

MapInfo Professional

Version 9.0

USER GUIDE

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May 2007

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Introduction

Welcome to the MapInfo family of products! As the field of computer mapping continues to expand, MapInfo leads the way with new products that are designed to fulfill users' computer mapping needs from the most basic to the most specialized with MapMarker, our premier address matching product.

MapInfo Professional[®], our flagship product, is a comprehensive computer mapping tool that enables you to perform complex geographic analysis such as redistricting, accessing your remote data, dragging and dropping map objects into your applications, creating thematic maps that emphasize patterns in your data, and much more.

This User Guide contains all of the information you need to learn about and be productive using MapInfo Professional.

Sections in this Chapter:

- ♦ **What is MapInfo Professional?**16
- ♦ **Getting Support**19

What is MapInfo Professional?

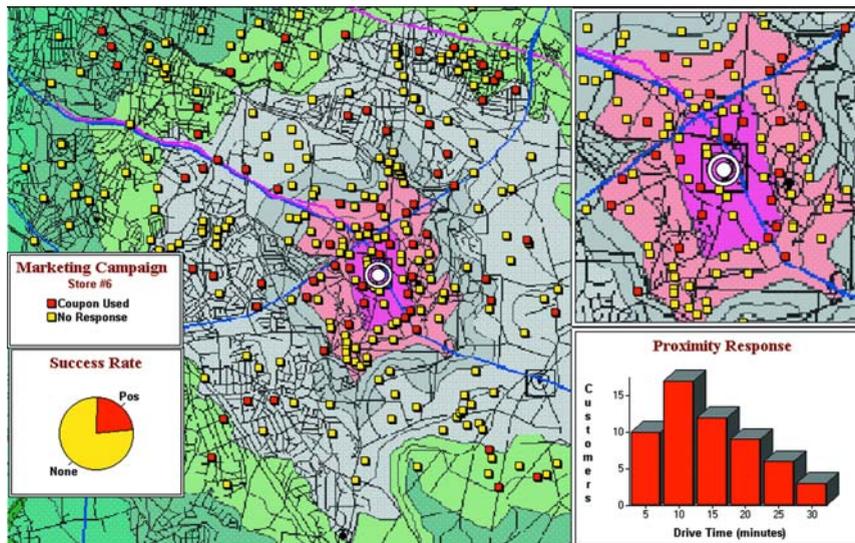
With MapInfo Professional, the power of computer mapping is at your complete disposal. You can display your data as points, as thematically shaded regions, as pie or bar charts, as districts, etc. You can perform geographic operations such as redistricting, combining and splitting objects, and buffering. You can also make queries against your data and access your remote data directly from MapInfo Professional.

For example, MapInfo Professional can show which branch store is the closest to your biggest customers. It can calculate the distances between customers and stores; it can show you the customers who spent the most last year; it can color-code the store symbols by sales volume. What makes it all come together is a visual display of your data on the map.

Mapping at a Glance

Huge quantities of information are available today, far more than ever before. Data abounds in spreadsheets, sales records, and marketing files. Paper and disk store masses of information on customers, stores, personnel, equipment, and resources. Thematic maps and graphs show distribution of customers for a marketing campaign.

Figure: Thematic Map Example



Nearly all of it has a geographic component. An estimated 85 percent of all databases contain some sort of geographic information such as street addresses, cities, states, postal codes, or even telephone numbers with area codes and exchange numbers.

Computer mapping can help you sort through all of this information, and using the geographic components in your data, display your results on a map. This lets you see patterns and relationships in the mass of information quickly and easily without having to pore over your database.

Windows Compatibility

MapInfo Professional is Windows XP Professional and Windows XP Home and Office compatible, so you will feel right at home with its windowing environment. It is designed to fit smoothly into your work environment, so it only changes the results you get, not the way you work.

Using Your Own Data

To begin with, you can use the data you already have, in the form it's already in — spreadsheets such as Excel, databases such as Access 2000, popular CAD packages, and other GIS applications, to name just a few. If your data is on a remote database, you can access it directly from MapInfo Professional. If you have data that is not already online, you can create database files right inside the product, or use data supplied by MapInfo — such as census data.

Similarly, you can use any of thousands of maps available from MapInfo, everything from street and highway maps to world maps. You can also create your own maps, either in MapInfo Professional or with a drawing package. You can diagram anything — floor plans, flow charts, even brain anatomy — can be treated as a map and entered into the product.

After you've organized your data visually, you'll save the results to files, or send them to any of the dozens of printers and plotters MapInfo Professional recognizes.

If you have your data on hand and you can read a map, you're just about ready to begin. Soon, we'll show you an example of how easy it is to put MapInfo Professional's power to work for you.

But first, install MapInfo Professional following the instructions in **Installing MapInfo Professional in Chapter 3 on page 85**. If you are new to the product, or new to computer mapping, we suggest you refer to **The Basics of MapInfo Professional in Chapter 4 on page 153** for an overview of basic mapping terms and concepts. Use the web-enabled tutorial to learn about its features, and become accustomed to the more common tasks and functions.

For more product and service information, you can connect directly from MapInfo Professional to our forum (on the **Help** menu, click **MapInfo on the Web**), or, consult our World Wide Web site (<http://www.mapinfo.com>).

Reviewing the MapInfo Professional Features

MapInfo Professional gives you the processing power of databases (including powerful SQL queries) and the visual power of maps, plus charts and graphs. It's an essential business tool for data analysis, sales, and presentations.

Here is a look at some of the features MapInfo Professional offers:

- Direct opening of files created with dBASE or FoxBASE, delimited ASCII, comma delimited CSV files, ESRI® shapefiles, Lotus 1–2–3, Microsoft Excel, and Microsoft Access; importing of graphics files in a variety of formats; a function for creating database files from within the product.
- Multiple views of your data in Map, Browser, and Graph windows. Hot Views allow you to open multiple views of the same data and update them when you change any one view.
- Live ODBC access to remote database data such as Oracle and SQL Server.
- Seamless map layers that allow you to handle several map layers as if they were one layer.
- Cartographic legends, enabling you to create and customize legends for any map layer.

What is MapInfo Professional?

- Thematic maps to create analyses of your data with high visual impact, including grid surface themes, 3DMaps, and Prism maps.
- Use raster underlay capabilities to enhance your work session.
- Querying capabilities ranging from simple data selections from a single file to complex SQL queries from one or more files.
- Workspaces that save all your settings and views so you can start where you left off.
- HotLinks that let you launch files or URLs directly from a Map window.
- OLE embedding of Map windows into other applications.
- A comprehensive array of drawing and editing tools for customizing your maps.
- Thousands of ready-made maps and functions for creating your own maps.
- Crystal Reports, the industry-standard report-writing program, allows you to create reports of your tabular data directly in the product.
- A layout window for preparing output.
- Printing and export capabilities for high-quality output
- The ability to change the projection of your map for display or digitizing.
- Object processing functions that help to correct errors in data, set node snap tolerances for different objects, as well as thin nodes and polygons.

When it's time to run MapInfo Professional, you'll feel right at home with its windowing environment. After you've organized your data visually, you'll save the results to files, or send them to your printer or plotter.

For tips to help you succeed in using MapInfo Professional, see *Ensuring Your Success* in the Help System.

MapInfo Professional Documentation Set

We have updated our MapInfo Professional *User Guide (Abridged)* to include the new features of MapInfo Professional and integrated issues and features from earlier versions. If you cannot find information you are looking for, please refer to the online help system, which is installed with the product.

Accessing MapInfo Professional Documentation

You can access the MapInfo Professional and Crystal Reports PDF files in the Documentation subfolder located in your installation directory. You can read these files using Adobe® Acrobat Reader, which is available on the installation CD or by going to the Adobe web site:

[.http://www.adobe.com/products/acrobat/readstep2.html](http://www.adobe.com/products/acrobat/readstep2.html)

Getting Support

Here at MapInfo Corporation, we are committed to your success and we provide a wide range of support to assist you in getting the results you are working toward.

Using the Status Bar

The Status Bar along the lower edge of your window provides helpful information during your mapping session and allows you to make some changes directly in the Status Bar. On the **Options** menu, click **Show/Hide Status Bar** to control the display of the Status Bar.

Note: Not all entries display in the Status Bar at all times. Entries display when a feature is active.

- *Status Bar Help:* For instantaneous answers to “What does that command do” simply move the cursor over the command. A brief description of the command displays in the left pane of the Status Bar along the lower edge of your screen.
- *Zoom, Map Scale, Cursor Location:* View any one of these settings in the Status Bar. You can change which one displays directly from the Status Bar. Click the arrow on the right side of the box to display a popup list of the three options. Click the setting you want to display. The Status Bar automatically updates. These display settings are also controlled in the Map Options dialog box (on the **Map** menu, click **Options**).
- *Editable Layers:* To keep track of which layer is currently editable, review the list of layers that display in the Status Bar. You can change the editable layer directly in the Status Bar. Click the arrow to the right of the box to display a popup list of the layers in the Map window. Click the layer you want to make editable. The Status Bar automatically updates, showing the new editable layer.
- *Selectable Layers:* The Status Bar indicates which layer the current selection is from. If there is nothing selected, the Status Bar reads: “Selecting: NONE.”
- *Browser window Records:* When viewing a table in a Browser, the record count displays in the Status Bar.
- *Snap-to-Node:* This **S**-key toggle feature is in use when SNAP displays in the Status Bar.
- *Autotrace indicator:* This **T**-key feature is in use when AUTOTRACE displays in the Status Bar.
- *Autonode indicator:* This **N**-key feature is in use when AUTONODE displays in the Status Bar.

Using the Help System

MapInfo Professional’s comprehensive Online Help system provides the information you need to learn and use the product more effectively. You can reach the information in several ways:

- Use the Help Contents screen to choose topics from “books”. Click a book to display its topics, choose a topic from the list.
- Use the Search feature to search on a specific word. Type the word you want to search for in the first field, select the matching word in the second, and then the topic in the third box. MapInfo Professional displays the topic in the pane on the right.
- Use the Index feature to find a topic quickly. Type the first few letters of the word you are looking for. The index entry that most closely matches your entry is highlighted. Click the index entry you want to display.
- Use the **Favorites** tab to collect and store topics you want to refer to frequently.

- **Context-Sensitive Feature:** Press the **F1** key to receive more information on any menu command or dialog box. The Help window for that item displays. Also click the **Help** button in the MapInfo Professional dialogs to display information on the current dialog box.
- **Quick Access to the MapInfo publications web site:** Click the underlined MapInfo Corporation name at the bottom of each topic page to go to the MapInfo web site. From here you have access to product information, upcoming events, tech tips, and a complete set of documentation.

Getting Technical Support

MapInfo Corporation offers a free support period on all new software purchases and upgrades, so you can be productive from the start. Once the free period ends, MapInfo Corporation offers a broad selection of extended support services for individual, business, and corporate users.

Technical Support is here to help you, and your call is important. This section lists the information you need to provide when you call your local support center. It also explains some of the technical support procedures so that you will know what to expect about the handling and resolution of your particular issue.

Please remember to include your serial number, partner number or contract number when contacting Technical Support.

Technical Support Offerings

To use Technical Support, you must register your product. This can be done very easily during installation or anytime during normal business hours by contacting Customer Service directly at 1-800-552-2511 Option 3.

Full technical support for MapInfo Professional is provided for the currently shipping version plus the two previous versions.

Extended support options are available at each of our technical support centers in the Americas, Europe/Middle East/Africa, and Asia-Pacific regions. See below for how to contact the office nearest you.

- For technical support contact information for your geography, see the *Getting Technical Support* topic in the *Help System*.

What's New in MapInfo Professional 9.0

Thank you for upgrading to the most advanced computer mapping product in the MapInfo family! As the field of computer mapping continues to expand, MapInfo leads the way with new products that are designed to fulfill your computer mapping needs from the most basic to the most specialized with MapMarker, our premier address matching product and Envinsa, our enterprise-wide location platform.

For more information about the bug fixes and corrections we have made to MapInfo Professional in this release, you will soon be able to review the release notes at:

<http://extranet.mapinfo.com/support/documentation/manuals.cfm>

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Before You Get Started

There are some big enhancements to the MapInfo Professional 9.0 functionality including support for curved labels, new time and date/time data types for crime analysis and other queries and thematic maps, and being able to open new data formats directly in the application.

All of the data used in this documentation is available either from the data CD or from the trial data on the MapInfo web site. To retrieve the trial data, go to:

www.mapinfo.com > Support and Training > Downloads > MapInfo Professional > MIProTrialData.exe

and download this data to your computer. You must have Internet access to retrieve the trial data.

Changes to the Installer

In the past, if you wanted to add ODBC or Oracle Spatial support, you followed the Custom Workstation Installation instructions. We have changed the installation program to add the ODBC Connectivity and Oracle Spatial support by default. This should simplify the installation process and ensure a better product installation experience.

You may notice that we have shipped two disks for MapInfo Professional this time. One is your familiar MapInfo Professional installation CD and the other is a data CD that contains new and updated data you can use to improve the accuracy of geocoding and enhance the look of your maps. For more information about this change see [Database Enhancements on page 69](#).

Licensing Support for MapInfo Professional

We have added product licensing options to the MapInfo Professional product during this release. Please review the licensing documentation carefully in [Installing and Configuring MapInfo Professional on page 79](#).

MapBasic Available Free of Charge on the Web

MapInfo has decided to make MapBasic, the powerful API you can use to extend MapInfo Professional available on the web. Go to www.mapinfo.com/proresources to obtain your free copy of MapBasic 9.0 and access other resources to enhance your use of MapInfo Professional.

Major Features and Enhancements

We have created the following major features and enhancements in response to your requests and suggestions.

- [Using Date- and Time-Based Data in Maps and Queries on page 23](#)
- [Curved Labels Improve the Look of Your Maps on page 31](#)
- [Using Universal Data Directly on page 34](#)
- [Using Templates for Layouts on page 40](#)

Using Date- and Time-Based Data in Maps and Queries

If you maintain time- or date/time-specific data, you may be interested in querying that information and displaying it visually in your MapInfo maps. We have added new Time and DateTime data types to allow you to display that data thematically and as part of a query analysis. You could use this new data type for many types of projects, such as to display crime information based on Date and Time or to post schedules based on resource availability on a particular date. Additionally if you use Access, Excel, dBase, and remote databases and you have not been able to use the date and time based information in the past, we are providing a way for you to use that information in MapInfo Professional. In the past, when you converted this type of information into a MapInfo format, the information either was interpreted incorrectly, it was truncated, or it did not translate at all.

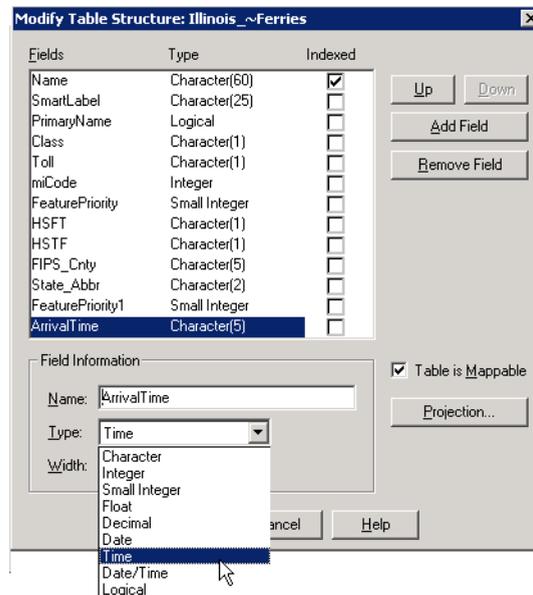
These new data types have been added in many places throughout MapInfo Professional and show up in the lists of your Query dialog boxes. However what is most important is that you understand how this data is now interpreted when bringing it into MapInfo format.

Using the New Data Types

You can convert existing fields with time or time/date information into the new format so you can use them for querying and thematic maps.

To convert your data:

1. Open the data you want to convert in MapInfo Professional.
2. Chose **Table > Maintenance > Table Structure** and select the table for which you want to change the data type. The Modify Table Structure dialog box displays.



3. To change the **ArrivalTime** field from a character field to a Time field, click the **Type** drop-down arrow and select the Time type.
4. Click **OK** to save your change.

Adding Time or DateTime Data Types to Existing Data

If you have existing data and want to add Time or DateTime content to it, check the table below to ensure that the data is in a format that MapInfo Professional can recognize as Time or DateTime.

Time and DateTime Data Formats

Enter:	To Format for Time:	To Format for DateTime:
Date	Not Applicable.	yyyyMMdd Sets value to the specified Date at midnight.
Time	HHmmssfff. Can also use the locale settings for a Time string.	HHmmssfff Sets value to current date at specified Time. Can also use the locale settings for Date and Time strings separated by a space.
DateTime	yyyyMMddHHmmssfff Sets value to Time portion of DateTime value.	yyyyMMddHHmmssfff

where:

HH refers to hours, **mm** refers to minutes, **ss** refers to seconds, **ff** refers to fractions of seconds, **yyyy** refers to years, **MM** refers to month, **dd** refers to date

Converting Existing Data to Time or DateTime Data Types

If you have Time or DateTime data in your tables already, check to see if it is in the format you want by checking the **Time and DateTime Data Formats**. If you have a lot of data and it is not in the format you require for your tasks, you can use one of the MapBasic conversion functions to assist you with this process.

Converting	Date	Time	DateTime
String	Assumes the form yyyyMMdd or locale settings for a date string if Date format is "local" or the U.S. form if Date format is "US". *	String can be in the form HHmmssfff or can use the locale settings for a Time string. **	String can be in the form yyyyMMddHHmmssfff or can use the locale settings for Date and Time strings separated by a space. ***
Number	Assumes the form yyyyMMdd. If any portion of the Date is invalid the value is set to null. May display this error: "Could not convert data."	Assumes the form HHmmssfff. If any portion of the Time is invalid the value is set to null and display this error: "Could not convert data."	Assumes the form yyyyMMddHHmmssfff. If any portion of the DateTime is invalid the value is set to null and display this error: "Could not convert data."

Converting	Date	Time	DateTime
Date	No conversion	Sets value to null and display this error: "Could not convert data."	Sets value to the specified Date at midnight.
Time	Sets value to null. May display this error: "Could not convert data."	No conversion	Sets value to current date at specified Time.
DateTime	Sets value to Date portion of DateTime value.	Sets value to Time portion of DateTime value.	No conversion

Additional Notes for Converting a String

* to a Date

If the year is last in the current Date format, you can omit it and MapInfo Professional will assume the current year. If the data specifies a two-digit year, MapInfo Professional assigns the century based on the current Date Window. If the Date is invalid the value is set to null and MapInfo Professional may display this error: "Could not convert data."

** to a Time

MapInfo Professional accepts both military and AM/PM forms. The data can specify the entire locale in AM or PM strings or use just the first character of each. The data may omit the milliseconds, seconds, and minutes if the lower-order portions are also omitted. If the Time is invalid the value is set to null and MapInfo Professional may display this error: "Could not convert data."

*** to a DateTime

The conversion rules for Date and Time apply for the respective portions of the string. If the data omits the Time portion, MapInfo Professional assumes midnight. If the DateTime is invalid the value is set to null and MapInfo Professional may display this error: "Could not convert data."

Additional Notes for Converting a Number to a String

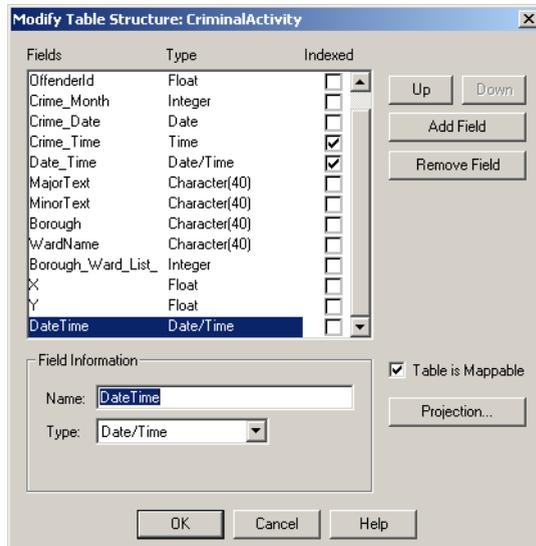
The conversion rules for Date and Time apply for the respective portions of the string. If the data omits the Time portion MapInfo Professional assumes the Time is midnight. If the DateTime is invalid the value is set to null and MapInfo Professional may display this error: "Could not convert data."

If you have a lot of data and it is not in the format you require for your tasks, you can use one of the MapBasic conversion functions to assist you with this process.

Creating a DateTime Column from Two Separate Columns

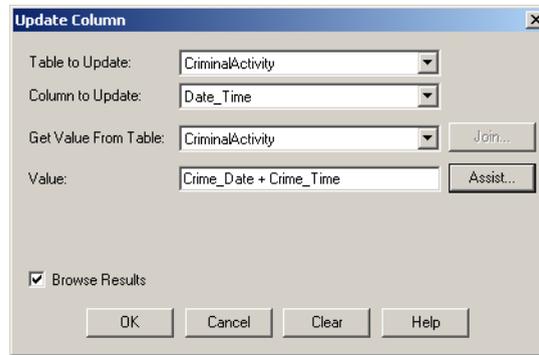
To create a DateTime column from a Date column and a Time column:

1. Open your data in MapInfo Professional Browser window. We use CrimeActivity.TAB from the Introductory Data on your CD.
2. Choose **Table > Maintenance > Table Structure** to display the Modify Table Structure dialog box.
3. Click **Add Field** and type a Date_Time label in the **Name** field.
4. Select **Date/Time** in the **Type** drop-down list and click **OK**.



5. Select **Table > Update Column** to display the Update Column dialog box.
6. Select the table name in the **Table to Update** drop-down list.
7. Select the name of the new column you just created in the **Column to Update** drop-down list.
8. Select the table name again in the **Get Value from Table** drop-down list.
9. Click the **Assist** button to display the Expressions dialog box.
10. Use the **Column** drop-down list to create the following expression and click **OK**:

DateColumnName + TimeColumnName



For more about using math expressions with Time and Date information, see [Using the Arithmetic Operators with the New Data Types on page 29](#).

11. Click **OK** to update the new column with the Date and Time information.

Creating Thematic Maps using Time and Time/Date Data Types

For ranged thematic maps, Time values will be able to be rounded by seconds, minutes, and hours. The default is **seconds**. When you select **None**, MapInfo Professional does not round the electing the seconds and displays a granularity of milliseconds.

Note: If your data is on a remote database, you may be interested in the [New Time and DateTime Data Type Support for Remote Databases on page 72](#).

To create a thematic map using DateTime information:

1. Open your data in MapInfo Professional Browser window. Use the appropriate background map to give your data perspective. Here we use the Great Britain data in the Introductory Data on the data CD.
2. Choose **Query > SQL Select** to display the SQL Select dialog box.
3. Place your cursor in the from **Tables** field and select the table name that contains the DateTime data in the **from Tables** drop-down list. For our example we used the CrimeActivity table.
4. To find out the location of crimes between April 10, 2003 and April 10, 2004 and between the hours of 12 and 8 p.m., we entered this text in the **where Condition** box:

```
Crime_Date between "04/10/2003" and "04/10/2004" And Crime_Time between
"12:00:00 PM" and "08:00:00 PM"
```

SQL Select

Select Columns: *

from Tables: CriminalActivity

where Condition: Crime_Date between "04/10/2003" and "04/10/2004" And Crime_Time between "12:00:00 PM" and "08:00:00 PM"

Group by Columns:

Order by Columns:

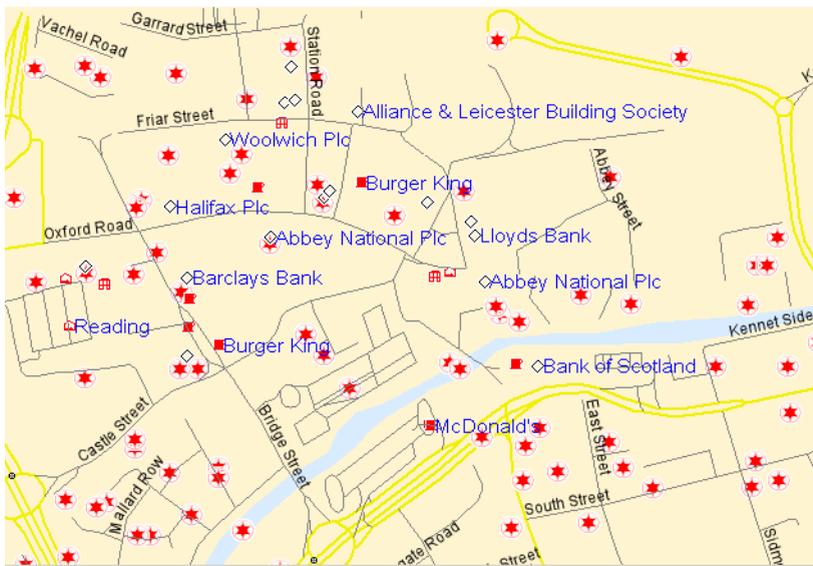
into Table Named: Selection

Browse Results Find Results In Current Map Window

OK Cancel Clear Verify Help

Save Template Load Template

5. Select the **Browse Results** and **Find Results in Current Map Window** check boxes to display the results.
6. Click **OK** to create the query and display the results.



We used the UKCrimeExample data to create this map. This data is available in the Introductory Data/World/Europe/UKCrimeExample folder of the Data CD that ships with MapInfo Professional.

Using the Arithmetic Operators with the New Data Types

You can use the addition and subtraction operators with the new data types as follows:

Data type	Operator	Data type	Result	Notes
Time	minus (-)	Time	Number	The number represents the number of seconds between two times as a floating point number. The fractional part of the result represents milliseconds.
Time	+ or -	Number	Time	The number represents the seconds to add to the first Time. The Time wraps around midnight so that 11:59 PM + 120 seconds equals 12:01 AM.
DateTime	minus (-)	DateTime	Number	The number represents the number of days between two DateTimes as a floating point number. The fractional part of the result is the fractional portion of a day, as in today at noon minus today at midnight equals one half day.
DateTime	+ or -	Number	DateTime	The number represents the number of days to add to the first Time.

Using the Comparison Operators with the New Data Types

The comparison operators are =, <>, <, >, <=, >= and should all work as expected for the Time and DateTime values. For Time values, the smallest Time is "12:00:00.000 AM" while the largest Time is "11:59:59.999 PM".

The "Between" operator works as expected for DateTime values. For Time values, we support wrap-around comparisons. For example:

TimeValue Between "2:00 AM" And "10:00 PM" is true if the TimeValue is greater than or equal to "2:00 AM" and less than or equal to "10:00 PM"

TimeValue Between "10:00 PM" And "2:00 AM" is true if the TimeValue is greater than or equal to "10:00 PM" and less than or equal to "11:59:59.999" **or** greater than or equal to "12:00 AM" and less than or equal to "2:00 AM"

Using the Logical Operators with the New Data Types

A Time or DateTime field with a value is **true**, while the same field with a null value indicates **false**. The behavior of the logical operators And, Or, and Not should follow logically from this.

Interpreting Excel Data

Using Excel you can format numeric cells as Dates and/or Times. In previous versions, MapInfo Professional supported Date fields with the format 'y' (year), 'm' (month), or 'd' (day). Time fields within the format 'h' (hour) or 's' (second) were treated as Float fields. Fields with Date and Time format codes were treated as a Date field and the Time information was ignored. Excel determines the meaning of the 'm' format code as either 'month' or 'minute' based on the rest of the format code. With the introduction of these new data types:

Fields registered with	Are Treated As...
Date format but not Time format	Date fields
Time format but not Date format	Time fields
Date format and Time format	DateTime fields

Note: If you want to use both the Date and Time data from tables registered with earlier versions of MapInfo Professional, you can re-register the tables.

Interpreting Microsoft Access Data

Access data uses a DateTime type, but not separate Date or Time types. In the past, MapInfo Professional interpreted these fields as Date fields. With the introduction of these new data types, MapInfo Professional registers the Access DateTime type fields as DateTime fields.

Note: The Date fields in any of your existing MapInfo Professional files are still treated as Date fields until you re-register them to use the new DateTime data type.

When you save a MapInfo table to Access format, MapInfo Professional writes Date, Time, and DateTime fields as Access DateTime fields. The .tab file itself maintains the Date, Time, and DateTime types so when you reopen the file, the Date, Time, or DateTime data displays. If you attempt to open these .tab files using a non-MapInfo application, these fields display as DateTime.

Interpreting dBase Data

The dBase format supports Date fields but does not explicitly support Time or DateTime fields. Therefore, when you register an existing dBase file, there will be no Time or DateTime fields. When you save or export a MapInfo table with Time or DateTime fields to a dBase file, Time and DateTime fields are written out as character fields of length 9 and 17, respectively so that the data is written out in numeric formats.

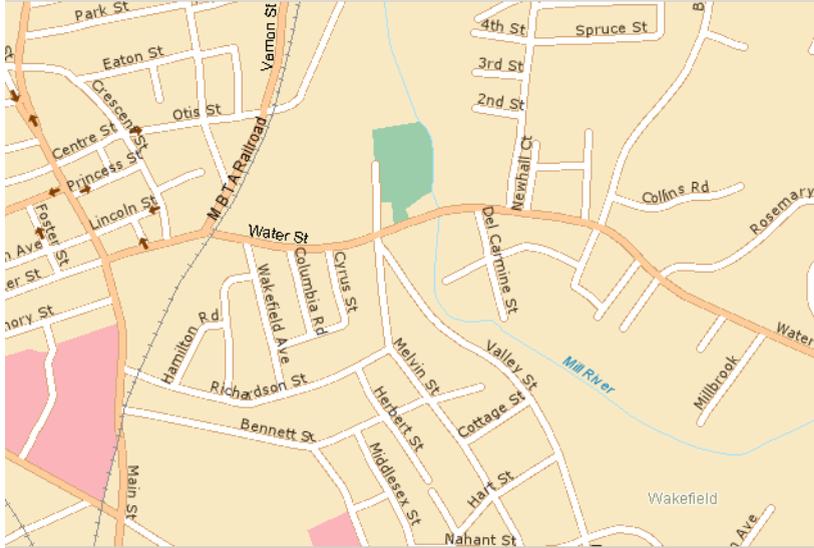
When you save a new MapInfo table to dBase format, the .tab file maintains the Time and DateTime types so that when you reopen it the data will display as either Time or DateTime. If you attempt to open these .tab files using a non-MapInfo application, these fields display as character fields.

Related topic in the *Help System*:

- Interpreting ASCII and CSV Data

Curved Labels Improve the Look of Your Maps

You can improve the look of your arc and polyline labels by making these labels follow the curve of the line. Curved labels can display for any arc/polyline feature, such as streets, railroads, ferry lines, and rivers. This functionality is supported in the Map window and persists when you move the map to a Layout, however you cannot create curved labels in the Layout window itself.



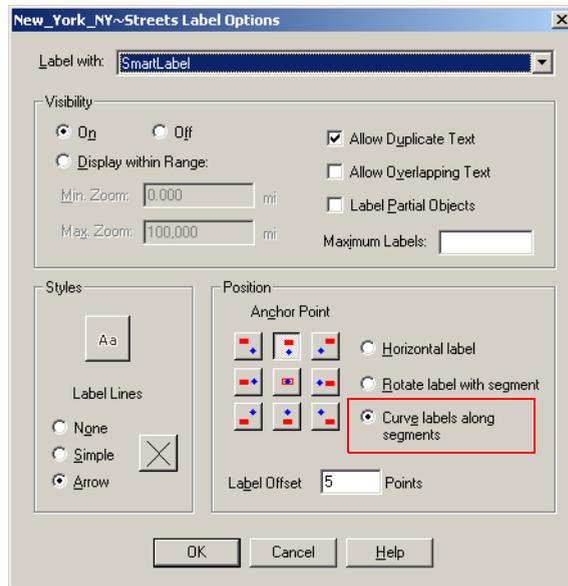
Here there are curved labels on the Streets, Railroads, and WaterRivers layers.

Setting the Curved Label Option

The curved label option gives you more control over the way your labels display.

To display labels along a curve:

1. Display the map you want to change the labels for.
2. Click  to display the Layer Control dialog box.
3. Highlight the layer that contains the labels you want to change and select the **AutoLabel** check box.
4. Click the **Labels** button to display the Label Options dialog box.



5. To ensure that the layer labels are visible, click the **On** button in the Visibility pane.
6. Click the **Curve labels along segments** option to display the layer's labels along the curve of the line. These labels are anti-aliased automatically to improve the display.

Note: If you use **Anchor Points** to set the label's position, when you select:

Left, the curved labels are left-justified starting at the beginning of the arc/polyline

Center, the curved labels are centered on the midpoint of the arc/polyline

Right, the curved labels are right-justified at the end of the arc/polyline

Note: The length of the polyline(s) affect how the label is positioned. The longer the polyline(s), the more predictably the labels display.

7. Click **OK** to save this option and **OK** again to display the new label(s).

Editing Curved Labels

All of the editable properties of curved labels are supported in the workspace.

You can use the Label tool on the Main toolbar to move curved labels. Make sure you have already selected the **Curve labels along segments** option in the Label Options dialog box for the layer you want to change. In these instructions, we use the term line to mean polyline or arc segment.

1. Click  on the Main toolbar to display the Layer Control dialog box.
2. Highlight the layer you want to move the labels for in the list.
3. Select the **Selectable** check box in this layer.
4. Click **OK** to redisplay the Map window.

5. Click  on the Main toolbar.
6. Click the line on which you want to reposition the label.
7. Click the new location for the label until the label displays as you want it to.

Note: If the segment you select does not have a label name associated with it in the data, no label displays. If MapInfo Professional cannot edit the label, the Label tool beeps to indicate an error.

Understanding your Data and Curved Labels

When you select curved autolabeling, MapInfo Professional attempts to create a curved label for every arc/polyline record in a map, just as it does for non-curved labels.

For example, in street maps, the street can be made of several polylines or one long polyline. The length and number of the polylines, the rules that govern whether a curved label can be created, and the labeling options you choose, all affect which curved labels are created and where they display.

Some polyline and arc segments in your layer data may not contain label name entries. When this occurs, MapInfo Professional cannot display labels for that segment.

What to Expect from Curved Labels

This feature is made up of complex algorithms that are designed to enhance the display of your polyline/arc features. There are several rules which determine whether MapInfo Professional can display a curved label.

- MapInfo Professional can only draw curved labels using TrueType fonts. If you select a non-TrueType font, MapInfo Professional substitutes a comparable TrueType font, so, the label you chose may display differently than you expect. Also, if you change a horizontal label using a non-TrueType to a curved label, the new label may display differently due to the font substitution.
- Part of the label string must fit along the polyline/arc that it is labelling. If it cannot fit, MapInfo Professional determines that the label is too long and throws it away
- MapInfo Professional cannot draw curved labels for polylines that are very jagged, however, it depends on the curvature of the line
- Labels that curve onto themselves are thrown away and do not display
- Curved labels follow the same rules for overlap detection, duplicate text, and partial segment labeling as non-curved labels. Each of these rules affect how and when MapInfo Professional displays the labels
- You cannot drag curved labels as you can other labels
- You can create curved labels with the Label tool at any point along a polyline/arc
- You can reposition the curved auto labels with the Label tool
- Curved and non-curved labels persist for layers in the workspace
- The Labeler utility does not support curved labels, so you cannot transfer curved labels to the Cosmetic layer
- The curved labels functionality supports double byte characters
- The Label Lines controls are disabled whenever you select the **Curve labels along segments** option
- You cannot underline curved labels

Using Universal Data Directly

Many of our customers who use **AutoCAD®**, **Microstation Design®**, **ESRI ArcSDE®** and **Personal Geodatabase®** data have asked us for a simpler and more direct way to open it. This new feature allows you to open and set the display properties of this data directly. By opening this data directly you avoid having to translate it separately and work with copies of the data in .tab format. This new functionality ensures that you will have more flexibility when working with your data.

MapInfo and Safe Software, a third-party partner, have worked together to provide this more direct way to open and display universal data directly in MapInfo Professional.

Using Safe Software's Feature Manipulation Engine (FME), you can access this data directly:

- ESRI ArcSDE
- ESRI Personal Geodatabase (*.MDB)
- AutoCAD.DWG/DXF
- Microstation Design (*.DGN)
- ESRI ArcInfo Export (*.E00)
- USGS Spatial Data Transfer Standard (*.CATD.DDF)
- VPF NIMA/NGA (*.FT)

Using the Open Universal Data feature of MapInfo Professional, you can open different types of data stored in a variety of locations and:

- Combine data from multiple sources into a single run and join data from incompatible systems
- Extend the use of legacy systems
- Exchange data between CAD-based systems and GIS systems
- Perform quality assurance tests on spatial data

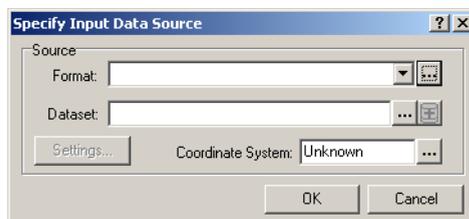
Additionally, if you have the FME Suite, which is available from Safe Software, you can use this feature to open almost 150 formats within MapInfo Professional. For more information about extending MapInfo Professional in this way, see [Extending MapInfo Professional with FME Suite on page 39](#). This feature is based on the FME 2007 release.

Opening Universal Data Directly

The process for opening this data is the same regardless of the format.

To open the universal data directly:

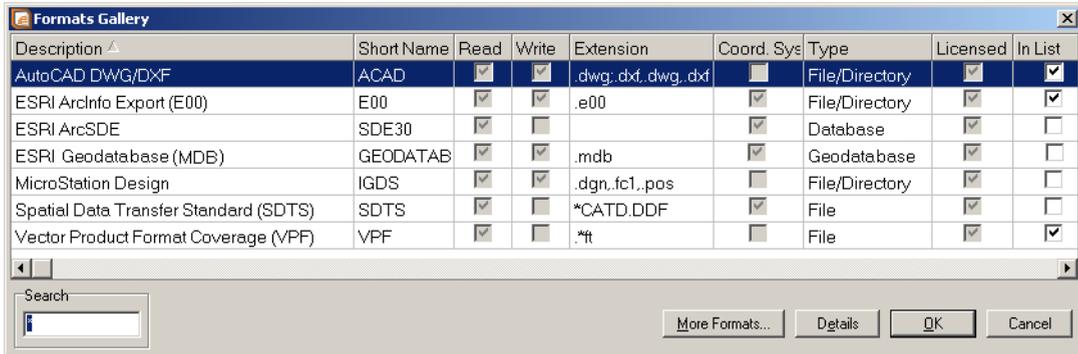
1. Choose **File > Open Universal Data** to display the Specify Input Data Source dialog box.



Use this dialog box to select the data you want to open and specify the name of the dataset you want to display.

Some formats are file-based and for others you need to specify a data source. Here, a dataset is defined as a set of data in the same format. Some data contains the coordinate system information in it and others do not. You may need to specify the coordinate system projection for the data you are attempting to open.

2. Beside the **Format** drop-down list, click the  **Ellipsis** button to specify the data format you want to open. The Formats Gallery displays.



From this dialog box you can select a format and import frequently used formats.

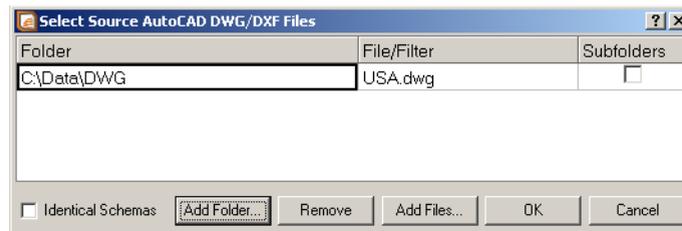
Note: Personal Geodatabase and ArcSDE always display in the Formats Gallery but they may be grayed out if you do not have the appropriate client DLL or applications installed. See [Setting the ArcSDE Data Options](#) and [Setting the ESRI Personal Geodatabase Data Options](#) in the *Help System* for these details.

To obtain a free trial of the FME Suite and add more formats to this list, click **More Formats**.

Highlight a format in this list and click **OK** to return to the Specify Input Data Source dialog box.

3. Click the **Ellipsis** button beside the **Dataset** field to select the data you want to open.

To open a folder of data, click the **+** button beside the **Ellipsis** button. The Select Source Files dialog box displays.



If you select a folder in this dialog box, MapInfo Professional opens all of the data of the specified format it finds in this folder. If you select the **Subfolders** check box, MapInfo Professional also opens all of the data with the specified format in the subfolders as well. This data is merged together when you open it. To add:

Directory-Based Formats: Click **Add Folder** to browse for a specific directory name. Check the **Subfolders** box to include all subfolders below that directory. Click **OK**. The new data appends to the original data.

File-Based Formats: You can type directly in the **Folder** field, and use wildcards to include all files of a specific format. For example:

*.dgn

merges all the .dgn files on your C drive. Check **Identical Schemas** if the files have the same schema.

- Click **Add Files** to select individual files
- **Ctrl**+Left-click to select multiple files
- Click **Remove** to delete single or multiple files based on your selection

Click **OK**. The new data appends to the original data. The Specify Data Input Source dialog box redisplay.

4. If the coordinate system for the data you selected is **unknown**, you need to specify it in the **Coordinate System** field. Click the **Ellipsis** button beside the field to select the appropriate projection and click **OK**. If you do not specify the coordinate system here, you will be prompted later. For more about this feature, see [Coordinate System Behavior and Universal Data on page 38](#).
5. Click **Settings** to display the settings options for this file type. The options in these dialog boxes depend on the format you selected. To learn more about these settings, see the these topics in the *Help System*:

[Setting the AutoCAD Options](#)

[Setting the ArcInfo Export File Options](#)

[Setting the ArcSDE Data Options](#)

[Setting the ESRI Personal Geodatabase Data Options](#)

[Setting the Microstation Design File Options](#)

[Setting the Vector Product Format Coverage Settings](#)

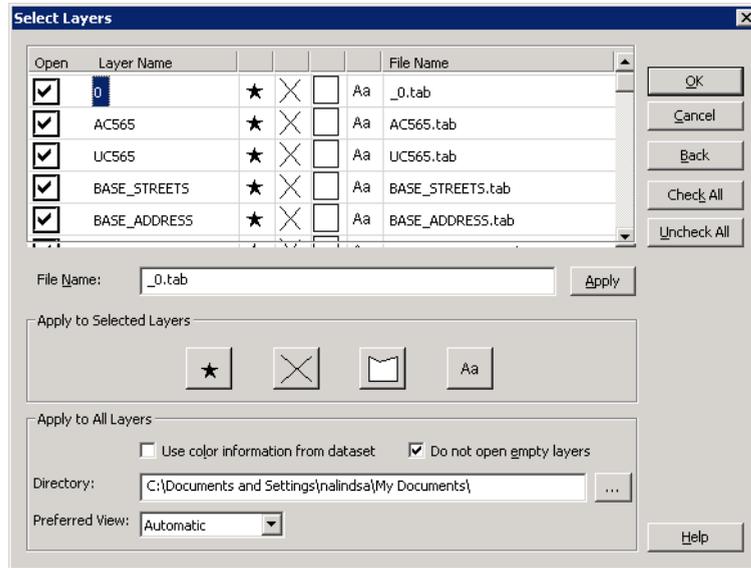
Note: The Spatial Data Transfer Standard data does not have settings options.

It is possible that a style option s will not show. If it's the case it means that the layer(s) in question does (do) not have any geometry objects (only attributes).

6. When you have completed your settings, click **OK** to open the data you selected.

If you did not specify the coordinate system in [step 4](#) and the coordinate system is unknown, the Choose Projection dialog box displays, allowing you to select the projection for the data you are opening. Select the appropriate projection for the data and click **OK**. The system defaults to your Table Projection setting in the Map Window Preference if you do not select a projection here. See [Coordinate System Behavior and Universal Data on page 38](#) for more information. The Select Layers dialog box displays.

MapInfo Professional opens all layers with the Open check box selected.



Use this box to specify the layers to open and then specify the layer display options.

To change the name of the layer, click it, type a new name in the **File Name** field and click **Apply**. Use the **Check All** and **Uncheck All** buttons to select or deselect the **Open** check box for all of the layers. Click the **Back** button to return to the Specify Input Data Source dialog box.

7. Now you are ready to select the layers to which you will apply the new display options. All layers you select together will share the same display characteristics.
 - To change the display options of all layers, click the layer name of the first layer, press the **Shift** key, and click the layer name of the last layer
 - To change the display options of some layers, click the layer name of the first layer, press the **Ctrl** key, and click the other layers that require the same change
 - To change the display options of one layer, click the layer name of the layer
8. Once you have selected the layer(s), use the display buttons to make the changes you require. If the layer(s) you are changing contain:
 - Point data, click the **Symbol Style** button to change the symbol options
 - Line data, click the **Line Style** button to change the line options
 - Region data, click the **Region Style** button to change the background options
 - Text data, click the **Text Style** button to change the text options

Note: If you want to open maps based on data that is thematically related, assign the same styles to the layers that contain that information.
9. Once you have completed your layer display options, consider the options that affect the whole data source. You can select from these options:
 - Use color information from data
 - Do not open empty layers
10. Use the **Directory** field to specify the path to which you want to save the resulting data. Click the **Ellipsis** button beside the field to navigate to the appropriate directory.

11. Select the viewing options from the **Preferred View** drop down box, as you would when opening any other data.
12. When you have completed your selections, click **OK** to open the data according to the settings you have specified. A status bar displays to indicate the progress and the data displays.

Note: For any terminology that might not be familiar to you, review the FME Suite *Help System*.

Avoiding Out of Disk Space Errors when using Universal Data

When you open universal data using this new feature, the data is stored locally temporarily so you can reopen it faster the next time you use MapInfo Professional. For example, the temporary file folder location for Windows XP is:

```
C:\Documents and Settings\<user id>\Local Settings\Application Data\  
MapInfo\MapInfo\Professional\900\UniversalDataCache\
```

Note: Paths in this explanation are based on installations on Windows XP and Windows 2000 operating systems. Vista operating system users need to consult their system documentation for the right path for their installation.

If you find that you are opening large files with many layers using this feature, these files can get very large and may impact the performance of your system. If you see *Out of Disk Space* errors, you may want to delete these files to see if this data is the cause of the error. Whenever you delete temporary files, you will have to reopen that stored data to display it again.

Coordinate System Behavior and Universal Data

Some of the universal data you are working with contains coordinate system information and some do not. If you are opening Spatial Data Transfer Standard data and some of the ESRI data, the coordinate system information entry is handled for you. Coordinate system information for AutoCAD, Microstation Design and VPF data must be specified, although VPF data is usually in the Longitude/Latitude WGS 84 projection.

Refreshing the Universal Data

You can refresh the data from the original data source using the Universal Data Table Refresh command. This allows you to incorporate changes to the original data in your new MapInfo Professional map.

To refresh the universal data:

1. The data you want to refresh must be open in the Map window.
2. Choose **Table > Universal Data Table Refresh**. The Select Tables dialog box displays.
3. Highlight the table(s) you want to refresh in the list and click **Select**. A status bar displays to indicate the progress and the layers are refreshed.

Working with the FME Suite

If you install the FME Suite from Safe Software, you can open even more formats from within MapInfo Professional. To extend MapInfo Professional to use these additional formats, use the FME Administrator tool that ships with the FME Suite. There are a couple of caveats to keep in mind:

- Make sure that the version of the FME Suite that you are using is the same version or later than the that which has been integrated with MapInfo Professional. This means you must have FME Suite 2007 or later. This works on a build number basis, so even a minor update to MapInfo Professional or FME Suite could result in discrepancies between the products and could prevent you from opening particular formats.
- MapInfo localizes the dialog boxes of the FME product that we use in MapInfo Professional. However, when you extend MapInfo Professional with the FME Suite, this functionality is effectively run from the FME Suite, using the FME Suite dialog boxes. For example, if you are running the Japanese version of MapInfo Professional and you install the English version of the FME Suite, the dialog boxes that display for this feature will be in English. If you revert to the MapInfo Professional implementation of this feature, the translated dialog boxes will display in Japanese.

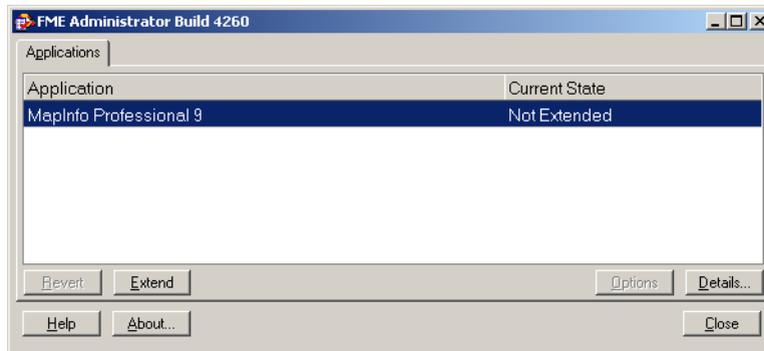
Note: Raster/grid formats and MapInfo TAB/MIF formats are not available when you extend MapInfo Professional with the FME Suite.

Extending MapInfo Professional with FME Suite

You must have a valid FME Suite License to extend MapInfo Professional to open additional data source formats.

To open even more universal data source formats in MapInfo Professional:

1. Choose **Start > All Programs > FME > FME Administrator** to display the FME Administrator dialog box.



2. To extend MapInfo Professional, click **Extend**.

If you have extended MapInfo Professional and want to return to MapInfo Professional Universal Data functionality only, click **Revert**. You might want to revert to MapInfo Professional if you have the Base FME Suite and you want to work with ArcSDE data.

3. Click **Close** to close the FME Administrator.

Using Templates for Layouts

Producing professional quality maps for printing or other output can be done quickly and easily with MapInfo Professional's Layout Templates feature.

A layout template is a user-defined workspace that contains a Layout window with placeholders for maps, other windows, and additional elements in a specific arrangement for presentation. You can create a layout from one of the templates that MapInfo Professional comes with, or from a template that you create using Layout Templates.

The Layout Templates feature provides a set of tool buttons that enable you to create, edit, and save layout templates. Configuration options enable you to keep layout templates organized and set the default layout template.

You can create different layout templates to accommodate your map presentation needs. For example, if you frequently use a combination of a map, browser, and legend in your layouts, you can create a layout template that contains placeholders for each of those window types. You can then create different layouts based on the same template without having to create each layout manually.

This section guides you through creating a layout template first and then shows you how to create a layout from a template.

Accessing Template Creation Tools

To access the tools you need to create a layout template:

1. Close any open windows. You will be prompted to close open windows later if you do not close them now. No windows can be open when you create or edit a layout template because the windows would be written to the workspace when you save the layout template.
2. Choose **Tools > Layout Templates > Create New Template**.
3. The About Creating Templates dialog box displays on the screen.



The About Creating Templates dialog provides important information about editing templates and enables you to control the display of the About Creating Templates dialog box.

The **Don't show this dialog again** check box is selected by default. Selecting the **Don't show this dialog again** check box prevents the About Creating Templates dialog box from displaying every time you create a layout template.

4. Click **OK**.

The Template Tools toolbar displays on the screen.



Creating Layout Templates

A layout template enables you to create and save an arrangement of maps, browsers, graphs, legends, and additional elements for presentation. When you save the template, it is saved as a workspace so that you can retrieve it easily for future use.

The tool buttons in Template Tools enable you to add placeholders for the different elements in the layout. These elements include the different types of MapInfo Professional windows (map, browser, graph, and legend), a scalebar, and text objects. You can control each element's size and its position in the layout. Additional tool buttons enable you to save the layout template, and cancel the creation of the layout template without saving it.

Each tool is described below:



Add Map—Adds a map frame to the layout template.



Add Graph—Adds a graph frame to the layout template.



Add Browser—Adds a browser frame to the layout template.



Add Text—Adds a text object placeholder to the layout template.



Add Scalebar—Adds a scalebar frame to the layout template.



Save Template—Use the Save Template tool button to save the layout template as a workspace.



Add Legend—Adds a legend frame to the layout template.



Quit Template without saving—Use the Quit Template tool button to cancel the creation of the layout template.

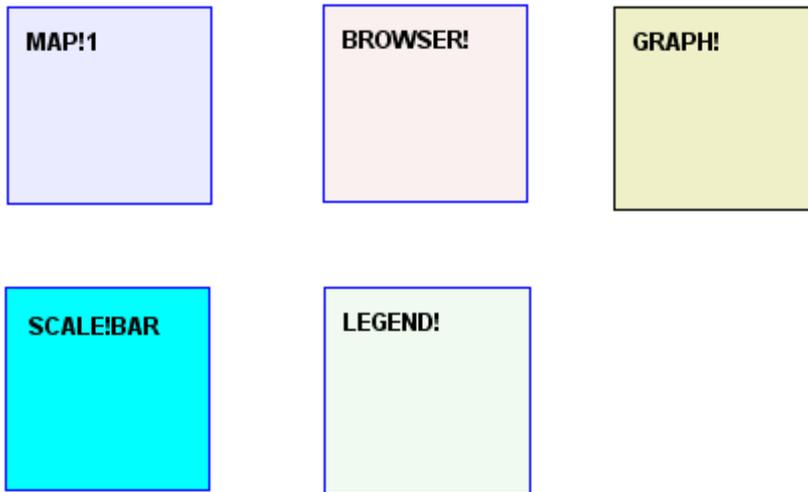
Adding Map Elements

Adding maps, browsers, graphs, legends or scalebars to a layout template follows the same procedure.

When you add a map element to the layout template, you are adding a frame that acts as a placeholder for that specific element, rather than adding the element itself. The tools enable you to specify which element you want the frame to represent in the template.

Major Features and Enhancements

Each map element's frame has a color fill to help you distinguish between each map element. The window types are also labeled inside the frame. The color and fill for each map element is illustrated below:



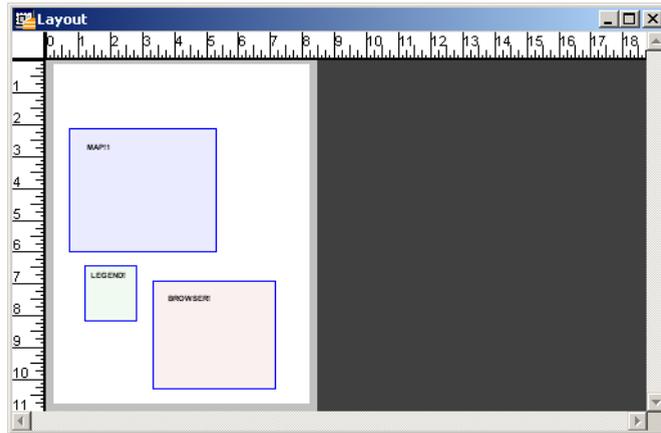
You can modify the borders of the placeholder frames, but you cannot modify the fill. Modifying the fill of the placeholder frames will produce an error when you use the template.

You can modify the style of the placeholder labels (text objects), but you cannot modify the placeholder text itself. Modifying the placeholder text creates unexpected results when you use the template. The placeholder text does not appear when the template is used.

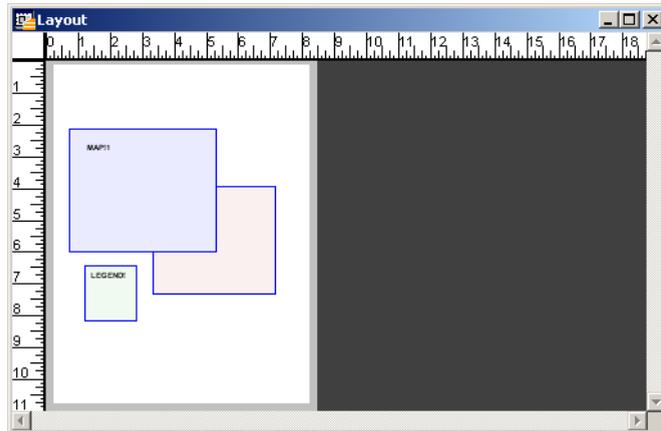
To add any map element to a layout template:

1. For the map element you want to add, click the corresponding tool button. For example, click the Add Map tool to add a map frame; click the Add Browser tool to add a browser frame, etc.
2. Move your cursor over the Layout window. The cursor becomes a crosshair. Click on the Layout window at the desired position for the map element and hold down the mouse.
3. Drag the mouse across the Layout window to create a frame.
4. When the frame reaches the desired size, release the mouse. A frame that represents the map element you specified displays on the screen.
5. Using the Select tool in the Main toolbar, adjust the size and position of the frame.

Here is an example of a layout template with a map, browser, and legend added to the Layout window.



Because you are working in the Layout window as you create the template, you can use any of the Layout menu commands to adjust frame position, bring windows to the front or back, or specify other Layout window options. Here is an example of the same layout template with the Map and Browser window positions adjusted and the Map window brought to the front.

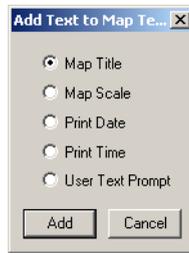


Adding Text

The Add Text tool button enables you to add text object placeholders to your layout template. The text placeholder is a textual description of what the actual text should be. For example, the placeholder might say "Map Title" to prompt you that the text should be the title of the map. You can select text placeholders from a list of text categories, or you can define your own text placeholder.

To add a text placeholder to a layout template:

1. Click the **Add Text** tool button.
2. Move your cursor over the Layout window. The cursor becomes a crosshair. Click on the Layout window at the desired position for the text. The Add Text to Map Template dialog box displays on the screen.



3. Select what you want the text placeholder to represent. Choose from the following text categories:
 - **Map Title**—Indicates the map title text.
 - **Map Scale**—Indicates the map scale.
 - **Print Date**—Indicates the date that the map was printed.
 - **Print Time**—Indicates the time that the map was printed.
 - **User Text Prompt**—Indicates a user-defined text category. You can define a category of text and create a placeholder in the layout template for it. This is useful if you have other text annotations that you use regularly, but that do not fall into any of the pre-defined categories.

Click the button next to the text category you want to add, and then click **Add**.

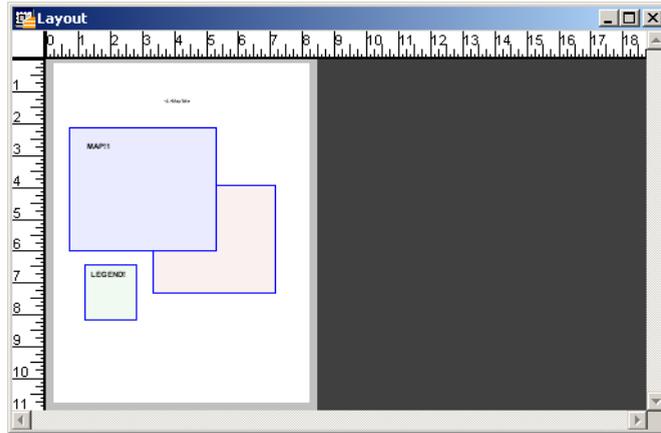
- If you selected **User Text Prompt**, go to **step 4**
 - If you selected any of the other categories, go to **step 5**.
4. If you selected **User Text Prompt**, the Enter User Text Prompt Name dialog displays on the screen. Enter the text prompt you want to use in the box and click **OK**.

Be sure that your user text prompt is meaningful in terms of the map presentations you are going to create with this template. There is a 200-character limit for user defined text.



5. When you select a text category, the text placeholder immediately displays in the Layout window at the position you clicked.
6. Using the **Select** tool on the Main toolbar, adjust the position of the text.
7. Using the **Text Style** tool on the Drawing toolbar, you can adjust the size and other style features of the text.

Here is an example of our earlier layout template, except it now has a map title added to it.



If you want to make the map title larger, using the Select tool from the Main toolbar, double-click on the map title placeholder. The Text Object dialog box displays on the screen. Click the Style button to change the size or other style elements of the text.

Adding Drawn Objects

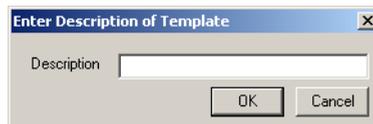
You can also add drawn objects to a layout template using the tools on the Drawing toolbar.

Drawn objects can be useful in a layout template if there is an object that you want to use in a number of layouts. The template enables you to draw the object and adjust its position once, and then reuse it as many times as you need to. You do not have to remember the object size, position, or style attributes because the object is part of the template.

Saving Layout Templates

Layout templates are saved as workspaces. To save a layout template:

1. Click the **Save Template** tool. The Specify workspace file to save template as dialog box displays on the screen.
2. In the **Save in** box, leave the folder as is. The layout template workspace must be saved to this location. If you try to save the workspace to another location, you will get an error.
3. In the **File name** box, enter a filename for the layout template. The default filename is Layout.
4. In the **Save as type** box, select the .wor workspace type. The default type is .wor.
5. Click **Save**. A MapInfo dialog box displays on the screen. The dialog box asks you if you want to add a new entry to the list of print templates.
6. Click **Yes** to add a new entry to the list of print templates. The Enter Description of Template dialog box displays on the screen.



7. Enter a description for the template. This description identifies the layout template. The description of the layout template appears in template lists when you perform the following tasks:
 - Configure layout templates.
 - Create a layout from a template.

Click **No** if you do not want to add a description of the layout template. The template will be saved as a workspace, but it will not appear in the Templates lists for configuration and for creating a layout from a template.

8. Click **OK**. The layout template is created, and the Layout window and the Template Tools close.

Stopping Work without Saving

You may decide part way through your work on a layout template that you do not want to finish it. You can easily stop creating the template without saving it using the Quit Template without saving tool.

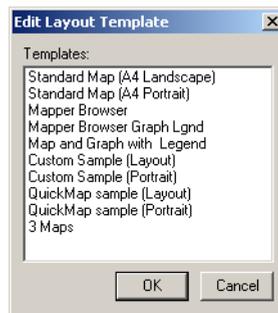
To stop work on a layout template without saving it:

1. Click the **Quit Template without saving** tool. A MapInfo dialog box displays on the screen. This dialog box asks you if you want to quit the layout template without saving it.
2. Click **Yes**. The Layout window closes without saving the layout template.

Editing Layout Templates

Editing a layout template enables you to make changes to a layout template that you've already created. To edit a layout template:

1. Close all open windows. No windows can be open when you create or edit a layout template because the windows would be written to the workspace when you save the layout template.
2. Choose **Tools > Layout Templates > Edit Template**. The Edit Template dialog box displays on the screen.



3. Click on the layout template you want to edit to highlight it.
4. Click **OK**.
5. The Layout window opens using the selected layout template. The Template Tools toolbar also displays on the screen.

6. Make the desired changes.
7. Click the **Save Template** tool button when you are finished.

When you edit a layout template, you can use any of the Template tools to add additional windows, a scale bar, or text. You can also use any of the drawing tools on the Drawing toolbar to add drawn annotations to your layout such as geometric objects and additional text annotations. Finally, you also have all the Layout menu commands at your disposal to make final adjustments to the windows, create drop shadows, or change the zoom.

You can modify the borders of the placeholder frames, but you cannot modify the fill. Modifying the fill of the placeholder frames will produce an error when you use the template.

You can modify the style of the placeholder labels (text objects), but you cannot modify the placeholder text itself. Modifying the placeholder text creates unexpected results when you use the template.

Configuring Layout Templates

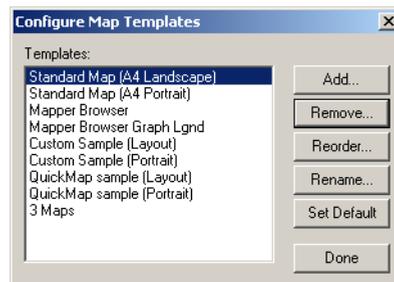
Configuring layout templates enables you to perform several tasks that help you manage and organize your layout templates.

You can perform the following configuration tasks:

- Add a template.
- Remove a template.
- Reorder a template.
- Rename a template.
- Specify the default template.

You will see any configuration changes the next time you create a layout from a layout template. The Create Layout from Template command in the Map menu displays the Configure Layout dialog box. The **Templates** list in the Configure Layout dialog box reflects any configuration changes you made. See [Creating a Layout From a Template on page 52](#) for more information.

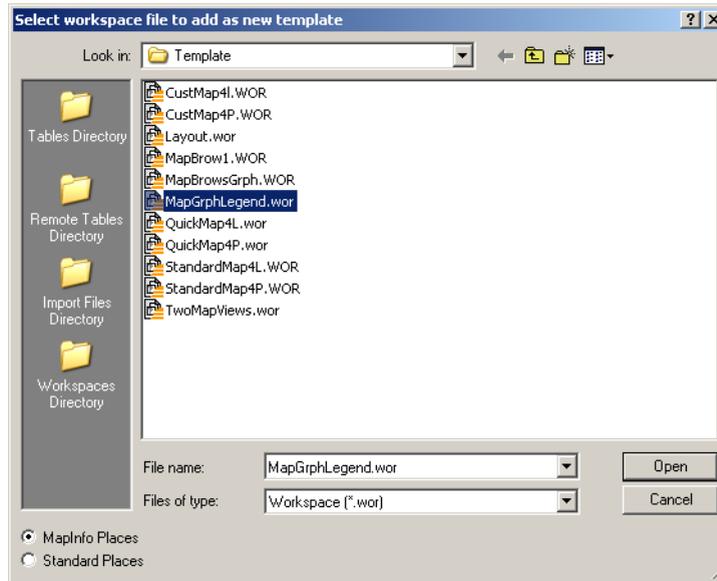
To configure layout templates, choose **Tools > Layout Templates > Configure Templates**. The Configure Map Templates dialog box displays on the screen.



Adding Layout Templates

Use the **Add** button to add a layout template to the **Templates** list. Adding a layout template is a good way to share templates with others. Once you add the layout template workspace to your Template directory, you can add it to the **Templates list**. To add a layout template:

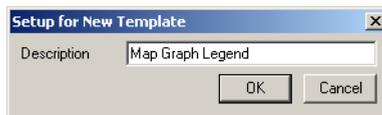
1. Click **Add**. The Select workspace file to add as new template dialog box displays on the screen.



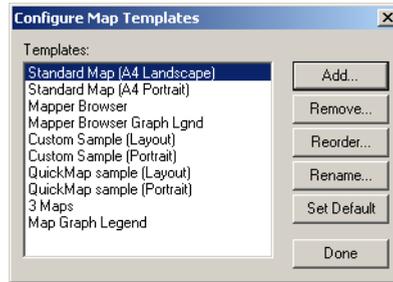
2. In the **File name** box, enter the name of the workspace file (*.wor) that you want to add to the Templates list.
3. Click **Open**. The Setup for New Template dialog box displays on the screen.



4. Enter a description of the layout template you are adding in the **Description** box. This description identifies the layout template.



- Click **OK**. The description of the layout template appears in the **Templates** list.



- Repeat this procedure for each layout template you want to add.
- Click **Done** in the Configure Map Templates dialog box when you are finished.

The next time you create a layout from a template, the additional template(s) will also appear in the **Template** drop-down list in the Configure Layout dialog box.

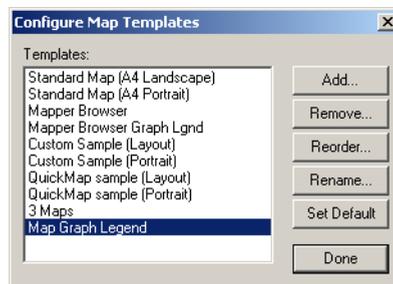
Removing Layout Templates

Use the **Remove** button to remove a layout template from the **Templates** list.

Note: Removing a template does not delete the layout template workspace; it only removes the layout template from the **Templates** list.

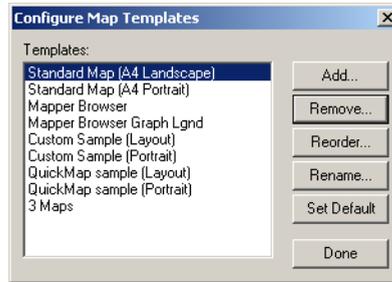
To remove a layout template:

- Click on a layout template in the **Templates** list to highlight it.



- Click **Remove**.
- A MapInfo message dialog box displays on the screen. This dialog box asks you if you want to remove the selected layout template.

4. Click **Yes**. The template is removed from the **Templates** list.



5. Repeat this procedure for each layout template you want to remove.
6. Click **Done** in the Configure Map Templates dialog box when you are finished.

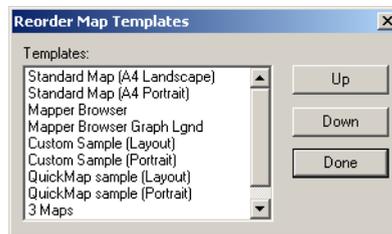
The next time you create a layout from a template, the selected template(s) is also removed in the **Template** drop-down list of the Configure Layout dialog box.

Reordering Layout Templates

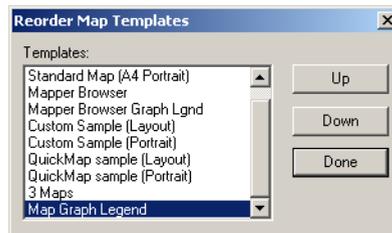
Use the **Reorder** button to change the order in which the layout templates appear in the **Templates** list.

To change the order of layout templates:

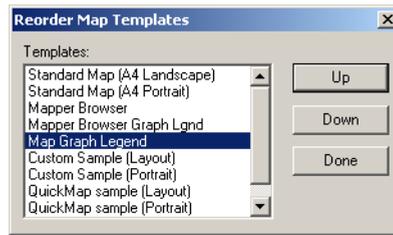
1. Click **Reorder**.
2. The Reorder Map Templates dialog box displays on the screen.



3. Click on a layout template in the **Templates** list to highlight it.

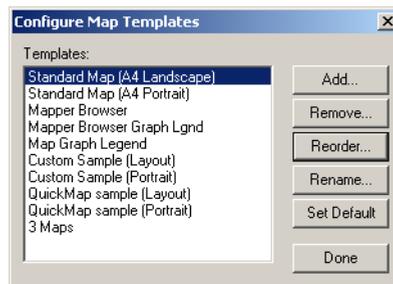


- Use the **Up** and **Down** buttons to move the selected layout template up or down in the **Templates** list. Each time you click either the **Up** or **Down** button, you move the selected template up or down one place in the **Templates** list.



In this example, the Map Graph Legend template has been moved up several places in the Templates list using the **Up** button.

- Repeat this procedure for each layout template that you want to reorder.
- Click **Done** in the Reorder Map Templates dialog box when you are finished.
- Click **Done** in the Configure Map Templates dialog box when you are finished. The new layout template order appears in the **Templates list** of the Configure Map templates dialog box.



The next time you create a layout from a template, the new template order will also be reflected in the **Template** drop-down list of the Configure Layout dialog box.

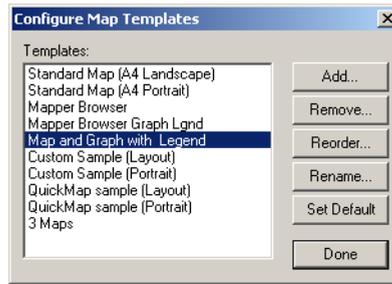
Renaming Layout Templates

Use the **Rename** button to change the description of a layout template.

To rename a layout template:

- Click on a layout template in the **Templates** list to highlight it.
- Click **Rename**. The Enter new description for template dialog box displays on the screen. The description of the selected template is displayed in the **Description** box.
- Enter the new description text in the **Description** box.

4. Click **OK**. The new description of the selected layout template displays in the **Templates** list of the Configure Map Templates dialog box.



5. Repeat this procedure for each layout template you want to rename.
6. Click **Done** in the Configure Map Templates dialog box when you are finished.

The next time you create a layout from a template, the new template name(s) will also be reflected in the **Template** drop-down list of the Configure Layout dialog box.

Setting the Default Template

Use the **Set Default** button to specify the default layout template. The default layout template is the layout template that is used when you create a layout from a template and do not specify a template. To set the default layout template:

1. Click on a layout template in the **Templates** list to highlight it.
2. Click **Set Default**.
3. Click **Done** in the Configure Map Templates dialog box when you are finished.

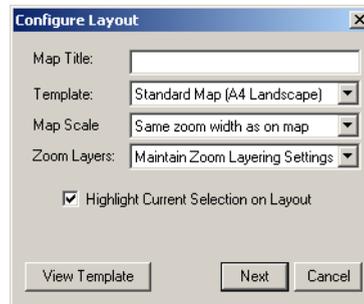
Exiting the Layout Templates Tool

When you choose **Tools > Layout Templates > Exit**, the Layout Template tool closes and is no longer available from the Tools menu. To reload Layout Templates, choose **Tools > Tool Manager**. In the Tool Manager dialog box, select the Layout Templates **Loaded** check box, and click **OK**.

Creating a Layout From a Template

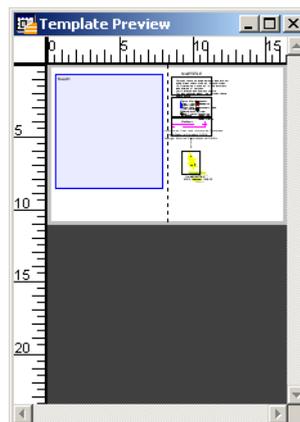
It is easy to put a layout together from a layout template. You can use one of the templates that come with MapInfo Professional, or you can use a template that you have created. To create a layout from a template:

1. Open the windows you want to include in your layout.
2. To activate the Map menu, make a Map window the active window. If your layout contains more than one Map window, the frontmost Map window will be map 1 in the layout. You will be prompted for maps 2, 3, and 4.
3. Choose **Map > Create Layout From Template**. The Configure Layout dialog box displays on the screen. The Configure Layout dialog box enables you to specify the layout template to use, enter the map title text, if any, and specify settings that control how map 1 will look in the layout.



Note: The Template drop-down list will reflect any layout configuration changes you might have made prior to creating a layout. See [Configuring Layout Templates on page 47](#).

4. In the **Template** drop-down list, select the layout template you want to use. The default template is the first template in the list. You set the default template when you configure a layout template. See [Setting the Default Template on page 52](#).
5. Click the **View Template** button to open the selected layout template in a Layout window. For example, here is the Template Preview of a user-defined layout template: s that comes with MapInfo Professional: Standard Map (A4 Landscape).



Viewing the template is an optional step, but looking at the template can help to remind you of what elements are in a particular layout template. If you change your layout template selection, you must click the **View Templates** button again to see the new layout template selection.

6. If the layout template you selected has a Map Title text placeholder, enter the map title text in the **Map Title** box. This text will appear where the Map Title text placeholder is in the layout template.
7. In the **Map Scale** drop-down list, select the map scale. You can choose from a number of different scale settings:
 - Same zoom width as on map—The map will display in the layout at the same scale setting that it does in the Map window. This is the default setting.
 - 1: 1000—One inch is equal to 1000 miles (or the distance units you have specified in the Map Options dialog box).

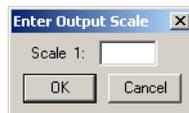
Major Features and Enhancements

- 1: 2500—One inch is equal to 2500 miles (or the distance units you have specified in the Map Options dialog box).
 - 1: 5000—One inch is equal to 5000 miles (or the distance units you have specified in the Map Options dialog box).
 - 1: 10000—One inch is equal to 10000 miles (or the distance units you have specified in the Map Options dialog box).
 - 1: 25000—One inch is equal to 25000 miles (or the distance units you have specified in the Map Options dialog box).
 - 1: 50000—One inch is equal to 50000 miles (or the distance units you have specified in the Map Options dialog box).
 - 1: 100000—One inch is equal to 100000 miles (or the distance units you have specified in the Map Options dialog box).
 - User Defined Scale—The map in the layout will display at the scale setting you specify. When you select **User Defined Scale**, you will be prompted for a scale setting after you click **Next** in the Configure Layout dialog box.
8. In the **Zoom Layers** drop-down list, select the zoom layering you want in the layout. Choose one of the following zoom layering settings:
- Maintain Zoom Layering Settings—The map displays in the layout using the zoom layering settings of the layers in the Map window.
 - Show Layers Currently Visible—The map displays in the layout showing the layers that are visible in the Map window.
 - Turn all zoom layering off—The map displays in the layout using no zoom layering for any layer, regardless of the zoom layering settings of the layers in the Map window.
9. If you want selected objects in the Map window to be highlighted in the layout, select the **Highlight Current Selection on Layout** check box. The highlighting is formed by objects drawn in the Cosmetic layer of the Map window.
10. Click **Next**. MapInfo Professional creates a copy of the frontmost Map window and displays this copy in the Layout window. Using a copy enables MapInfo Professional to manipulate the map that appears in the layout without affecting the map in the Map window.

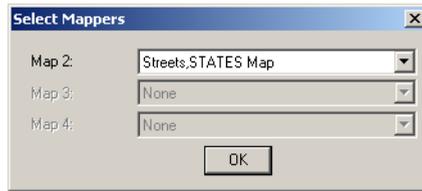
If you chose a standard scale setting and have only one Map window frame in your layout template, you are finished. You can make final adjustments to your layout and then print it or save it to a file.

If you elected to use your own scale setting or have more than one map in your layout template, go to **step 11**.

11. If you selected the **User Defined Scale** option in **step 7**, the Enter Output Scale dialog box displays on the screen. Enter the desired scale and click **OK**.

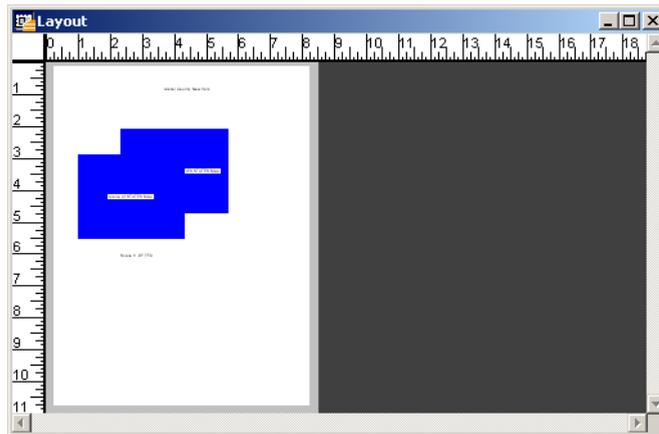


12. If you have more than one Map window frame in the layout template, the Select Mappers dialog box displays on the screen.



13. Three **Map** drop-down lists enable you to select up to three additional Map windows to include in the layout. You can have a maximum of four Map windows in a layout template. The number of **Map** drop-down lists that are available corresponds to the number of Map window frames in the layout template. In the Select Mappers dialog box shown here, one additional map is needed to complete the layout. The Map windows available to choose from correspond to the Map windows you have open.

Select the additional map or maps needed to complete your layout and click **OK**. The layout displays on the screen.



Mapping – New Features and Enhancements

This section contains the new and enhanced Mapping features in MapInfo Professional 9.0.

- [Setting a Global Label Font on page 56](#)
- [Creating Multiple HotLinks in a Map on page 56](#)
- [Setting the New Default Layout Preferences on page 60](#)
- [New Prompt Prevents the Loss of Work when Closing Windows on page 61](#)
- [Improvements in Symbol Style Dialog Box and New Fonts on page 62](#)

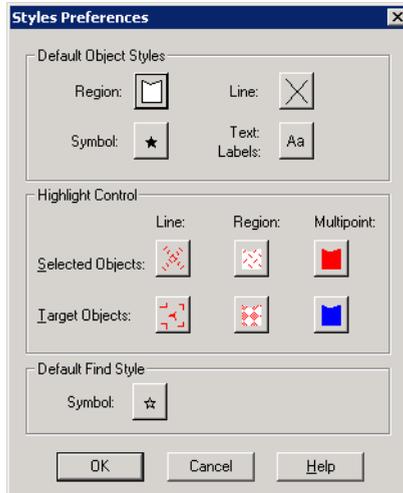
Setting a Global Label Font

Some of our customers have requested the ability to set the label preferences up front to make all of the maps they create look more uniform.

We have added this Label preference to the Styles Preferences dialog box for your convenience.

To set your global label font:

1. Choose **Options > Preferences > Styles** to display the Styles Preferences dialog box.



2. Click the **Text** button to display the Text Style dialog box. The options you select in this dialog box now also apply to labels.
3. Click **OK** to save your label preference.

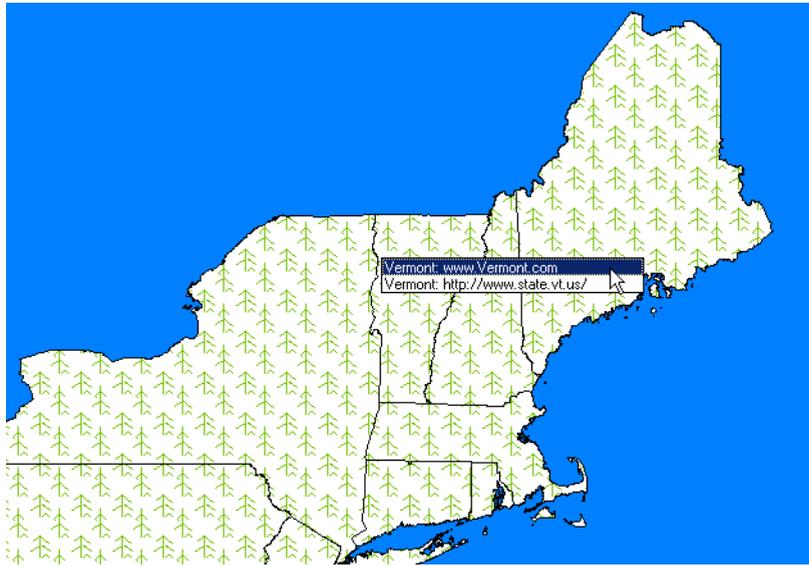
Creating Multiple HotLinks in a Map

Many users have asked us to allow more than one HotLink definition per map object. When a user clicks a map object with multiple HotLinks, a list of options are displayed, which allows your user to access different types of content for a single map object.

For example:

- Your Web site
- Product or Service Documents
- Applications
- Flash Demonstrations
- Anything you can open with a mouse click or double-click

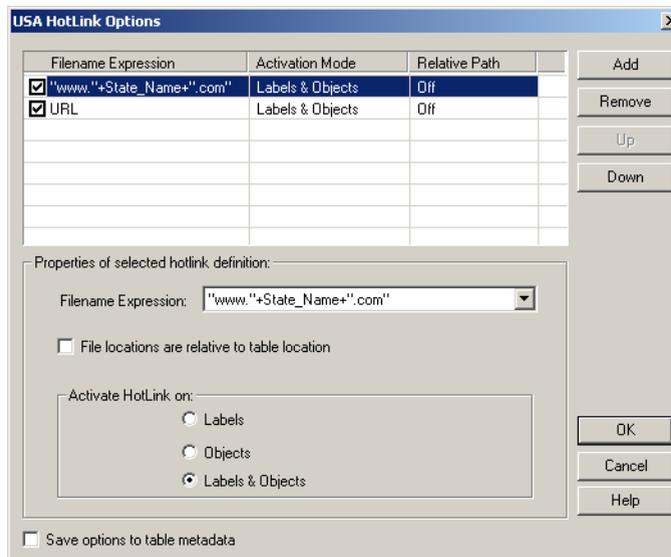
For example, you could offer your customers access to your web site, product information, and a tutorial all from the same map object.



Adding More than One Hotlink

To create more than one hotlink for a layer:

1. With the Map window open, select  to display the Layer Control dialog box.
2. Click the layer you want to add the hotlink to and click **HotLink**. The HotLink Options dialog box displays.



The first time you open this dialog box, may be no column entries to display.

Note: The check box beside the **Filename Expression** indicates that the HotLink is active. To disable the HotLink, clear the check box beside the Filename Expression.

3. To edit a HotLink definition, select the definition in the list and use the fields and buttons in the **Properties of selected hotlink definition** section to set the values.

Note: To edit a HotLink option, make another selection in this dialog box and click **OK**.

Filename Expression

Use this drop-down list to select a field in the selected layer's table. You can also select the **Expression** option to create an expression. We have created an example expression in the first column

This option defaults to the first field in the table.

File locations are relative to table location

Use this check box to indicate whether the HotLink data you are specifying is in the relative path of the open .tab file. This check box is cleared by default.

Activate HotLink on

Use these buttons to indicate which map feature the user can click to activate a HotLink. Options include **Labels**, **Objects**, or **Labels & Objects**. The **Labels** option is selected by default.

Note: When you select the same activation option for two different Filename Expressions, a list of options displays for the user.

Save options to table metadata

Use this option to save the HotLink options you select in this dialog box to the metadata of the .tab file. This option is cleared by default.

Accessing Multiple HotLinks

To access these multiple HotLinks:

1. Open the map.
2. Select  from the Main toolbar menu.
3. Click an area on the map with multiple HotLinks to see the list.

Removing a HotLink from a Map

There are two ways to remove a HotLink from a map. The Map window that contains the HotLinks you want to remove must be open to remove the HotLinks.

To remove a HotLink from a map permanently:

1. Choose  to display the Layer Control dialog box.
2. Select the layer that contains the HotLink you want to remove permanently.
3. Click **HotLink** to display the HotLink Options dialog box.

4. Highlight the HotLink you want to remove.
5. Click **Remove**. There is no confirmation prompt for this action.
6. Click **OK** to save this change.

To disable a HotLink temporarily:

1. Follow **step 1** through **step 3** in the previous instructions to display the HotLink Options dialog box.
2. Clear the check box beside the **Filename Expression** column of the HotLink you want to disable.
3. Click **OK** to save this change.

Changing the Display Order of HotLinks in a List

If you have multiple HotLinks for a particular map feature, you may want to prioritize the order in which the HotLinks display.

To reorder the list of HotLink entries for a particular layer:

1. Choose  to display the Layer Control dialog box.
2. Select the layer that contains the HotLink you want to remove permanently.
3. Click **HotLink** to display the HotLink Options dialog box.
4. Highlight the HotLink you want to move and use the **Up** and **Down** buttons to position the HotLink in the proper order.
5. Click **OK** to save this change.

Multiple HotLink Notes

The following multiple HotLink behavior may not be obvious:

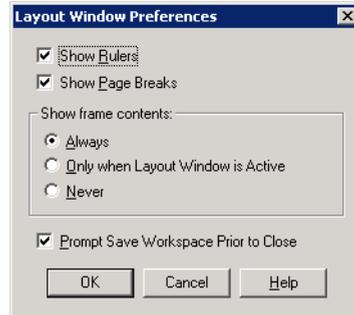
- If a HotLink definition has a Filename Expression value of none (that is, it is an empty string) the Hotlink Options dialog box displays the Filename Expression as <undefined>.
- When you hover the  cursor over a map feature that contains a HotLink, MapInfo Professional displays a message in the Status bar describing the content of the HotLink. When there is more than one HotLink for that map feature or the activation attributes overlap, the phrase, **Multiple active objects under cursor** is displayed in the Status bar.

Setting the New Default Layout Preferences

We have added Layout preferences so you can set the options for Layout windows globally by default. You can change these options locally to meet the individual needs of your current Layout, but global preferences can assist you in presenting a unified look in your presentation map graphics.

To set the global default preferences for Layout windows:

1. Choose **Options > Preferences > Layout Window** to display the Layout Window Preferences dialog box.



Use this dialog box to set the preferences for Layout windows. Completing the entries in this dialog box ensures that your layouts will have a uniform look and feel.

2. Complete the selections in this dialog box and click OK to save your Layout window preferences.

Show Rulers

Select this check box to display rulers in your Layout window. Rulers can be useful to help you line up elements of your layout on the page. This option is selected by default.

Show Page Breaks

Select this check box to display the page breaks in your Layout window. Showing the page breaks ensures that the elements of your layout are consistent from page to page. This option is selected by default.

Show Frame Contents

The options in the Show frame contents box allow you to specify when the contents of frames display.

Always

Allows you to have the contents of a frame display all the time even when it is not active.

For example, if you are changing the contents of a Map window that is also in the layout, you might want the **Always** option. That way you can see the effect of the layout as you make your changes. This option is selected by default.

Only when Layout window is active

Allows you to display the contents of a frame only when the Layout is the active window.

Never

Allows you to display only the file name and frame type, even when the Layout is the active window. For example, choose **Never** when you are resizing and repositioning frames. That way the contents of each frame will not redraw every time you make a change.

Prompt to Save Workspace Prior to Close

When this check box is selected, MapInfo Professional prompts you to save before you close windows with layout changes. Clear this check box if you do not want to be prompted to save your changes. This option is selected by default to prevent accidental loss of information.

Note: The prompt only displays if there are changes to the open Layout and Legend windows or when the Layout and Legend windows are new.

3. Click **OK** to save your preference.

Once you set these preferences, MapInfo Professional sets these options automatically whenever you create a new Layout window. To reset these options for a particular layer locally, select **Layout > Options** to display the Layout Display Options dialog box. This dialog box also allows you to set height and width restrictions and an autoscroll option.

New Prompt Prevents the Loss of Work when Closing Windows

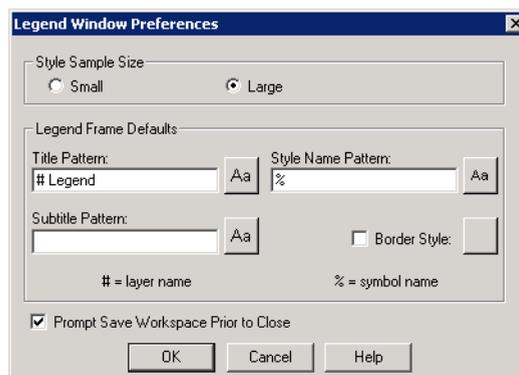
Some have you have raised issues about losing work when closing windows. When you use the Close All option, MapInfo Professional closes not only the window you are working in but also Layout and Legend windows that are open as well. When you close a Map window, MapInfo Professional closes the Legend and Layout windows associated with that map too.

Note: The instructions for setting this prompt for Layout windows are described in [Setting the New Default Layout Preferences](#) topic.

To prevent the loss of work, we have added a new prompt option to the Layout Window Preferences and the Legend Window Preferences dialog boxes. This prompt allows you to choose to save the contents of the windows you are working in to a workspace before closing. You can also choose to discard these changes.

To set the new prompt when you close Map windows with open Legend windows:

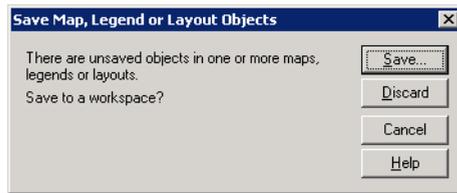
1. Choose **Options > Preferences > Legend Window** to display the Legend Window Preferences dialog box.



2. Select the **Prompt Save Workspaces Prior to Close** check box to display the prompt when closing all or closing map windows.
3. Click **OK** to save your Legend window preferences.

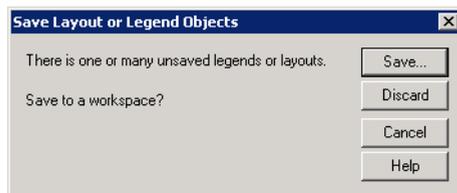
Using the New Save Workspace Prompt

Once you have set these preferences and click the  button on the Standard tool bar or you select **File > Close All** while you are in a Layout or Legend window, this prompt displays:



Here you can choose to save your current work or discard it. Click **Save** to save all of the work you have completed in all your open windows or **Discard** to lose all of the changes you have made since the last save.

When close a Map window that has layouts and legends associated with it, this prompt displays:



The same rules apply here. Click **Save** to save all of the work you have completed in all your open windows or **Discard** to lose all of the changes you have made since the last save. The prompt only displays if there are changes to the open Layout and Legend windows or these windows are new.

Improvements in Symbol Style Dialog Box and New Fonts

We have improved the Symbol Style dialog box by increasing the width of the Font drop-down list and by adding new Emergency Response fonts.

Many users have indicated that the font names have been difficult to distinguish because the width of the Font drop-down list is too narrow.

We have added new standard fonts prepared by the Office of Homeland Security for use in your MapInfo maps. These fonts were developed to standardize the way emergency circumstances and industries are depicted in maps. These TrueType fonts are listed using the format "ERS V# symbol type" for clarity. Specifically the new symbols are:

- **ERS v2 Damage** - Use these fonts to create your own symbols. These fonts include circles, squares, and rectangles of various complexity.
- **ERS v2 Incidents** - Use these fonts to show various hazardous circumstances such as fires, police activity, and other dangers.
- **ERS v2 Infrastructures Stage 01 - 04** - Use these fonts to show various industrial environments including farms, factories, financial businesses etc. in a wide variety of complex frames to indicate severity

- **ERS v2 Natural Events** - Use these fonts to show areas of natural disasters such as hurricanes, tsunamis, volcanoes and other natural events
- **ERS v2 Operations Stage 01 - 04** - Use these fonts to show various emergency circumstance symbols such as ambulances, biohazard, and Red Cross-type symbols in a wide variety of complex frames to indicate severity

Tool Enhancement

Setting the Window Size with the Window Manager Tool

You can now resize the open browser, map, layout, and graph windows in MapInfo Professional using the Window Manager tool. Remember you need to add the Window Manager tool to the Tool Manager list before using it. For specific instructions in using this new feature, see the *Windows Manager Tool* in the *Help System*.

Coordinate System and Datum Enhancements

For the details of these projections, see the Custom Datums section in the Appendices.

Added Bosnia-Herzegovina Coordinate Systems. We have added the following projections to the PRJ file:

- Bosnia-Herzegovina (Zone 5)
- Bosnia-Herzegovina (Zone 6)
- Bosnia-Herzegovina (Zone 7)

Added Luxembourg Projections. We have added the following Luxembourg projection to the PRJ file:

- Luxembourg 1930 / Gauss\p2169

Added S-JTSK (KROVAK) Coordinate System. We have added a new S-JTSK projection to the .PRJ file to serve the Czech Republic and Slovakia. We have added using new Projection #32 and new Datum #1020:

The last PRJ entry is using following parameters:

Datum:1020 (S-JTSK datum with Ferro Prime meridian)

Units:- meters

Origin, Longitude: 42.5 degree (East of Ferro)

Origin, Latitude: 49.5 degree

Standard Parallel: 78.5 degree

Azimuth: 30.28813972 degree

Added Swedish Coordinate System. We have added the following projection to the PRJ file.

- ST 74

Updated EPSG Aliases for Swedish Coordinate Systems. We have added two new EPSG aliases for Swedish coordinate systems to the PRJ file to maintain consistency with the latest update to MapXtreme:

- EPSG:2326
- EPSG:3152

Updated Hong Kong EPSG Code. We have added the following EPSG code entry to the PRJ file:

- Hong Kong 1980 Grid System\p2326

Updated Australian Victorian Coordinate System

We have added the following Australian bounded projections to the PRJ file:

- VIC VicGrid66 (AGD 66)
- VIC VicGrid94 (GDA 94)
- VIC AMG Zone 54 (AGD 66)
- VIC AMG Zone 55 (AGD 66)
- VIC MGA Zone 54 (GDA 94)
- VIC MGA Zone 55 (GDA 94)
- VIC Longitude/Latitude (AGD 66)
- VIC Longitude/Latitude (GDA 94)

Updated Danish Coordinate System Entries

We have added the following Danish projections to the PRJ file

- UTM Zone 32 Euref89\p25832
- UTM Zone 33 Euref89\p25833
- UTM Zone 32 (ED 50)\p23032
- UTM Zone 33 (ED 50)\p23033
- System 34 Jylland-Fyn\p34003
- System 34 Sjaelland\p34005
- System 45 Bornholm\p45001
- KP2000 Jylland-Fyn\p18401
- KP2000 Sjaelland\p18402
- KP2000 Bornholm\p18403

Printing, Importing, and Exporting Enhancements

Exporting to GeoTIFF (*.tif) Format

MapInfo Professional includes the capability of exporting Map windows to GeoTIFF (*.tif) export format. GeoTIFF files are designed to connect a raster image to its location on the earth. Georeferencing information is written directly to the *.tif file so that it can be used in other applications.

GeoTIFF Export Requirements

This section explains the requirements for exporting maps to GeoTIFF format. Using GeoTIFF format has the following requirements:

- The window you are exporting is a Map window.
- The Map window's projection contains an EPSG code. Projections that do not have an EPSG code are not supported.
- The Map window must not be rotated, or contain a raster image that causes a rotation.

The sections that follow explain the requirements in more detail.

Map Windows

When you export a Map window to GeoTIFF format, the file is saved in the current projection of the Map window.

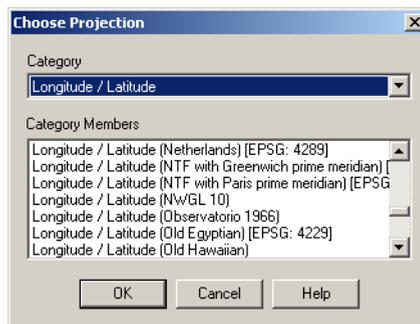
You cannot use the Save Window As command to save the Map window to a different projection. To use a different projection, you must change the Map window projection before you use the Save Window As command.

GeoTIFF is not available as an export format for other types of windows (Browser, Graph, Legend, Redistrictor, 3DMap) or Map windows that use unsupported projections.

Supported Projections

For GeoTIFF export the Map window projection must have an EPSG code.

You can see whether a projection has an EPSG code in the Choose Projection dialog box.



The Choose Projection dialog box is available from the Map Options dialog box. With a Map window open, choose Map > Options. In the Map Options dialog box, click the Projection button.

The MAPINFOW.PRJ file entries that use EPSG codes contain a “P###” code. For more information see the MapInfo Professional User Guide, Chapter 14: Working with Coordinate Systems and Projections.

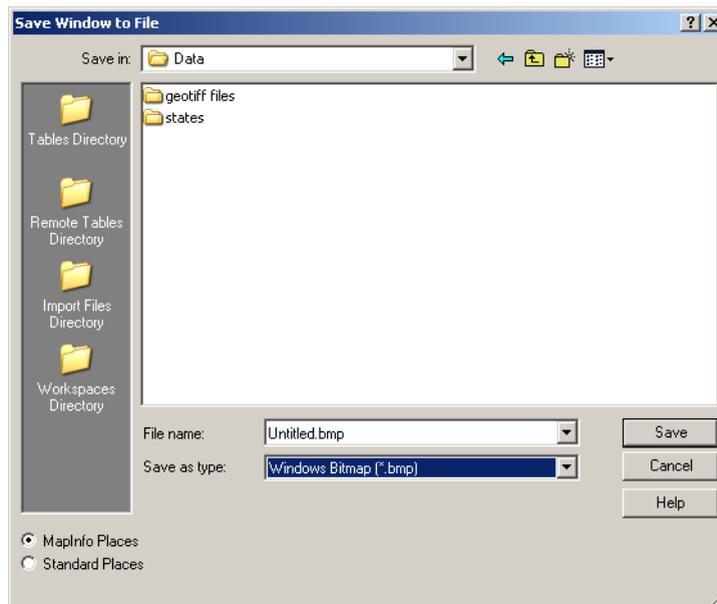
Image Rotation

In Map windows that contain a raster or grid image, the image must not cause the map projection to rotate the coordinates if you wish to create a GeoTIFF for this Map window. Rotation can occur if the image is not registered precisely. To work around this, you can force Image Reprojection to be enabled by setting Map > Options > Image Processing > Reprojection Using > Always. If Image Processing is set to Always, then it is possible to use raster layers for GeoTIFF export

GeoTIFF Export Procedure

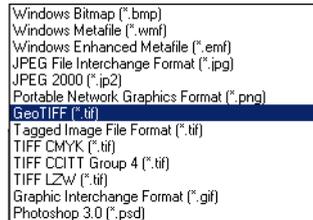
To export a Map window to a GeoTIFF format file, do the following:

1. Open the desired layers in a Map window, if you do not have your map open already.
2. Make the Map window active.
3. Choose **File > Save Window As**. The Save Window As dialog box displays on the screen.



4. In the **Save in** box, select the destination folder of the exported file.

- In the **Save as type** drop-down list, click the arrow to see the file format choices. Select GeoTIFF (*.tif).



- In the **File name** box, enter a name for the exported file.

Click **Save** and continue with the normal Save Window As process.

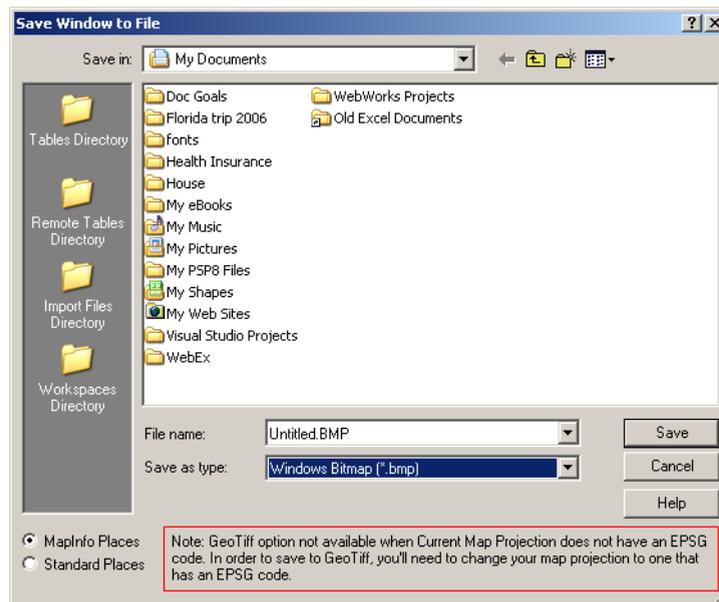
Other Types of Windows

If you attempt to export other types of windows to GeoTIFF format (for example, Browser, Graph, Legend, Redistrictor, 3DMap), the GeoTIFF format will not be available as an export format in the Save as type drop-down list.

Unsupported Projections

If you attempt to export a Map window using a projection that is not supported by the GeoTIFF format, that is, a projection that does not have an EPSG code, the GeoTIFF format will not be available as an export format. In addition, the Save Window As dialog box displays the following message at the bottom of the dialog box:

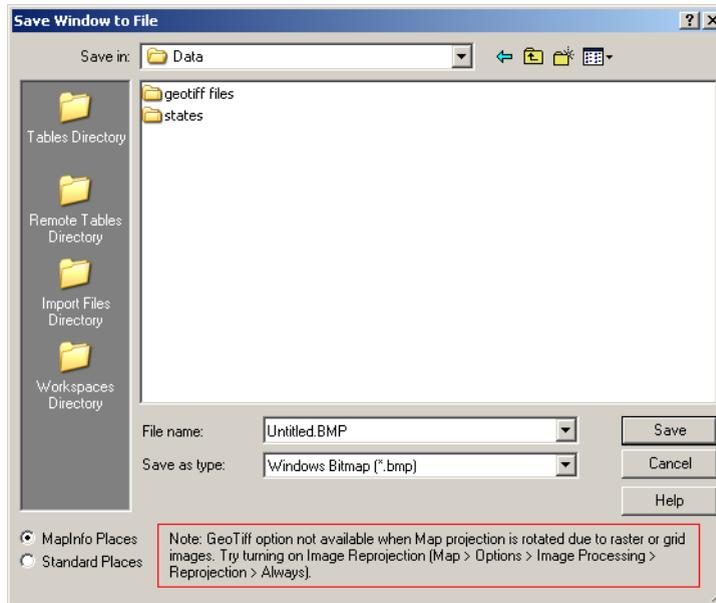
Note: GeoTIFF option not available when Current Map Projection does not have an EPSG code. In order to save to GeoTIFF, you'll need to change your map projection to one that has an EPSG code.



Raster and Grid Images

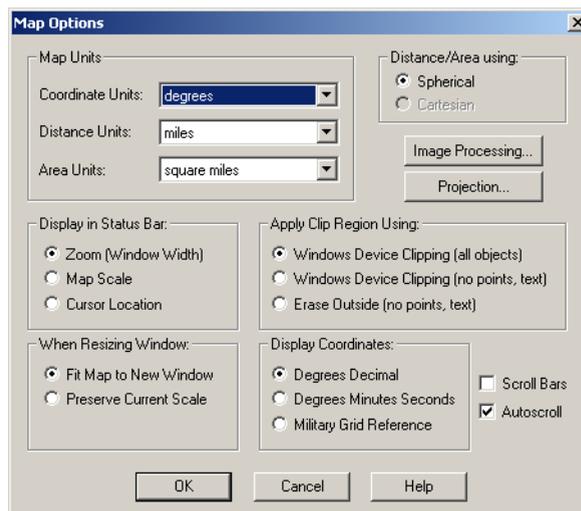
If you attempt to export a Map window that contains a raster or grid image that causes a rotation in the Map window, the GeoTIFF format will not be available as an export format. In addition, the Save Window As dialog box displays the following message at the bottom of the dialog box:

Note: GeoTIFF option not available when Map projection is rotated due to raster or grid images. Try turning on Image Reprojection (**Map > Options > Image Processing > Reprojection > Always**).

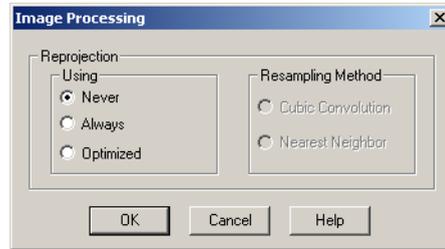


To turn on Image Processing, do the following:

1. Choose **Map > Options**. The Map Options dialog box displays on the screen.



2. Click **Image Processing**. The Image Processing dialog box displays on the screen.



3. Click **Always**, and then click **OK**.
4. Click **OK** in the Map Options dialog box.
5. Try saving the Map window to GeoTIFF format again.

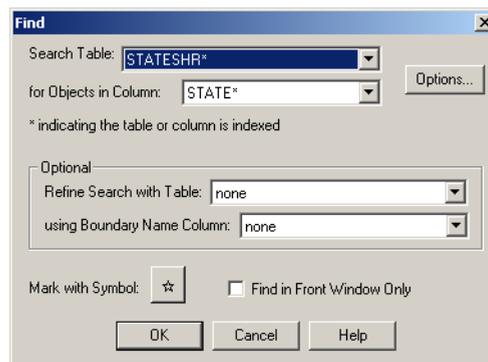
Database Enhancements

The following are the database enhancements for this version of MapInfo Professional:

- [Using the Find Command in Remote Tables on page 69](#)
- [Using the Geocode Command in Remote Tables on page 70](#)
- [New Find Selection Preferences for Copying/Pasting on page 70](#)
- [New Time and DateTime Data Type Support for Remote Databases on page 72](#)

Using the Find Command in Remote Tables

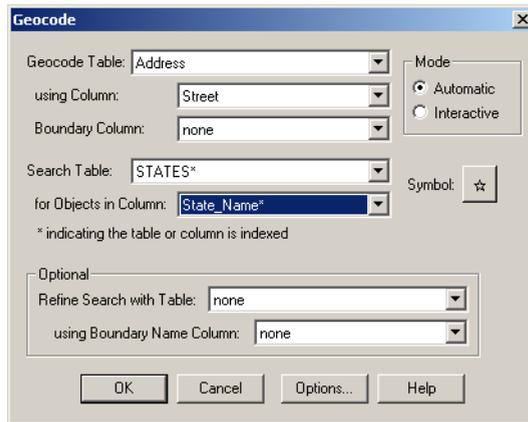
The Find command (**Query > Find**) is available for both live and linked remote tables, regardless of whether they are indexed. Neither the table nor a column in the table needs to be indexed for the Find command to be available.



If the selected column in the search table does not have an index, an index will be created when you click **OK** in the Find dialog. For native tables and linked remote tables, this newly created index is permanent. For live remote tables and read-only native tables, the index is temporary.

Using the Geocode Command in Remote Tables

The Geocode command (**Table > Geocode**) is available for both live and linked remote tables, regardless of whether they are indexed. Neither the table nor a column in the table needs to be indexed for the Geocode command to be available.



If the selected column in the search table does not have an index, an index will be created when you click **OK** in the Geocode dialog. For native tables and linked remote tables, this newly created index is permanent. For live remote tables and read-only native tables, the index is temporary.

Additional Notes

The Find and Geocode dialog boxes both contain the following design elements:

- Indexed tables and columns are shown with an asterisk at the end of their names in the **Search Table** and **for Objects in Column** drop-down lists. There is a reminder in each dialog box about what the asterisk means.
- The tables in the **Search Table** drop-down list are listed in alphabetical order.
- The width of the list boxes adjusts dynamically to fit the longest table or column name.

New Find Selection Preferences for Copying/Pasting

In the last release of MapInfo Professional, we added zoom functionality when performing a Query > Find Selection on a single object. We added this feature so MapInfo Professional would perform consistently with existing Query > Find Selection behavior for multiple objects. In speaking with users subsequently, we found that most of you were using this functionality to copy and paste a single object, and since the object was already in view, the additional zoom was not necessary. In fact, if you were doing multiple copy and paste operations, the new functionality was a hardship.

Some customers objected to the Find Selection zoom functionality for multiple objects as well. Others wanted the option of zooming or not zooming in different situations, so we have created a Map window preference so you can set the functionality that works best for you.

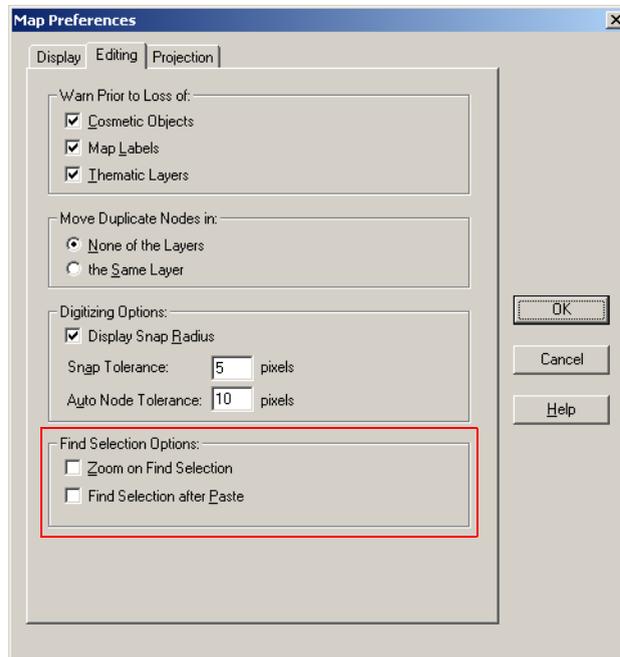
When we refer to Find Selection, we include all of these functions:

- Query > Select
- Query > SQL Select
- Query > Find Selection
- Copy/Paste

To make Map Preferences easier to work with, we have created a tab system.

To set your Find Selection options for Map windows:

1. Choose **Options > Preferences > Map Window > Editing** tab to display the Editing Map Preferences dialog box.



Use the Find Selection Options to specify the behavior when you are performing a Find Selection.

2. Select the **Zoom on Find Selection** option to zoom to the selection each time you perform a Find Selection for single and multiple objects. Clear this check box to prevent zooming when performing a Find Selection.
3. Select the **Find Selection after Paste** option to turn on the Find Selection feature in the Map window only after you Paste an object. If you have an active Browser, and the selection is in that Browser window, the browser still scrolls to the selection. Clear this check box to prevent zooming after pasting an object.
4. Click **OK** to save your preferences and **OK** again to return to the Map window.

New Time and DateTime Data Type Support for Remote Databases

The new Time and DateTime data types (see [Using Date- and Time-Based Data in Maps and Queries on page 23](#)) address a long time issue with many remote databases. Because MapInfo Professional only had a date data type, and most remote databases and servers have Date and DateTime data types, data read from servers would often be truncated or lost in the process.

With the addition of these new Time and DateTime data types, the server DATE, TIME, and DATETIME/TIMESTAMP match up with the MI Date, MI Time, and MI DateTime more closely. If you create a new table with DateTime or Time data in it, the .tab file (both live and linked) you create is marked as version 900 file.

To preserve backward compatibility, when you open an existing live .tab file (linked .tab files are really native tables with a local table definition), the behavior depends on the version of the .tab file. If the tab file is marked as version 900 or later, MapInfo Professional treats the server DATE as MI Date, the server DATETIME or TIMESTAMP as MI DateTime, and server TIME (if any) as MI Time. If the version number is earlier than 900, MapInfo Professional matches the behavior of previous releases, that is, the server DATE and DATETIME or TIMESTAMP values are converted to MI Date and server TIME to MI Char. In addition the Informix DATETIME type is opened as MI Date but is marked read-only. This is true of live tables only because linked tables have already been defined.

Handling Time and DateTime Data From Remote Databases

When you download Date, Time, and DateTime data type information to MapInfo Professional, this is the results you can expect:

MapInfo Professional Data Type	From Informix	From Oracle (OCI)	From MS Access	From MS SQL Server
DATE	DATE	DATE**		
TIME	DATETIME HOUR TO SECOND			
DATETIME	DATETIME YEAR TO FRACTION	TIMESTAMP*	DATETIME*	DATETIME*

*Backward compatibility depends upon the .tab file version as described above.

**If you use ODBC, the Oracle DATE type is returned as TIMESTAMP. The driver issue causes an inconsistency with OCI.

When you commit table data from MapInfo Professional to these remote database servers, MapInfo Professional updates the server table with the value that the user provides in the browser. MapInfo Professional may apply some restrictions during the input time.

Working with Time and DateTime Data on the Server

When you create a new table or save a copy of a table with Date, Time, and DateTime data type information on a DBMS server, this is the results you can expect:

In MapInfo Professional	To Informix	To Oracle	To MS Access	To MS SQL Server
DATE	DATE	DATE	DATETIME*	DATETIME*
TIME	DATETIME YEAR TO FRACTION(3)*	TIMESTAMP(3)*	DATETIME*	DATETIME*
DATETIME	DATETIME YEAR TO FRACTION(3)	TIMESTAMP(3)	DATETIME	DATETIME

*The MapInfo Professional data type will be extended on the servers. When the same data returns to MapInfo Professional it becomes the data type identified on the server. This mismatch is caused by a mismatch between the data types in the server and MapInfo Professional.

As you can see from the previous table, there may be conversion issues involved depending on the local type and the type of database server you are communicating with. To make the data type conversion clearer we have added some messages to inform you of the details of the conversion when you are creating a new table or saving a copy of a table data to a remote database. When you use the Create New Table or Save Copy of Table as dialog boxes, red messages display at the bottom of the dialog box to inform you of the Date, Time, and DateTime conversion details.

If you create a new table with Date, Time, and DateTime data using MapBasic statement, the notification is a little different. If you use the Server Create Table statement, keep in mind that the statement only supports the types that are also supported by the server. Therefore, Time type is prohibited from this statement for Oracle, IBM Informix, MS SQL Server and Access servers and the Date type is prohibited for MS SQL Server and Access servers. You should replace unsupported types with DateTime to create a table that contains Time information on a column.

If you create a copy using a MapBasic statement and the source table contains Time or Date type columns, these columns will be converted to DATETIME or TIMESTAMP depending on whether the server supports the data types or not and the parameters you pass in. You can control this behavior using the ConvertDateTime clause. If the source table does not contain Time or Date data type, this clause is not operational. If ConvertDateTime is set to ON (which is the default setting), Time or Date type columns will be converted to DATETIME or TIMESTAMP. If ConvertDateTime is set to OFF the conversion is not done and the operation will be cancelled if necessary. If ConvertDateTime is set to INTERACTIVE a dialog box will pop up to prompt the user and the operation will depend on the user's choice. If the user chooses to convert, then the operation will convert and continue; if the user chooses to cancel, the operation will be cancelled. The Time type requires conversion for all supported servers (Oracle, IBM Informix, MS SQL Server and Access) and the Date type requires conversion for MS SQL Server and Access database servers.

Note: For MS SQL Server and Access database servers, this restriction could be an backward compatibility issue. In previous releases, we did the conversion without explaining it. In this release, we suggest you use the DateTime data type instead of Date data type. If you still use the Date data type, the conversion operation will fail.

Miscellaneous Enhancements

The following changes are additional significant enhancements to the MapInfo Professional product:

- [New Time and DateTime Data Type Support for Remote Databases on page 72](#)
- [Envinsa Routing and Geocoding Constraints Change on page 74](#)
- [New TrueType Font Behavior on page 74](#)
- [Improved Character Set Conversion on page 74](#)
- [MapBasic Help Available from MapBasic Window on page 75](#)

Envinsa Routing and Geocoding Constraints Change

We have changed the way we limit the amount of information that is sent to servers based on upgrades to the Envinsa product. For example, you may notice that the **Add** button in the Create Driving Regions dialog box or the Geocode using Server dialog box is disabled if you have reached the limit on the number of request values (number of address batches, times, or distances) you have sent to the server. In the past, MapInfo Professional used to use the same limit for all servers but we found that the loads a server can handle vary widely. Newer versions of Envinsa allow the server to set limits on the server side, and MapInfo Professional will now use these limits. You may see some changes in behavior when you switch servers and the new server has different limits.

Another difference you may see is that a particular quantity of address batches, times or distances may work for one server but not for another.

These changes should improve the performance of your connection to the server in that MapInfo Professional is not sending more information to the server than it can handle.

New TrueType Font Behavior

Curved labels and other text display features are moving MapInfo Professional toward using only TrueType fonts. For all text display excluding curved and rotated labels, MapInfo Professional 9.0 will honor the use of non-TrueType fonts, but we recommend the use of TrueType fonts wherever possible.

When you use the Text Style dialog box, you may notice that only TrueType fonts display in the Font list by default. If you have used a non-TrueType font in an old workspace or table, this font appears in the Font list. If you use a non-TrueType font in an existing workspace or .tab file and begin using the curved labels feature, MapInfo Professional substitutes the font you are using with a TrueType font.

Improved Character Set Conversion

For many years, MapInfo Professional has supported the automatic conversion of characters from one character set (called a codepage in Windows) to another. Even though our internal code API allows for conversions from any two character sets, in all cases the conversion occurs between a character set associated with some data (a text file in MapBasic or a table) and the system character set, which is an internal value based on a Windows setting.

If characters in your data display incorrectly or display as an _ (underscore), your character set conversion routine or tables may be to blame.

We have found that these Microsoft Windows conversion tables and routines more adequately meet our customers' needs. Therefore, MapInfo Professional now relies on the character set conversion routines supplied by the Windows operating system. Most modern systems have all these internal tables already configured. If a situation occurs where those tables are not installed, you can easily install them, if you have administrative rights.

See http://www.microsoft.com/resources/documentation/windows/xp/all/proddocs/en-us/int_pr_install_code_page.msp?mfr=true for details.

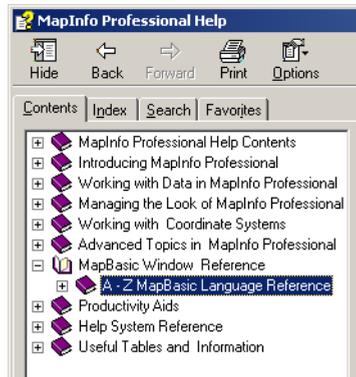
MapBasic Help Available from MapBasic Window

If you use the MapBasic Window, you may be interested in looking up information about the functions and statements that you see there. There is a MapBasic section in the *Help System* that shows the purpose, syntax and examples of all MapBasic Language features.

To access the MapBasic Language reference features available in the MapBasic window:

- Do one of the following:
 - Select **Help > MapInfo Professional Help Topics**. When you select this option, you can access the MapBasic Language Reference list of functions, statements, and clauses you can use in the MapBasic window.

Figure: MapBasic Language Reference Help Topic



*When you find a function or statement you think is particularly useful, you can save it to the **Favorites** tab for later reference.*

- Open the MapBasic window and select **F1**. The MapBasic Window topic displays:

From this help topic you can access the Language Reference or learn more about working in the MapBasic window.

Data Enhancements

To provide more room for data in the future, we have decided to ship a separate data CD with MapInfo Professional.

Here is the directory structure and data presentation for the introductory and sample data that is shipped with MapInfo Professional. We use the term Introductory Data to describe the data you can use to geocode locally and to enhance the maps you create in every session. The Sample Data folder provides examples of other types of data that are available from MapInfo Corporation.

The Introductory_Data directory is structured as follows:

- NorthAmerica
 - USA
 - Canada
 - Mexico
- World
- [files]
- Europe
- Asia
- Africa
- Australia
- World_WMS
- workspcs

The Sample Data is designed to give you a taste of the other kinds of data products you have available to you. The SampleData directory is structured as follows:

- Geographic
 - AirPhotoUSA
 - StreetPro Samples
- Industry_Data
 - Business Points
 - Insurance
 - TelcoData
 - Weather

We have added more industry-specific sample workspaces and updated the samples that ship with the MapInfo Professional application to enhance your maps and geocoding. To make space for this new data, we have removed the indexes from all of the data except the USZIPBDY.TAB, US_ZIPS.TAB, and the US_CNTY.TAB files. You need the indexes for these files to maximize your ability to geocode to ZIP code boundaries and centroids and county centroids.

Installing the Free Data Locally

To install the free data locally:

- Place the Data CD in the CD drive and follow the prompts that display according to the needs of your implementation of MapInfo Professional.

CAUTION: If you want to install this data in addition to your existing product data, you need to specify a new directory to ensure that your current data is maintained.

Data Updates and Additions

The data updates and additions for this release include:

- Updated ZIP Code Point file to version April, 2007
- Updated ZIP Code Boundary file to version October 2005
- Added new version of telephone company data for Connecticut April, 2007 (Area Codes, PSAP, RateCenters)
- Added Updated RiskInfo (Weather) data for Connecticut September, 2005
- Added Business Points sample data for Connecticut in workspaces, showing potential use cases – January, 2006
- Added a sample of IDSS (Insurance Decision Solution Suite)
- Updated all StreetPro sample data – StreetPro US Version 10.0 January 2007
- Added StreetPro samples for Austria, Denmark, France, Ireland, Norway, Portugal, and Switzerland
- Added sample crime data in the UKCrimeExample directory
- Crater_3d.wor and ElevationUS_3D.wor provide is a new 3D grid workspaces
- CurvedLabel.wor displays the new Curved Label feature

Installing and Configuring MapInfo Professional

This chapter helps you install and set the basic preferences for MapInfo Professional®. In addition, there are instructions for fixing problems that come up as part of the installation process. We also cover starting and exiting the product.

Sections in this Chapter:

- ◆ **System Requirements**8
- ◆ **MapInfo Professional and Operating System Support**9
- ◆ **MapInfo Professional Database Connectivity and Support**11
- ◆ **Before You Install MapInfo Professional**12
- ◆ **Installing MapInfo Professional**13
- ◆ **MapInfo Licensing and Activation**20
- ◆ **Modifying or Removing MapInfo Professional**40
- ◆ **Configuring the MapInfo Professional Preferences**44
- ◆ **Starting up and Leaving MapInfo Professional**77
- ◆ **File Format Types Supported**78

System Requirements

Below are the guidelines for minimum and recommended system requirements. Please note that hardware requirements do vary based on your use of the product and your system. In general, a higher processor speed, larger memory (RAM) and industry leading graphics cards provide a better user experience and result in better responses from MapInfo Professional. These are the minimum system requirements for MapInfo Professional 9.0:

Operating Systems	Minimum Memory	Minimum Disk Space	Minimum Graphics	Minimum Monitor
Windows 2000 Professional SP 4 Windows Vista *	128 MB of RAM with a minimum of a Pentium PC	Application 103 MB Data 450 MB	16- or 24-bit Color	800x600 Display
Windows XP Professional SP 2 Windows XP Home SP 2 Windows 2003 SP 1 Server with Terminal Services/Citrix	64 MB of RAM with a minimum of a Pentium PC	Application 103 MB Data 450 MB	16- or 24-bit Color	800x600 Display

* MapInfo Professional is not currently Windows Vista certified.

These are the recommended system requirements for MapInfo Professional 9.0:

Operating Systems	Recommended Memory	Recommended Disk Space	Recommended Graphics	Recommended Monitor
Windows 2000 Professional SP 4 Windows XP Professional SP2 Windows XP Home SP2	256/512 MB of RAM with a minimum of a Pentium PC or better	Fast EIDE 2 or SCSI Interface with 2GB or better Data 450 MB	Mid to High 2D/3D card with 128MB or better	Greater than 1024x768 resolution or better
Windows 2003 SP 1 Server with Terminal Services/Citrix	Same, PLUS memory sufficient to support each connected user	Fast EIDE 2 or SCSI Interface with 2GB or better Data 450 MB	<i>Server:</i> Same <i>Client:</i> Choose based on resolution/speed requirements	Greater than 1024x768 resolution or better

Note: For Windows 2003 Server Users: Keep in mind that some of the options you choose for the server can limit the options available to the client system.

MapInfo has exhaustively tested MapInfo Professional under the following Microsoft Windows Desktop Operating Systems:

- Windows 2000 Professional
- Window XP Home Edition
- Windows XP Professional

MapInfo has exhaustively tested MapInfo Professional under the following Microsoft Windows Server Operating Systems:

- Windows 2003 Server
- Windows 2003 with Terminal Services with Citrix Meta Frame technology. To learn more about this installation option see [Windows 2003 Server with Terminal Services/Citrix Support](#).

MapInfo has performed Installation and validation testing on the following 64Bit Windows Operating System:

- Microsoft's 64-bit Windows XP Professional with 32 Bit compatibility mode.

Note: There are no special installation instructions for installing MapInfo Professional on a 64-bit Windows Operating System. Please follow the instructions designed for your installation type ([Typical Workstation Installation on page 16](#), [Custom Workstation Installation on page 16](#) or [Network Installation on page 18](#)) presented in this chapter.

MapInfo Professional and Operating System Support

This section provides additional detail on the operating system support for MapInfo Professional, including:

- [Windows 2000 Support on page 9](#)
- [Windows 2003 Server with Terminal Services/Citrix Support on page 10](#)

Windows 2000 Support

MapInfo Professional supports Windows 2000 (SP 4) features as described in the Application Specification for Microsoft Windows 2000 document (available at <http://www.microsoft.com/WINDOWS2000/news/bulletins/appspec.asp>).

The key aspects of Windows 2000 support with regard to MapInfo Professional are:

- Supporting multiple users on a single machine, each having their own application settings.
- Supporting use of MapInfo Professional on a secure Windows 2000 computer (one where users have very limited access rights).
- Using an installer based on the Windows Installer Service.

In order to support these requirements, we have changed the location of many application data files (for example, files containing information used by MapInfo Professional during execution (for example, the projection file, mapinfo.prj). The installer places the files under the current user's Application Data folder. Likewise, some registry entries have been moved from HKEY_LOCAL_MACHINE to locations under HKEY_CURRENT_USER. In both cases the current

user is guaranteed to have write access to the folder or registry key. Also, since the files and registry entries are stored in user specific locations, each user of the computer has their own application data files (e.g. each has their own copy of the preference file, mapinfo.prof).

Note: The changes described above apply to all versions of Windows supported by MapInfo Professional. The exact location of the Application Data folder varies depending on the version of Windows:

OS	Application Data Folder Location
Windows 2000 (SP 4)	c:\Documents and Settings<user name>\Application Data
Windows XP Professional (SP 2)	c:\Documents and Settings<user name>\Application Data
Windows XP Home (SP 2)	c:\Documents and Settings<user name>\Application Data

Windows 2003 Server with Terminal Services/Citrix Support

MapInfo Professional supports Windows 2003 Server with Terminal Services through Citrix to allow any member of the group *Users* to be able to use MapInfo Professional via a Terminal Services session. The Terminal Services feature is essential to the operation of the Citrix Access Infrastructure.

We recommend that you consult with your Citrix administrator in the Citrix configuration guidelines PDF. That document includes both questions and answers about RAM and CPU requirements. This document is available by clicking this link.

http://support.citrix.com/servlet/KbServlet/download/4257-102-11011/Load_Manager_Guide.pdf.

We have tested MapInfo Professional with a standard install of Citrix v3.0 and Microsoft Terminal Services 2003. We verified the testing of MapInfo Professional on CITRIX v3.0. MapInfo Professional does not require any client side technology, however, Citrix requires the Citrix Client to be installed. We tested against Version 6.20.985 of the client.

We have modified our installation process to ensure that MapInfo Professional operates successfully in a Terminal Services/Citrix environment. When the installer detects that the user is installing locally in a system running Windows 2003 Server with Terminal Services through Citrix, the installer adds the necessary files and components to that machine. Once the user connects for the first time to the Terminal Services/Citrix computer and runs MapInfo Professional, a user configuration process begins to copy the per-user files needed to run MapInfo Professional. This works in the same way for Windows 2003 Server/Citrix clients as any other MapInfo Professional windows client.

During the installation process, if you decide that the default installation locations are not appropriate for your implementation, you can change these locations using the MODE.INI file. For more information about constructing a custom MODE.INI file, see [Controlling the Location of Application Data Files During Installation on page 42](#).

All Citrix testing we have done has been accomplished using the standard Citrix server and client installations. We used Citrix Server version 3.0 and the Citrix Client version 6.20.985. The recommended RAM amount is based on the general guidelines from Citrix and uses this formula:

```
Amount of RAM required for the application x the number of concurrent users
```

in the case of MapInfo Professional:

```
64MB of RAM X the number of concurrent users
```

so, we recommend this formula as well. For more information about the load requirements of Citrix, please consult your Citrix Load Manager Support Guide.

Installing MapInfo Professional on the Citrix Server

Citrix users follow the **Typical Workstation Installation** instructions to install MapInfo Professional.

Note: While we expect to work with ODBC and OCI technology on Citrix, we recommend that your Citrix administrator consult with database vendor documentation to configure their respective drivers on Citrix.

MapInfo Professional Database Connectivity and Support

MapInfo Professional supports the following spatial database servers:

- SQL Server 2000/2005
- Informix 9.x
- Solaris 32-bit
- HPUX
- Oracle Spatial 10G, 9iR2, 9iR1

Further, using ODBC drivers, you can access your data from MapInfo Professional using:

- Oracle ODBC Driver 9x
- SQL Server 2000/2005
- Informix 3.x

You can also open tables of data from the following databases and make them mappable but only for point data:

- Oracle 9iR2
- Oracle 10G
- MS Access XP
- MS SQL Server 2000/2005
- Informix 9.4

For more about working with remote database information, see *Accessing Remote Data* and *Setting your Database Connection Preferences* in the *Help System*.

A Note about SQL Server 2005 Support

MapInfo Professional supports the changes in the MS SQL Server 2005 schema concept. Microsoft has enhanced SQL Server 2005 to use schemas to organize database objects into namespaces. In the past the schema was part of the owner/user construct, so when you deleted a user, you deleted the objects associated with that user.

Using SQL Server 2005, objects are associated with a schema, which can be associated with many users and each user can be associated with many schemas.

The old fully qualified name of a database object was:

*Server.Database.**User**.Object.*

The new fully qualified name of the object is:

*Server.Database.**Schema**.Object*

If you leave out the server and database name identifiers, MapInfo Professional uses the current server and database names. If you do not explicitly specify a schema for a user, the server assumes any unqualified object names are in the default schema. Therefore, if you are accessing a SQL Server 2005 database, you need to update any features/functions, tools, and test scripts accessing the objects, including the metadata in the MAPCATALOG, to use the new fully or partially qualified object name.

To make this version of SQL Server work, you must have this 8.5.1 (or later) version of MapInfo Professional. There is a work around for MapInfo Professional 8.5 and earlier versions that accesses a server table with the form, *Database.Owner.Object*. Review the MapInfo Professional 8.5 *User Guide* for these instructions.

Before You Install MapInfo Professional

Before installing MapInfo Professional, record your serial number and access code in an easy-to-remember place, such as the title page of the *User Guide* or *Supplement*. You need a valid serial number and access code to complete an installation or an upgrade. Also, please complete the postage-paid registration card and return it to MapInfo Corporation. Additionally, you can register online by accessing the Contact Info option on the CD Browser.

If the MapInfo Professional installer detects a current version of the product, 6.0 or earlier, or detects that the product had been installed at some time, the installer copies the MAPINFOW.WOR, STARTUP.WOR and MAPINFOW.PRF from the operating system's system directory to <user profile root>\Application Data\MapInfo\MapInfo.

Application data (appdata) files are the non-executable data files that MapInfo Professional uses during operation.

To use a silent installation procedure, see [Silent Installation Procedures for System Administrators on page 105](#).

Navigating the MapInfo Professional CD Browser

The initial screen of the MapInfo Professional CD Browser includes these options:

- *Install Products*: From this option you can install MapInfo Professional (including DBMS support and translators), free data, access to the documentation, and Install Utilities, including: ECW Compressor and GPS.
- *What's New*: Display a list and description of new and enhanced features.
- *Online Reference*: MapInfo Professional provides the following online reference documents: The MapInfo Professional *Supplement*, MapBasic *Reference*, Crystal Reports *User's Guide*, the MapInfo Professional *Printing Guide*, as well as the Adobe Acrobat Reader. The MapInfo Professional and Crystal Reports documentation are copied into the Documentation subfolder of your installation directory during the installation process.
- *Run MapInfo Tutorial*: From this option you can access the MapInfo Tutorial from the MapInfo web site to learn more about the basic features of MapInfo Professional.
- *Other Products*: Display information about MapBasic, MapInfo Discovery, and MapInfo Pro for SQL Server.
- *Contact Information*: Where ever you are, MapInfo is there to help you. Contact us at any of these locations or visit us on the world wide web at www.mapinfo.com!
- *Register Online*: We have simplified the registration process. Simply click this entry and the wizard walks you through the registration process quickly.
- *Browse CD*: From this option you can review the contents of the CD. There are additional utilities that may be useful to you that are only available when you browse.
- *Exit*: From this option you can close the CD Browser application.

Installing MapInfo Professional

CAUTION: We strongly recommend that you exit from all Windows programs before beginning the installation process. If you are upgrading from an earlier version of MapInfo Professional, we recommend that you uninstall before upgrading.

You must have Administrator rights to run the Installer on Windows XP.

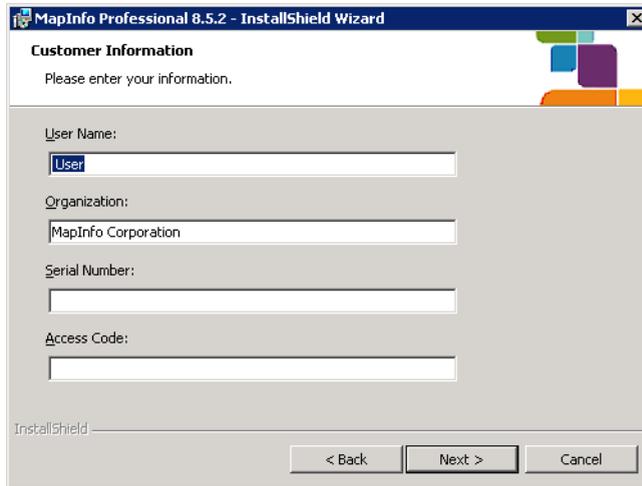
If your Windows **Start** menu does not have a MapInfo program folder, the installation process creates this folder. If your Windows **Start** menu already has a MapInfo program folder, this process creates a new MapInfo icon within that folder.

MapInfo Professional provides its application data files to each user. Called a Per-User install, this functionality runs the first time you run MapInfo Professional or MapInfo Professional client on a machine, and each time the MapInfo Professional Installer is run thereafter. The application data files include, among others, the Pen Styles file, Custom Symbols files, Graph Support files, and Thematic Legend templates. These files allow different users to have custom settings.

Note: The Installer requires that your TEMP variable be set to a valid directory.

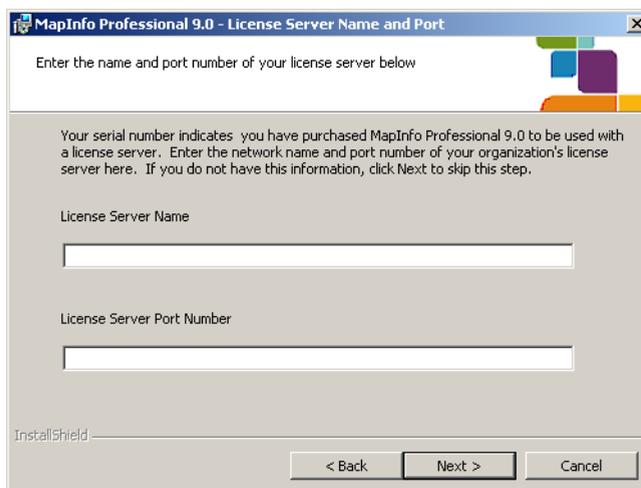
To install MapInfo Professional:

1. On the **Launcher** menu, click **Install Products** from the MapInfo Professional CD Browser.
2. Click **MapInfo Professional Installer**. The Install Shield Wizard dialog box displays. Click **Next** to continue the process and display the License Information dialog box and accept the terms of the agreement.
3. Click **Next** to continue. The Customer Information screen displays.



The screenshot shows a dialog box titled "MapInfo Professional 8.5.2 - InstallShield Wizard" with a sub-header "Customer Information". Below the sub-header, it says "Please enter your information." There are four text input fields: "User Name:" with the text "User", "Organization:" with the text "MapInfo Corporation", "Serial Number:" which is empty, and "Access Code:" which is empty. At the bottom left, it says "InstallShield". At the bottom right, there are three buttons: "< Back", "Next >", and "Cancel".

4. Type your name, organization name, serial number, and access code in the corresponding fields. The serial number and access code are listed on the Product Activation Information Card in the product box and are used to activate your product. Click **Next** to continue.
5. Do one of the following:
 - If your organization purchased node-locked licenses, the third character of your serial number is "N". Skip step 5 and go to **step 6**. For more information, see **Node-Locked Licenses on page 20**.
 - If your organization purchased concurrent licenses, the third character of your serial number is "S". In those cases, the License Server Name and Port dialog box displays on the screen.



If you know the license server name and port number, enter them here. If you do not, you can continue with the installation without filling in the license server name and port number. You will have another opportunity to supply this information when you start MapInfo Professional. For more information, see [Concurrent Licenses on page 29](#). Click **Next**.

6. Review the following installation types and determine which instructions are appropriate. Click one of the following and click **Next** to continue:
 - **Typical Workstation Installation.** Click this option if you will be using MapInfo Professional as a desktop application including remote database access and connectivity. See [Typical Workstation Installation on page 16](#) to continue these instructions.
 - **Custom Workstation Installation.** Click this option to restrict the components that are installed by the installation program. For example, you can prevent the installer from adding the help system and tools. See [Custom Workstation Installation on page 16](#) to continue these instructions.
 - **Network Installation.** Click this option if you are installing or upgrading to a MapInfo Professional network product. See [Network Installation on page 18](#) to continue these instructions. These instructions are for network administrators only. After you install MapInfo Professional on the network, follow the instructions for installing MapInfo Professional on client equipment in [Setting Up Client Workstations on page 19](#).

Typical Workstation Installation

Choose this option to install MapInfo Professional program files, Online Help, Tools, Universal Translator, and Crystal Reports. The ArcLink translation utility is not installed with this option.

CAUTION: Make sure you have completed the directions in [Installing MapInfo Professional on page 13](#) before beginning these instructions.

To continue installing MapInfo Professional on a workstation:

1. In the Setup Type dialog box, click **Typical Workstation Installation**; the Destination Folder screen displays. If you have an earlier version (or versions) of MapInfo Professional installed and you do not want to overwrite that version, create a new directory name in the next step.
2. Do one of the following:
 - Click **Next** to accept the destination folder indicated
 - Click **Change** to create a new path in the Change Current Destination Folder dialog box. Type the new path in the **Folder name** field and click **OK** to continue. Click **Next** to continue. The Ready to Install the Program screen displays. Review your selections to ensure that the path is correct before moving on. Click **Back** to make changes.
3. Click **Install** to begin. A progress bar indicates the status of the process.
4. When the InstallShield Wizard Complete screen displays, choose **Finish** to return to the Install Products screen.

Note: When you open MapInfo Professional for the first time, the final installation and configuration process takes place automatically. See [MapInfo Licensing and Activation on page 20](#) before you begin using MapInfo Professional.

Custom Workstation Installation

Choose this installation type to select components and drivers within the MapInfo Professional installation program. This is particularly useful if you want to save disk space by not installing the Help System, the documentation, or the MapInfo Professional tools.

CAUTION: Make sure you have completed the directions in [Installing MapInfo Professional on page 13](#) before beginning these instructions.

To continue installing using the custom workstation instructions:

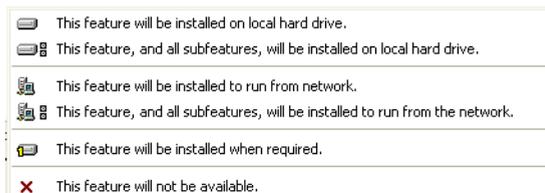
1. In the Setup Type dialog box, click **Custom Workstation Installation**; the Custom Setup dialog box displays. A feature description, and the space required for the feature and its sub-features displays in the Feature Description area.
2. In the Custom Setup dialog box you decide what components are to be installed and the directory you want them to install to. Click the feature icon to select the feature for installation.

The options for a Custom Setup include:

- **MapInfo Program Files**
- **Tools** (which refer to the MapInfo Utility Tools, Crystal Reports etc.)
- **Translators** (Universal Translators, ArcLink, etc.)

- **Help Files**
- **Documentation**

3. To select a feature, click the **Down Arrow** beside it; a menu displays.



4. For each feature you want to install, select one of the following:
- This feature will be installed on local hard drive.
 - This feature, and all subfeatures, will be installed on local hard drive
 - This feature will not be available

Note: For some features, there are additional options pertaining to the use of the feature from the network. Choose the option that describes your systems implementation of this feature.

When you select the first or second options in the bullets described above, the feature installs on your local hard drive in the default folder. This path displays in the **Install To:** entry below the Custom Setup list pane. To specify another path, select **Change** button. When you do the Current Destination folder dialog box displays allowing you to choose a new path.

To see if you have enough space on your hard drive or other mapped resources, click the **Space** button. The Disk Space Requirement dialog box displays the disk size, the amount of available space, and the amount of space the selected install would take.

Note: To avoid installing a subfeature, select **This feature will not be available**.

5. After you select all the custom options click **Next** to display the Ready to Install the Program dialog box.
6. Click the **Install** button to begin the installation of MapInfo Professional with the features you selected. The Installing MapInfo Professional screen displays with a progress bar indicating the status.
7. At the end of the installation, the prompt: "Would you like to check our web site for any current updates to our product?" displays. If you have an Internet connection, click **Yes** to access the MapInfo Corporation web site containing information about product updates.
8. When the **InstallShield Wizard Complete** screen displays, choose **Finish** to return to the Install Products screen.

Note: When you open MapInfo Professional for the first time, the final installation and configuration process takes place automatically.

Setting up MDAC

When installing MapInfo Professional, you can choose whether or not to install MDAC (Microsoft Data Access Components). Microsoft Data Access Components include various components: ActiveX Data Objects (ADO), OLE DB, and Open Database Connectivity (ODBC). If you are unsure

whether or not to install the MDAC, consult with your network administrator. This choice allows IT administrators to manually install their own replacement modules for the MDAC. You must have MDAC, or a replacement, to connect to any databases.

Adding ODBC and OCI Drivers

After you add the ODBC and OCI drivers as part of the Typical Installation process, you can use the instructions in *Setting your Database Connection Preferences* in the *Help System* to set your database connection preferences.

You must have the OCI and ODBC drivers installed for MapInfo Professional to connect to remote databases. If you see the following messages, then you have installed the MapInfo DLLs for these features correctly but the drivers are missing:

OCI (Oracle Call Interface)

The MapInfo Oracle OCI Database driver (MIDLOCI.DLL) failed to load. This is most commonly caused by not having an installation of Oracle's OCI driver, which is necessary for the MapInfo Oracle OCI Database driver to load.

To fix this issue, please install the Oracle OCI Database driver or rerun the MapInfo Professional Installer to remove the MapInfo Oracle OCI Database driver.

Clicking "OK" will allow you to run MapInfo Professional without the ability to open Oracle tables through Oracle's Oracle Call Interface. If you need more information, please contact MapInfo Technical Support.

ODBC (Open DataBase Connectivity)

The MapInfo ODBC Database driver (MIDLODBC.DLL) failed to load. This is most commonly caused by an incomplete installation of MapInfo ODBC Connectivity Support. To fix this issue, please rerun the MapInfo Professional Installer to repair or remove the MapInfo ODBC Connectivity Support.

Clicking "OK" will allow you to run MapInfo Professional without the ability to open remote database tables through ODBC. If you need more information, please contact MapInfo Technical Support.

A combined message displays if you attempt to add both of these options and neither of them have access to the appropriate database drivers.

Network Installation

Installing MapInfo Professional 9.0 on a network involves two separate procedures:

- Installing the product on a network drive (presumably done by the Network Administrator).
- Setting up users with program manager icons, etc. (presumably done by the user).

Make sure you have completed the directions in **Installing MapInfo Professional on page 85** before beginning these directions.

Choose this installation ONLY if you are a Network Administrator and have full rights to the network.

To continue installing MapInfo Professional 9.0 on a network:

1. Click **Network Installation**; the Administrator Selection Screen displays.

The options for a Network Setup include:

- **MapInfo Professional Program Files**
- **Tools, Translators**
- **Help Files**

A feature description, and the space required for the feature, displays in the Feature Description area. Click the option icon to install it.

2. When you select a feature, a menu displays allowing you to choose to install and/or run the feature and its subfeatures from various locations, including your local hard drive or from CD.
 - If you select the hard drive option, the feature will be installed in the path indicated; on your local hard drive in the folder indicated; to specify a different location, choose **Change** to display the Current Destination folder screen.
 - If you choose to install an option to your hard drive, the **Space** button is enabled; choose this button to display the Disk Space Requirement dialog box.

Note: You can choose to not install a feature by skipping it.

See *Installing MapInfo Professional on a Network Drive in the Help System* for additional details.

3. After the installation is complete, the prompt: “Would you like to check our web site for any current updates to our product?” displays. If you have an Internet connection, check **Yes** to be connected to the page of the MapInfo Corporation Web site containing information about product updates.
4. When the InstallShield Wizard Complete screen displays, choose **Finish** to return to the Install Products screen.

Note: When your users open MapInfo Professional for the first time, the final installation and configuration process takes place automatically. See [MapInfo Licensing and Activation on page 20](#) for information on licensing.

Installing MapInfo Professional on a Network Drive

The procedure for installing MapInfo Professional on a network drive is the same as the regular installation procedure except for the following:

- Select Network Installation in the Setup Type screen.
- Continue as in a Workstation Installation, selecting features, destination locations, etc.

The Network Installation alone does not install any files to the local hard drive.

Setting Up Client Workstations

To permit a user to use this network installation of MapInfo Professional, run SETUP.EXE:

1. Map a drive to the MapInfo Professional Install directory.
2. Select **Run** from the **Start** menu.
3. Run SETUP.EXE from [*MapInfo install directory*]\AddClient. The MapInfo Professional Client Welcome screen displays.
4. Click **Next**. The License Information screen displays.
5. Click **"I accept the terms of the license agreement"** and select **Next**. The Customer Information screen displays with the network install values as the default.
6. Modify for the current instance and select **Next**.
7. Click **Install** to continue the installation.
8. Click **Finish** to complete the client installation.
9. Open MapInfo Professional and begin the product activation process. See [MapInfo Licensing and Activation on page 20](#).

MapInfo Licensing and Activation

This section describes the licenses available for MapInfo Professional and how to get started with the product according to the type of license your organization purchased.

MapInfo has two licensing schemes:

- Node-locked
- Concurrent

The serial number and access code that you enter during the installation indicates to MapInfo Professional what type of license you have. Depending on the license type, MapInfo Professional will guide you through activating the product (if your organization purchased node-locked licenses) or connecting to a license server (if your organization purchased concurrent licenses).

Node-Locked Licenses

Node-locked licenses enable you to run MapInfo Professional on a specific computer. If you purchased node-locked licenses, your installation of MapInfo Professional must be activated before you can use it. Activation is the process of acquiring a license from MapInfo. This section explains the activation options available for node-locked licenses.

Product Activation

MapInfo uses the serial number and access code you supplied during the installation to activate the product. If you need to refer to these numbers again, the serial number and access code are located on the product box and on the Product Activation Information Card.

To activate MapInfo Professional:

1. Install MapInfo Professional, if you haven't already, and start the product. When you start MapInfo Professional for the first time after installation, the Activation Wizard launches. The MapInfo Professional Activation dialog box displays on the screen.



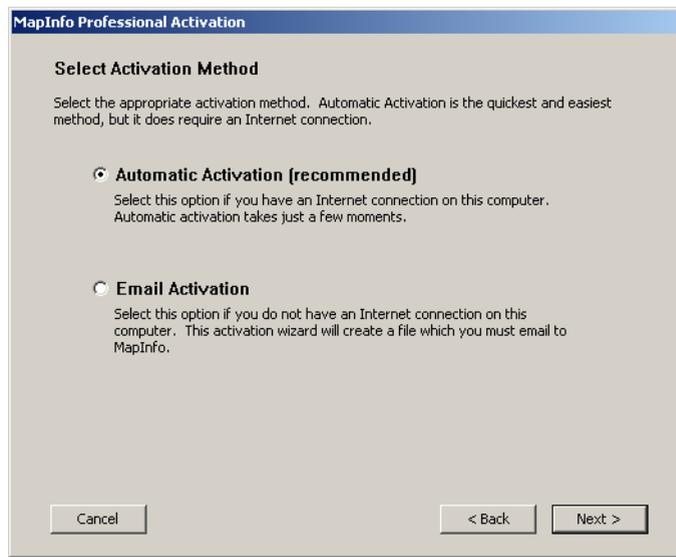
2. Select when you want to activate MapInfo Professional. Select one of the following:
 - **Activate Now**—Select this option to start activation now.
 - **Activate Later**—Select this options to start a 30-day courtesy period in which you can use MapInfo Professional without activating the product.
3. Click **Next**.

If you selected **Activate Now**, go to **step 4**.

If you selected **Activate Later**, the Activation Wizard closes and the courtesy period begins. The courtesy period enables you to use MapInfo Professional immediately and active the product at a time that is convenient for you. Each subsequent time you start MapInfo Professional, a dialog box displays informing you of the time remaining in the courtesy period and giving you the opportunity to activate the product.

You must activate MapInfo Professional sometime during the courtesy period to avoid interrupting your work. When the courtesy period ends, you will not be able to use MapInfo Professional until you activate it.

4. If you selected **Activate Now**, the Select Activation Method dialog box displays on the screen:



5. Select one of the following activation methods:
 - **Automatic Activation**– Select this option if you have an Internet connection. The Activation Wizard will make a one-time connection with a MapInfo server. Using the serial number and access code you provided during the installation, the Activation Wizard will retrieve one of the licenses your organization purchased and associate it with your computer.
 - **Email Activation**– Select this option if you do not have an Internet connection. The Activation Wizard will guide you through the creation of an Activation Request file that you must then email to MapInfo.

6. Click **Next**.

If you selected **Email Activation**, go to **step 7**.

If you selected **Automatic Activation**, the Activation Wizard takes a few moments to transfer the activation credentials to MapInfo and perform the activation. A MapInfo Activation message displays on the screen to tell you that the activation was successful.

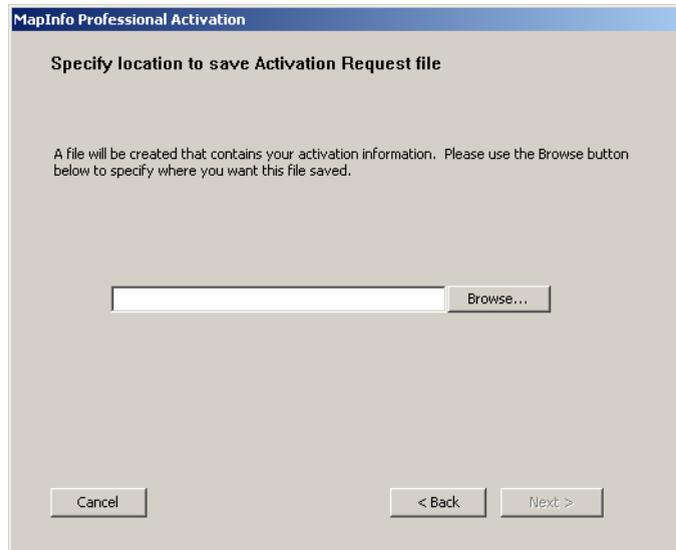
Click **OK**. The Activation Wizard closes, and MapInfo Professional is ready to use. You are finished.

7. If you selected **Email Activation**, the Verify Activation Credentials dialog box displays on the screen:



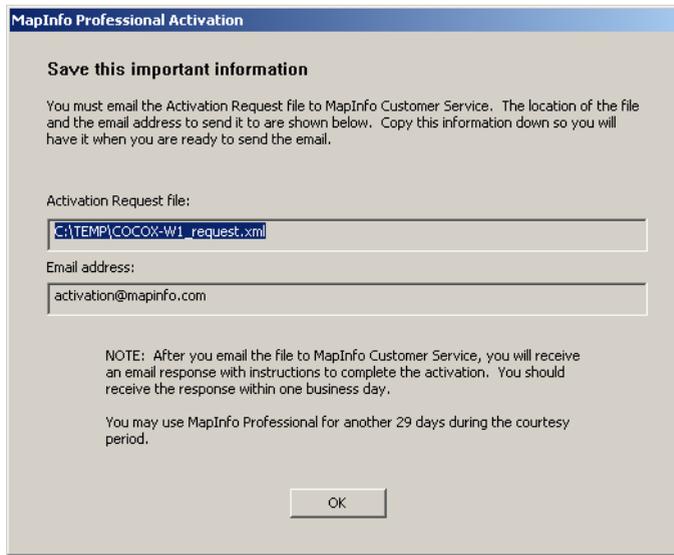
Double-check that your serial number and access code are correct. Click **Edit** if you need to make any corrections.

8. Click **Next**. The Specify location to save Activation Request file dialog box displays on the screen:



Select a folder in which to save the Activation Request file. Click the **Browse** button to navigate to the desired location. Click **OK**. The path and filename of the Activation Request file appear in the box. The Activation Request contains your serial number and access code, plus information that identifies the computer you are activating on.

9. Click **Next**. The Save this important Information dialog box displays on the screen.



This dialog box provides the information to send your Activation Request file to MapInfo. The full path and filename of the Activation Request file is displayed in the **Activation Request File** box. The email address to send the file, `activation@mapinfo.com`, is displayed in the **Email address** box.

Take a few moments to write down the location of the Activation Request file and email address to send the Activation Request file.

CAUTION: Please do not edit the Activation Request file in any way. If you do, MapInfo may not be able to process it and your activation will be delayed.

10. Click **OK**. The Activation Wizard closes and the courtesy period automatically starts.

11. Email your Activation Request to MapInfo at this address:

`activation@mapinfo.com`

You can finish email activation when you receive an Activation Response file from MapInfo. You should receive the Activation Response file within one business day.

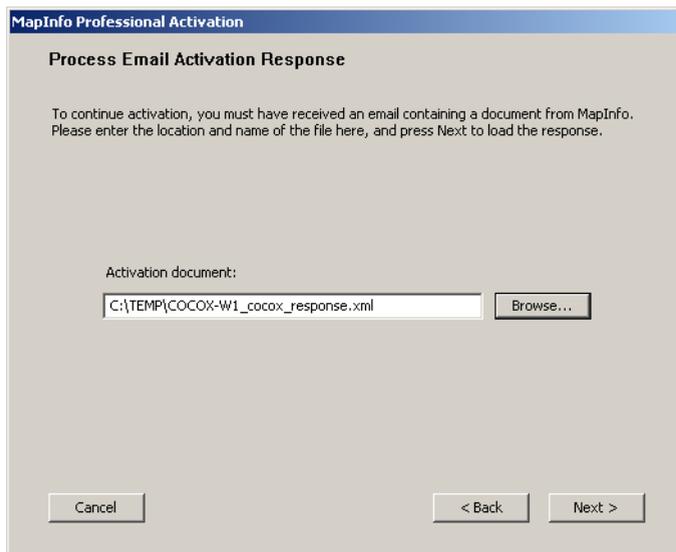
Finishing Email Activation

When you receive the Activation Response file from MapInfo, you are ready to finish activating MapInfo Professional.

To finish email activation:

1. Copy the Activation Response file you received from MapInfo to an accessible folder on your computer and make note of the location.
2. Open MapInfo Professional. If MapInfo Professional is already open, exit and restart the program. A dialog box displays asking you if you want to finish activating MapInfo Professional.
3. Click **Yes**. The Process Email Activation Response dialog box displays on the screen.

4. Click **Browse** to navigate to the location of the Activation Response file. Click **Open** in the Locate Response file dialog box when you have located the file.
5. The path and filename of the Activation Response file appear in the box.



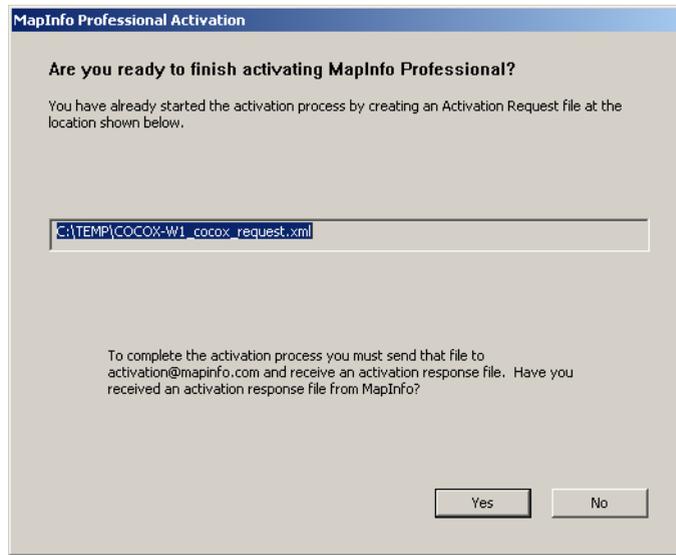
6. Click **Next**.
7. A MapInfo Activation message displays on the screen to tell you that the activation was successful. Click **OK**. The MapInfo Professional Activation Wizard closes, and MapInfo Professional is activated and ready to use. You are finished.

After you have completed activation, you can delete the Activation Response file. You do not need to keep it on your computer.

Using MapInfo Professional While You Wait

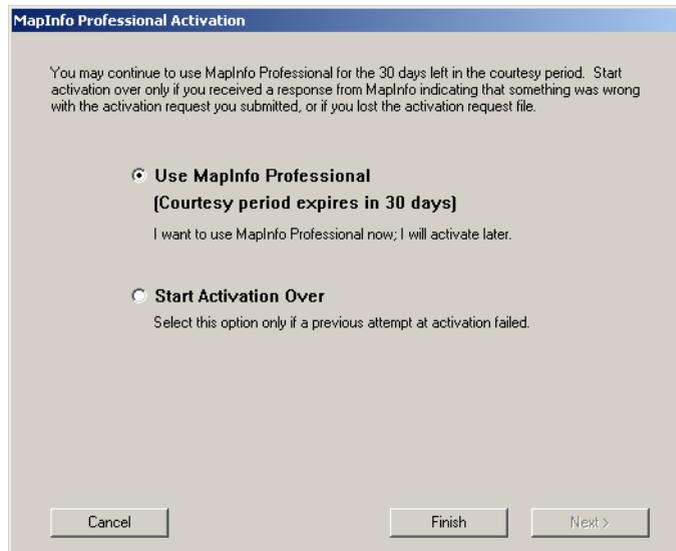
While you are waiting for MapInfo to send you the Activation Response file, you can continue to use MapInfo Professional under the courtesy period. To ensure uninterrupted use of MapInfo Professional, we encourage you to activate before the courtesy period expires.

Each time you open MapInfo Professional subsequent to initiating email activation, a dialog box displays asking if you want to finish activating MapInfo Professional. When you receive the Activation Response file from MapInfo you are ready to finish activation.



To continue using MapInfo Professional under the courtesy period:

1. Click **No** in the dialog box.
2. A dialog box displays on the screen that provides information about the courtesy period and asks you how you would like to proceed.



Select one of the following:

- **Use MapInfo Professional**—Select this option if you have not received an Activation Response file yet and you want to use MapInfo Professional under the courtesy period.
- **Start Activation Over**—Select this option if previous activation attempts have failed.

If you selected **Use MapInfo Professional**, click **Finish**. The Activation Wizard closes and MapInfo Professional is ready to use under the courtesy period. You can finish the activation at a later time.

If an earlier attempt to activate MapInfo Professional failed, and you selected **Start Activation Over**, click **Next**. The Activation Wizard restarts, giving you the opportunity to try the activation again.

Transferring a Node-Locked License

Node-locked licenses are associated with a particular computer. To use MapInfo Professional on a computer other than the one on which you have it activated, and without consuming another license, you can transfer your license from one computer to another. For example, you received a new computer at work and you want to run MapInfo Professional on the new computer instead of on the old one.

Note: Your organization is limited to two license transfers per year, regardless of the number of licenses.

Transferring Your License to Another Computer

To transfer a node-locked license:

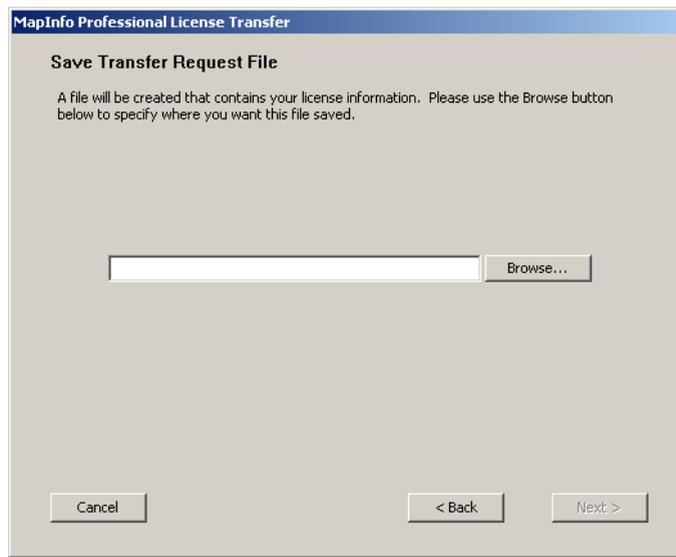
1. Open MapInfo Professional.
2. Choose **Help > Licensing > Transfer license**. The MapInfo Professional License Transfer dialog box displays on the screen.
3. Click **Yes**. The Select Transfer Method dialog box displays on the screen.

Select one of the following transfer methods:

- **Automatic Transfer**—Select this option if you have an Internet connection. Your license will be automatically transferred to MapInfo. You can retrieve the license by activating MapInfo Professional on another computer.
 - **Email Transfer**—Select this option if you do not have an Internet connection. You will be guided through the creation of a Transfer Request file, which you must then email to MapInfo.
4. If you selected **Email Transfer**, go to **step 6**.

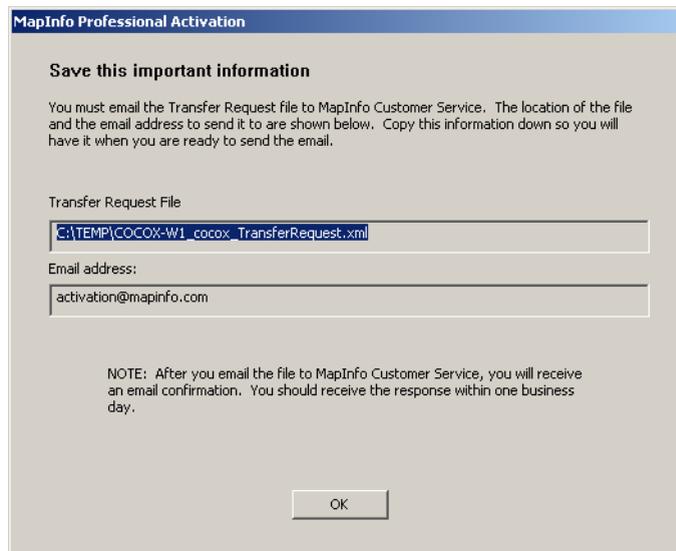
If you selected **Automatic Transfer**, the License Transfer Wizard takes a few moments to transfer the license to MapInfo. When this process is finished, a message displays on the screen informing you that the transfer was successful.

5. Click **OK**. MapInfo Professional closes and can no longer be run from this computer. The license is now available for you to activate MapInfo Professional on another computer.
6. If you selected **Email Transfer**, the Save Transfer Request File dialog box displays on the screen.



Select a folder in which to save the Transfer Request file. Click the **Browse** button to navigate to the desired location. Click **OK**.

7. Click **Next**. The Save this important information dialog box displays on the screen.



This dialog box provides the information to send your Transfer Request file to MapInfo Customer Service.

The full path and filename of the Transfer Request file is displayed in the **Transfer Request File** box. The email address to send the file, **activation@mapinfo.com**, is displayed in the **Email address** box.

Take a few moments to write down the location of the Transfer Request file and email address to send the Transfer Request file.

CAUTION: Please do not edit the Activation Request file in any way. If you do, MapInfo may not be able to process it and your activation will be delayed.

8. Click **OK**. MapInfo Professional closes and can no longer be run on this computer unless you activate it again.

9. Email the Transfer Request file to MapInfo at the following address:

activation@mapinfo.com

10. MapInfo Customer Service will send you an email reply confirming that the transfer was successful. You should receive this confirmation within one business day.

The license is now available for you to activate MapInfo Professional on another computer.

Uninstall Transfer Options

If you have a node-locked license and you uninstall MapInfo Professional, you have the option of transferring the license to MapInfo.

If you intend to install MapInfo Professional on another computer, transfer the license to MapInfo so that the license is available. When you install MapInfo Professional on the desired computer, you will be prompted to activate the product.

If you intend to reinstall MapInfo Professional on the same computer, do not transfer the license. When you reinstall, you can reuse the same license without activating.

When you begin an uninstall of MapInfo Professional, the Transfer License Now? dialog box displays on the screen:

Do one of the following:

- Click **Yes** to transfer the license to MapInfo. The License Transfer Wizard will start and guide you through the transfer process. See [Transferring Your License to Another Computer on page 99](#)
- Click **No** to keep the license on this computer. The uninstall operation continues. When you reinstall MapInfo Professional, you can reuse the license without activating.

Concurrent Licenses

Concurrent licenses enable you to install MapInfo Professional on any number of computers. A license server, installed and maintained by your organization, limits the number of computers that can run MapInfo Professional at any given time to the number of concurrent licenses purchased by your organization.

In the concurrent licensing scheme, you must connect to a license server on your network to check out a license before you can run MapInfo Professional. Checking out a license is the process of obtaining a license from the license server. You will need to supply the license server machine name and port number to connect to the license server. You can do this either during installation or the first time you run MapInfo Professional. After you have established a license server connection, the check out occurs automatically.

A license server administrator from your organization installs and maintains the license server. The license server administrator must also perform the following tasks:

- Activate the license server to make licenses available for check out.
- Inform users of the license server machine name and port number.

Connecting to a License Server

If your organization purchased concurrent licenses for MapInfo Professional, you will need to connect to a license server to run the product.

To connect to the license server, MapInfo Professional must have the license server name and port number. Your license server administrator will provide you with this information.

Connecting During Installation

The installation program will ask you for the license server name and port number. If you know them at install time, enter them. When you start MapInfo Professional, you will be connected to the license server and a license will be checked out automatically.

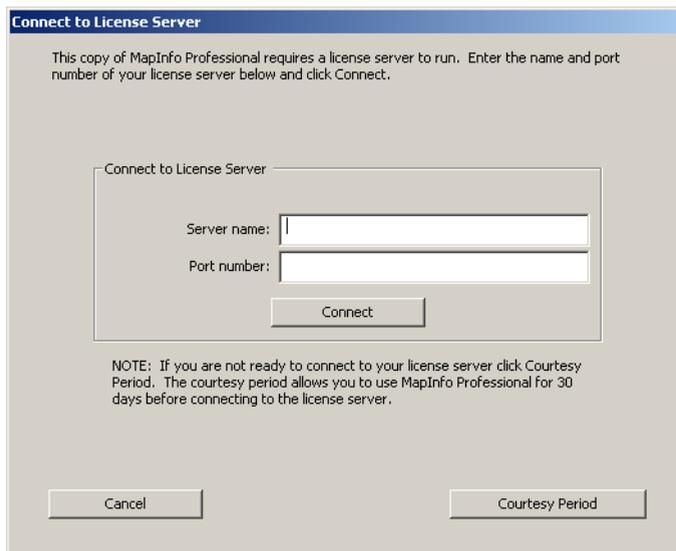
If you do not have this information at the time you install MapInfo Professional, the installation program will enable you to continue with the installation without filling in the license server name and port number. You will have another opportunity to connect to the server when you start MapInfo Professional.

Connecting After Installation

If you did not specify the license server name and port number during product installation, you will be prompted for that information when you start MapInfo Professional. You will also be prompted if MapInfo Professional cannot connect to a running license server using the server name and port number you provided at install.

To connect to the license server after you install MapInfo Professional:

1. Start MapInfo Professional. The Connect to License Server dialog box displays on the screen.



If you have the license server name and port number, proceed with these instructions. If you do not, see [Starting the Courtesy Period on page 103](#).

2. Enter the license server name in the **Server name** box.
3. Enter the port number in the **Port number** box.
4. Click **Connect**. MapInfo Professional takes a few moments to connect to the license server and check out a license.

When the license is checked out, the Connect to License Server dialog box closes. You are finished. MapInfo Professional is licensed and ready to use. After you successfully connect to your license server once, a license will be checked out automatically when you start MapInfo Professional.

Starting the Courtesy Period

If you do not have the license server name and port number, but you want to start using MapInfo Professional, you can start a 30-day courtesy period during which you can use MapInfo Professional without connecting to the license server.

To use the courtesy period to run MapInfo Professional:

1. Open MapInfo Professional. The Connect to License Server dialog box displays on the screen.
2. Click **Courtesy Period**. A MapInfo Activation message displays telling you that the courtesy period started successfully.
3. Click **OK**. MapInfo Professional is ready to use under the courtesy period.

You can connect to the license server and check out a license when you receive the license server name and port number from your license server administrator.

Connection Failures

Failure to connect to the license server can occur for several reasons.

First, although you may know the license server name and port number, the license server administrator may not have had an opportunity to install it yet. In this case, MapInfo Professional cannot find the license server you specified. To use MapInfo Professional, you can start the courtesy period, and then connect when you know that the license server has been installed and is running.

Failures can also occur if the license server has been moved to a different computer. In this case, you were previously able to connect to the license server, but the license server was moved since the last time you used MapInfo Professional. MapInfo Professional is looking for the license server in its previous location. If MapInfo Professional cannot connect to the license server at startup, the Connect to License Server dialog will display on the screen. See **Connecting After Installation on page 102** for information. See your license server administrator for the correct license server name.

Finally, if all licenses have been checked out, you will not be able to run MapInfo Professional. You are able to connect to the license server, but you cannot check out a license because they are all in use. You will need to wait until a license becomes available before you can check out a license.

Borrowing a Concurrent License

Some concurrent licenses can be borrowed. Borrowed license enable you to use MapInfo Professional when your computer is not able to connect to your license server. For example, if you have MapInfo Professional installed on a laptop computer and you are going to be away from the office, you can borrow a license to use MapInfo Professional while you are away. Check with your license server administrator to find out if your concurrent license includes borrowing.

When you borrow a license, be sure to specify a borrow period that gives you sufficient time to use MapInfo Professional before the license expires. If the license expires before you have an opportunity to return it, the license is automatically returned to the license server. MapInfo Professional is unusable until you can connect to your network again and check out a license.

To borrow a license, the computer that you want to put the borrowed license on must have MapInfo Professional installed and be connected to the license server.

To borrow a license:

1. Open MapInfo Professional.
2. Choose **Help > Licensing > Borrow license**. The Borrow MapInfo Professional License dialog box displays on the screen.
3. Specify the number of days that you want to borrow the license. You can specify from one to 365 days.
4. Click **Borrow License**. After a few moments, MapInfo Activation message displays on the screen to tell you that the license was borrowed from the server successfully.
5. Click **OK**.

You can use MapInfo Professional on this computer while not connected to your network for the borrow period that you specified.

Returning a Borrowed License

To return a borrowed license, you must reconnect the computer that is using the borrowed license to your network. If it is not connected, the Return borrowed license command will not be available.

To return a borrowed license:

1. Reconnect the computer to your network.
2. Open MapInfo Professional. A dialog box displays to tell you on what date the borrowed license is going to expire.
3. Click **OK**.
4. Choose **Help > Licensing > Return borrowed license**. The Return borrowed license to license server dialog box displays on the screen.
5. This dialog box explains how a license is returned. Click **OK**.
6. A MapInfo Activation message displays on the screen to tell you that the license has been returned to the license server.
7. Click **OK**.

Silent Installation Procedures for System Administrators

Silent installations allow you to repackage MapInfo Professional for deployment within your company so your users do not have to enter user- or company-specific information, path information, Oracle or ODBC DLLs, a serial number, or an access code.

The MapInfo Professional installation setup.exe indicated in the steps below can be found on the installation CD (d:\) in this directory:

```
\Install\MI_PRO\DISK1
```

In general, the silent installation process goes like this:

1. Place the installation CD in the target computer's disk drive.
2. From the command line on the target computer, type:

```
"d:\Install\MI_PRO\DISK1\setup.exe /s /v"PARAMETERS"
```

where `PARAMETERS` are the parameters you set to populate the msiexec.

For example:

```
"\Install\MI_PRO\DISK1\setup.exe /s /v"/qb  
INSTALLDIR="[PathTo]\MapInfo\OtherThanStandard\Professional 9.0\  
USERNAME="MyUser" COMPANYNAME="MyCompanyName"  
PIDKEY="MySerialNumber" ACCD="MyAccessCode"
```

For concurrent licenses the parameters for the license server name and license server port number must also be included:

1. Place the installation CD in the target computer's disk drive.
2. From the command line on the target computer, type:

```
"d:\Install\MI_PRO\DISK1\setup.exe /s /v"PARAMETERS"
```

where PARAMETERS are the parameters you set to populate the msiexec.

For example:

```
"\Install\MI_PRO\DISK1\setup.exe /s /v"/qb  
INSTALLDIR="[PathTo]\MapInfo\OtherThanStandard\Professional 9.0\  
USERNAME="MyUser\ " COMPANYNAME="MyCompanyName\  
PIDKEY="MySerialNumber\ " ACCD="MyAccessCode"  
LSNAME="MyLicenseServerName\ " LSPN="MyLicenseServerPortNumber\ ""
```

Look for the type of installation you want to perform from the options below and follow the corresponding instructions. In each of the install scenarios described below, the serial number and access code parameters are given in the following format:

- PIDKEY=MI#####
- ACCD=#####

Substitute the appropriate serial number and access code when you perform the silent install.

Completely Silent Install

To initiate a silent install:

1. Place the installation CD in the target computer's disk drive.
2. From the command line on the target computer, type:

```
"d:\Install\MI_PRO\DISK1\setup.exe" /s /v"/q PIDKEY=MI#####  
ACCD=#####"
```

For concurrent licenses, the license server name and port number parameters must be included:

- LNAME="LicenseServerName"
- LSPN="LicenseServerPortNumber"

Substitute the appropriate license server name and port number when you perform the silent install.

Silent Install with an Initial Dialog Box Only

To initiate a silent install where a single dialog box displays to initiate the installation:

1. Place the installation CD in the target computer's disk drive.
2. From the command line on the target computer, type:

```
"d:\Install\MI_PRO\DISK1\setup.exe" /s /v"/qb PIDKEY=MI#####  
ACCD=#####"
```

For concurrent licenses, the license server name and port number parameters must be included:

- LNAME="LicenseServerName"
- LSPN="LicenseServerPortNumber"

Substitute the appropriate license server name and port number when you perform the silent install.

Silent Install with Progress Bar Only

To initiate a silent install where the progress bar displays but users do not have to make entries:

1. Place the installation CD in the target computer's disk drive.
2. From the command line on the target computer, type:

```
"d:\Install\MI_PRO\DISK1\setup.exe" /s /v"/qb PIDKEY="\MI#\#####\"  
USERNAME="\FRED\" ACCD="\#####\" COMPANYNAME="\My Company\"  
InstallDir="\c:\Program Files\MapInfo\""
```

where you substitute the user's username for FRED, the organization's name for My Company, and the installation directory path for the c:\Program Files\MapInfo\ entry.

There are three caveats with this process:

- The user is prompted to reboot, if necessary
- The developer must populate the registration info with specific info
- The developer must specify the installation directory

Note: MIDLODBC.DLL or MIDLOCI.DLL are NOT installed using this case.

For concurrent licenses, the license server name and port number parameters must be included:

- LNAME="LicenseServerName"
- LSPN="LicenseServerPortNumber"

Substitute the appropriate license server name and port number when you perform the silent install.

Silent Install that Installs the Oracle Library List Only

To initiate a silent install that installs the Oracle DLL:

1. Place the installation CD in the target computer's disk drive.
2. From the command line on the target computer, type:

```
"d:\Install\MI_PRO\DISK1\setup.exe" /s /v"/q PIDKEY=MI#\#####\"  
ACCD=##### OCIDL=TRUE"
```

Note: MIDLODBC.DLL is NOT installed using this case.

For concurrent licenses, the license server name and port number parameters must be included:

- LNAME="LicenseServerName"
- LSPN="LicenseServerPortNumber"

Substitute the appropriate license server name and port number when you perform the silent install.

Silent Install that Installs Both the Oracle and ODBC Library Lists

To initiate a silent install that installs the Oracle and ODBC DLLs:

1. Place the installation CD in the target computer's disk drive.

2. From the command line on the target computer, type:

```
"d:\Install\MI_PRO\DISK1\setup.exe" /s /v"/q PIDKEY=MI#####  
ACCD=##### OCIDL=TRUE ODBCDDL=TRUE"
```

For concurrent licenses, the license server name and port number parameters must be included:

- LNAME="LicenseServerName"
- LSPN="LicenseServerPortNumber"

Substitute the appropriate license server name and port number when you perform the silent install.

Silent Install that Installs the ODBC Library List Only

To initiate a silent install that installs the Oracle and ODBC DLLs:

1. Place the installation CD in the target computer's disk drive.

2. From the command line on the target computer, type:

```
"d:\Install\MI_PRO\DISK1\setup.exe" /s /v"/q PIDKEY=MI#####  
ACCD=##### ODBCDDL=TRUE"
```

Note: The MIDLOCIDL is NOT installed using this case.

For concurrent licenses, the license server name and port number parameters must be included:

- LNAME="LicenseServerName"
- LSPN="LicenseServerPortNumber"

Substitute the appropriate license server name and port number when you perform the silent install.

Silent Install that Installs ArcLink

To initiate a silent install that installs ArcLink:

1. Place the installation CD in the target computer's disk drive.

2. From the command line on the target computer, type:

```
"d:\Install\MI_PRO\DISK1\setup.exe" /s /v"/q PIDKEY=MI#####  
ACCD=##### ADDARC=TRUE"
```

For concurrent licenses, the license server name and port number parameters must be included:

- LNAME="LicenseServerName"
- LSPN="LicenseServerPortNumber"

Substitute the appropriate license server name and port number when you perform the silent install.

Silent Install with an Initial Dialog Box that Installs ArcLink

To initiate a silent install with an initial dialog box that installs ArcLink:

1. Place the installation CD in the target computer's disk drive.

2. From the command line on the target computer, type:

```
"d:\Install\MI_PRO\DISK1\setup.exe" /s /v"/qb PIDKEY=MI#####  
ACCD=##### ADDARC=TRUE"
```

This process runs the Smartupdate at end of installation. If you do not want the Smartupdate to run, type:

```
set RUNSU = FALSE
```

at the end of the command line.

For concurrent licenses, the license server name and port number parameters must be included:

- LNAME="LicenseServerName"
- LSPN="LicenseServerPortNumber"

Substitute the appropriate license server name and port number when you perform the silent install.

Installing Data

To help you get started, MapInfo provides you with some United States-based and world-wide maps you can use as a background to your data. Use these instructions to install this free data.

To install the free data provided with MapInfo Professional:

1. Choose **Install Products** from the CD Browser.
2. Choose **Free Data** to display the MapInfo Professional Data screen. In this screen, you can also review the data specifications, access new data over the web and learn about what data is available from MapInfo Corporation.
3. Choose **Install Free Data**. The Welcome screen displays.
4. Choose **Next** to continue. The License Information screen displays.
5. Choose **Yes** to accept the terms of the agreement and to continue the installation process. The Choose Destination Location screen displays.
6. Select the product for which you will be installing the data and click **Next** to continue:
 - MapInfo Professional
 - MapInfo Run Time
7. Specify the directory where the data will be installed. Use the **Browse** button to select a directory if necessary or accept the default directory. Click **Next** to continue.

8. Choose one of these options:
 - **Custom Install:** Choose which datasets to install. Select the check box beside each dataset you want to install. The size of each dataset displays, as well as space required and space available.

To see the subcomponents of the data you selected, click **Change**.
 - **Typical Install:** Install all datasets.

Choose **Next** to continue. Respond **Yes** to the “Would you like setup to display workspace icons” prompt if you want to create an icon for each data set you choose.
9. The **Select Program Folder** screen displays if you chose to set up Workspace icons. Select the program folder where the icons will be created. Choose **Next**.
10. The **Start Copying Files** screen displays. Review the selections you have chosen and click **Back** to return to any screen to change your selections. When you are ready to begin the installation, click **Next**.
11. The Setup Complete dialog box displays; click **Finish**.

Getting More Data

To learn more about our data products, click the **Get More Data** option in the MapInfo Professional Data screen during the Data Installation process or click **MapInfo Data Products on the Web** in the **Help** Menu. If you have a Browser installed, you will be automatically connected to MapInfo Corporation’s web site, where we provide detailed information about MapInfo’s World Wide Data Products. We have over 350 data products to choose from—products that provide both reliable and current information.

Installing Related Programs, Hardware, and Resources

This section contains the instructions for installing the ECW Compressor, the Blue Marble GPS, and the documentation associated with MapInfo Professional. We also include information about the Microsoft IntelliMouse and how to use it.

Installing the ECW Compressor

The ECW raster handler allows you to open and display raster images compressed in the ECW format. We recommend that you exit all Windows programs before installing.

1. Choose **Install Products** from the MapInfo Professional 9.0 CD Browser.
2. Choose **ECW Compressor**. The Welcome screen displays. Choose **Next** to continue the installation process.
3. The Software License screen displays. Choose **Yes** to accept the terms of the agreement and to continue the installation process.
4. The Choose Destination Location screen displays. Specify the directory where ECW Compressor will be installed.
5. The Select Program Folder screen displays. Select a folder. Choose **Next** to continue.

6. The Setup Complete screen displays: choose to display the ReadMe file and/or create a shortcut on your desktop. Choose **Finish**.

Using the Microsoft IntelliMouse™ to Move Around the Windows

MapInfo Professional 9.0 supports the Microsoft IntelliMouse™ as follows:

Document Scrolling: In the Map, Layout, Browser, and MapBasic windows, hold down the **Ctrl** key and move the wheel to scroll the document vertically; the effect is the same as clicking on the arrow at the end of the scroll bar.

Document Panning: In the Map and Browser windows, hold down the **Wheel** button on the IntelliMouse™ and move the mouse to pan the document. Release the button to end the panning. There are three panning speeds. The speed of the panning is based on the cursor's distance from the starting point, indicated by the origin mark. In the Map window, the distance moved at each speed is a percentage of the zoom distance.

For example, the amount to move at slow speed is $.005 * \text{ZoomDistance}$, medium speed is $.01 * \text{ZoomDistance}$, and super speed is $.1 * \text{ZoomDistance}$. In the Browser, the window is scrolled by 1, 3, and 7 lines or columns for slow, medium and super speeds. When the cursor is within 15 pixels of the starting point, there is no panning.

AutoScroll: In the Map and Browser windows, click and release the **Wheel** button to activate AutoScroll. When the mouse cursor is moved away from the starting point the document starts to scroll in whatever direction you move the mouse. When the cursor is returned to the starting point, scrolling stops. AutoScroll is turned off by any mouse click or key stroke. AutoScroll is also turned off when MapInfo Professional loses the focus, for example, when you **Alt-Tab** to another application.

Zoom: In the Map and Layout windows, move the wheel forward to zoom in on the document. Roll back the mouse wheel to zoom out on the document. The wheel has a series of settings; each "click" is the same as one click with a zoom tool. The mouse wheel does not recenter the view. There are other keyboard commands that allow you to zoom in and out more precisely.

Installing Global Positioning Software (GPS)

To install Global Positioning Software from Blue Marble:

1. From the CD menu, click **Install Products** and then **Free Utilities**.
2. Click **Install GPS Support**. You will be prompted to exit all applications before installing. Choose **OK**.
3. The MapInfo Special Edition dialog box displays. Choose **OK**.
4. The Select Destination Location screen displays. Specify the directory where GPS will be installed.
5. The Software License screen displays. Choose **YES** to accept the terms of the agreement and to continue the installation process.
6. The Add to the Start Menu dialog box displays: click **Yes** to add a shortcut to the **Start** menu.
7. The ReadMe displays; choose **OK** to exit the ReadMe.

Installing the Online References

MapInfo Professional 9.0 provides the following online reference documents: MapInfo Professional *Supplement*, MapBasic *Reference Guide*, Crystal Reports *User's Guide*, ArcLink, and EasyLoader documentation, as well as the Adobe Acrobat Reader. These documents are installed in the Documentation subfolder of your installation directory.

Note: If you have any questions about the use of the Acrobat Reader, contact Adobe support at www.Adobe.com.

Troubleshooting your Installation

The Installer must be run from a drive with a letter such as G: and not from an explicit UNC path. For example, you might have the MapInfo Professional CD in your computer as USERSPC. Other users may share this device as USERSPC; however, it would not contain a drive letter. The MapInfo Professional Installation program requires a drive letter.

To remedy this situation, map your network drive to a specific drive letter:

1. In Windows Explorer, right-click the shared directory or CD-ROM that contains the MapInfo Professional SETUP.EXE and select **Map Network Drive**.
2. Choose a drive letter to map.
3. Run the Installation Program again from the newly mapped drive letter.

Modifying or Removing MapInfo Professional

Use the Program Maintenance feature of the CD Browser to modify, repair, or remove MapInfo Professional.

To access Program Maintenance:

1. Click **Install Products** from the MapInfo Professional CD Browser.
2. Click **MapInfo Professional**. The Welcome screen displays. Choose **Next**. The Program Maintenance screen displays.
3. Choose modify, repair, or remove MapInfo Professional based on your needs.
 - Click **Modify** to display the Custom Setup dialog box.
 - Click **Repair** to repair installation errors in the program.
 - Click **Remove** to remove an existing copy of MapInfo Professional 9.0 from your system. The installer displays the Remove the Program dialog box. Click **Remove** to uninstall the product's programs from your system.

You can also access the Program Maintenance screen from the **Start** menu by clicking **Control Panel** and then **Add/Remove Programs** and finally **MapInfo Professional**.

For information on node-locked license transfer options at uninstall, see [Uninstall Transfer Options on page 101](#)

Controlling Advanced System Settings

MapInfo Professional has some advanced system settings that cannot be configured through a dialog box. These settings allow you to control several low-level, technical aspects of how MapInfo Professional runs. Most users do not need to worry about these advanced settings.

For example, MapInfo Professional has a Dynamic Data Exchange (DDE) time-out setting, which controls how long MapInfo Professional tries to communicate with other applications during DDE communications. If you run a MapBasic application, and that application encounters time-out errors during DDE, you may want to increase the DDE time-out setting. To modify one of MapInfo Professional's advanced system settings (such as the DDE time-out setting), use this procedure.

Modifying the Windows Registry

MapInfo Professional stores system settings in the Windows registry. To edit the Windows 2000 registry, use the REGEDT32 program.

CAUTION: Be very careful when editing the registry; damaging the registry can cause serious problems in your operating system.

For example, to set MapInfo Professional's Dynamic Data Exchange (DDE) time-out setting, locate the following key in the registry:

```
HKEY_LOCAL_MACHINE\SOFTWARE\MapInfo\MapInfo\Common
```

Within that key, edit the DDeTimeout value. If there is no value by that name, create a new value of type string, and assign the name DDeTimeout to the value. Set the value's data to be a number, representing the number of milliseconds (for example, enter 30000 to specify a time-out of 30 seconds). For more on editing the registry, see the online help for REGEDIT or REGEDT32.

Descriptions of Advanced Registry Settings

This section describes advanced settings that are stored in the registry.

DDeTimeout = *number*

This setting controls MapInfo Professional's time-out setting in DDE conversations where MapInfo Professional is the client (the application that initiates a conversation). The *number* represents milliseconds. The default value is 10,000 milliseconds (ten seconds). If you run a MapBasic application that attempts to initiate a DDE conversation, but the conversation fails because the server application does not respond within the time-out period, you may need to increase the DDeTimeout number.

OffscreenBitmap = *number*

The *number* is 0 (zero) or 1 (one). A value of 1 (the default) indicates that MapInfo Professional will process off-screen bitmaps when drawing a map. This means that if you cover a Map window, and then bring the Map window to the front again, the map redraws instantly. If you set this setting to zero, MapInfo Professional will not process off-screen bitmaps. This means that when you bring a Map window to the front, MapInfo Professional will redraw the map. If you are using a video driver that is problematic, and encounter video problems with Map windows, you may eliminate those problems by setting the OffscreenBitmap number to 0.

MaxFiles = *number*

This setting must be an integer from 10 to 100, indicating how many files MapInfo Professional can open simultaneously. This setting does not limit the number of tables you can open, but it does limit the number of tables you can edit at one time (the number of tables that have unsaved edits). The default value is 29. If you need to work with more files simultaneously, set *number* to 100.

MaxORACLEFILES = *number*

A value from 0 = unlimited tiles to infinity.

Improving Performance for MapInfo Professional

To improve MapInfo Professional's performance, you can increase the speed of the processor in the machine. A video accelerator card will increase the speed of the redraw. It will not speed up the initial draw of the map, but all subsequent redraws will be faster. A faster disk cache will also improve performance, as will adding memory.

Controlling the Location of Application Data Files During Installation

By default, the setup program for MapInfo Professional installs application data files to locations that make sense for the typical user. After installing the product, the user is free to move one or more of the application data files to another predefined location and MapInfo Professional will find that file. For example, the administrator of a machine might move MAPINFOW.PEN from the per user area (its default location) into the install directory so all users on that machine will share the same set of pens. For IT personnel responsible for a large number of MapInfo Professional installs it is not practical to manually move application data files to realize the desired configuration.

To solve this problem, create a setting file, MODE.INI, to specify the location of application data files prior to installing MapInfo Professional.

1. Copy the installation files to a read-write location.
2. Create a MODE.INI file in the root directory of the installer.

Code	Description	Location
1	per user, roaming	<Current User>\Application Data
2	per user, not roaming	<Current User>\Local Settings\Application Data
3	per machine	<All Users>\Application Data
4	program directory	<Install Dir>

3. Open MODE.INI into any text editor.
4. Edit MODE.INI, modifying the code associated with the application data file/folder whose location you wish to change.
5. Install MapInfo Professional.

The following is a list of predefined locations for application data files supported by MapInfo Professional, and the corresponding numeric code to be used in MODE.INI.

The following is a list of application data files/groups and their default locations:

Filename	Default Location
MAPINFOW.CLR	per user, roaming
MAPINFOW.PEN	per user, roaming
MAPINFOW.FNT	per user, roaming
MAPINFOW.ABB	program directory
MAPINFOW.PRJ	program directory
MAPINFOW.MNU	program directory
CustSymb	per user, roaming
ThmTplt	per user, roaming
GraphSupport	per machine

MODE. INI File Example

Create a text file with the following syntax:

```
GraphSupport = 3
CustSymb = 1
ThmTplt = 1
MAPINFOW.CLR = 1
MAPINFOW.FNT = 1
MAPINFOW.PEN = 1
MAPINFOW.ABB = 4
MAPINFOW.PRJ = 4
MAPINFOW.MNU = 4
```

Removing MapInfo Professional from your System using Control Panel

Remove MapInfo Professional by accessing the CD Browser, Program Maintenance screen, or by choosing the Add/Remove Programs option in the Control Panel in Windows 2000 or Windows XP.

- For more information, see *Removing MapInfo Professional from your System using the CD Browser* in the *Help System*.

Configuring the MapInfo Professional Preferences

Preferences allow you to change a number of default settings, enabling you to customize certain aspects of the program's behavior. Preference files are stored on a per-user basis. As you gain experience with MapInfo Professional®, you will probably want to change some of these settings. This chapter discusses the various preferences and what they control.

Here is a brief description of the preference categories:

System Settings – Controls what information is copied to the clipboard, color defaults, aspect ratio, paper and layout units, the number of Undo objects permitted, how symbol types used prior to version 4.0 are drawn, and how MapInfo Professional handles 2-digit years.

Map Window – Sets the default Map window options; moving duplicate nodes; snap tolerance; units for distance and area; display of scroll bars in the Map window; display of degrees in either decimal or degrees, minutes, seconds form; and the display of InfoTips.

Layout Window - Sets the Layout window preferences to display Rulers, Page Breaks, and to determine the display options of frame contents.

Legend Window – Sets the legend frame default settings.

Startup – Controls whether the program saves the MAPINFOW.WOR upon exiting and loads it upon start up; whether queries are saved in workspaces; and the display of the Quick Start dialog box upon startup.

Address Matching – Controls the house number placement when specifying street addresses.

Directories – Specifies default directories for opening and saving tables, workspaces, MapBasic programs, import files, ODBC SQL queries, theme templates, graph support files, saved queries, new grids, and Crystal Report files. Also specifies the directories MapInfo Professional searches for tables without fully qualified paths referenced in workspaces or MapBasic programs.

Output Settings – Controls the on-screen display of a raster file, the printer output, and exporting choices.

Printer – Controls which printer information is used for all new windows. This printer can be the Windows default printer, or a printer you designate as your MapInfo Preferred printer. This choice can be overridden on a per window basis using either the Print or Page Setup dialog boxes.

Styles – Sets the default object styles for region, line, symbol, and text objects.

Web Services – Sets refresh, timeout values, server options and other default settings for Proxy Servers, WMS, WFS, Geocode Servers, and Drivetime server web services.

Image Processing - Sets the rules for raster reprojection allowing you to choose whether reprojection is allowed, when, and allows you to select resampling options.

Setting the Preferences

To set a preference:

1. On the **Options** menu, click **Preferences** to display the Preferences dialog box.



2. Click one of the preference buttons to display the specified preferences dialog box.
3. Set your preferences in that dialog box and click **OK** to save them and return to the Preferences dialog box.
4. Click **OK** to close the Preferences dialog box.

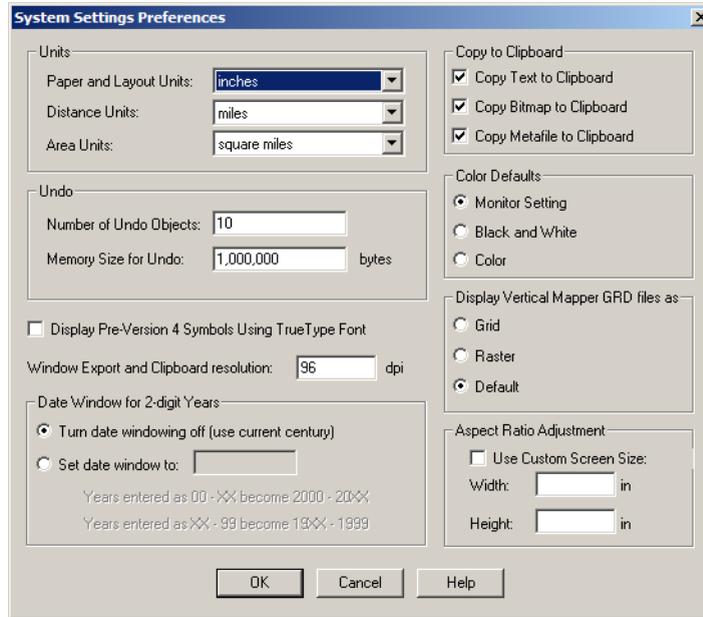
What follows in this section are details to assist you in setting your preferences.

Setting your System Preferences

Use the **System Settings Preferences** dialog box to control the default settings that affect how MapInfo Professional interacts with your system.

To set your system settings preferences:

1. On the **Options** menu, point to **Preferences** and click **System Settings** to display the System Settings Preferences dialog box.



2. Select the appropriate system preferences for your implementation of MapInfo Professional. Click **OK** to save them.

Setting the Units

- **Paper and Layout Units** — Specify the Paper and Layout Units used when you measure the size of objects in a **Layout** window and the size of paper in the Print dialog boxes. The default is set to inches. You can choose: inches, picas, points, millimeters, and centimeters.
- **Distance Units** — Specify the units that you want to use to indicate distance in the application by selecting **US Survey feet, yards, rods, chains, miles, nautical miles, millimeters, centimeters, meters, or kilometers**.
- **Area Units** —Specify the area units you want to use in the application by selecting **square inches, square links, square feet, square yards, square rods, perches, square chains, rods, acres, square miles, square nautical miles, square millimeters, square centimeters, square meters, hectares, or square kilometers**.

Copying to the Clipboard

- **Copy Text/Bitmap/Metafile to Clipboard** — Click the **Copy to Clipboard** check boxes to specify whether to copy text, bitmap, and metafile items to the Clipboard. All three are copied to the Clipboard by default. Clear the appropriate check box(es) to prevent the item from being copied to the clipboard.

Setting the Undo Options

- **Number of Objects** — You can only undo the last action. Set this option to the number of objects in the last action you want the system to undo. For example, if you moved 10 objects at the same time and enter 10 in this field, MapInfo Professional restores all 10.

Note: You cannot use the Undo capability for the following operations: Revert, Save, Save As, or Modify Table, or any operations whose effects are primarily cosmetic.

The default is 10 objects. You can set it from 0 to 800. Setting the number of objects to 0 deactivates the system. After you use the Undo option, the system toggles to **Redo**.

- **Memory Size for Undo** — Type the number of bytes of memory you want to set aside for the Undo feature. This entry is set to 1,000,000 bytes by default. You can enter up to 10,000,000 bytes into this field. Increasing this entry may result in slower response time.

Setting the Color Defaults

Select one of the Color Defaults preferences described below to control how MapInfo Professional shades thematic map layers.

- By default, **Monitor Setting** is selected. MapInfo Professional uses the color settings of the monitor to shade the map when this option is selected.
- Click the **Black & White** radio button if you are using a color monitor and want to shade your thematic map in gray-scale.
- Click the **Color** radio button if you are using a black and white monitor and want to print a thematic map in color on a color printer.

Display Pre-Version 4 Symbols using the True Type font — Select this check box to indicate how you want to draw symbols from early versions of MapInfo Professional (before 4.0). Select this check box to draw vector symbols with characters from the MapInfo Professional Symbols font. By default, vector symbols are drawn.

Window Export and Clipboard Resolution — To set the image resolution for exporting and Clipboard purposes, type the resolution in this field. MapInfo Professional uses this preference whenever you copy windows to the Clipboard, export your work to metafile and raster formats and the Save Window As export process as well. If you do not set this resolution manually, the product assumes 96 DPI. The maximum setting for this field is 1200 DPI.

Display Vertical Mapper grd files as — Use this option to determine how to display Vertical Mapper GRD files within MapInfo Professional. These options allow you to display your Vertical Mapper GRD maps as grid files and not as raster files. Vertical Mapper creates GRD\TAB files that display using the raster handler. This preference contains a Grid option, so that Vertical Mapper grid files use the Info tool and displays file information in 3D windows.

- Click **Grid** to display GRD files as grid files and get the added support of the MapInfo Professional toolbar features.
- Click **Raster** to display the GRD files as raster images.
- Click **Default** to treat the GRD files as rasters or grids depending on existence of the Rasterstyle 6 1 code in the TAB file. If the code does not exist, the file opens as a raster file, if the code does exist, the file opens as a grid file.

Date Window for 2 Digit Years — Select the appropriate Date Window for 2-Digit Years option for your purposes:

- Click the **Turn date windowing off** radio button to use the current century for all 2-digit years. This option is selected by default.
- Click the **Set date window to** radio button to refer to dates in both the current century and the previous century. You need to use this setting if your data uses dates in the 1900s.

For example, if you type the number 30 in the **Set date window** field, 2-digit years from 00–29 are set in the 21st century (2000-2029), and 2-digit years from 30–99 are set in the 20th century (1930-1999).

Setting the Aspect Ratio Adjustment

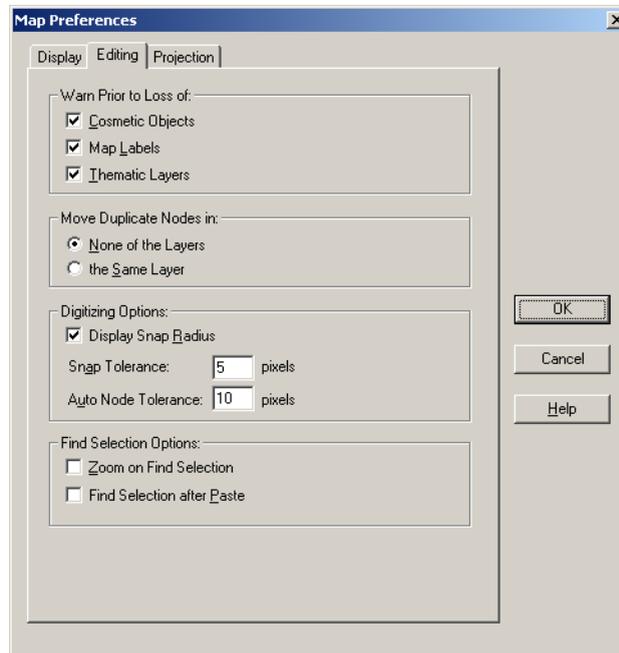
- **Aspect Ratio Adjustment** — Select the Aspect Ratio Adjustment options so that your map maintains the appropriate aspect ratio on your screen. Enter the dimensions of your screen in these fields.

Setting your Map Window Preferences

The Map window preferences control the default settings for any new Map window created in MapInfo Professional. You can override some of these preference settings for the current Map window in the Map Options dialog box (on the **Map** menu, click **Options**). These include the settings for resizing Map windows, specifying distance/area calculations, and displaying coordinates in degrees, minutes, seconds.

To set the Map Window preferences:

1. Choose **Options > Preferences > Map Window** to display the Map Preferences dialog box.



2. In the Display tab, select from these options:
 - Set the **When Resizing Map Window** options to control the default behavior of Map windows when you resize them. Select one of these options:
 - Click the **Fit Map to New Window** to draw the map to fit the resized window. You see the same view of the map that you saw before you resized the window. This is the default setting.
 - Click the **Preserve Current Scale** button to change the view of the map when the Map window is resized. As you shrink or enlarge the window, you will see a smaller or larger area of the map.

This setting does not affect Map windows that are already open. To override the preference settings for the currently open Map window, make different selections in the Map Options dialog box.

- Select the **Apply Clip Region Using** settings to specify how you want the product to clip regions. Select one of these three choices:
 - **Windows Device Clipping (all objects)** – The clipping is controlled by the Windows Device Display. All objects (including points, labels, text, raster and grid images) will be clipped at the Clip Region boundary. This is the default setting.
 - **Windows Device Clipping (no points, text)** – Use this method to emulate the Erase Outside clipping method. All objects are clipped using Erase Outside except points and labels. Points and labels will be completely displayed only if the point or label point lies inside the Clip Region object. Text objects, raster files, and grid files always display and are never clipped.
 - **Erase Outside (no points, text)** – This method uses the Erase Outside functionality. The Clip Region object is the Cutter object, and all other objects are Target objects for this operation. All objects are clipped using Erase Outside, excepts points and labels. In addition, points and labels will be completely displayed only if the point or label point lie inside the Clip Region object. Text objects always display and are never clipped.
- Other display options include
 - **Scrollbars** — To display scrollbars, select the **Scroll Bars** check box. By default, MapInfo Professional does not display scrollbars in Map windows.
 - **Autoscroll** — To scroll the layout automatically, select the **Autoscroll** check box.
 - **Show InfoTips** — To display one or two word tips when you cursor over a button, select the **InfoTips** check box. By default, MapInfo Professional displays InfoTips. Clear the **Show InfoTips** check box to deactivate their display.
 - **Show ToolTips in Layer Control Dialog** — To display detailed layer information in the Layer Control dialog box, select this check box. If you do not want to see this level of detail, clear this check box.
 - **Automatic Raster Zoom Layering** — To choose the default mode for automatic zoom layering for raster layers, select this check box. Raster zoom layering is turned on by default.
 - **Automatic Grid Zoom Layering** — To choose the default mode for automatic grid zoom layering when adding a grid layer to the map, select this check box. Automatic Grid Zoom Layering is turned off by default.
 - **Use Cartographic Scale** — To display your maps in Cartographic Scale automatically. When you make this change, the options that display in the Change View, Map Print Options and Frame Object dialog boxes use the cartographic scale on which the selected map is based and a scale indicator displays in the Status Bar.
 - **Draw Layers Under Themes** — This option sets the default behavior for the **Replace Layer Style** check box in both the Ranges and Individual Value Theme dialog boxes. Select this

check box to clear the **Replace Layer Style** check box by default. Clear this check box to select the **Replace Layer Style** check box by default.

- **Automatically Open Default Theme** — This option saves the theme to the table's metadata so that the theme displays each time you open the table. This check box is cleared by default.
 - **Enable Hardware Acceleration for 3DMap Windows** — Select this check box to use your video card acceleration capability to display 3DMaps. Clear the box to display the 3DMap without using your video card acceleration capability. Turning the acceleration off reduces performance, but it avoids failure with certain graphic adapters and drivers.
 - **Handler for New Grids** — Select the output grid file format. By default, MapInfo Professional uses the MapInfo Professional handler (*.MIG). The available formats depend on which grid handlers are installed. When you change the grid file format, the file extension on the grid file name changes to reflect the selected format.
3. In the Editing tab, select from these options:
- Set the **Warn Prior to Loss** options to display warning messages before you leave the currently open map window and lose cosmetic objects, map labels, and thematic layers you have created. After the warning, you can save these objects, labels and layers as part of a table or workspace. These boxes are selected by default.

You can turn off the display of these warning messages by clearing the desired check boxes from the Warn Prior to Loss of group.

- Select the **Move Duplicate Nodes in** settings to specify whether MapInfo Professional will move duplicate nodes when you use the **Reshape** command (on the **Edit** menu, click **Reshape**) to edit objects that are adjacent to each other, such as regions. Select one of these options:
 - Select the **None of the Layers** button to prohibit the product from moving duplicate nodes. This is the default setting
 - Select the **Same Layer** button to move duplicate nodes that are in the same layer when one of the connected nodes is moved.
- Digitizing Options include:
 - **Display Snap Radius** — Select this option to set the **Snap Tolerance** and **Auto Node Tolerance** to make the snap radius larger or smaller. If you clear the **Display Snap Radius** option, the radius does not display when the snap mode is turned on.

Type the appropriate **Snap Tolerance** and **Auto Node Tolerance** settings to specify the default tolerance in pixels within which Snap to node and Auto Node features operate. You use these settings when you draw objects (click the **S** key to turn Snap to node on). The default is 5 pixels. Enter a smaller value to obtain a tighter tolerance, and avoid snapping to other objects' nodes as you draw. Enter a larger value to obtain a looser tolerance, when you want to snap to a node even though you are relatively far away from it.

For more information about Snap Tolerance, see *Using "Snap To" to Select Nodes and Centroids* in the *Help System*.

- Find Selection Options include:
 - **Zoom on Find Selection** — Select this option to zoom to the selection each time you perform a Find Selection for single and multiple objects. Clear this check box to prevent zooming when performing a Find Selection.
 - **Find Selection after Paste** — Select this option to turn on the Find Selection feature in the Map window only after you Paste an object. If you have an active Browser, and the selection

is in that Browser window, the browser still scrolls to the selection. Clear this check box to prevent zooming after pasting an object.

4. In the Projection tab, select from these options:

- **Table Projection** — To set the default projections for the current map, designate a default table projection for creating new tables, importing GML 2.1, MIF, MBI, and IMG files, and for **Choose Projection** options in dialog boxes.

Note: You can override the table projection defaults by accessing the **Choose Projection** button throughout MapInfo Professional except when you use the Universal Translator, ArcLink, or when you import DXF files.

- **Session Projection** — To set the option to designate a default MapBasic projection for returning coordinate values using a MapBasic window or Update Column. Compiled MapBasic applications are not affected by this preference.
- To change the format in which coordinates display, select one of the options in the Display Coordinates group. You can select only one:
 - **Decimal Degrees** — By default, MapInfo Professional displays coordinates in decimal degrees. MapInfo Professional displays coordinates of objects in the Object Info dialog boxes, and of the cursor location in the status bar if that display option is selected.
 - **Degrees, minutes, seconds** — Choose this option to display your Map using the degree, minute, seconds format.
 - **Military Grid Reference System** — Choose this option to display your Map using the Military Grid Reference System format. Coordinates are converted to the Military Grid Reference System format using the World Geodetic System (WGS) of 1984 Ellipsoid.

To override this preference in individual maps, use the Map Options dialog box (on the **Map** menu, click **Options**). Overrides to the default coordinate setting will be saved to your workspace.

Selected in either the Map window preferences or the Map Options dialog boxes, the format will display in the status bar, but not in the Object Info dialog boxes. If you display any Object Info dialog box for an object on a map that uses the Military Grid Reference System, the coordinates will be displayed in decimal degrees.

5. Select the **Distance/Area using** settings to specify the default type of distance/area calculation that MapInfo Professional uses for new Map windows.

- **Spherical** — The Spherical calculations measure distance according to the curved surface of the Earth. **Spherical** is the default. The data is first converted to Latitude/Longitude and then a calculation is produced. Lat/Long data will always use spherical calculations.
- **Cartesian** — The Cartesian method performs calculations on data projected onto a flat plane. Cartesian coordinates (x,y) define the position of a point in two-dimensional space by its perpendicular projection onto two axes which are at right angles to each other. Long/Lat projections cannot use Cartesian calculations.

Note: To specify a calculation method for the currently active Map window, use the Map Options dialog box (on the **Map** menu, click **Options**).

6. Click **OK** to save these settings and return to the Preferences dialog box.

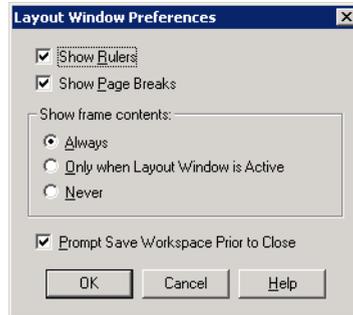
7. Click **OK** to close the Preferences dialog box.

- For more information, see *Scrolling through a Map*, *Specifying Options in a Map*, *Changing the Default or Preference Setting for Calculations*, *Centering a Map Using Military Grid Reference System (MGRS) Coordinates*, and *Setting Default Clip Region Options* topics in the *Help System*.

Setting your Layout Window Preferences

To set the global default preferences for Layout windows:

1. Choose **Options > Preferences > Layout Window** to display the Layout Window Preferences dialog box.



Use this dialog box to set the preferences for Layout windows. Completing the entries in this dialog box ensures that your layouts will have a uniform look and feel.

2. Complete the selections in this dialog box and click OK to save your Layout window preferences.

Show Rulers

Select this check box to display rulers in your Layout window. Rulers can be useful to help you line up elements of your layout on the page. This option is selected by default.

Show Page Breaks

Select this check box to display the page breaks in your Layout window. Showing the page breaks ensures that the elements of your layout are consistent from page to page. This option is selected by default.

Show Frame Contents

The options in the Show frame contents box allow you to specify when the contents of frames display.

Always

Allows you to have the contents of a frame display all the time even when it is not active.

For example, if you are changing the contents of a Map window that is also in the layout, you might want the **Always** option. That way you can see the effect of the layout as you make your changes. This option is selected by default.

Only when Layout window is active

Allows you to display the contents of a frame only when the Layout is the active window.

Never

Allows you to display only the file name and frame type, even when the Layout is the active window. For example, choose **Never** when you are resizing and repositioning frames. That way the contents of each frame will not redraw every time you make a change.

Prompt to Save Workspace Prior to Close

When this check box is selected, MapInfo Professional prompts you to save before you close windows with layout changes. Clear this check box if you do not want to be prompted to save your changes. This option is selected by default to prevent accidental loss of information.

Note: The prompt only displays if there are changes to the open Layout and Legend windows or when the Layout and Legend windows are new.

3. Click **OK** to save your preference.

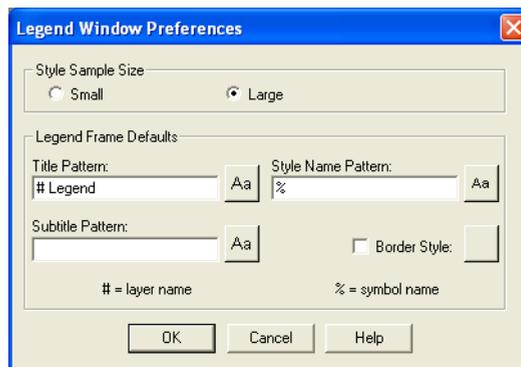
Once you set these preferences, MapInfo Professional sets these options automatically whenever you create a new Layout window. To reset these options for a particular layer locally, select **Layout > Options** to display the Layout Display Options dialog box. This dialog box also allows you to set height and width restrictions and an autoscroll option.

Setting your Legend Window Preferences

These settings control the defaults for how titles are specified for all legend frames in the legend window, as well as the default text style attributes such as font and size. The settings correspond to the settings displayed in Step 2 of the legend wizard. MapInfo Professional uses these defaults if there are no metadata keys in the table on which the legend frame is based. If metadata keys are present, the metadata defaults override the settings in Step 2 of the wizard and the Legend Preferences.

To set the Legend window preferences:

1. On the **Options** menu, point to **Preferences** and click **Legend Window** to display the Legend window preferences.



2. Use the options in this window to set the **Legend Frame Defaults**.
 - To set the **Title Pattern**, type the text that you want to display at the top of each legend frame in this box.

By default, the **Title Pattern** is “# Legend”, where ‘#’ is the name of the layer on which the frame is based. So, if the frame is based on the States layer, the default pattern title would be “States Legend.” You can change this pattern to “Legend of #” or simply “#.” To have no default pattern, leave the box blank.

Choose a title pattern default that suits your needs. The # character can be used in any of the pattern text boxes as a shortcut key for the layer name.

- To set the **Subtitle Pattern**, type the subtitle text you want in this box. The entry in this box is blank by default, but you can set your own default title pattern for subtitles.
- To set the **Style Name Pattern**, type the text you want to display beside each symbol in this box. The default pattern is the ‘%’ character. The Style Name is the text that describes each symbol in a legend frame. The % character is used as a placeholder for the type of object the legend symbol corresponds to: point, line, or region.

You can type in your own default **Style Name Pattern**, either using the % character or not. For example, in a legend frame based on the States layer, a Style Name Pattern that reads “% of #” will display as “Region of States” next to the symbol in the legend. The % character can only be used in the **Style Name Pattern** box.

- To set the **Border Style**, select this check box to place a border around the legend and select the appropriate style by clicking the **Border Style** button.
3. To change the defaults of the style attributes for the titles, the style name, or the legend frame border, click the desired style box to display the corresponding style dialog box and make your changes.
 4. Click **OK** to save these settings and return to the Preferences dialog box.
 5. Click **OK** to close the Preferences dialog box.

Text Box Size Limits

MapInfo Layout or Mapper windows can contain a maximum of 2047 characters. Text object rotation is restricted to under 256 bytes. Y are restricted to 256 bytes.

Setting the Startup Preferences

In general, the Startup preferences control:

- How MapInfo Professional behaves when you startup
- The MAPINFOW.WOR workspace properties such as whether printer information and queries are saved to workspaces

To set your startup preferences for MapInfo Professional:

1. On the **Options** menu, point to **Preferences** and click **Startup** to display the startup preferences.



2. Select the following boxes to enable the indicated functionality; clear the check box to disable this functionality. You may select all that apply.
 - **Save MAPINFOW.WOR when Exiting MapInfo** — Select this check box to save your setup to the MAPINFOW.WOR workspace when you exit MapInfo Professional. When you clear this check box, MapInfo Professional does not save the MAPINFOW.WOR unless you save it explicitly.
 - **Load MAPINFOW.WOR when Starting MapInfo** — Select this check box to display MAPINFOW.WOR when you enter MapInfo Professional.

Note: To enable this check box, you must clear the **Display Quick Start Dialog** check box.

- **Save Queries in Workspaces** — Select this check box to save the queries you create during a mapping session in the workspace. If you do not select this check box and the selected map has only one layer based on a query, the query is not saved and the application writes a map definition with an empty layer list. MapInfo Professional cannot support subselects in queries. The operators Any and All are not supported in the MapXtreme 2004 versions of MapInfo SQL and, therefore, subselects are not supported either.

Note: MapInfo Professional cannot map selections with Group Bys, so Group By clauses are ignored. MapInfo Professional only translates the Order By clause.

- **Save Printer Information into Workspaces** — Select this check box to save the printer information in the workspace.

This check box saves the printer name, paper orientation, paper size, and the number of copies from your printer settings into the workspace. This also includes any overrides you might have made to the default printer settings in the Printer preferences. We recommend that you leave this preference on.

- **Restore Printer Information to Workspaces** — Select this check box to restore printer information from a workspace. When you open the workspace, the printer name, paper orientation, paper size, and the number of copies are restored. This is useful if you are

sharing workspaces with other MapInfo Professional (6.0 or later) users who are also using the same printers.

Note: If this preference is turned off, or if the printer indicated is not available, the printer settings for the workspace revert back to the default printer set in the Printer preferences.

- **DBMS Connection** — Select this check box to save a default DBMS Connection, specify a DBMS connection that will be opened each time you begin a MapInfo Professional session. Click **Set** to set this connection.
 - **Display Quick Start Dialog** — Select this check box to display the Quick Start dialog box automatically when you start MapInfo Professional. This check box is selected by default. Clear the **Display Quick Start Dialog** check box to prevent it from displaying when you start subsequent MapInfo sessions.
3. Click **OK** to save these settings and return to the Preferences dialog box.
 4. Click **OK** to close the Preferences dialog box.

To set default DBMS Connections, see *Setting up your Database Connection Preferences* in the *Help System*.

Creating a Startup Workspace

STARTUP.WOR is the name you give to a workspace from which MapInfo Professional is run. You can create it so that MapInfo Professional automatically opens various tables and windows on startup. When you use STARTUP.WOR, MapInfo Professional performs the startup actions regardless of what you did in your previous MapInfo Professional session or how you have set preferences for MAPINFO.WOR.

To create a workspace:

1. Open the tables and windows you want in your workspace. Size and position them as you please.
2. Choose **File > Save Workspace**.
3. Name your workspace “Startup” and save the workspace into your “home” directory. By “home” directory we mean your private Windows directory.

When you run MapInfo Professional, MapInfo Professional does the following in the order shown:

- If there is a STARTUP.WOR in the MapInfo Professional program directory, it is run.
- Then, if there is a STARTUP.WOR in your home directory it is run. (When there is a STARTUP.WOR in both the MapInfo Professional program directory and your home directory, both will= run.)
- Then, if any file names are given on the command line—or if you double-click a document, MapInfo Professional loads those files. MapInfo Professional support adding workspaces (.WOR), running applications (.APP), and opening databases (.TAB) on the command line.
- Only if MapInfo Professional did not add a workspace or run a program from the command line does it then check the AutoLoad preference and load MAPINFOW.WOR from the user's home directory. When the preference is set, and the file is found, it is loaded. Note that if we had a workspace or application on the command line, we skip the AutoLoad.
- Finally, if MapInfo Professional didn't load a workspace or run an application from the command line, and it didn't AutoLoad MAPINFOW.WOR, then MapInfo Professional shows the Tool palette.

Setting your Address Matching Preferences

Use the Address Matching preferences to specify the placement of the house number in addresses. The default setting is for house numbers to come before the street name.

To set your address matching preferences:

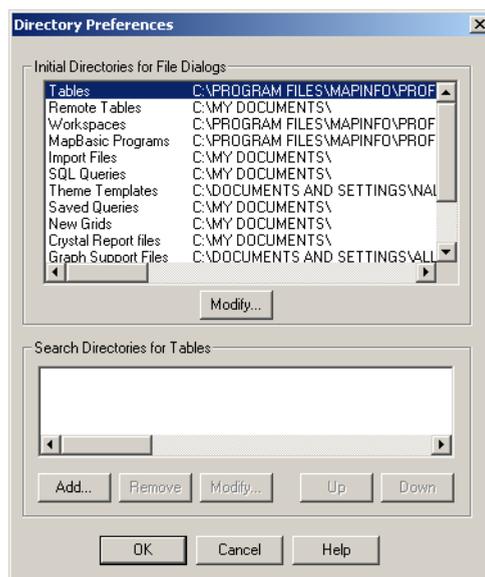
1. On the **Options** menu, point to **Preferences** and click **Address Matching** to display the Address Matching Preferences dialog box.
2. Click **OK** to save this preference and return to the Preferences dialog box.
3. Click **OK** to close the Preferences dialog box.

Setting your Directory Preferences

The Directory preferences control the directories in which MapInfo Professional looks for files.

To set your directory preferences:

1. On the **Options** menu, point to **Preferences** and click **Directories** to display the Directory Preferences dialog box settings.



2. To set a preferred directory for each type of file, highlight the file dialog type and click the **Modify** button. The Choose Directory dialog box displays.
3. Select the appropriate directory for the file type you highlighted and click **OK**.
4. Repeat this process until you have specified all of the directories you need to.
5. Click **OK** to save these settings and return to the Preferences dialog box.
6. Click **OK** to close the Preferences dialog box.

Use this setting to specify the default directories that display in the File menu dialog boxes when you open or save different files. You can specify directories for:

- Tables
- Remote tables
- Workspaces
- MapBasic programs
- Import files
- DBMS SQL queries
- Theme templates
- Saved queries
- New grids
- Crystal Report files
- Graph support files
- Shapefile tables

When you click **Open**, you can select an icon from the MapInfo Places Bar. Click the **Workspace Directory** icon to display the workspace directory you designated in this preference.

Additionally, use this preference to search for raster and grid tables. If you open a *.tab file for a raster or grid image and the image file cannot be found an attempt is made to find the image in the same location as the .TAB. If the image file is not found, it will then use the Search Directories.

Use the Search Directories for Tables and Workspaces to specify search paths that MapInfo will use to look for tables referenced in workspaces or MapBasic programs that do not have fully qualified paths.

To search directories for tables and workspaces:

1. To specify a search path, in Search Directories for Tables group, click **Add**.

Note: You can use the **Add** and **Remove** buttons to add or remove paths from the list.

2. Specify a drive and directory in the Choose Directory dialog box and click **OK**.

You can set up to four paths. Use the **Up** and **Down** keys to change the search order.

3. Click **OK** to save these settings and return to the Preferences dialog box.

4. Click **OK** to close the Preferences dialog box.

- For more information see *Choosing the Directories in the Place Bar* in the *Help System*.

Setting your Output Setting Preferences

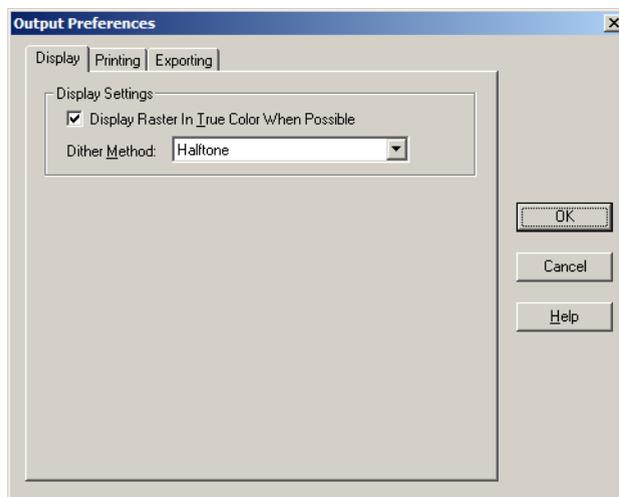
The Output Settings allow you to control raster and grid file color settings for on-screen display, printed output, and file export settings. In addition, you can also specify how you want to handle transparency in vector and raster files in both your printed output and exported files. Other printer settings enable you to specify an output method, map scaling, and whether to print a border around a Map window.

You can override the settings in the Output settings preferences in the Advanced Printing dialog box. These preferences represent the default settings used in the Advanced Printing dialog box. These settings can then be saved in a workspace.

Note: You can get additional printer advice in the MapInfo Professional *Printing Guide* in the Documentation subfolder of your installation directory.

To set your output preferences:

1. On the **Options** menu, point to **Preferences** and click **Output Settings** to display the Output Preferences dialog box.



2. The **Display** tab sets the on-screen display options for raster or grid files. Click the appropriate output settings based on your output requirements.

These entries explain the display settings, the printing options, and window export options in this dialog. Some of the options appear in more than one dialog so we have grouped all of the like explanations together.

- **Display Raster in True Color When Possible** — Click this check box to display your 24-bit raster or grid file images in true color (make sure your display settings are set to greater than 256 colors). Clear this check box if you only want your images to display using 256 colors. This box is checked by default.
- **Dither Method** — Dithering is a technique that blends pixels electronically to improve the look of an image. Click a dither method when you are converting a 24-bit image to 256 colors.

Dithering creates the illusion of complex colors by using a pattern of finite (fixed) color dots. For example, to create the color green using dithering, the color would consist of a pattern of yellow and blue dots.

Halftone dithering calculates a series of half tone differences in color between high-contrast elements in your image to create a smooth transition of color. This option is selected by default for display, print, and export options.

Error diffusion dithering calculates an interim color between contrasting colors and shades the surrounding pixels to blend evenly toward that interim color.

Note: You can select dither method options in the display, printing, and exporting sections of this dialog box. The same definitions apply to each area.

3. Click the **Printing** tab to set the printing options for Map windows, Layout windows and all other output file types. Select the appropriate printing settings based on your output requirements. Remember that resetting these printer options locally overrides these preferences.

- **Output Method/Print Directly to Device** — Click this option to print your image file directly from MapInfo Professional as you did when you were using MapInfo Professional 6.0 or earlier. This check box is checked by default.
- **Output Method/Print Using Enhanced Metafile** — Click this option to generate an enhanced metafile of your MapInfo Professional image before sending it to the printer. This setting takes advantage of current printer technology to shrink the spool size and print your file quicker without sacrificing quality.

Note: You must use this setting if you are printing a map containing a translucent raster or grid layer. If you do not use this setting, the image will not print translucently.

- **Print Border for Map Window** — Click this check box to print a black border around the image you are printing. Clear this check box to leave the image unbordered. This check box is checked by default.
- **Internal Handling for Printing Transparent Vector Fills and Symbols** — Special programming has been added to handle transparent fill patterns and bitmaps for vector images when printing or exporting. Click this check box to use this functionality or clear it to let the printer or Windows export functions to handle this. This check box is checked by default.
- **Scale Patterns** — Select this check box to match the non-transparent fill patterns in your print output to more closely match what you see on your screen. This check box is checked by default. Clear this check box to let the printer driver have exclusive control over rendering the pattern fills.

Note: The **Scale Patterns** check box does not affect transparent fill patterns because transparent fill patterns are always scaled.

- **Use ROP Method to Display Transparent Raster** — Click this check box to allow the internal ROP (Raster Overlay by Pixel) to manage the transparent pixel display and printing in raster images. Since the ROP Method is largely a display method, not all printers, plotters, and export programs can use it. We recommend that you either check with the printer manufacturer before using this setting or try a few test prints or exports to get the results you want. This check box is cleared by default.

Using the ROP method may not produce problems unless you print the metafile.

- **Print/Export Raster in True Color When Possible** — Click this check box to print and export your 24-bit raster or grid file images in true color (make sure your printer settings are set to greater than 256 colors). Clear this check box if you are not working with a color printer. This check box is checked by default.

Note: See the Dither Method setting above for details about this option.

4. Click the **Exporting** tab settings to set the export options for Map windows, Layout windows and all other output file types. Select the appropriate window export settings based on your output requirements. Remember that resetting these options locally overrides these preferences.

- **Export Border** — Select this check box to include a black border on images you are exporting. Clear this check box to export the image without a border. This check box is checked by default.

Note: The preference setting definitions for Internal Handling for Transparent Vector Fills and Symbols, Use ROP Method to Display Transparent Raster, Print Raster in True Color When Possible, and Dithering Methods are the same for export as for printing.

- **Use Anti-Aliasing**— Select this check box to apply the anti-aliasing options available in MapInfo Professional.

5. Click **OK** to save these settings and return to the Preferences dialog box.

6. Click **OK** to close the Preferences dialog box.

Understanding the Anti-Aliasing Export Preferences

To give you more control over map images when exporting MapInfo Professional maps, you can use anti-aliasing methods. This is particularly important when you are saving maps created in MapInfo Professional for use in other Windows-based applications, in particular in slide presentations or for web pages.

The benefits of anti-aliasing can include:

- Make your fonts look smoother
- Make jagged edges in maps look rounder
- Can make text can be easier to read (for some) because it looks more like printed type
- Make maps look more visually attractive

We have added the ability to smooth images and text during the export process. You can use this capability with all types of windows such as Map windows, layouts, legends, and graphs.

Note: You cannot anti-alias images you are exporting to .EMF or .WMF format, because these are not true raster formats.

There are three smoothing options you can use to customize your raster image:

1. *Smooth using a Filter value.* You can set a flag that selects one of six filters that allow you to choose the direction the filter is applied to the image from.
2. *Smooth using a Mask value.* You can select a value that indicates the size of the area you want to smooth. For example, to create a 3x3 pixel mask value, you would enter a 3 in this field. This would limit the amount of change in the color of the pixels. Typically mask sizes would be 2-3 pixels when exporting at screen resolution. If you are exporting at a higher resolution, a larger mask might be appropriate.
3. *Smooth using a Threshold value.* You can select a threshold value to indicate which pixels to smooth. Each pixel in an image has a value based on its color. The smaller the pixel value, the darker the color. Select this option to smooth all of the pixels above the threshold you enter in this field. When you set this value to 0, MapInfo Professional will smooth all of the pixels.

You must either set a global preference for these anti-aliasing options or set them locally during the export process (using the Advanced button).

- For more information, see *Recommendations for Effective Pattern Scaling* in the *Help System*.

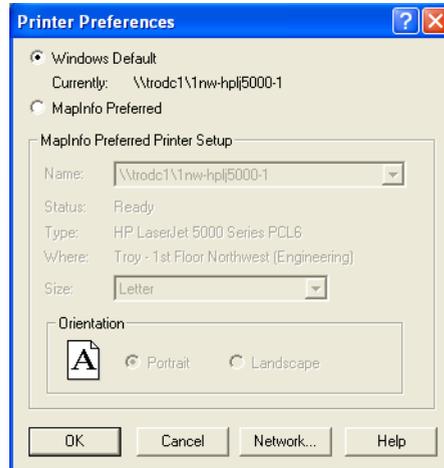
Setting the Printer Preferences

You can use the printer preferences to select a printer for MapInfo Professional output, which can be separate from your default Windows printer.

Note: You can get additional printer advice in the MapInfo Professional *Printing Guide*, which is located in the Documentation subfolder of your installation directory.

To set your printer preferences:

1. On the **Options** menu, point to **Preferences** and click **Printer** to display the Printer Preferences dialog box.



2. Complete your selections using these instructions.
 - **Windows Default** — This entry displays the path to the default printer specified for your operating system. This button is selected by default.
 - **MapInfo Preferred** — Click this button to select a different default printer when printing while using MapInfo Professional. This can be a printer or a plotter. After you select this option you can specify the size of the paper that is appropriate for this printer.
 - **Size** — After you select a printer, this list prefills with the appropriate paper sizes available. Select the requested paper size from this drop-down list.
 - **Orientation** — After you select a printer, you can specify the direction that the paper faces. Portrait indicates that the paper is taller than it is wide (as shown in the previous figure); landscape indicates that the paper is wider than it is tall.
 - **Network** — Click this button to locate the printer or plotter on the network that you want to set as the default. This button only displays for users running under Windows 2000 and Windows XP Pro. The Connect to Printers dialog displays.
3. To select a default printer, do one of the following:
 - Select the path of the printer you want to use as your default and click **OK**,
 - Double-click the printer in the list.Using either method the Printer Preferences window redisplay.
4. Click **OK** to confirm your selections and set your MapInfo Professional default printer options.

Note: If you selected **Save Printer Information to Workspaces** in the Startup preferences, MapInfo Professional saves the printer information and settings to the workspace.

To set this preference, make changes in the Startup Preferences dialog box.

5. Click **OK** to save these settings and return to the Preferences dialog box.
6. Click **OK** to close the Preferences dialog box.

If you select the Windows Default printer, MapInfo will always use the printer that is currently set as the default in Windows. The settings for that printer will display in the MapInfo Preferred Printer Setup group. You will not, however, be able to change them in the **Printer Preferences** dialog box. To change the Windows default printer, go back to the Windows Control Panel.

To use a printer other than the one indicated in the Printer preferences, choose either:

- On the **File** menu, click **Print**. You can change the printer you are using in the Print dialog box, overriding the default printer settings.
- On the **File** menu, click **Page Setup**. In the Page Setup dialog box, click the printer to display the Preferences dialog box for the default printer. Select a different printer in the **Name** drop-down list. This will override the default printer set in the Printer preferences.

Note: The printer override applies only to the window you are currently printing. To change the default settings, go back to the printer preferences and specify a new default printer.

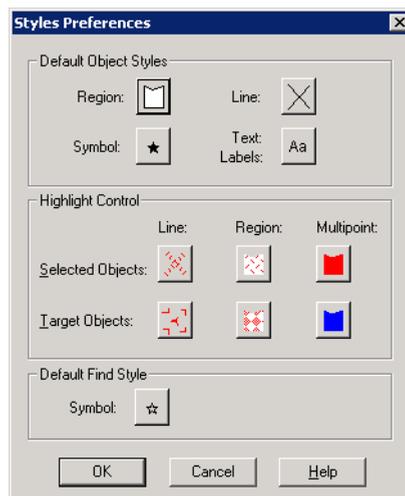
- For more information, see *Selecting a Printer* and *Error Message Displays when Print Output is Too Large* topics in the *Help System*.

Setting your Style Preferences

The Style preferences allow you to preset the look of your objects regions, text, and lines.

To set the default style preferences:

1. On the **Options** menu, point to **Preferences** and click **Styles** to display the Styles Preferences dialog box.



When you set the text styles you are also setting the label styles.

Complete your selections using these instructions.

Default Object Styles — Click the **Region**, **Symbol**, **Line**, and **Text** buttons to set these style options. These selections will serve to create the default settings for these style elements.

Note: Text styles apply to text objects and labels.

Highlight Control — Click this button to specify the Line, Region, and Multipoint styles of selected and target objects, as well as highlighting specifications in the Map window. Additionally, specify the style of selected and target multipoint objects. The default settings are shown in the **Style** boxes of the **Highlight Control** group. Click one of the boxes to display the corresponding style dialog box and change its settings.

Symbol — Click this button to set the default symbol style for Query > Find tasks. In the **Symbol Style** dialog box, select the new symbol style and click **OK** to save them.

2. Click **OK** to save these settings and return to the Preferences dialog box. Click **OK** to close the Preferences dialog box.
- For more information, see *Changing the Find Symbol Style Locally* and *Inserting Styles into Tables* in the *Help System*.

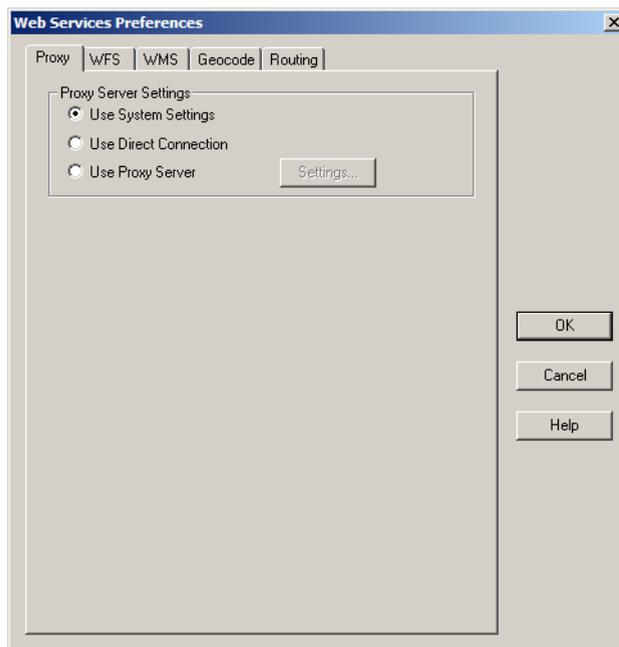
Setting the Web Services Preferences

The Web Services Preferences dialog box provides access to settings for the Web Feature Service and Web Map Service timeout values, GetMap pixel limits, and Proxy Server settings in MapInfo Professional. Additionally, you can set geocoding server and routing server options. These options allow you to control the web services preferences.

Note: You can set per-server defaults based on particular WFS and WMS servers in the **Override Timeout Values** section of the Server Information dialog box.

To access the Web Services Preferences dialog box:

1. Choose **Options > Preferences > Web Services** to display the Web Services Preferences dialog box.



2. Select the tab you want to set the options for and click **OK** to save the options you select.

Setting the Proxy Server Preferences

1. From the **Options** menu, click **Preferences** and then **Web Services** and then **Proxy** tab to display the proxy server options.
2. Select the preferences appropriate for your server and click **OK** to confirm them.

Use System Settings

Click this option to use the LAN settings in the system registry. This is the default preference. You can review the current LAN settings by clicking **Start > Control Panel > Internet Options > Connections Tab > LAN Settings**.

Use Direct Connection

Click this option to override the system LAN settings and try to connect directly to the Internet (not through a proxy server).

Use Proxy Server

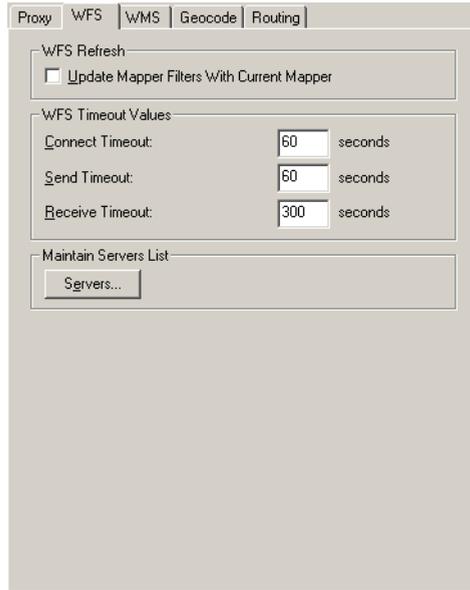
Click this option to set and use the proxy server settings to connect to the Internet.

Settings

Click this button to set the proxy server options. See [Setting the Custom Proxy Server Preferences on page 143](#) for instructions on completing these settings.

Setting the WFS Server Preferences

1. From the **Options** menu, click **Preferences** and then **Web Services** and then **WFS** tab to display the WFS server options. This tab sets the WFS refresh, timeout, and server options.



2. Select the preferences appropriate for your server and click **OK** to confirm them.

WFS Refresh

You use the WFS Refresh option to retrieve updated GML information from the web feature service pertaining to the current layers.

Update Mapper Filters with Current Mapper

Select this check box to use the current filter settings to refresh the Map window. If you select this check box and the table has already been refreshed, the current bounds of the front-most map window are used. If the check box is cleared and the table is refreshed, the bounds of the map window (at the initial WFS request) are used.

Note: The original map bounds are used, regardless of the current map window bounds.

WFS Timeout Values

In this section you set the default WFS timeout values (in seconds) for the WFS servers you use. You can set per-server defaults based on particular WFS servers in the **Override Timeout Values** section of the WFS Server Information dialog box.

Connect Timeout

Indicates the amount of time (in seconds) allowed to establish an Internet connection request to a Web Feature server. If the request takes longer than this value, a timeout occurs. The default connect timeout is 60 seconds.

Send Timeout

Indicates the amount of time (in seconds) allowed to send an Internet request to a Web Feature server. If the request takes longer than this value, a timeout occurs. The default send timeout is 60 seconds.

Receive Timeout

Indicates the amount of time (in seconds) allowed to begin to receive a response from a request from a Web Feature server. The download can take longer than the timeout, but the response has to occur within the timeout setting. The default receive timeout is 300 seconds.

Maintain Servers List

Click the **Servers** button to display the **WFS Servers List**, where you can add, edit, and delete WFS servers.

Setting the WMS Server Preferences

1. From the **Options** menu, click **Preferences** and then **Web Services** and then **WMS** tab to display the WMS server options. This tab sets the WMS timeout, and server options.
2. Select the preferences appropriate for your server and click **OK** to confirm them.

WMS Timeout Values

In this section you set the default WMS timeout values (in seconds) for the WMS servers you use. You can set per-server defaults based on particular WMS servers in the **Override Timeout Values** section of the WMS Server Information dialog box.

Connect Timeout

Indicates the amount of time (in seconds) allowed establish an Internet connection request to a Web Map server. If request takes longer than this value, a timeout occurs. The default connect timeout is 60 seconds.

Send Timeout

Indicates the amount of time (in seconds) allowed to send an Internet request to a Web Map server. If the request takes longer than this value, a timeout occurs. The default send timeout is 60 seconds.

Receive Timeout

Indicates the amount of time (in seconds) allowed to begin to receive a response from a request to a Web Map server. The download can take longer than the timeout, but the response has to occur within the timeout setting. The default Receive Timeout setting is 300 seconds.

WMS GetMap Pixel Limits

The GetMap Pixel Limits option represents the maximum number of pixels (in width/height) that a map request is limited to. The GetMap request is designed to retrieve the highest resolution map image as is necessary to render the image on the screen, for a printer, or for an export file. This option prevents the request from going higher than the specified values. Different servers have different limits, so you can set the limit that works best for your environment.

Note: You can set per-server defaults for **GetMap Pixel Limits** in the WMS Server Information dialog box.

Unfortunately, servers do not report their limits to us, so if the GetMap request fails, it means that you have entered a value that is too large.

Typically, large GetMap requests occur when you are printing or exporting windows containing WMS images. This happens because printing and exporting occurs at larger sizes and/or higher resolutions than on-screen display requires.

Note: You can also use this option to shorten the WMS map retrieval time, but remember that the resulting image will display at a lower resolution.

Max Width

Max Width specifies the maximum number of pixels for a GetMap request in the X direction.

Max Height

Max Height represents the maximum number of pixels for a GetMap request in the Y direction.

Maintain Servers List

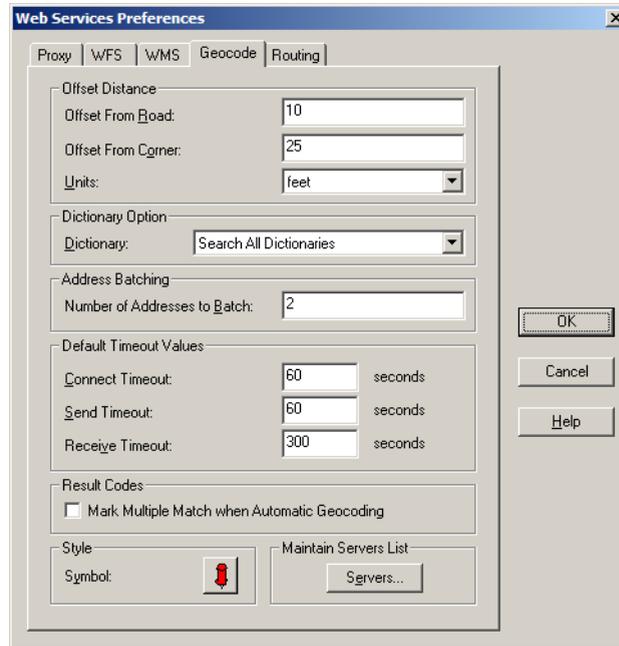
Click the **Servers** button to display the WMS Servers List, where you can add, edit, and delete WMS servers.

Setting the Geocoding Server Preferences

You can get more information about setting up a geocoding server in [Setting up a Geocoding Server on page 145](#). A table must be open to enable the Geocode using Server menu item.

To set the geocoding server preferences:

1. From the **Options** menu, click **Preferences** and then **Web Services** and then **Geocode** tab to display the Geocoding server options. This tab sets the geocoding server timeout and maintenance options.



2. Select the preferences appropriate for your server and click **OK** to confirm them.

Offset From Road

Use this field to indicate the default distance the geocoded point should be from the road, if applicable.

Offset From Corner

Use this field to indicate the default distance the geocoded point should be from the corner, if applicable.

Units

Use this field to indicate the units for the previous entries.

Dictionary

Use this drop-down list to select the dictionary options you want the geocoder to use (Address or User). These libraries exist on the service. Not all dictionary types may exist on all services. There are a maximum of 5 options:

Select All Dictionaries - Select this option to use both the user and address dictionaries.

Address Dictionary Only - Select this option to use only the service's address dictionary and not the user's dictionary.

User Dictionary Only - Select this option to use only the user's address dictionary and not the service's address dictionary

Prefer Address over User - Select this option to use the service's address dictionary before the user's address dictionary.

Prefer User over Address - Select this option to use the user's address dictionary before the service's address dictionary.

Number of Addresses to Batch

Use this option to specify how many addresses you want to send to the geocoding service at a time. The number of addresses you send at a time can affect performance. If you are using the EOLS, the batch size can also affect billing of geocoding transactions if you cancel a geocoding operation during processing.

Default Timeout Values

Use these timeout values to set the communication parameters for the geocoding service. You can override these defaults on a per-service basis locally by editing the service in the Services list and specifying the override.

Note: When you set the time out values locally, you may want to keep in mind the size of your request. The more complicated your request, the more time may be required for connection/sending/receiving.

Connect Time Out

Use this setting to indicate the amount of time allowed establish an Internet connection to the geocoding service. If the request takes longer than this value, a timeout occurs. The default connect time out is 60 seconds.

Send Time Out

Use this setting to indicate the amount of time allowed to send an Internet request to the geocoding service. If the request takes longer than this value, a timeout occurs. The default send time out is 60 seconds.

Receive Time Out

Use this setting to indicate the amount of time allowed to begin to receive a response from a request to geocoding service. The download can take longer than the time out, but the response has to occur within the timeout setting. The default receive time out is 300 seconds.

Result Codes - Mark Multiple Match when Automatic Geocoding

Select this option to display a result code of M when you are performing automatic geocoding and there are multiple matches for an address. If you do not select this option, and there are close matches, the system displays an S for street only. See *Understanding the Geocoding Result Codes* in the *Help System*.

Symbol Style

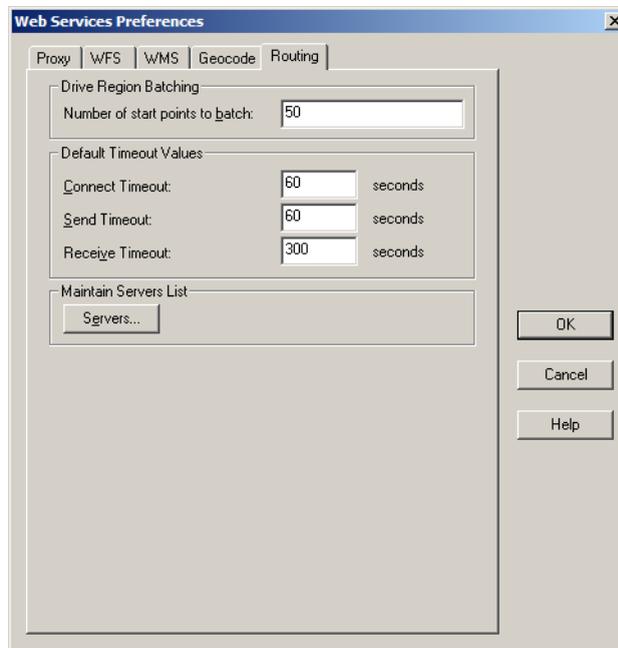
Use this setting to set the default symbol style for the points you are creating for geocoding. You can override it during a geocoding operation using **Symbol Style** in the **Common Options** tab.

Maintain Servers List

Click **Servers** to display the **Geocoding Servers List**, where you can add, edit, and delete MapMarker and Envinsa geocoding servers. This list is the same as you would see when you select the **Servers** button in the **Geocode Using Servers** and the Find Address dialog box.

Setting the Routing Server Preferences

1. From the **Options** menu, click **Preferences** and then **Web Services** and then **Routing** tab to display the Routing server options. This tab sets the driving region server maintenance options.



2. Select the preferences appropriate for your server and click **OK** to confirm them.

Maintain Servers List

Click the **Servers** button to display the **Routing Servers List**, where you can add, edit, and delete Envinsa Drivetime servers.

Setting the Custom Proxy Server Preferences

You can configure MapInfo Professional for proxy server use. By default, MapInfo Professional uses your system LAN settings as the default proxy server settings. To set the Web Services Preferences to use a different proxy server, you must know the IP address and port number of the alternate proxy server to properly complete these entries.

To set up your web service preferences to use a different proxy server than those provided in your system LAN settings:

1. From the **Options** menu, click **Preferences** and then **Web Services**. The Web Services Preferences dialog box displays.
2. In the **Proxy Server Settings** box, click the **Use Proxy Server** button and click the **Settings** button. The Web Services Proxy Settings dialog box displays.



Use these options to configure the proxy server for your internet and intranet use.

3. Enter the IP address of your computer and the port number in the fields provided. If you do not know this information, check the IP Config settings or consult your system administrator.
4. To access local addresses without going through the proxy server, select the **Bypass proxy server for local addresses** check box.
5. To exclude some non-local IP addresses from the proxy server, enter the IP addresses in the text area provided, using a semicolon to separate the addresses.
6. Click **OK** to save your entries.

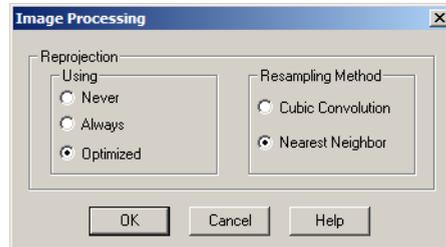
As a result of these settings, you are prompted for a user name and password when you are attempting to access the Internet to use the Web Map Service or the Web Feature Service features.

Setting up the Image Processing Preferences

You can control the reprojection options of your vector and raster maps using the Image Processing Preference. Reprojection, particularly when reprojecting seamless tables or other large raster map layers, can take a long time. This is particularly true if your reprojection is dramatic, as when you are transforming world-wide rasters from Long/Lat to Mercator, for example. To see the results of this setting go to *Reprojecting a Raster based on a Vector Map* in the *Help System*.

To set the raster reprojection options for all registered raster files:

1. From the **Options** menu, choose **Preferences** and **Image Processing** to display the Image Processing dialog box.



You can also access these options using the **Image Processing** button in the *Map Options* dialog box.

The **Resampling Method** options are enabled when you select **Always** or **Optimized**. **Never** is the default reprojection option and reflects the vector reprojection only behavior.

2. Select the reprojection option that suits your raster reprojection needs. Select:
 - **Never** to prevent raster reprojection. This is the default setting which preserves the pre-version 8.5 MapInfo Professional behavior.
 - **Always** to ensure that reprojection is always performed, that is, MapInfo Professional calculates the image's coordinates based on a precise formula and then the pixels are resampled using Cubic Convolution or Nearest Neighbor options.
 - **Optimized** to determine the reprojection of a raster image based on the look of the destination rectangle (a selection of the image) after transformation into the source image space. If it looks as a rigorous rectangle (two sides are parallel to x-axis and two sides parallel to y-axis), then the standard Windows functions stretch the source image in both directions, as it was in pre-version 8.5 MapInfo Professional. If the image fails the rigorous rectangle test, the reprojection is performed using the resampling options.
3. If you select **Always** or **Optimized**, you can decide how best to resample the image from these options:
 - **Cubic Convolution** provides the best restoration of pixel values because of their separateness. Using this option, a pixel in the destination image is calculated based on the pixel values in a 4x4 pixel window centered at the original pixel in the source image. The coordinates of the original pixel are calculated for every pixel of the destination image based on a special optimized procedure. Pixels are then weighted based on the basic pixel coordinates. In general, we recommend you use the Cubic Convolution resampling method for aerial images and satellite rasters to get a better image quality. The Cubic Convolution algorithm used in MapInfo Professional is based on the work of S.K. Park and R.A. Schowengerdt, *Computervision, Graphics and Image Processing* (1983, Volume 23. Pages 258-272).

- **Nearest Neighbor** replaces the pixel value in the reprojected image with the original pixel value from the source image. This resampling method takes less time to render than the Cubic Convolution method, but may be less precise. In general we recommend you use Nearest Neighbor resampling for raster maps, grids, and scanned maps to get faster results.

Note: When you are reprojecting 8-bit palette raster images, such as color .TIFF or .BMP images, MapInfo Professional uses the Nearest neighbor resampling option without regard to the resampling method you choose.

4. After you have selected these options, click **OK** to save them.

When you choose the Always or Optimized reprojection options, the reprojection process runs in the background, so there is nothing to see, but you can see the differences that the Cubic Convolution and Nearest Neighbor resampling options make in the way the raster displays.

Note: The data used in this instruction set ships with the product. You can retrieve this data from the data CD.

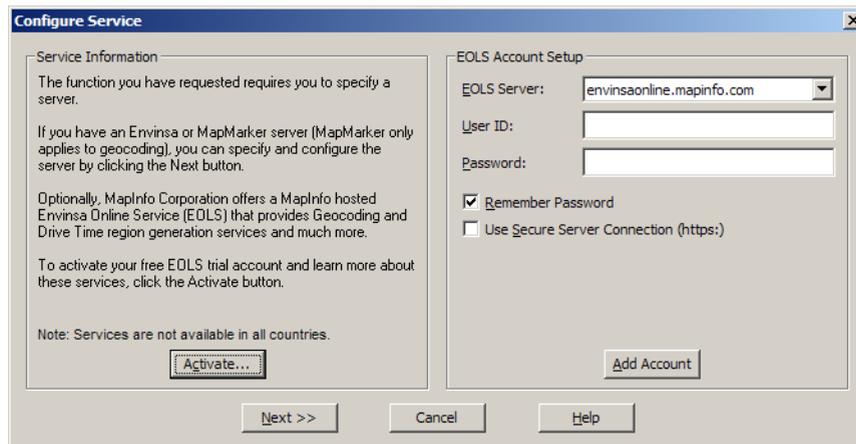
Setting up a Geocoding Server

To use MapInfo Professional with a geocoding server, you need MapMarker Java Server 4.0 or later or Envinsa Server 4.0 or later. MapInfo Professional supports any geography that is supported by Envinsa currently. Envinsa supports MapMarker Java Server V2, V3, and V4. Keep in mind that any Envinsa server only supports the data that is installed.

Before you can access a MapMarker or Envinsa geocoding service, you need to connect MapInfo Professional to its server. This process gives MapInfo Professional all the information it needs to access the geocoding service. You need to enter this information only once per service.

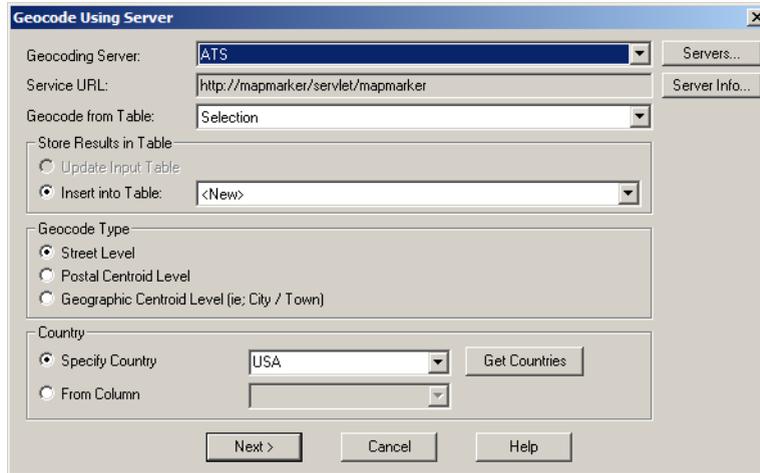
To set up a geocoding server:

1. Make sure that the table you want to geocode is open.
2. From the **Table** menu, choose the **Geocode Using Server** option to display the Geocode using Server dialog box. If you have not added any geocoding servers yet, the Configure Service dialog box displays.



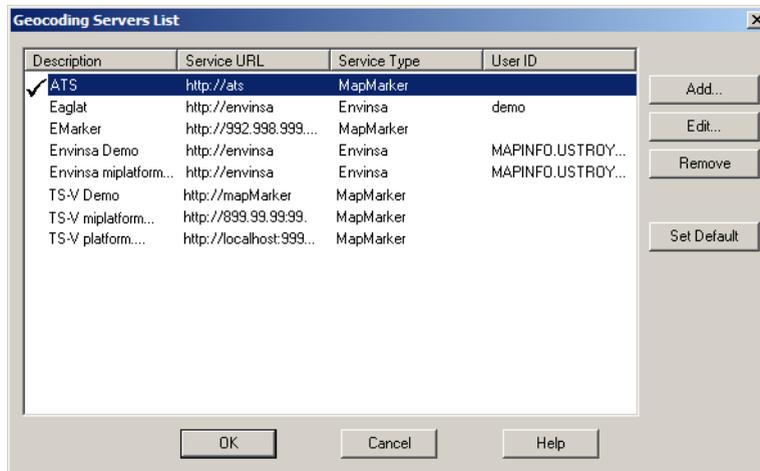
Configuring the MapInfo Professional Preferences

- Do one of the following:
 - If you do not have a MapMarker or Envinsa geocoding server, you can use MapInfo's hosted Envinsa Online Service to try this functionality. Click **Activate** to sign up for a geocoding service near you. See *Accessing Online Services at MapInfo* in the *Help System* for more instructions in signing on to this service.
 - If you have a MapMarker or Envinsa geocoding server, click **Next** to display the Geocoding Using Server dialog box.



After you add geocoding servers to MapInfo Professional, this box displays your default server.

- Click **Servers** to display the Geocoding Servers List dialog box.



This list is empty by default until you add a geocoding server either using the Servers button in the Geocode Using Server dialog box or in the geocoding web services preferences.

Note: When you have entered a server that you will use most frequently, highlight it in the list. Click **Set Default**. A check mark displays to indicate that the server you selected will open by default.

5. To add a new server, click **Add**. The Geocoding Server Information dialog box displays.

6. Type the service URL and description in the fields provided. You can connect to either a MapMarker or Envinsa geocoding service by making a selection in the **Type of Service** drop-down list.

When you select an Envinsa service, enter a user ID and password in the fields provided. Select the **Remember Password** check box to save the password in encrypted format in the server list. This option is selected by default. If you prefer to enter the password each time you access this server, clear this check box.

CAUTION: Anyone knowing this password will be able to use the Envinsa geocoding service.

7. Consider whether the default timeout settings are appropriate for the service you are adding. The default settings that display in each field are set in the geocoding web services preferences. You can change these global defaults using the instructions in [Setting the Geocoding Server Preferences on page 140](#).

To reset these entries for the current server, select the **Override Default Values** check box and enter new timeout settings using these definitions:

Connect Timeout

Indicates the amount of time (in seconds) allowed to establish an Internet connection request to a geocoding service. If the request takes longer than this value, a timeout occurs. The default connect timeout is 60 seconds.

Send Timeout

Indicates the amount of time (in seconds) allowed to send a request to a geocoding service. If the request takes longer than this value, a timeout occurs. The default send timeout is 60 seconds.

Receive Timeout

Indicates the amount of time (in seconds) allowed to begin to receive a response from a request from a geocoding service. The download can take longer than the timeout, but the response has to occur within the timeout setting. This default timeout is 300 seconds.

If the default timeout settings are appropriate for the new service, clear this check box.

8. When you have completed these entries, click **Test URL** to ensure that the connection is made. When you click **Test URL** and MapInfo Professional can connect to the service, the Geocoding Server Details dialog box displays.

If the URL is valid, the **Engine Info** list displays the service's available, country data, the supported geocoding types (Street, Postcode, Geographic), and the version information. Click the column headings to sort the entries alphabetically. Click **Close** to return to the Geocoding Server Information dialog box.

Note: If you select **Test URL** and no service connection is found, an error message displays.

9. When all of these fields and options are complete, click **OK** to save the new geocoding server.

Setting up the Routing Server

Before you can access an Envinsa Drivetime service, you need to show MapInfo Professional where to find the Routing server it is housed on. This process gives MapInfo Professional all the information it needs to access the server. You need to enter this information only once per server. To set the routing server preferences, see [Setting the Routing Server Preferences on page 142](#).

To add a Routing server:

1. From the **Options** menu, choose the **Preferences** option and then select **Web Services**. Click the **Routing** tab to set the web service preference options.
2. To add a new routing server, click **Servers** to display the Routing Servers List dialog box.
3. Click **Add**. The Routing Server Information dialog box displays.

MapInfo Professional supports server-side and proxy server authentication. If you use a proxy server for Internet access and your routing server also requires user/password authentication, you authenticate with the proxy server first. As a result, the Connection dialog box displays twice -- once for the proxy server and once for the routing server.

4. Type the server URL, the server description, the default user name and password in the fields provided. Click the check box to remember the password when you enter the correct user name.
5. Consider whether the default timeout settings are appropriate for the server you are adding. The default settings display in each field. The options you select in this dialog box determine the Routing server's default settings. To change these entries, select the **Override Default Values** check box and enter new timeout settings using the same definitions.

Note: When you have entered a server that you will use most frequently, highlight it in the list. Click **Set Default**. A check mark displays beside the server you selected.

6. When you have completed these entries, click **Test URL** to ensure that the connection is available. The Routing Server Details dialog box displays.

If the URL is valid, the **Countries** list displays the server's available country data. Click **Close** to return to the Routing Server Information dialog box.

Note: If you select **Test URL** and no server connection is found, an error message displays.

7. When these fields and options are complete, click **OK** to save the new routing server.

Starting up and Leaving MapInfo Professional

In this section we cover the very basics of starting MapInfo Professional, using the STARTUP.WOR, and exiting the program. Since opening a table is basic to getting started in using MapInfo Professional, we cover that topic here, as well.

Starting MapInfo Professional

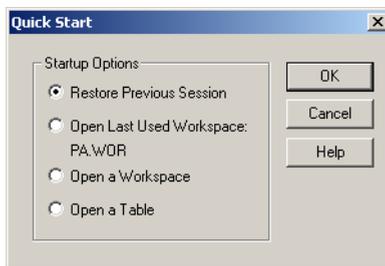
Now that you have MapInfo Professional installed and have read a little about its power and functionality, you are ready to begin mapping and analyzing your data.

To start MapInfo Professional:

- Do one of the following:
 - Double-click the MapInfo Professional icon on your desktop. In a few seconds, MapInfo Professional's Quick Start dialog box displays.
 - From the **Start** menu, select **MapInfo Professional 9.0** (or **MapInfo Professional 9.0 Client**, if this is a network installation) from the Selected Program folder.

Using either method the Quick Start dialog box displays.

Here you can choose how you want to start your mapping session. The Quick Start dialog box displays every time you start MapInfo Professional, but you can change this behavior in the Startup preferences (On the **Options** menu, point to **Preferences** and click **Startup**) using instructions in *Setting the Startup Preferences* in the MapInfo Professional *Help System*. In the Startup Preferences dialog box, clear the Display Quick Start dialog box to deactivate the display of the Quick Start dialog box.



If you are returning to MapInfo Professional, you can return to the previous mapping session by choosing Restore Previous Session or use last workspace. If this is your first look at MapInfo Professional, choose the Open a Table option to begin. The Open dialog box displays.

Exiting MapInfo Professional

To leave MapInfo Professional:

- On the **File** menu, click **Exit**. There is no confirmation message.

CAUTION: If you made changes to a table and did not save them a prompt appears asking you if you want to save the changes. Unless you choose Save, the changes are lost.

- For more information, see *Leaving MapInfo Professional using the MAPINGOW.WOR Workspace* in the Help System.

File Format Types Supported

You can open the following file types using the **File > Open** capability in MapInfo Professional:

- **TAB**: MapInfo .TAB files (*.tab)
- **WOR**: MapInfo workspace files (*.wor)
- **MDB**: Microsoft Access files (*.mdb)
- **DBF**: dBASE DBF files (*.dbf)
- **TXT**: Delimited ASCII files (*.txt)
- **WKS**: Lotus 1-2-3 files (*.wk1, *.wks, *.wk3, *.wk4)
- **XLS**: Microsoft Excel files (*.xls)
- **SHP**: ESRI Shapefiles (*.shp)
- **Raster image files** (*.bil, *.sid, *.gen, *.adf, *.img, *.ntf, *.ecw, *.url, *.tif, *.grc, *.bmp, *.gif, *.tga, *.jpg, *.pcx, *.jp2, *.j2k, *.png, *.psd, *.wmf, *.emf, *.map)
- **Grid images** (*.adf, *.flt, *.txt, *.asc, *.img, *.dem, *.dt0, *.dt1, *.dt2, *.mig, *.grd)
- **CSV**: Comma Delimited files (*.csv)

Note: Grid Format Direct Support: The following grid handlers support direct read of DEM-USGS Text (.dem); *GTOPO30 (.dem) and DTED levels 1, 2, 3 (.dt0, .dt1, .dt2)*. These grid handlers are read-only; they cannot be used to create grid files during the Create Grid Thematic interpolation process.

Using the Universal Translator, you can import these file format types:

- **DWG/DXF**: AutoCAD
- **E00**: ESRI ArcInfo format
- **SHP**: ESRI Shapefile format
- **MID/MIF**: MapInfo file formats
- **TAB**: MapInfo .TAB files
- **DGN**: Microstation Design files
- **CATD.DDF**: Spatial Data Transfer Standard (SDTS)
- **FT**: Vector Product Format (VPF)

You can import the following file types into MapInfo Professional using **Table > Import**:

- **MIF**: MapInfo Professional Interchange Format. MapInfo Professional's data interchange format (ASCII file format).
- **DXF**: The graphic/data interchange format for AutoCAD and other CAD packages.
- **MBI**: MapInfo Professional Boundary Interchange format. An ASCII file for MapInfo DOS boundary files.
- **MMI**: MapInfo DOS MMI
- **IMG**: A file format for MapInfo Professional for DOS image files.
- **GML**: OS MasterMap format.
- **GML/XML**: Geographic Markup Language 2.1 (*.gml, *.xml)

Note: You can download raster handlers for NIMA formats such as ADRG, CADRG, ASRP, CIB, USRP, and NITF formats from the MapInfo website or get them from the Installation CD.

MapInfo Professional imports graphics and textual information from MapInfo Professional Interchange Format, DXF, MBI, and MMI files. MapInfo Professional imports only graphics from IMG.

These are the Raster image file formats MapInfo Professional supports:

- **MrSID:** The MrSID raster handler allows you to open and display raster images compressed in the MrSID format.
- **BMP -- Windows Bitmap.** Windows format only: Monochrome: 8 Bit Color, 24 Bit Color
- **GIF -- Graphics Interchange Format**
- **GIF89a Format (non-interlaced only):** Monochrome, 8 Bit Color
- **JPEG-2000 -- Joint Photographic Experts Group:** MapInfo Professional supports creating JPEG 2000 files using Save Window As and viewing JPEG 2000 files using the LeadTools raster handler.
- **JPEG -- Joint Photographic Experts Group**
- **JFIF V1.02 (JPEG File Interchange Format):** 8 Bit Gray, 24 Bit Color, No Subsampling, 24 Bit Color, YUV422 Subsampling, 24 Bit Color, YUV411 Subsampling
- **PCX -- ZSoft Paintbrush**
- **PCX File Format Version 5 (Paintbrush Version 3.0):** Monochrome, 8 Bit Gray, 8 Bit Color, 24 Bit Color
- **SPOT -- Satellite Pour l'Observation de la Terre -- Spot Image Formats 1.5 and 4.0:** 8 Bit Gray, Format 1.5, 8 Bit Gray, Format 4.0, 24 Bit Color, Format 1.5, 24 Bit Color, Format 4.0
- **TGA -- Truevision TGA Truevision File Format Specification 2.0:** 8 Bit Gray, 8 Bit Color, 24 Bit Color
- **TIFF -- Tagged Image File Format: TIFF Revision 5.0,** Monochrome (Class B), Uncompressed, Monochrome (Class B), PackBits Compression, 8 Bit Gray (Class G), Uncompressed, 8 Bit Color (Class P), Uncompressed, 24 Bit Color (Class R), Uncompressed
- **PNG -- Portable Network Graphics Format**
- **PSD -- Adobe Photoshop Version 3.0**
- **WMF -- Windows Metafile:** The raster handler will load a rasterized version of the WMF file.
- **ECW -- Enhanced Compression Wavlet by ER Mapper**
- **GRD/GRC -- MapInfo Vertical Mapper:** GRD files can be treated as either a grid or raster image. If the associated .TAB file contains a RasterStyle 6 entry, the file will be treated as a grid.
- **ASRP -- ARC Standard Raster Product to 1.2**
- **ADRG -- ARC Digitized Raster Graphic**
- **CADRG- Compressed ARC Digitized Raster Graphic**
- **NITF -- National Imagery Transmission Format (version 2.x)**
- **CIB -- Controlled Image Base**
- **GIF -- Graphics Interchange Format**
- **TIFF LZW-- Tagged Information File Format LZW**
- **TIFF CCITT Group 4-- Tagged Information File Format CCITT Group 4**
- **GeoTIFF**

The Basics of MapInfo Professional

Now that you have installed MapInfo Professional®, you are probably anxious to get mapping. But, if you are new to MapInfo Professional, take a few minutes to read this chapter to familiarize yourself with the concepts, components, and tools for successful computer mapping.

Sections in this Chapter:

- ♦ A Tour of the MapInfo Professional Desktop.94
- ♦ Understanding Your Data in MapInfo Professional.99
- ♦ Working with Layers in the Layer Control100
- ♦ Working with Seamless Layers.111
- ♦ Data - Where MapInfo Professional Begins114
- ♦ Reviewing the Windows in MapInfo Professional.122
- ♦ Saving, Closing, and Exporting Your Work130
- ♦ Using the Tools in the Tool Manager143

A Tour of the MapInfo Professional Desktop

This section details the tools and commands that are available to you in the MapInfo Professional product. You may refer to these frequently as you familiarize yourself with MapInfo Professional.

Working with Toolbars

MapInfo Professional provides four toolbars of tool buttons and commands to give you tremendous mapping creativity at the click of a button.

To reshape the toolbars, click and drag on their borders. Drag the title bar to move them. To dock a toolbar, drag it to the area directly underneath the Main menu bar. The toolbar changes shape and positions itself directly under the menu bar. You can easily change it back to the floating view by clicking the background area of the toolbar and dragging it away from its position. The toolbar retains the same shape as it had before you docked it.

You can also dock and undock a toolbar from the **Options** menu.

1. On the **Options** menu, click **Toolbars**, and in the Toolbar Options dialog box.
2. Do one of the following:
 - Select the **Floating** check box for each toolbar that you want to have float and be able to move around.
 - Clear the **Floating** check box for each toolbar you want to dock.

Note: To display or hide the toolbars, select or clear the **Show** check box. You can also choose whether you want to display color buttons or larger buttons for each toolbar.
3. Choose **Save as Default** to save your arrangement. To remove a toolbar from the screen, click its **Ctrl** box.

Reviewing the Standard Toolbar

The Standard toolbar contains tools for commonly performed menu functions from the File, Edit, and Window menus. It also contains tools for quick access to a Redistricting window and online Help. Many of these tools are familiar to you from working with Microsoft Windows.



New Table



Open



Open Workspace



Open WMS Table (Web Map Service)



Open WFS Table (Web Feature Service)



Save Table



Save Workspace



Save Window



Print



Cut



Copy



Paste



Undo



New Browser



New Map Window



New Graph Window



New Layout Window



New Redistricting Window



Help



Close All

Reviewing the Main Toolbar

The Main toolbar contains buttons for selecting objects, changing the view of the Map window, getting information about an object, and showing distances between objects. It also contains buttons that allow you to change layer attributes and open the Legend or Statistics window.



Select

Accesses the **Select** tool to select objects/records in a Map, Layout, or Browser window. Also acts as the default pointer/cursor tool.



Marquee Select

Accesses the **Marquee Select** tool so you can select and search for map objects within a given rectangle (marquee box).



Radius Select

Accesses the **Radius Select** tool so you can select and search for map objects within a circular region.



Polygon Select

Accesses the **Polygon Select** tool so you can select objects within a polygon.



Boundary Select

Accesses the **Boundary Select** tool so you can select and searches for map objects within a given region.



Unselect All

Accesses the **Unselect All** tool so you can clear all of your object and record selections. Performs the same operation as Unselect All.



Invert Selection

Selects all objects or records not included in the current selection, and cancels the current selection.



Zoom-in *

Accesses the **Zoom-in** tool to get a closer area view of a map or layout.

	Zoom-out *	Accesses the Zoom-out tool so you can get a wider area view of a map or layout.
	Change View *	Accesses the Change View dialog box so you can specify settings for Map window width, map scale, resizing, and centering.
	Graph Select	Accesses the Graph Select tool. As you click graph objects, such as a riser bar, pie slice, column, etc., this tool selects the corresponding records from the table.
	Grabber *	Accesses the Grabber tool so you can reposition a map or layout within its window.
	Info tool *	Accesses the Info tool so you can view the tabular data that is associated with a map object.
	HotLink	Accesses the HotLink tool, so you can launch active objects such as files or URLs from your Map window.
	Label	Accesses the Label tool so you can label objects with information from the related database.
	Drag Map Window *	Accesses the Drag Map Window button to drag an MapInfo Professional map into an OLE container application.
	Layer Control	Accesses the Layer Control dialog box so you can specify how the various tables in a Map window are layered and displayed.
	Ruler	Accesses the Ruler tool to determine the distance between two points and the length of some path.
	Legend	Accesses the Legend window for maps or graphs.
	Statistics	Accesses the Statistics window to tally the sum and average of all numeric fields for the currently chosen objects or records.
	Set Target District from Map	Sets the target district from the map during a Redistricting session.
	Assign Selected Objects	Assigns selected objects to the target district during a Redistricting session.
	Clip Region On/Off	Redisplays the entire map.
	Set Clip Region	Isolates a map region for display.

* These tools are also available when you access your MapInfo .TAB map within a container application such as MS Word, PowerPoint, etc.

Reviewing the Drawing Toolbar

The Drawing toolbar contains tools and commands that are used to create and edit map objects. For more about how to use these buttons, see [Using the Drawing and Editing Commands in Chapter 7 on page 306](#).

	Add Node	Accesses the Add Node tool, which allows you to add a node to regions, lines, or polylines when you are in Reshape mode.
	Arc	Accesses the Arc tool, which allows you to draw an arc the size and shape of one quarter of an ellipse.
	Ellipse	Accesses the Ellipse tool, which allows you to create elliptical and circular objects.
	Frame	Accesses the Frame tool, which allows you to create frames in the Layout window to display maps, graphs, browsers, and legends.
	Line	Accesses the Line tool, which allows you to draw straight lines.
	Line Style	Accesses the Line Style dialog box where you can change the style, color, and width of line objects.
	Polygon	Accesses the Polygon tool, which allows you to draw polygons (a closed, connected sequence of lines).
	Polyline	Accesses the Polyline tool, which allows you to draw polylines (an open, connected sequence of lines).
	Rectangle	Accesses the Rectangle tool, which allows you to draw rectangles and squares.
	Region Style	Accesses the Region Style dialog box where you can change the fill pattern, color, and background, plus the border style, color, and width of region objects.
	Reshape	Toggles in and out of Reshape mode. Reshape allows you to edit regions, polylines, lines, arcs, and points by moving, adding, and deleting nodes that define them.
	Rounded Rectangle	Accesses the Rounded Rectangle tool, which allows you to draw rounded rectangles and squares.
	Symbol	Accesses the Symbol tool, which allows you to place point symbols on your map like “push pins.”



Symbol Style Accesses the **Symbol Style** dialog box where you can change the style, color, and size of a symbol object.



Text Accesses the **Text** tool, which allows you to add titles, labels, and annotation to maps and layouts.



Text Style Accesses the **Text Style** dialog box where you can change the font typeface, size, style, color, and background of text objects.

Reviewing the DBMS Toolbar

The DBMS Toolbar contains buttons and commands that are used to access tables residing on a remote database. These options are only available if you have installed a relational database manager.



Open DBMS Table Button

Accesses the Open dialog box, which allows you to access a remote database. If a connection has not been established, you are prompted to open one. This button is also found in the Open dialog box if DBMS is installed.



Make DBMS Table Mappable Button

Accesses the Make DBMS Table Mappable dialog box, which allows you make a table linked to a remote database mappable in MapInfo Professional.



Refresh DBMS Table Button

Accesses the Refresh DBMS Table dialog box, which allows you to refresh a MapInfo Professional linked or live table with the most recent data residing on the remote database for that linked or live table.



Unlink DBMS Table Button

Accesses the Unlink DBMS Table dialog box, which allows you to unlink a downloaded table from its remote database.



Change Symbol for a Mappable DBMS Table Button

Accesses the Change Symbol for a Mappable DBMS Table dialog box, and allows you to change the symbol style of a mappable DBMS table.



Disconnect DBMS Button

Accesses the Close DBMS Disconnection dialog box, where you can close a connection to a remote database.

Using Workspaces

A workspace is a list of all the tables, windows, and settings you are using, stored in a file with the extension .WOR. Workspaces are a convenient way to return to a previously created map without having to open each table file individually. The workspace keeps track of the following elements:

- Map, Browser, Graph, 3DMap, and Layout windows, including their size and position
- Query tables created from base tables using either the Select or SQL Select statements (queries on queries will not be saved)

- Graphs
- Thematic maps
- Legend windows
- Cosmetic objects
- Labels
- Styles for fonts, symbols, lines, and fill patterns used to display objects

To view the contents in the workspace file, open the .WOR file in MapInfo Professional, a text editor or word processor.

Note: When you save a workspace, you cannot save any references to selections or queries made by the Selection tools or the Query options.

Opening a Workspace

Any previously opened tables and windows will be left untouched when you open a workspace. However, to avoid cluttering up your screen with unnecessary windows, use the Close All command from the File menu before adding the workspace.

When you exit MapInfo Professional, the MapInfo Professional workspace (MAPINFOW.WOR) stores the last session (unless you have set your preferences so that the workspace will not be written). If there are files you don't want added to your workspace, close them before exiting.

To open a workspace:

1. Choose **File > Open**. The Open dialog box displays.
2. Choose **Workspace (*.wor)** from the **Files of type** drop-down list.
3. Specify the name, directory and drive for the workspace you want to open.
4. Click **OK**.

When you exit MapInfo Professional, the MapInfo Professional workspace (MapInfo.wor) stores your last session. If there are files you don't want added to your workspace, make sure you close them before exiting.

- For more information, see *Opening Multiple Workspaces* in the *Help System*.

How Renaming Tables Affects Workspaces

When you change the name of a table listed in a workspace, you invalidate the workspace. Table names are stored in the workspace file, so if change it, the workspace cannot find it.

For example, if you create a workspace called CUSTOMER.WOR that contains the STATES table. If you later rename the STATES table to AMERICA, MapInfo Professional will not be able to open the customer.wor workspace. It will try to open the STATES table and not be able to locate it.

There are two ways to avoid this problem:

- Make any table name changes before you start to build workspaces.
- Open the workspace file in any text editor and manually change the table names.
- Open a workspace. Rename the table(s) using the Rename Table dialog box and immediately save the workspace.

Saving Printer Information to a Workspace

MapInfo Professional enables you to save your printer information to a workspace, and restore printer information from a workspace. These settings are located in the Startup preferences (on the **Options** menu, point to **Preferences**, and click **Startup**). To save printer information to a workspace, check the **Save Printer Information to Workspaces** check box. Subsequently, when you save your workspace, the printer name, paper orientation, paper size, and the number of copies are saved. When this preference is on, the printer settings are saved in a workspace file.

Note: We recommend that you leave this preference on.

To restore printer information from a workspace, check the **Restore Printer Information to Workspaces** box. When you open the workspace, the printer name, paper orientation, paper size, and the number of copies are restored. This is useful if you are sharing workspaces with other MapInfo Professional 6.0 or later users who are also using the same printers. You may want to leave it off if you want to send the workspace to someone who is using a different printer. If this preference is turned off, MapInfo Professional uses the default printer selected in the Printer preferences.

Note: You can get additional printer advice in the MapInfo Professional *Printing Guide*, which is located in the Documentation subfolder of your installation directory.

Understanding Your Data in MapInfo Professional

Computer maps are organized into layers. Think of the layers as transparencies that are stacked on top of one another. Each layer contains different aspects of the whole map.

What is a Layer?

In MapInfo Professional you begin by opening your table of data and displaying it in a Map window. Each table displays as a separate layer. Each layer contains the table plus any map objects, such as regions, points, lines, and text. Additionally, the layer contains style overrides and zoom layering characteristics that you can add to give the layer more or less prominence in the Map window.

Figure: Map Layers Example



Map layers form the building blocks of maps in MapInfo Professional. Once you have created your layers, you can customize them in a variety of ways, add and delete layers, or reorder them.

For example, one layer may contain state boundaries, a second layer may have symbols that represent capitals, a third layer might consist of text labels. By stacking these layers one on top of the other, you begin to build a complete map. You can display one, two, or many tables at a time.

Map Objects as Part of Layers

We mentioned earlier that maps in MapInfo Professional are made up of layers of map objects. There are five basic types of objects:

- *Regions*: closed objects that cover a given area. These include polygons, ellipses, and rectangles. For example, country boundaries, postal code boundaries, sales territories.
- *Point objects*: represent single locations of data. For example, customer locations, restaurants, parking meters. Points can also be combined into multipoint objects.
- *Line objects*: open objects that cover a given distance. These include lines, polylines, and arcs. Examples are streets, rivers, power lines.
- *Text objects*: text that describes a map or another object, such as labels and titles.
- *Collection objects*: combination of region, line, and multipoint objects.

You can have each type of object in a separate layer (most common), or you can combine objects in the same layer. MapInfo Professional lets you create, edit, customize, and display these objects to make maps that meet your needs.

For information about drawing and editing map objects, see [Drawing and Editing Objects in Chapter 7 on page 305](#) and see *Moving Map Objects* in the *Help System*.

Managing a Map's Layers

The key to controlling your map layers is the Layer Control dialog box. The dialog box shows all the layers that make up the current Map window and the status of the layer attributes. These attributes are: visible, editable, selectable, and auto label. The icons above each check box column represent the attributes. ToolTips display over the attribute icons when you move your cursor over them to help familiarize yourself with each icon. It is easy to change a layer's, or multiple layers', attributes using the check boxes.

You also have options available to change the Display and Label settings; modify any thematic maps you have displayed; and reorder, add, or remove layers.

- For instructions on accessing the Layer Control dialog box, see *Accessing Layer Control* in the *Help System*.
- For instructions on changing layer order in the Layer Control dialog box, see *Changing the Order of Contiguous Layers* or *Changing the Order of Random Layers* topics in the *Help System*.

Working with Layers in the Layer Control

The Layer list has multi-select capabilities. To change the order of one or more contiguous layers, hold down the **Shift** key, select the layers, and drag them up or down. To change the order of one or more layers that are out of sequence, hold down the **Ctrl** key, select the layers, and drag them up or down.

When you begin to drag the layers, the cursor will change shape to represent the number of layers being dragged. If you are dragging one layer, the cursor becomes an arrow icon with a single layer icon attached to the top. If you are dragging multiple layers, the arrow icon will display multiple layer icons at the top. If you select layers that cannot be dragged or if you are attempting to insert layers where they cannot be inserted, the cursor becomes a circle with a line through it.

Note: A selection of layers that is out of sequence will become contiguous upon insertion.

You can also use the **Up** or **Down** buttons to move one or more layers. You cannot reorder or remove the Cosmetic layer. It will always be the top layer.

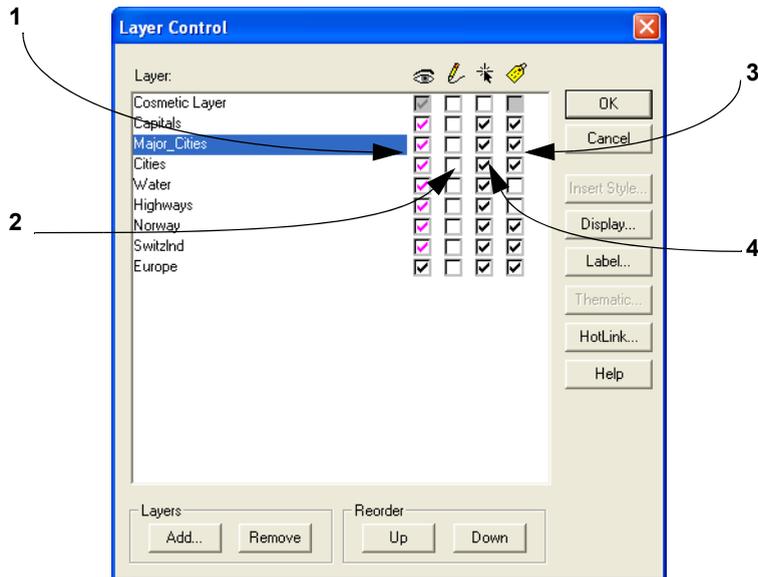
There is ToolTip associated with field entries in the Layer Control dialog box that allows you to view the whole name of the layer you hover over. This is to make it easier to identify the layers in your map. You can change the way ToolTips display in the using the **Map Window Preferences**. Select the **Show ToolTips in Layer Control Dialog** to display the ToolTip message or clear the check box to prevent ToolTips from showing in **Layer Control**. To access the Map Window Preferences dialog box, select **Options > Preferences > Map Window**.

Accessing Layer Control

To access the Layer Control dialog box:

1. In the Map window, do one of the following:
 - On the **Map** menu, click **Layer Control**
 - Click the **Layer Control** button  in the **Main** toolbar.

Use Layer Control to manipulate the layers and their attributes to determine the map display.



1 Select these boxes to display a layer. 2 Select these boxes to edit a layer.
 3 Select these boxes to label a layer automatically. 4 Select these boxes to make a layer selectable in the Map window.

2. When you have completed your changes, click **OK** to display them on the map.

Adding a Layer to the Map

You can add one layer to the current Map window at a time or use the multiselect functionality to add layers simultaneously.

Note: You can only add layers from tables that are open. If you want to add a layer and you do not see it in the list, make sure the table that contains that layer is open.

- For more information, see *Adding a Layer to the Map* and *Adding Multiple Layers* in the *Help System*.

Reordering Layers

Map layers display in the order that they are listed in the Layer Control dialog box, with the bottom layer drawn first and the top layer (which is always the Cosmetic Layer) drawn last. It is important to order your layers correctly.

For example, you have a layer of customer points and a layer of census tracts. If the layers are incorrectly ordered in the Map window, MapInfo Professional might draw the customer points first and then display the census tract layer second. Your points would be obscured by the census tract layer. You can reorder how layers are displayed in a Map window two ways.

- For more about layers, see *Reordering Layers*, *Changing the Order of Contiguous Layers* and *Changing the Order of Random Layers* topics in the *Help System*.

Layer order is also important when you use the Select tool. The Select tool selects objects from the topmost Selectable layer. If you have several objects at the same location, it is difficult to select the exact one you want. You can reorder your layers in Layer Control so that the layer you want to select from is the new topmost layer.

MapInfo Professional does not allow you to control the front-to-back ordering of objects within a single map layer. If you are editing a table, and you draw a line on top of a circle, the line might appear in front of or behind the circle; you cannot control whether it is in the front or the back. You can, however, control the front-to-back ordering of objects in a Layout window.

Note: If you need to control the ordering of objects (for example, you need to make sure that your lines display on top of your regions), put the different object types in separate layers. Put your line objects in one table, and put your region objects in another table. Then use the **Layer Control** dialog box to order the layers.

- For more information, see *Removing a Layer from the Map* and *Changing a Layer's Display Options* in the *Help System*.

Positioning and Sizing Labels

Two features in the **Map > Layer Control > Label button > Label Styles** dialog box help you with label placement: Anchor Point and Offset.

To label a map object using the Label tool:

First, make sure that the layer containing the objects you want to label is selectable.

1. Click the **Label** button in the **Main** toolbar.
2. Click on an object with the Label tool to display a label for that object. MapInfo Professional labels the object with the values (from the column that you specified for that layer in the Label Options dialog box).
3. To change label options, choose **Map > Layer Control**. The **Layer Control** dialog box displays.
4. Press the **Label** button. The **Label Options** dialog box displays. Specify the desired label options, (Label Partial Objects, Allow Duplicate Text, Allow Overlapping Text, Styles, Position etc.)

The anchor point is the label's position relative to the map object. Click on one of the buttons in the Label Style dialog box to select an anchor point. You have nine choices.

The anchor point is an ongoing attribute of the label. For example, if you anchor a point object's label at Center Left and you increase the label's font size, the text will grow to the left. This way, the text can never overwrite the point.

The default anchor point varies with the type of map object you are labeling:

- Regions default to Center.
- Lines default to Below Center.
- Points default to Right.

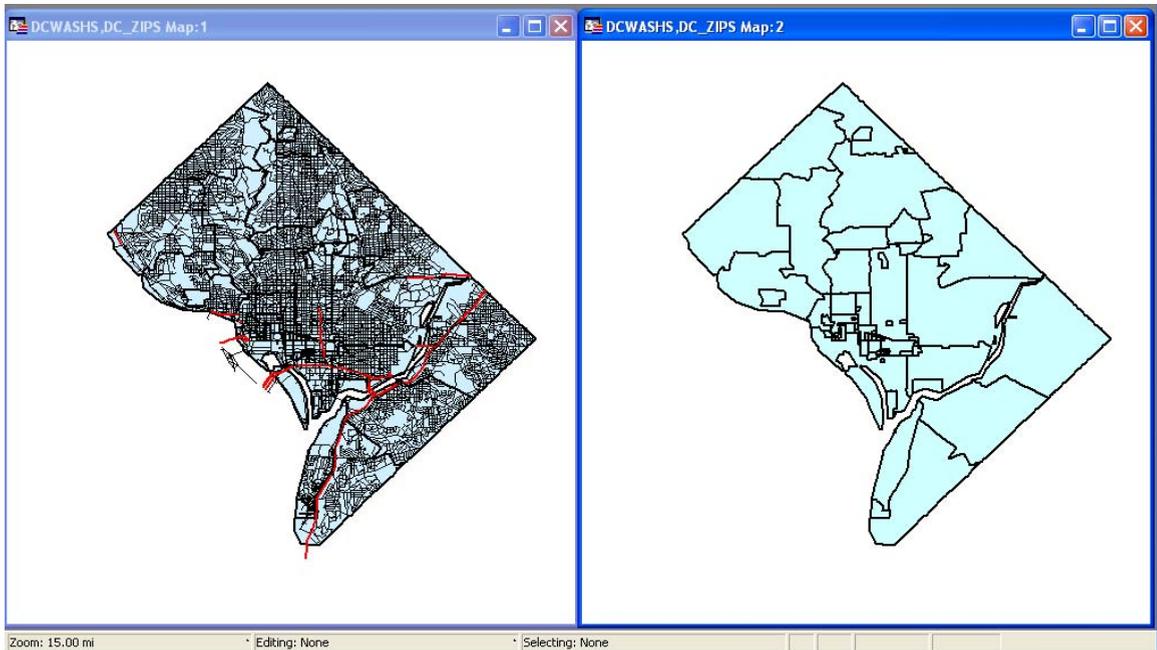
Label offset is how far away a label is from its anchor point. Specify the number of half spaces you want the label to be from the anchor point in the **Label Offset** box.

Label Size

Label size does not change with zoom or scale changes. Labels display at the size you specify at all zoom levels as well as on printed output. Labels are never hidden behind other geographic objects because they are always the last objects drawn on the map.

Setting the Zoom Layering

Sometimes you want a map layer to display only at certain zoom levels. *Zoom Layering* controls the display of a map layer so that it displays only when the map's zoom level falls within a preset distance.



For example, you have a layer of streets and a layer of postal code boundaries. When you zoom out past 10 or so miles, the streets look like a black smudge in the window. This is because the zoom (window width) is too wide to show detailed street maps. Use Zoom Layering to tell MapInfo Professional to display the street layer only when the zoom is set to a distance that allows you to see the street detail properly, for instance, less than 5 miles.

The first map doesn't have zoom layering set for its street layer. At a zoom of 15 miles across, notice how difficult it is to see any detail. The second map has zoom layering set to display the streets when the zoom is less than five miles. Therefore, the streets layer does not display when the window is set at 15 miles.

For more information, see *Setting the Zoom Layering* in the *Help System*.

You can display different layers in the same Map window at different zoom levels. For example, you have a layer of streets, a layer of county boundaries, and a layer of state boundaries. You want the streets layer to be visible only when the zoom level is less than eight miles. You want the county

boundary layer to display when the zoom level falls between 20 miles and 200 miles. You want the states boundary layer to be visible only when the zoom level is greater than 100 miles. You can set a different zoom level for every layer in your Map window.

Note: When you add an object, a region, a line, or a polyline in the Map window and zoom out beyond where the zoom layer would permit you to see that feature, MapInfo Professional turns off zoom layering so you can continue to see what you are working on. When you complete the add process, a message displays asking you if you want to leave zoom layering off (so you will still be able to see the feature). If you click **Cancel**, MapInfo Professional cancels the zoom layering. If you click **OK**, you need to adjust your zoom settings to see this feature again.

For more information, see *Changing a Map's Zoom Level* in the *Help System*.

Displaying the Lines, Nodes, and Centroids

The **Display Options** dialog box allows you to display line directions, nodes, and object centroids. Select the **Show Line Direction** box when you want to show the direction in which line objects are drawn. Check the **Show Nodes** box to display the nodes in a layer.

The **Show Centroids** box displays the centroids of each object in a layer. In MapInfo Professional, a region's centroid does not represent its center of mass. Instead, the centroid represents the location used for automatic labeling, geocoding, and placement of thematic pie and bar charts. If you edit a map in Reshape mode, you can reposition region centroids by dragging them.

See the Help System for these related topics:

- *Changing a Layer's Labeling Options*
- *Changing a Region's Centroid*
- *Changing a Label's Style*
- *Drawing Autotags*

For instructions on inserting table-based style in the Layer Control dialog box, see *Inserting Styles into Tables* in the *Help System*.

Understanding the Cosmetic Layer

Every Map window in MapInfo Professional has a Cosmetic Layer. Think of the Cosmetic Layer as the blank transparency that lies on top of the other map layers (transparencies). It can store map titles and other graphic objects you create during a work session. The Cosmetic Layer is always the top layer of the map. You cannot remove or reorder the Cosmetic Layer.



You can only make the Cosmetic Layer editable or selectable. Other Layer Control options (labeling, zoom layering, display mode) are not available for the Cosmetic Layer. To select fill patterns, line types, symbols, and text font for the Cosmetic Layer, use the Line Style, Region Style, Symbol Style and Text Style commands from the Options menu. When the Cosmetic Layer is editable, you can access the style options from the Drawing Toolbar.

The contents of the Cosmetic Layer are linked proportionally to the map. Map objects (except for symbols) and text in the Cosmetic Layer are proportionally linked to the zoom level of the map. If you draw objects in the Cosmetic Layer and then change the map's zoom from 30 to 100 miles, the size of the objects will appear smaller.

See these related topics in the Help System:

- *Using the Cosmetic Layer*
- *Saving Cosmetic Layer Objects*
- *Saving Objects on the Cosmetic Layer*
- *Removing Cosmetic Objects*
- *Disabling the Save Cosmetic Objects Warning Dialog Box*

Making the Layers “Editable”

To make changes to the graphic objects in a layer, you must make the layer editable. You can draw objects on that layer, add text, combine, or delete objects. You can only make one layer editable at a time.

- For specific instructions, see *Making Layers Editable* in the *Help System*.

Making a Read-Only Table “Editable”

If you are working with tables that were opened from Excel, Lotus, or ASCII files, you may have noticed that they come in as read-only tables. Because the files are not in native MapInfo Professional formats or standard DBF format, MapInfo Professional is unable to edit the tabular information contained in these tables.

If you wish to modify the table information, you must save a copy of the table.

- For instructions on making read-only map layers editable, see *Making Layers Editable* in the *Help System*.

Getting Layer Information

You can use the Info tool to get information pertaining to the map layer.

To get information about an object in a particular layer:

1. Make sure the layer you want information about is the selectable layer.
2. Click **Info**  in the Main toolbar and click the object you want information about.

Note: If the information that displays is not what you were looking for, check to see that the layer you are interested in getting data for is selected.

Using either method, the Info Tool box displays.



Note: Use the **Ctrl** key with the **Info** tool to toggle through all selectable layers and access overlapping objects.

When you click a map location using the **Info** tool where two or more selectable map objects overlap, the data tied to the objects on each layer display in the Info tool window. If you do not want the information for all layers to display, turn off `Selectable` for those layers in the **Layer Control** dialog box.

You can also view an object's label expression in an InfoTip when you use the Select, Info, or Label tools. InfoTips work very much like ToolTips. Using one of these tools, place your cursor over an object. An InfoTip displays the label expression for the object in the topmost selectable layer. To set InfoTips for a particular layer, adjust the `Selectable` attribute in the Layer Control dialog box so that the Tips display for the layer you want. InfoTips are active by default, but you can turn them off in the Map window preferences (on the Options menu, point to Preferences and click Map window).

Selecting Objects in a Layer

If you only want to select objects for further analysis rather than edit the objects, make the layer selectable. More than one layer can be selectable at a time. If a layer is editable, it is also selectable.

Many MapInfo Professional functions require that map objects be selected before performing the particular operation. To use the **Select** tool, **Label** tool or **Info** tool you must first make the layer selectable. Unlike the editable feature, more than one layer may be selectable at the same time. You may, however, only select from one layer at a time.

The Select tool selects objects from the topmost Selectable layer. To select an object that is not in the top Selectable layer, you can turn off the Selectable option in Layer Control for every layer above the layer you want to select from. Using the multi-select functionality, you can do this in just a few steps. Select the layers, and select a Selectable check box for one of the layers. The Selectable attribute is cleared for the selected layers. As an alternative, you can leave all layers Selectable and use the Ctrl key in combination with the Select tool to cycle through each Selectable layer.

Note: The instructions for making a layer editable are the same, except that you select the check box in the Editable column instead.

- For instructions on making objects in a layer selectable, see *Selecting Objects in a Layer* in the *Help System*.

For example, if you want to find all customers who live within a fifty kilometers radius of Paris, make the Street layer selectable. If the map also includes a layer of hospitals (which you do not want to include in the radius search), turn off the Selectable option for the hospital layer.

The Editable or Selectable options only apply to the Map window itself. You can always select objects using the Select or SQL Select commands regardless of whether a layer is selectable.

Working with Thematic Layers

When you create a thematic map in MapInfo Professional, the thematic shading is added to your map as a separate layer. It is drawn on top of the layer, from which it gets the raw data. Separating a thematic layers from its base layer provides you with several important options:

- Graduated symbol thematic maps do not require that your base layer contain point objects. Instead, graduated symbol objects are built regardless of the map object type. Therefore, even if your base layer contains region or line objects, you will still be able to create a graduated symbols map.
- You can have multiple thematic layers per base layer. In some cases, you do not have to add another base layer to the map to create another thematic layer. You can display more than one thematic layer at a time, as well as perform bivariate thematic mapping.
- You can use **Layer Control** to turn the display on or off for a given thematic layer. The layer it is based on can continue to display. You can also set individual zoom layers on thematic maps.

Ordering Thematic Layers

To display thematic layers properly, they must be in a specific order. This is especially important when you want to display more than one thematic layer at a time. For example, you would want pie or bar charts for an area map to display on top of regions that are shaded in order to see them.

The following lists the order of map layers from top to bottom (note that map layers are drawn from the bottom up):

1. Pies, Bars, or Graduated Symbol thematic layer.
2. Dot Density thematic layer.
3. Ranged thematic layer – where Color or Size Attributes are applied.
4. Ranged (or Individual Value) thematic layer – where All Attributes are applied.
5. Major layer or base layer.
6. Grid thematic layer.

When you create a new thematic layer, MapInfo Professional automatically inserts it into its proper place.

- For more information, see *Reordering Thematic Layers* in the *Help System*.

Displaying Thematic Layers

You can turn the display on and off for thematic layers the same way you can for other map layers. All the display settings in Layer Control are also applicable to thematic layers, enabling you to set a zoom level for each thematic layer. You can also access the Modify Thematic Layer dialog box through Layer Control by clicking the Thematic button.

Thematic layers are always drawn after their base layer. Therefore, they appear above their base layer in the Layer Control list, and are indented to distinguish them from other map layers.

Thematic layers are displayed in the list with this naming convention:

```
<Thematic type> with/by <variable-list>
```

The type of thematic map is noted first, followed by the list of variables used to create the map. For example, a pie thematic layer that uses commuting data is listed this way:

```
Pies with ComAlone, ComCarpool...
```

The variable list is truncated if there is not enough room to display each variable used in your thematic analysis. For more information about thematic mapping, see [Using Thematic Mapping to Analyze Information on page 414](#).

Converting Objects into Region Objects

When you convert a circle or ellipse into a region, the region contains 101 nodes. When you convert an arc into a region, the number of nodes depends on the starting and ending angle of the arc. If the arc spans 180 degrees (for example, the starting angle is zero and the ending angle is 180), a region based on the arc will contain 52 nodes; if the arc spans 90 degrees, a region based on the arc will contain 27 nodes; etc.

If you perform extensive map editing, you may need to convert polylines to regions. If you cut or copy a group of selected nodes, MapInfo Professional treats the set of nodes as a polyline object, and places the polyline on the clipboard. If you then paste the object, MapInfo Professional places the polyline on your map. At this point, you may want to perform Convert to Regions, depending on whether you want the finished object to be a region.

Convert to Regions also allows you to perform node-editing operations (for example, adding and moving nodes) on objects that ordinarily do not allow node editing. For example, MapInfo Professional does not allow you to add nodes to rectangle objects; however, if you convert a rectangle object to a region, you can then add nodes to the region.

To convert objects into region objects:

1. Make the Map window active.
2. Choose the layer containing the objects and make it editable.
3. Select one or more objects from the editable layer.
4. Choose **Objects > Convert to Regions**.

When you choose **Convert to Regions**, MapInfo Professional converts each of the selected objects into a region object. Each object is converted into a separate region; MapInfo Professional does not combine all selected objects into one region. To combine objects, use the **Combine** command.

MapInfo Professional automatically assigns the current region style to each of the region objects. To specify a region style, choose **Options > Region Style**.

Line, polyline, arc, ellipse, rectangle, and rounded rectangle objects may all be converted to regions. The **Convert to Regions** command does not affect point objects, text objects and region objects.

- For more information, see the *Creating Regions from Polygonal Areas Enclosed by Polylines* topic in the *Help System*.

Working with Raster and Grid Layers in Layer Control

A raster image is a type of computerized image that consists of row after row of tiny dots (pixels). If you have a scanner and scanner software, you can create a raster image by scanning a paper map. After you scan a map image and store the image in a file, you can display the file using MapInfo Professional.

In contrast, vector images contain coordinate-based data structures represented by x and y coordinates (most of MapInfo Professional's data is in vector format).

The Help System contains these related topics:

- *Displaying a Raster Image*
- *Registering the Coordinates of a Raster Image*
- *Working with Raster Images*
- *Changing the Display of a Raster Image*

Converting Grid Files to MapInfo Professional Grids (*.mig)

The Grid Tools (Create MapInfo Grid from Table of Objects and Create MapInfo Grid from Other Grid Files) In MapInfo Professional allow you to convert Grid Files to MapInfo Professional Grids (*.mig). These tools convert any grid file for which there is a grid handler present with the output being in MapInfo Professional (*.mig) format. You can apply relief shading from a user-specifiable virtual light source and control the color inflection values. The color files are simple text files that you can edit to specify the color inflection values by specific value or as a percentage of the range of data values. You can open and display the new grid after the conversion.

- For specific instructions, see *Converting Grid Files to MapInfo Professional Grids and Specifying Inflection Values with the MapInfo Professional Grid Converter* in the *Help System*.

Adjusting the Translucency of a Grid Thematic Map

The Translucency slider control in the Modify Thematic Map dialog box allows you to control the percentage that layers show through raster images. A translucent image allows you to partially see *through* the image. Translucent images can be layered on top of other layers so that the lower layers are partially visible through the image.

Note: The Grid Appearance dialog box allows you to specify color inflection distribution options for grid maps.

- For specific instructions, see *Adjusting the Translucency of a Grid Thematic Map* in the *Help System*.

Working with Seamless Layers

Use or create a seamless map layer to treat a group of base tables as if they were one. A seamless layer allows you to change display attributes, apply or change labeling or use the **Layer Control** dialog box for an entire group of tables at once. You can also retrieve information using the Info tool, and select or browse any one of the layer's base tables. A base table can be any regular MapInfo Professional table. Grid layers cannot be made seamless.

This feature is especially useful when you want to display a vector or raster backdrop for your maps such as joining street or boundary maps. For example, you may have a seamless layer of county boundaries made up of several individual county tables.

Features Available with Seamless Layers

Since a seamless layer is actually made up of *several* base tables, MapInfo Professional does treat it a little differently than a regular MapInfo Professional table. You can use the following MapInfo Professional features with a seamless map layer:

- **Layer Control**
Use any of the functions except Thematic Mapping from the Layer control dialog box on your seamless layer. Add, Remove, or Reorder layers or set Display, Zoom Layering or Label options for the seamless layer (*all* base tables) at one time. However, you cannot make a seamless layer editable.
- **Info Tool**
Retrieve information about a particular object in a base table.
- **Select Tools**
Select objects from the seamless layer. You can only select a group of objects if they reside in the same base table. Press the Shift key while clicking the Select Tool to do so. If you attempt to select several objects that reside in different base tables, MapInfo Professional will only select objects in one base table. If you use the Marquee or Radius select tools and the selected area spreads across two different base tables, MapInfo Professional selects the table in either the center of the circle or polygon.
- **Browse Table**
Display a Browser window of a particular seamless table. You are prompted to select a base table.

Turning Seamless Layers On and Off

If you need to edit the structure of your seamless layer, you'll need to turn your seamless layer off.

To turn your seamless layer off:

1. Choose **Options > Show MapBasic Window**. The **MapBasic Window** displays.
2. Type set table "tablename" seamless off. MapInfo Professional turns off the seamless layer.
3. Display the table in a browser to view or edit its table structure. If you edit the table structure, you will need to recompile the seamless layer.

MapInfo Professional turns off the seamless layer. Display the table in a browser to view or edit its table structure. Use the Seamless Table Manager to add or create seamless tables.

To turn the seamless layer on:

1. Choose **Options > Show MapBasic Window**. The **MapBasic Window** displays.
2. Type set table "tablename" seamless on. MapInfo Professional turns the seamless layer on again.

Opening a Seamless Map Layer

MapInfo Professional includes sample seamless maps or you can create your own. Some of these data files are available on the MapInfo web site in the MapInfo Professional Tutorial data. We recommend you download this data for use with these examples.

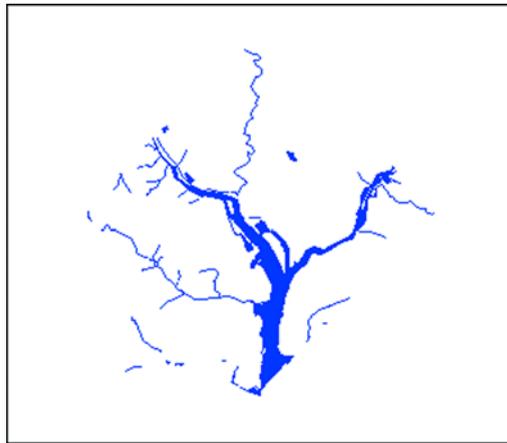
From the `mapinfo\tutorial\tut-usa\usa\dc\seamless` directory, choose **dcmetrow**. A seamless map layer of water areas in Washington DC displays. Notice at first glance that the seamless layer looks like any other MapInfo Professional table. However, the **Dcmetrow** seamless map layer is made up of the following base tables:

- **vaarliw.tab** (Arlington Virginia water areas)
- **vaalexw.tab** (Alexandria Virginia water areas)
- **dcwashw.tab** (Washington DC water areas)

To display a sample seamless map:

1. On the **File** menu, click **Open**.
2. From the data directory, choose DCWATER.

The following seamless map layer of water areas in Washington DC displays.



The structure of each seamless layer includes the path name of each base table plus a description that defaults to the table name (alias). To view the table structure, turn the seamless layer off and display the seamless table in a browser. Refer to **Turning Seamless Layers On and Off** in the Help System.

Characteristics of a Seamless Layer

Since a seamless layer is actually made up of *several* base tables, MapInfo Professional does treat it a little differently than a regular MapInfo Professional table. You can use the following MapInfo Professional features with a seamless map layer:

- **Layer Control**. Use any of the functions except Thematic Mapping from the **Layer Control** dialog box on your seamless layer. Add, Remove, or Reorder layers or set Display, Zoom Layering or Label options for the seamless layer (*all* base tables) at one time. However, you cannot make a seamless layer editable.
- **Info Tool**. Retrieve information about a particular object in a base table.
- **Select Tools**. Select objects from the seamless layer. You can only select a group of objects if they reside in the same base table. Press the **Shift** key while clicking the Select Tool to do so. If you attempt to select several objects that reside in different base tables, MapInfo Professional

will only select objects in one base table. If you use the Marquee or Radius select tools and the selected area spreads across two different base tables, MapInfo Professional selects the objects in the center of the circle or polygon.

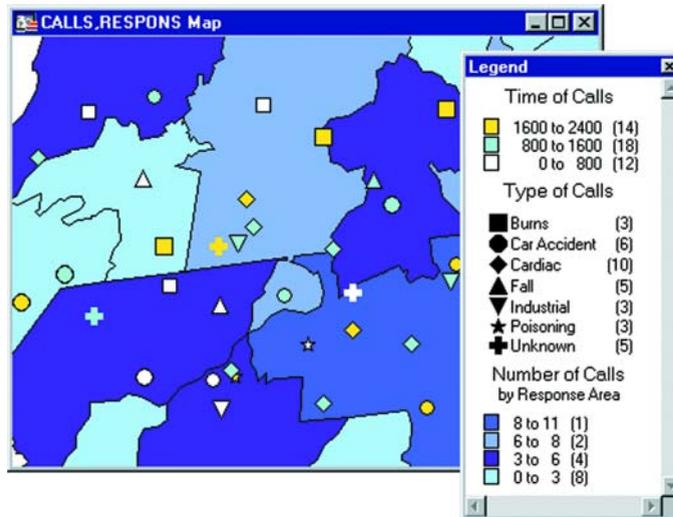
- *Browser Table*. Display a Browser window of a particular seamless table. You will be prompted to select a base table.
- For more information, see *Creating/Compiling a Seamless Layer* in the *Help System*.
- For more about Seamless Layers in general, see the *MapInfo Professional Help System*.

The Help System contains these related topics:

- *Experimenting with a Seamless Layer*
- *Specifying Search Paths for Component Tables of a Seamless Layer*
- *Turning Seamless Layers On and Off*

Data – Where MapInfo Professional Begins

To use MapInfo Professional, you need to match the files that contain your information (*data*) and maps that come from MapInfo Professional or that you create yourself. MapInfo Professional organizes all its information, whether textual or graphic, in the form of tables; each table is a group of MapInfo Professional files that constitute either a map file or a database file.



Emergency medical calls thematically shaded by type of call and time of call, with response zones shaded by number of calls.

MapInfo Professional begins when you open tables, whether they are maps or data from a database.

What Is a Database and Other Basic Terminology

A *database* is a collection of information organized so that it can be readily accessed using a computer. Databases in MapInfo Professional are often referred to as tables.

To understand MapInfo Professional, you need a basic understanding of database organization, in particular, three fundamental concepts: *record*, *field*, *index*, and *query*.

LastName	FirstName	Address	ZIPCode
Fraser	Mark	212 Hudson St	12205
Donaldson	Eva	459 Yates St	12208
Espinosa	Kim	200 Broadway	12180
Smith	Charles	1 Redbird Ln	12065
Chang	Elizabeth	53 Crescent Rd	12077

To understand the database concepts we are about to discuss, consider the table above.

Each row in the list contains information about one person. In database terms, each row is a *record*. Each different box of information (Last Name, First Name, etc.) within a record is called a *field*. Fields correspond to the columns so that the table shown above contains four different fields.

Database fields are ordered (first, second, third, fourth, etc.), and the basic convention is that the first field displays as the first column in the database. The second field is in the column to the right of the first, and so on to the last field, which is displayed in the right most column.

Since the data in a database isn't usually in alphabetical order or postal code order or any other pattern which would make it easy for the computer to find the information, the computer needs a way to organize the information. A database uses an *index* to keep track of what information is where and what record it is tied to. Without indices it would be tedious to find anything in a database with hundreds of records, not to mention databases with thousands and tens of thousands of records.

A database index works on the same principle as a book index. A book index is an alphabetical list of topics that appear in the book and the page number or address of the information. Database indices work in a similar way, except that they generally work behind the scenes. You don't ever see them. But the computer constructs them and allows you to use them in your work. An index allows the computer to work with the records according to the order of items in the key field.

MapInfo Professional requires fields to be indexed in order to use the Find command. Indices are also used to improve performance in SQL Select and joins.

A *query* is just another word for a question. You query data to collect a particular type information from your database. For example, if you wanted to know how many customers live within a certain number of miles of your store, (and you had that kind of information in your database), you could query the database to find out that information. The result of the query is *query data*. You can think of query data as a subset of your data as in the example — a list of all the customers within 5 miles and none of the customers who live further away. MapInfo Professional has tools to help you query your data and display it on a map. For more about querying your data, see [Selecting and Using Queries in Chapter 8 on page 361](#).

What Data Can I Use in MapInfo Professional?

MapInfo Professional allows you to use data that was created in other file formats. When you bring data into MapInfo Professional for the first time, you need to specify its format. For example, if your data is in delimited ASCII format, choose **Delimited ASCII** from the **File Format** drop-down list.

Data file choices include:

- Microsoft Access
- Microsoft Excel
- dBASE DBF
- ESRI[®] shapefiles
- Raster Image
- Grid Images
- ASCII Delimited Text
- Lotus 1–2–3
- Remote Databases (Oracle, Informix, SQL Server, etc.)
- Workspace
- Comma Delimited CSV files

When you choose a particular file format, the File Name box will only list files that have the appropriate extension. For example, if you choose **dBASE DBF** from the **File Format** drop-down list, MapInfo Professional will only list files that are in dBASE format.

When you choose a file other than a MapInfo-formatted file type, MapInfo Professional creates a table structure for that data based on the type of file that it is.

Note: During the .TAB file creation process, the original file is in no way altered. The file retains its original properties.

When you open that table in future work sessions, MapInfo Professional will treat these files as if they were in MapInfo Professional's native format. The next time you want to open the table, you should choose the .TAB format for the table. If you accidentally attempt to open the file again with its original file format, MapInfo Professional prompts you with the message:

```
Table definition already exists. Overwrite it?
```

This message displays because MapInfo Professional has already created a table for that file. To use the file you have already created, press **Cancel** and open the associated .TAB file.

Also keep in mind that MapInfo Professional supports long filenames and UNC paths. The UNC paths allow you to access your data without having to remember your drive mappings from one session to another.

To display your table in the Map window, your data must contain X and Y coordinates. If it doesn't already, you can add them using MapInfo Professional. Assigning these coordinates is called geocoding. More about geocoding follows later in this chapter and in **Chapter 4: Putting Your Data on the Map**.

The *Help System* contains these related topics:

- **Displaying your Excel (.XLS) Data**
- **Displaying your Access (.MDB) Data**
- **Displaying your Comma Delimited Data**

- [Displaying your dBase Data](#)
- [Displaying your Lotus 1-2-3 Data](#)
- [Displaying your ESRI Shapefile Data](#)
- [Registering and Displaying your ASCII Data](#)
- [Importing and Displaying GML File Data](#)
- [Displaying Your Remote DBMS Data](#)
- [Displaying and Importing Data from a Web Map Service](#)

Support for Raster Images

MapInfo Professional supports raster image display. Raster images are computerized pictures. These graphic images can be used as backgrounds for maps you create in MapInfo Professional and can serve as a reference for your displayed data.

When you bring in a raster image to MapInfo Professional, you may need to register it (specify its map coordinates) so MapInfo Professional can display it properly. Choosing the Raster Image file format from the **Open** dialog box will bring you to the Image **Registration** dialog box where you can specify the appropriate map coordinates. Once you register the image, a process that creates a .TAB file for the image, you can open it as you would open any table in a Map window. Images that you purchase from MapInfo Professional will already be registered.

If a raster image is georeferenced it will be automatically opened. If a raster image has an associated world file, you will be prompted to choose the projection. If you open a raster image that does not have any georeferencing data, you will be prompted to display or register the image.

For a full discussion of raster image display, see [Registering SPOT Images in Appendix C on page 861](#).

The MapInfo Professional raster handlers support:

- LeadTools to version 15
- MrSID SDK (3.2), to provide support for MG3 files
- Multi-threading; specifically for ECW and the Government handlers (ADRG, ASRP, CADRG, CIB, NITF)

AirPhotoUSA provides raster images at different elevations for particular areas in the United States. The AirPhotoUSA map handler allows MapInfo Professional users to open and display the imagery contained in AirPhotoUSA Map files as a layer. These files are treated just like any other raster file in MapInfo Professional. The MAPINFOW.PRJ file contains AirPhotoUSA information.

You can use the AirPhotoUSA Conterminous U.S. coordinate system without making any changes. However, if you want MapInfo Professional to recognize and give a name to that coordinate system, or to use it for other purposes, you must add it to the MAPINFOW.PRJ.

Understanding the Files Associated with MapInfo Professional Tables

When you open your data file, MapInfo Professional creates a table. This table consists of at least two separate files. The first file contains the structure of the data. The second file contains the raw data. All MapInfo Professional tables have the following two files:

- <SOMEFILE>.tab: This file describes the structure of your table. It is a small text file describing the format of the file containing your data.

- <SOMEFILE>.DAT or <SOMEFILE>.WKS, .DBF, .XLS: These files contain your tabular data. If you are working with a dBASE/FoxBASE, delimited ASCII, Lotus 1–2–3, Microsoft Excel, or Microsoft Access file, your MapInfo Professional table will consist of a .TAB file and your data or spreadsheet file. For raster tables, the equivalent extension might be BMP, TIF, or GIF.

Your data may also contain graphic objects. Once you assign X and Y coordinates to your data records, your table will also contain graphic objects. In **Geocoding – Assigning Coordinates to Records on page 203**, you will learn how to assign X and Y coordinates to your data records so you can display them on a map. If you already have graphic objects in your table, there are two more files associated with the table:

- <SOMEFILE>.MAP: This file describes the graphic objects.
- <SOMEFILE>.ID: This file is a cross reference file that links the data with the objects.

For a Microsoft Access table, there will be a file SOMEFILE.AID associated with the table instead of SOMEFILE.ID. This file is a cross reference file that links the data with the objects for a Microsoft Access table.

Your table may also include an index file. The index file allows you to search for map objects using the Find command. If you want to locate an address, city, or state using the Find command, those fields must be indexed in your table. The index is located in:

- <SOMEFILE>.IND

Opening Your Data in MapInfo Professional

You can open your Excel (.XLS), dBase (.DBF), Microsoft Access (.MDB), and ASCII (.TXT) in MapInfo Pro and display that data on a map. There are three steps to accomplishing this:

1. Creating a copy of your data in MapInfo format.
2. Creating points on a map using either coordinates in your data or by matching your data to a search file (see **When Do I Geocode vs. Create Points? in Chapter 4 on page 192** for this process).
3. Display your data on the map (see **Displaying Your Data on the Map in Chapter 4 on page 216** to complete this process).

If you are accessing your data remotely or use SpatialWare or other ODBC supported database product, see **Understanding Remote Tables and Databases in Chapter 6 on page 278** and *Working with the MapBasic Window* in the MapInfo Professional *Help System* for additional support. For more information about converting, displaying, and printing your data, see **Understanding Your Data in Chapter 5 on page 257**.

Opening MapInfo Tables

To work with the data in your database, you open the file or table that contains the data. MapInfo provides some free introductory data you can open as soon as you get MapInfo Professional.

Note: When you open a table and select a new Preferred View from the drop-down list, MapInfo Professional remembers your selection and uses it the next time you open a table.

- For instructions on opening the free introductory data provided by MapInfo, see *Opening the MapInfo Professional Introductory Data* in the *Help System*.

To open a local table:

1. On the **File** menu, click **Open**. The **Open** dialog box displays.
Note: If you are at the **Quick Start** dialog box (the first dialog box you see after starting MapInfo Professional), choose the **Open** button. The **Open** dialog box displays.
2. Navigate to the data file you want to open. Use the **Files of type** drop down to select the type appropriate for your data.
3. Select the view you want of this data from the **Preferred View** drop-down list.
 - **Automatic** – MapInfo Professional chooses the most appropriate view. If the data is mappable (i.e., graphic objects are attached to the data), for example, MapInfo Professional opens the table in a Map window. If you have a Map window displayed and the table you want to open is mappable, MapInfo Professional will automatically open the table in the current Map window. If the data is not mappable, MapInfo Professional will attempt to open the table in a Browser window. If the table cannot be mapped or browsed, MapInfo Professional opens the table using the No View option (no data is displayed).
 - **Browser** – MapInfo Professional attempts to open the table in a Browser window.
 - **Current Mapper** – MapInfo Professional attempts to add your data to the current Map window.
 - **New Mapper** – MapInfo Professional attempts to open the table in a new Map window.
 - **No View** – MapInfo Professional opens the table, but no data is displayed.**Note:** When you open a table and select an option in the **Preferred View** drop-down list, MapInfo Professional remembers what you selected and uses the same option the next time you open a table.
4. Select the **Create copy in MapInfo format for read/write** to open it in native (.tab) format.
Note: If you do not select the **Create copy...** check box, the file opens read-only.
5. To open the file, do one of the following:
 - Double click the file you want to open
 - Click the file you want to open to highlight it in the list and click **Open**.Using either method, MapInfo Professional opens the data file.

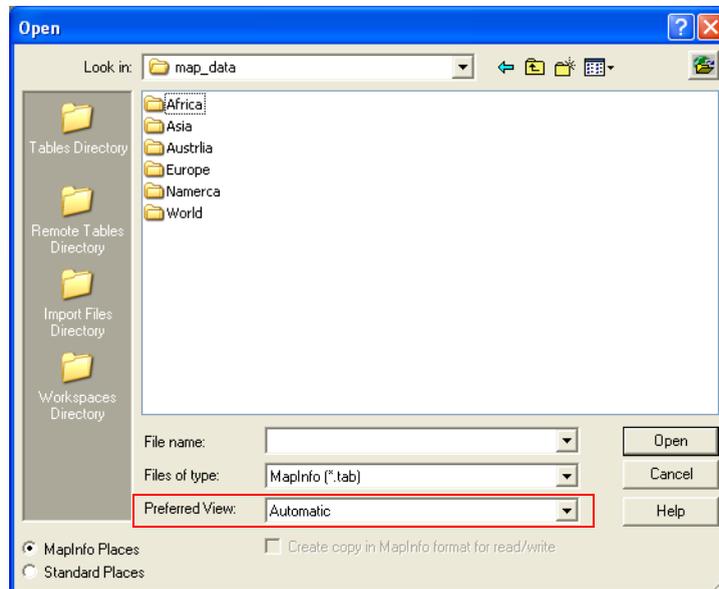
Note that although an MapInfo Professional table consists of two or more component files (STATES.tab, STATES.DAT, STATES.MAP etc.), only the .TAB file appears in the **File Name** box of the **Open** dialog box. It is the only component file you must open. For more about these other MapInfo file types, see [Understanding the Files Associated with MapInfo Professional Tables on page 117](#).

In MapInfo Professional you can work with a variety of table types. Some data tables are like the example table we just discussed. Further subdividing this class of tables are data tables that contain graphic objects (map objects) and data tables that do not (such as spreadsheets or external database tables). Raster tables are graphic images that you can display in a Map window. These computerized pictures do not have the same table structure of record, field, and index as data tables do, and therefore, will not be discussed in this chapter. For more on raster images, see *Working with Raster Images* in the MapInfo Professional *Help System*.

You can see what windows are currently open by reviewing the list at the bottom of the **Window** menu. If one of these “More Windows” windows is the active window, the check box displays beside the More Windows entry. To make another window active, click the entry in the Window list. The window you selected comes to the forefront of the MapInfo Professional screen. When you select the More Windows entry, the **Select Window** dialog box displays. To activate a window from this list, either double-click the entry in the **Select Window** list, or click the entry and click **OK**.

A Note about the Preferred View Options

Of the five Preferred View options, **Automatic** and **No View** will work on all tables, regardless of what kind of data they contain. MapInfo Professional attempts to open the table as specified for **Browser**, **Current Mapper**, and **New Mapper**.



Of the five Preferred View options, **Automatic** and **No View** will work on all tables, regardless of what kind of data they contain. MapInfo Professional attempts to open the table as specified for **Browser**, **Current Mapper**, and **New Mapper**. If it cannot, it will open the table according to the following rules:

- If **Current Mapper** is selected, and there is no Map window displayed, MapInfo Professional will attempt to open the table in a new Map window.
- If **Current Mapper** or **New Mapper** is selected and the data is not mappable, MapInfo Professional will try to open the table in a Browser window.
- If the table cannot be mapped or browsed, MapInfo Professional will open the table using the **No View** option (no data is displayed).

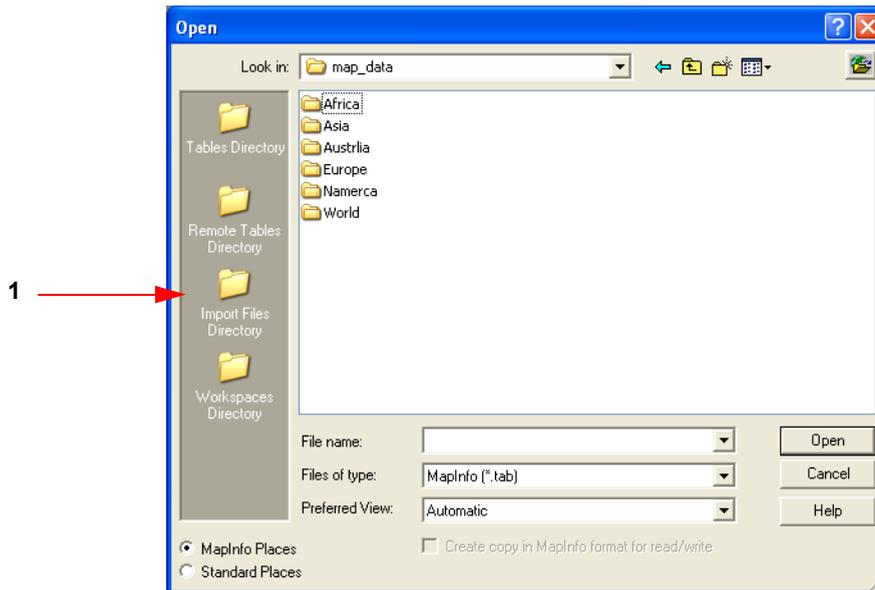
For more information, see *Renaming a Table* and *Deleting a Table* in the *Help System*.

Opening Data in Remote Tables

MapInfo Professional also enables you to access remote database data through its ODBC connectivity support and the Oracle Spatial Object support. The MapInfo Professional ODBC connectivity support supplies many ODBC drivers that you can easily install. Oracle spatial databases enable you to store spatial objects with your conventional data in the same database. This enables you to read and write geographies in Oracle Spatial without the need for a middleware product such as MapInfo Professional's SpatialWare, or SDE. You also gain better performance through the Oracle Call Interface (OCI). In addition, Oracle applications can use this same spatial or non-spatial data through other interfaces (ODBC, OCI, JDBC, PL/SQL, HTTP, IIOP, etc.) or use other spatial or non-spatial tools (MapInfo Professional, ArcView, Intergraph, Excel, Forte, Formida, etc.). For more about accessing remote data using ODBC connectivity, see [Setting your Database Connection Preferences in Chapter 2 on page 67](#).

Using the MapInfo Places on Open Dialog Box

The **Open** dialog box provides a quick way to look for maps you have created.



1 The **Places** box. Select the **Workspaces Directory** option in the **Places** box, to display the **Workspace (.wor)** type in the **Files of Type** list. If you select any other entry in the **Places** box, **MapInfo (.tab)** displays in the **Files of type** list.

The **Open** dialog box provides many ways to quickly find the maps that you have created in a variety of locations in your system and network.

Note: The **Places** box on the left side of the **Open** dialog box allows you to select a directory in which you may have your map and other MapInfo Professional tables and workspaces.

When you select the **Workspaces Directory** option in the **Places** box, the **Files of type** drop-down list changes to **Workspace (.wor)** type. If you select any other entry in the **Places** box, **MapInfo (.tab)** displays in the **Files of type** list.

- For more information, see *Opening MapInfo Professional Introductory Data* in the *Help System*.

Opening Special File Types

There are additional file types that MapInfo Professional can read including rasters, grids, shape files. For details about working with raster images, see *Displaying a Raster Image* and *Registering the Coordinates of a Raster Image* in the *MapInfo Professional Help System*.

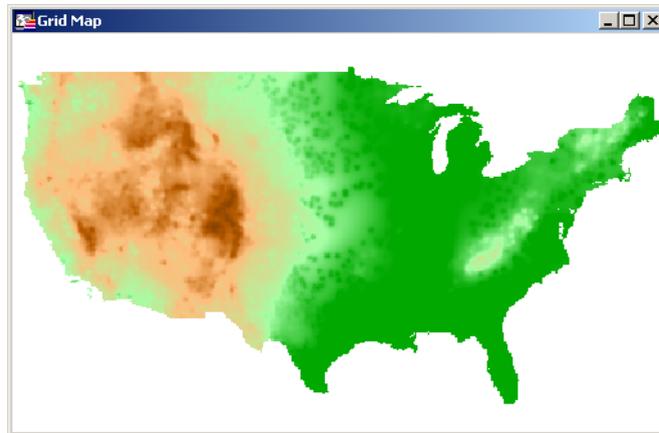
Opening a Grid Layer

A grid layer is a type of thematic map that displays data as continuous color gradations across the map. To produce this type of thematic map, you interpolate point data from the source table. In MapInfo Professional, a grid file from the data interpolation is generated and is displays as a raster image in a Map window.

- For more information, see *Selecting Point Objects in Grid Files* in the *Help System*.

To open a grid layer:

1. On the **File** menu, click **Open** to display the **Open** dialog box.
2. Select **Grid Image** in the **Files of type** drop-down list.
3. Navigate to the directory in which your grid image is located and click the file you want to open.
4. Click **Open** to display the grid image.



Reviewing the Windows in MapInfo Professional

MapInfo Professional allows you to display your data in many different windows and with different views at the same time. For instance, you can display the WORLD table of country boundaries in a Map window to view the geographic boundaries. At the same time you can display the tabular data of the WORLD table in a Browser window to see the country names, population, and other data in the file. If you make a change in either window, it is reflected in the other.

Only one view can be active at a time. To make a different window active, click its title bar. Notice that the menu bar changes depending on which window is active. For instance, when you are working in a Map window when you also have a Browser open, only the **Map** menu is available on the menu bar. Make the Browser active. The **Browse** menu replaces the **Map** menu.

There are many different types of windows you can display your data in, depending upon what you need your data to communicate. This section covers the many ways you can display your data using MapInfo Pro. Each of these display methods: map, list, graph, and presentation give your information a different impact. How you display the information you have should depend upon what effect you want.

Consider these options carefully before you select a display type.

- **Map windows** present information arranged as conventional maps, allowing you to visualize the geographic patterns of your data.
- **Browser windows** present information as tabular lists (just as conventional databases do), allowing you to fully examine tabular data.
- **Graph windows** present information arranged as graphs, allowing you to visualize and make comparisons of the purely numerical patterns.
- **Layout windows** present information in a polished and attractive way and can be embedded in other applications such as Microsoft Word or PowerPoint.

Displaying Data in a Map Window

You use Map windows to display the geographic objects from your table on a map. Map windows can display information from many tables at once, with each table a separate layer.

Opening a Table in a Map Window

You can create your maps or edit existing maps. You can open a Map window directly on the **File** menu, by clicking **Open** or by selecting **New Map window** from the **Window** menu.



Getting Around in the Map Window

There are a wide variety of tools that allow you to zoom, pan, and move objects around the Map window. Zooming allows you to look more closely or more widely at a particular geography. Panning allows you to move around a map left, right, up, and down. Moving selected objects in an editable layer is useful when you want to get your map right.

You can zoom using the mouse wheel or using the keyboard. For more about zooming using the mouse wheel, see *Using the Microsoft IntelliMouse to Move Around the Windows* in the MapInfo Professional *User Guide Help System*.

In addition to the usual zoom keys on your Main Toolbar (, , and ) , you can use the + and - keys on the keyboard, to zoom in and out more precisely.

- When you press +, you zoom in by a factor of 2.
- When you press -, you zoom out by a factor of .5.

You can pan in your Map window using the scroll bars or the **Arrow** keys **Up**, **Down**, **Left**, and **Right**.

Further, you can move an object in an editable layer more precisely by selecting it and using the following key combinations.

- **<CTRL + Arrow>** - moves the editable, selected objects 1 pixel at a time
- **<CTRL + Shift Arrow>** - moves the editable, selected objects 10 pixels at a time

Note: These tools also apply to the Layout window.

Changing a Map's Zoom Level

You change a map's zoom level by specifying certain parameters in the Change View dialog box.

To change a map's zoom level do one of the following:

- Choose **Map > Change View**. The **Change View** dialog box displays.
- Click the **Change View** button on the **Main** toolbar. The **Change View** dialog box displays.

The Change View dialog box allows you to set various parameters of the map including:

- Display the current zoom, scale or cursor position in the status bar (the default unit of distance is miles which is specified in Map > Options).
- Change the zoom, scale, and the center point of the current map view.
- Behavior of the map when you resize the window.
- Resize the map to fit the new window, keeping the view the same.
- Set the map to preserve the current scale, so that resizing the window has the effect of letting you see more or less of the map.

The Help System contains the following related topics:

- *Opening MapInfo Professional Introductory Data*
- *Setting Margins for a Map Window when Printing*
- *Editing Text in a Map or Layout*

Displaying Data in a Browser Window

You use Browser windows to view and manipulate your data records in traditional row and column form, typically used in spreadsheets and databases. Each column contains information about that particular field, such as name, address, phone number, cable ID number, or order amount. Each row contains all information relating to a single record.

- For more information, see *Displaying Data in a Browser Window* in the *Help System*.

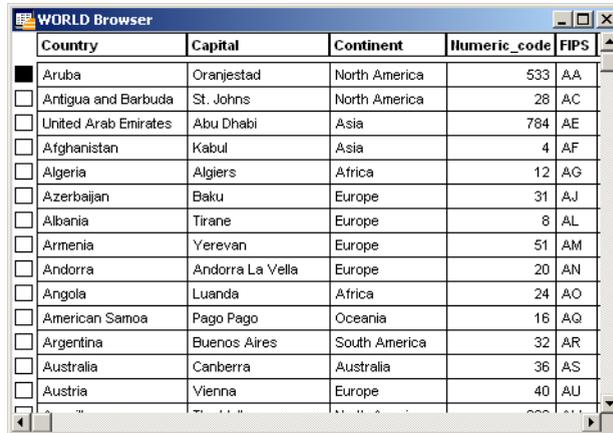
About the Browser Format

If you have ever worked with spreadsheets or databases, you are probably familiar with the Browser format. Each row of the table contains one record, and each column in the record contains information about a particular field (e.g. last name, street address, order number, price, and so forth). The name of the table appears in the Browser window's title bar. Column titles appear directly below the Browser window title bar, appearing as headings. You select a row by single clicking the empty box appearing to the left of that row.

The Status Bar appears at the bottom left of the MapInfo Professional window. This bar displays the range of records currently displayed within the Browser window out of the total number of records in the table.

Opening a Table in a Browser Window

You can edit records in your table, copy records, add new ones, or delete existing records. To open a Browser directly, on the **Window** menu, click **New Browser Window**.



	Country	Capital	Continent	Numeric_code	FIPS
<input checked="" type="checkbox"/>	Aruba	Oranjestad	North America	533	AA
<input type="checkbox"/>	Antigua and Barbuda	St. Johns	North America	28	AC
<input type="checkbox"/>	United Arab Emirates	Abu Dhabi	Asia	784	AE
<input type="checkbox"/>	Afghanistan	Kabul	Asia	4	AF
<input type="checkbox"/>	Algeria	Algiers	Africa	12	AG
<input type="checkbox"/>	Azerbaijan	Baku	Europe	31	AJ
<input type="checkbox"/>	Albania	Tirane	Europe	8	AL
<input type="checkbox"/>	Armenia	Yerevan	Europe	51	AM
<input type="checkbox"/>	Andorra	Andorra La Vella	Europe	20	AN
<input type="checkbox"/>	Angola	Luanda	Africa	24	AO
<input type="checkbox"/>	American Samoa	Pago Pago	Oceania	16	AQ
<input type="checkbox"/>	Argentina	Buenos Aires	South America	32	AR
<input type="checkbox"/>	Australia	Canberra	Australia	36	AS
<input type="checkbox"/>	Austria	Vienna	Europe	40	AU

To create a report of your data, use the Crystal Reports functionality included in MapInfo Professional (on the **Tools** menu, click **Crystal Reports**).

- For more information, see *Opening Multiple Browsers*, *Scrolling through a Table*, and *Using the Select Tool to Edit Browser Entries* in the *Help System*.

How a Browser Displays in a Layout

A Browser window displays with the column headings at the very top of the frame. Immediately below, it displays the contents of the table, starting with the row and column at the upper-left corner of the table. It displays as many columns and rows as it can fit in the frame, regardless of how many are displayed in the table. When you resize the frame, the number of rows and columns displayed are adjusted accordingly. However, fields removed from the table with the Pick Fields command are not displayed in a table frame.

The number of rows and columns that can be displayed in a frame depends on font size and column width. The frame displays Table text using the font style and size for that Browser window. When you want a different type style in the frame, you have to make the change in the Browser window using **Options > Text Style** dialog box. When you use smaller type, you can get more rows and columns in a frame.

You can also manually adjust column width in a Browser window without affecting the underlying field size for the base table. You do this by clicking and dragging the short vertical bars separating the column names in the Browser window.

The Help System contains the following related topics:

- *Adding a New Row to a Browser*
- *Adding and Editing Text in a Browser*
- *Adding Fields to a Browser*
- *Choosing a Font for your Browser*
- *Creating a Default Browser View*
- *Preserving Column and Expression Settings in a Browser Window*
- *Removing Fields from a Browser*
- *Resizing a Browser's Columns*
- *Setting Margins for a Browser Window when Printing*
- *Showing or Hiding a Browser's Grid*
- *Using the HotLink Tool in a Browser Window*

Changing a Record's Data, Font, and Style

The **Info** tool allows you to choose an object or row and see a window displaying information from the table about that object. Click another object with the **Info** tool and its information appears in the same window. Click the **Ctrl**-menu box [Close box] of the Info window to make it disappear.

Mouse Wheel Support for Browser Window

When you are working in the Browser window, you can use the mouse wheel to scroll through the records. Roll the mouse button down to scroll down the list, and roll the mouse button up to scroll up the list. You can use the **Tab** key to scroll right and the **<Shift Tab>** keys to scroll left in the Browser window.

Displaying Data in a Graph Window

The Graph window allows you to visualize statistical relationships in graph format. You can create many different kinds of graphs: 3D, bar, line, area, histogram, scatter, bubble, and pie graphs. You can also choose from a number of different graph templates.

To display a table as a graph:

1. From the **File** menu, click **Open** and select the table that you want to display as a graph.
2. Choose **Window > New Graph Window**. The **Create Graph Step 1 of 2** dialog box displays.
3. Choose the chart type and the template for your graph.
4. Click **Next**. The **Create Graph Step 2 of 2** dialog box displays.
5. Choose the field, or create an expression that contains the data values fields that you want used when creating your graph.

Note: For more information about using the graph features of MapInfo Professional, see *Graph Help System available by selecting Help > MapInfo Graphing Help Topics*.

6. If you want labels for your graph, choose the column that the records are to be labeled with.
7. Choose how you want your graph data organized in rows or series.
8. Click **OK** to display a Graph window.

After the graph displays you can invoke one of several editing dialog boxes to modify an extensive array of attributes. You can also move and resize objects within the graph window until the desired graph is achieved.

The *Help System* contains these related topics:

- *Editing a Graph*
- *Saving a Graph*
- *Saving a Graph Window as a Template File*
- *Setting Margins for a Graph Window when Printing*
- *When Should I use Label Axis Options?*
- *When Should I use Value Axis Options?*

Displaying Data in a Layout Window

The Layout window allows you to combine Browsers, Map windows, Graph windows, and other graphic objects into one layout which can then be sent to a printer or plotter. You use this type of window to create presentation graphics. Layout windows have scroll bars at the right and at the bottom like Map windows and Browser windows.

You can display rulers at the top and to the left to help you in positioning, sizing and aligning objects.

The Zoom displayed in the status bar indicates the magnification factor that is currently applied to the Layout. When the zoom is 37.46%, then the Layout is being displayed 37.46% of its actual size. When the zoom is at 123%, then the Layout is being displayed at 123% of its actual size.

Opening a Map in a Layout Window

To use a Layout window, on the **Window** menu, click **New Layout Window**.

Note: MapInfo Professional has some excellent tools to assist you in moving around the Layout window. See [Getting Around in the Map Window on page 124](#) for these details.

The *Help System* contains these related topics:

- *Sending Objects to the Back of a Layout*
- *Sending Objects to the Front of the Layout*
- *Printing a Layout*
- *Setting Printing Margins for a Layout*
- *How a Map Legend Displays in a Layout*
- *Printing a Legend in a Layout*
- *Changing a Map Scale in a Layout*
- *Moving a Map or a Layout*
- For instructions in sending objects to the back of a layout, see the *Displaying Data in the Layout* topic in the *Help System*.
-
- For instructions in sending objects to the front of a layout, see the *Displaying Data in the Layout* topic in the *Help System*.

Other Windows for Displaying Data

There are two other ways of displaying data that are used less often or can be used in conjunction with display options we have already reviewed.

- *Legend Windows* are the key boxes at the bottom of the map that explain what the map symbols mean. There are two different kinds of legend windows:
 - a. The *Thematic Legend* window is automatically created and details the meaning of colors, symbols and styles on a thematic map. Display or hide this legend in the **Options** menu, by clicking the **Show/Hide Theme Legend Window** menu option.
 - b. The *Cartographic Legend* displays legend frames for any map layer, not just thematic map layers. The legend window displays the legend, or key, to the cartographic data on your map.

The legend frames can all be in one window, or can be split among several legend windows for the same map. Therefore, each map can have one or more cartographic legend windows containing the frames of your choice. Additionally, you can customize the text and style of the information presented. Modifications to the legend can be made through shortcut menus you access by right-clicking in the legend window or through the **Legend** menu. You can learn more about legends in [Working with Legends in Chapter 9 on page 442](#).
- *Redistricting Windows* allow you to create groupings of spatial information. This is a little more complex than these other options. For more information about redistricting windows, see [Redistricting](#) in the MapInfo Professional *Help System*.

Saving, Closing, and Exporting Your Work

Preserving your work is an important part of being productive. MapInfo Professional has a wide variety of ways you can save what you are working on, depending upon what needs to be saved and how you need to retrieve it.

Saving a Workspace

If you work with the same tables repeatedly, you know that opening each one individually every time you use it can be tedious. With MapInfo Professional's workspace feature, you can automate this process so you can get back to the business of creating maps and analyzing data sooner.

When you work with MapInfo Professional you generally use many different tables and windows. A Map window, for instance, is likely to be built of several layers. MapInfo Professional uses *workspaces* to save your work setup from session to session. Workspaces prevent you from having to reassemble all the pieces of your earlier setup from scratch. So, you don't have to reopen tables, re-create maps or layouts, resize windows, or do anything else just to duplicate what was on your desktop the last time you were using MapInfo Professional.

CAUTION: Saving a workspace will not save edits you have made to tables in the workspace.

If you close a window or table and you have thematic maps, graphs, label settings or label edits, or cosmetic objects pending, MapInfo Professional will prompt you to save the session to a workspace.

- For more information, see *Saving a Workspace and Saving a Map Window as a .TAB File* in the *Help System*.

For instructions on saving a Map window as a .TAB file, see the *Help System*.

Saving Your Workspace as an XML-Based MWS File

You can save the maps in your workspace out to an XML format for use with MapXtreme 2004 applications. When saving a workspace to MWS format, only the map windows and legends are saved. All other windows are discarded as MapXtreme 2004 applications cannot read that information. Once your workspace is saved in this format, it can be opened with the Workspace Manager utility that is included in the MapXtreme 2004 installation or with an application developed using MapXtreme 2004. The file is valid XML you can view it using any XML viewer or editor. MWS files created with MapInfo Professional 7.8 or later can be validated using schemas supplied with MapXtreme 2004.

Note: You will not be able to read files saved in MWS format in pre-8.0 versions of MapInfo Professional.

You can set the visibility of a modifier theme without regard to its reference feature layer, so you can turn the visibility of the main reference layer off but still display the theme. In MapXtreme2004, the modifier themes (Dot Density, Ranges, Individual Value) are only drawn if the reference feature layer is visible. To ensure that modifiers marked as visible in MapInfo Professional display in tools like Workspace Manager, we force the visibility of the reference feature layer so that its modifier themes display.

- For specific instructions, see *Saving your Workspace as an XML-Based MWS File* in the *Help System*.
- For more information, see *Caveats for Saving Label Expressions to MWS* and *Caveats for Saving Thematic Expressions to MWS* in the *Help System*.

Saving a Table or a Copy of a Table

To save changes to map objects or data, you must save the table. (On the **File** menu, click **Save Table**.) A dialog box displays asking you to choose which table you want to save.

You can also save a copy of the table under a new name, using **Save Copy As**. This, in essence, creates a new table. This is helpful in several instances, as when you want to:

- Retain any changes while preserving the original table.
- Save a table with a temporary column (from Update Column).
- Create a new table before you make editing changes to the original table.
- Save spreadsheet files that you wish to modify in MapInfo Professional.
- Save a table in a different projection.

To save a copy of the table:

1. On the **File** menu, click **Save Copy As**. The **Save Copy of Table** dialog box displays.
2. Choose the file to save and click **OK**.
3. Give the file a new name.

The original table remains unchanged and open for all further changes. The new table does not open immediately after its creation, but can be opened for use at any time. When choosing a name for your new table that begins with a number, MapInfo Professional adds an underscore to the beginning of the table name. For instance, your table 1STREETS.tab. will become 1_STREETS.tab.

Saving a copy of a raster table only saves a copy of the *.tab file, not the image. You cannot change the projection of a raster or grid table using **Save Copy As**. To do this go to the **Table** menu, point to **Raster** and click **Modify Image Registration** and click the **Projection** button. Then save the file from there.

Since MapInfo Professional supports long filenames, it is easier to give the new table a name that is descriptive and at the same time distinguishes it from the original file.

The Help System contains these related topics:

- *Saving a Copy of your Table as a New Table*
- *Saving a Copy of Your Table as a New Table*
- *Tables you Cannot Update*
- *Choosing Ascending vs. Descending Sorts*
- *Column Name Syntax in the Order By Columns Field*
- *Rearranging a Table's Column Order*

Closing a Table

Closing a table removes it from active use in your current session. Choose the **Close** command from the **File** menu to close tables. When you close a table, you automatically close all views of that table. If you close a table that is displayed in a Map window with other tables, MapInfo Professional removes that table from the window, but the Map window remains open.

In addition, any subset tables of the original table (known as query tables) also close. You can use the Close command for any table, whether or not it is displayed in a window. Opening and closing *tables* is different from opening and closing *windows* in which you view your tables. You can open a table without opening any views of the data. Similarly, closing a window does not close the table (or tables) you are viewing in the window. They are still open and available for use. To close a window, click the **Ctrl**-menu box in the upper-left corner of any window and select **Close**.

If you have made changes to a table but have not yet saved those changes, MapInfo Professional will ask you if you want to save them before closing the table. To save your changes, choose **Save Table** from the **File** menu.

- For more information, see Closing a Table, Closing All Open Tables, and Closing Multiple Tables in the *Help System*.

Opening vs. Importing

You must open a table before you can use it. The Open command activates a dialog box for opening tables, (opening a table is described below). Choose the appropriate table by double-clicking on it in the dialog box.

Most programs require you to import files created in some other programs. MapInfo Professional allows you to work directly with files created in other programs. When you have a file in one of the following non-MapInfo Professional formats, you do not have to import it:

- dBase DBF
- Delimited ASCII
- Lotus 1-2-3
- Microsoft Access Database
- Microsoft Excel

By not importing data you save time; opening a file is quicker than importing it. You also save disk space. When you import a file, you make a copy of it. Since MapInfo Professional works directly with files from other programs, it does not have to make a copy.

When MapInfo Professional opens a file from some other program, it creates a file with a .TAB extension. This file describes the format of the file that actually contains the data. When you have opened a non-MapInfo Professional file, such as a Lotus file, in a previous session and attempt to open it again, the following prompt appears:

```
Table definition already exists. Overwrite it?
```

The table definition referred to is the .TAB file. It does not hurt anything if you continue. MapInfo Professional overwrites the .TAB file and opens the file.

Exporting Your Data to a New Format

You can export your Map window to other file formats with the Save Window As command (on the **File** menu, click **Save Window As**). This enables you to use your map in another application, such as word processing, presentation, or computer publishing packages.

Supported Export Formats

You can save data in a number of formats in MapInfo Professional. Windows .bmp is the initial default. The **Save Window to File** dialog box sets the last-used format as the default. Formats include:

- Windows Bitmap (*.BMP)
- Windows Metafile (*.WMF)
- Windows Enhanced Metafile (*.EMF)
- JPEG File Interchange Format (*.JPG)
- JPEG 2000 (*.JP2)
- Portable Network Graphics Format (*.PNG)
- Tagged Image File Format (*.TIF)
- TIFF CMYK (*.TIF)
- TIFF CCITT Group 4 (*.tif)
- TIFF LZW (*.tif)
- Graphic Interchange Format (*.gif)
- Photoshop 3.0 (*.PSD)
- Comma Delimited Format (.CSV)
- See *Understanding the Advanced Exporting Options* in the MapInfo Professional Help System.
- For more information, see *Understanding the Advanced Exporting Options* and *Setting your Output Setting Preferences* in the Help System

.Importing and Exporting Data in AutoCAD Format

Because CAD packages represent drawings in non-earth coordinates, all drawings imported or exported between MapInfo Professional and CAD suffer some distortion. This comes from trying to display non-earth information on a spherical coordinate system (like the globe). Coordinate conversions are used to assign longitude/latitude coordinates to CAD drawings that were created using non-earth coordinates. Conversions near the equator are more exact than conversions at the extremes of the hemispheres. To minimize distortion, import and export with no coordinate conversions and avoid translating maps that cover large areas.

- For more information, see *Importing DXF Attributes into MapInfo Professional* and *Importing Attributes with Nested Blocks* in the Help System.
- For more information, see *DXF Exporting Notes* in the Help System.

Cropping Images

When MapInfo Professional exports a window, it does not clip objects that extend beyond the edges of the windows, but it does export information about where the clipping is.

Other programs always honor the clipping of bitmap files. As for other formats, the behavior varies depending on the program that is used to display and print the file. Many programs, such as drawing programs, "explode" the file into individual objects. A file containing several country boundaries would explode into several polygon objects, one for each country. Programs like these usually ignore the clipping information that MapInfo Professional stores in the file.

Other programs, such as word processing programs and spreadsheets, typically open files as one compound object, without trying to explode them into component objects. These programs usually honor the clipping information and clip the contents appropriately.

For example, if you are exporting a Map window that displays part of Germany, but not all of it, the exported file contains the entire image of Germany. It also contains information about where MapInfo Professional clipped that image in its Map window. But when you open the exported window in your target application, a drawing package for example, the image of Germany may not be clipped.

Exporting to ASCII Format

MapInfo Professional also allows you to export your tabular data to a delimited ASCII file. This file can later be edited with a text editor or imported into another package. When you export to ASCII, MapInfo Professional displays the **Delimited ASCII Information** dialog box, where you choose your delimiter character. You can also choose to have the first row of the ASCII file become column titles.

MapInfo Professional also displays a dialog box that you use to indicate the character set for the exported ASCII file. Different platforms use different character sets. MapInfo Professional must know the platform where you are going to use the exported file in order to provide the appropriate character set. No graphical data is exported to ASCII.

Exporting to dBase (*.DBF) Format

MapInfo Professional can export tabular data into dBASE DBF format. Exporting to DBF creates only the .DBF file. No graphical data is exported to dBASE. When you save your table in DBF format, you create a .DBF file, as well as some other files. These other files contain graphic information (for example, MapInfo Professional indices and other information that MapInfo Professional uses).

MapInfo Professional also displays the dBASE DBF Information dialog box that you use to indicate the character set for the exported DBF file. Different platforms use different character sets. MapInfo Professional must know the platform where you are going to use the exported file in order to provide the appropriate character set.

Smoothing Map Images During Export

You can anti-alias a table during the export process to give you more control over your map images. This is particularly important when you are saving maps created in MapInfo Professional for use in other Windows-based applications, in particular in slide presentations or for web pages.

Anti-aliasing allows you to smooth images in all types of windows such as Map windows, layouts, legends, and graphs.

Note: You cannot anti-alias images you are exporting to .EMF or .WMF format, because these are not true raster formats.

There are three smoothing options you can use to customize your raster image:

1. *Smooth using a Filter value.* You can set a flag that selects one of six filters that allow you to choose the direction the filter is applied to the image from.
2. *Smooth using a Mask value.* You can select a value that indicates the size of the area you want to smooth. For example, to create a 3x3 pixel mask value, you would enter a 3 in this field. This would limit the amount of change in the color of the pixels. Typically mask sizes would be 2-3 pixels when exporting at screen resolution. If you are exporting at a higher resolution, a larger mask might be appropriate.
3. *Smooth using a Threshold value.* You can select a threshold value to indicate which pixels to smooth. Each pixel in an image has a value based on its color. The smaller the pixel value, the darker the color. Select this option to smooth all of the pixels above the threshold you enter in this field. When you set this value to 0, MapInfo Professional will smooth all of the pixels.

You must either set a global preference for these anti-aliasing options or set them locally during the export process (using the Advanced button).

- For specific instructions, see *Smoothing Map Images During Export* in the *Help System*.

Using the Tools in the Tool Manager

MapInfo Professional contains many additional tools that simplify mapping tasks, convert MapInfo Professional files to different file formats and vice versa, automate tasks for working with DBMS tables, and more. The Tool Manager helps you run and manage these many utilities easily.

Use the Tool Manger to run, add, edit, or remove tools from the currently registered list of tools in the Tools menu. You can also configure a tool to run automatically upon startup. If you performed a Custom installation, you may have elected to not install the tools. In this case when you open the **Tool Manager** dialog box, the list box will be empty (on the **Tools** menu, click **Tool Manager**).

For information about using the tools in MapInfo Professional, see the MapInfo Professional *Help System*.

What are the MapInfo Professional Tools?

These tools are covered in more depth in the *Help System*.

AutoLabeler – Use this tool to place text object style labels in the Cosmetic Layer of the active Map window.

CoordSys Bounds Manager – Use this tool to check and set the coordinate system bounds for mappable MapInfo Professional base tables.

Concentric Ring Buffer – Creates concentric ring buffers around one or more map objects. This tool also computes aggregated values for underlying data that occur within each ring. Therefore, it can be used to count how many customers occur within each ring and their total sales. You can graph the results. See *Concentric Ring Buffer Tool* in the Tools section of the *Help System*.

Coordinate Extractor – Allows you to add two columns to an open table and updates each column with x and y coordinates in the table's native projection. For objects other than points, the x and y coordinates will represent CentroidX and CentroidY locations. See *Coordinate Extractor Tool* in the Tools section of the *Help System*.

Create Line by Length (Cogoline) – Draws lines in the Cosmetic Layer of a specific length and angle. You can also use DMS coordinates and create polylines with this tool. See *Create Line by Length (COGOLine) Tool* in the Tools section of the *Help System*.

DBMS Catalog – Use this tool to create a MapInfo Professional MapCatalog table in a remote database. You need the catalog to download coordinate information to MapInfo Professional from a remote database. This tool should be used by a qualified DBA.

DBMS Count Rows in Table – Allows you to optimize opening large tables (million or more rows) using the DBMS Live Access method (unlinked tables). This will update an entry for a table in the MapCatalog, correctly setting the number of rows for that table.

Degree Converter – Converts a column of data containing DMS coordinates to Decimal Decimals and Decimal Degrees to degrees/minutes/seconds. See *Degree Converter Tool* in the Tools section of the *Help System*.

Delete Duplicates – Use this tool to delete duplicate records from a table while retaining map objects. This tool does not change the original table in any way. See *Delete Duplicates Tool* in the Tools section of the *Help System*.

Disperse Points – Disperses points located in the same position. Points can be dispersed systematically or can be used to calculate the distance from a selected object (or group of objects) to the closest or farthest object(s). You can also specify criteria to limit the results. See *Disperse Points Tool* in the Tools section of the *Help System*.

Distance Calculator – The Distance Calculator tool (DistanceCalc.MBX) is used to calculate the distance from a selected object (or group of objects) to the closest or farthest object(s). You can also specify criteria to limit the results. See *Distance Calculator Tool* in the Tools section of the *Help System*.

EasyLoader – EasyLoader is a Windows-only utility that is loaded using the Tool Manager. EasyLoader allows you to upload MapInfo Professional tab files to a remote database. Online help is available for using EasyLoader. See *EasyLoader Tool* in the Tools section of the *Help System*.

GeoTracker Tool – This is a GPS tool to be used with MapInfo Professional, which supports up to 12 com ports, sophisticated error message management for Disconnect and Reconnect features, and superior installation and help support features. See *GeoTracker Tool* in the Tools section of the *Help System*.

Grid Maker – Draws a Graticule: a grid of latitude/longitude lines. See the *Grid Maker Tool* in the Tools section of the *Help System*.

Grid Tools – Use these tools to create a MapInfo Professional native grid file from a table of points, convert grids from any format that MapInfo Professional can read into MapInfo Professional grid format (.MIG), and display x, y, and z coordinates, and row and column, of the grid you selected.

HTML Image Map – HTML Image Map allows you to create a web page based on any MapInfo Professional Map window that includes a layer of polygons. The resulting HTML page includes an Image Map (JPG or PNG) and applies a user designated title and copyright. See the *HTML Image Map Tool* in the Tools section of the *Help System*.

Labeler – Transfer layer's labels into permanent text objects; label current selection; make individual labels created with the Label tool into permanent text objects. See the *Labeler Tool* in the Tools section of the *Help System*.

Legend Manager – Takes control of how MapInfo Professional displays Legend windows. Includes the ability to have multiple Legend windows open, and to associate each legend with a specific Map window. See the *Legend Manager Tool* in the Tools section of the *Help System*.

Link Utility for Google Earth – Use this tool to display your map data on Google Earth Maps. See the *Link Utility for Google Earth™* in the Tools section of the *Help System*.

Mapping Wizard Tool – Use this tool to open data, maps, perform analysis, and generate output using a wizard. This tool is set to load automatically when you start MapInfo Professional.

MapX Geoset Tool – Allows you to read a MapX Geoset into a MapInfo Professional Map window, and write a MapX Geoset from the contents of the MapInfo Professional Map window. See the *MapX Geoset Utility* in the Tools section of the *Help System*.

Named Views – Use this tool to save a Map window's current zoom and center as a named view. Return to that view by selecting the view name from a dialog box.

North Arrow – Add North Arrows of various styles and optionally add a Magnetic Declination arrow. A North Arrow can be added to a Map or Layout. You can either specify from the dialog box which corner to position the North Arrow, or use the toolbar button to drag a rectangle and place the North Arrow at the specified location. See the *North Arrow Tool* in the Tools section of the *Help System*.

Overview – Use this tool to open a new Map window to provide an overview of another Map window.

Register Vector – Use this tool to put control points into a vector image and reference points into a Map window and then performs an affine transformation to line them up.

Rotate Labels – Use this tool to rotate all the labels in a map layer at once.

Rotate Map Window – Use this tool to rotate the contents of the current Map window a specific number of degrees. It calculates and sets an Affine transformation for the Map window.

Rotate Symbols – Use this tool to rotate all the symbols in a map layer at once.

ScaleBar – Use this tool to create a custom distance scalebar to annotate a Map window. This tool can also be used in Layout windows.

Seamless Table Manager – Use this tool to create and manage seamless map sheets.

Search and Replace – Search a character column for a specific string and replace it with another string or to search and replace multiple column entries. See the *Search and Replace Tool* in the Tools section of the *Help System*.

Send to MapX Mobile – Use this tool to write a custom MapX geoset and associated .TAB files to create a user-defined subset of a map window's background data for display on a mobile device.

Set the Minimum Bounding Rectangle – Use this tool to set the Minimum Bounding Rectangle for ODBC live access based tables. See the *Set the Minimum Bounding Rectangle Tool* in the Tools section of the *Help System*.

Shields – Use this tool to draw decorative frames around text objects.

Spatialize SQLServer Table – Use this tool to accommodate spatial data in an existing SQL table.

SpiderGraph – This tool draws lines between objects in a single table, or the objects from two tables based on a join. It then creates a new table of lines that connect the objects from the original table(s) based on matching column names. See the *Spider Graph Tool* in the Tools section of the *Help System*.

Symbol Maker – Use this tool to create, edit, and delete MapInfo Professional symbols. These symbols become part of the standard MapInfo Professional symbol set.

Synchronize Windows – This tool provides toolbar icons that allow you to automatically share changes made in one mapper window to all other mapper windows in a given MapInfo Professional session. See the *Synchronize Windows Tool* in the Tools section of the *Help System*.

Table Manager – Use this tool to get information about all currently open tables, including table metadata.

TOC Tool – Builds a seamless table of all the files listed in a TOC file. This utility will create one or more seamless tables, grouped by zone and resolution. See the *TOC Tool* in the Tools section of the *Help System*.

Universal Translator – Import and export MapInfo Professional data to and from other popular mapping file formats. Provides a log file viewer to confirm log file changes. See the *Universal Translator Utility* in the Tools section of the *Help System*.

Window Manager – Use this tool to assign the title of Map, Browser, Graph, Layout, and Redistricter window and the default table view. The Set Default View option allows you to select a layer from an open Map window and make the default zoom and center settings for the layer's base table match those of the Map window. The default center and zoom settings are written to the table's .MAP file. See the *Window Manager Tool* in the Tools section of the *Help System*.

Workspace Packager – Use this tool to create a copy of a workspace in a new location or folder, and copies all the data referenced by the workspace to the same location. MapInfo Professional updates the internal references in the workspace and .TAB files to point only to the "packaged" copies of the data, so you can open the new workspace no matter where the folder is moved or copied, even if the folder is moved or copied to a different computer. See the *Workspace Packager* in the Tools section of the *Help System*.

Workspace Resolver – Use this tool to find missing .TAB files while you are opening a workspace. See the *Workspace Resolver* in the Tools section of the *Help System*.

- Instructions for adding a tool to the Tool Manager, editing, and removing a tool from the Tool Manager are available in the *Help System*.

Putting Your Data on the Map

As we saw in **Chapter 4: Data – Where MapInfo Professional Begins**, you can convert your existing data to a format that MapInfo Professional can use to display it on a map. Now you're getting somewhere! But how does MapInfo Professional know where to put the information on a map? That is the subject of this section of the *User Guide*.

Sections in this Chapter:

- ◆ **How Do I Get My Data on the Map?**200
- ◆ **Displaying your Data on a Map**200
- ◆ **Geocoding – Assigning Coordinates to Records**211
- ◆ **Putting Latitude/Longitude Coordinates on a Map**.....223
- ◆ **Displaying Your Data on the Map**225
- ◆ **Printing Your Results**.....226

How Do I Get My Data on the Map?

There are three steps to putting your organization's data on a map:

- Creating a MapInfo .tab file of your data
- Geocoding or creating points for the data
- Displaying your points on a map

When Do I Geocode vs. Create Points?

There are two processes that MapInfo Professional uses to identify and plot your data on a map.

During *Geocoding*, MapInfo Professional reads data such as street data, postal code data, and other non-coordinate information from your database and matches it against street or postal code information on a MapInfo data table.

During the *Create Points* process, MapInfo Professional reads X and Y coordinate data (such as longitude and latitude data from a Global Positioning System) and plots data using those coordinates. Use the appropriate process to the type of data you have collected.

- For more about the geocoding process, see [Geocoding – Assigning Coordinates to Records on page 211](#)
- For more about the create points process, see [Putting Latitude/Longitude Coordinates on a Map on page 223](#).

Note: If your data is in non-MapInfo format before you geocode or create points, you must convert it before using either of these processes.

- For more specific instructions on creating points, see *Putting Longitude/Latitude Coordinates on a Map* in the *Help System*.

Displaying your Data on a Map

The first step in using your data in MapInfo Professional is to create that .tab file from your data. This process takes the data you have created (either a spreadsheet or database) and extracts the information into a .tab file that MapInfo Professional can use. Your data remains in tact as we go through this process. The process that MapInfo Professional uses depends upon the type of format your data is in. You can create a MapInfo table of the following data file format types:

- Microsoft Excel (.XLS)
- Microsoft Access (.MDB)
- d-Base (.DBF)
- Lotus 123 (.WKS, WK1)
- ASCII (.TXT)

- Comma Delimited files (.CSV)
- RDBMS (Oracle, Informix, SQL Server)
- XML (Web Map Service)

Note: The process for creating a .tab file from ASCII data is called “registering” instead of creating because we are actually making a series of pointers to the ASCII data. The process is different but your resulting files behave the same way.

The *Help System* contains these related topics:

- *Displaying your Excel (.XLS) Data*
- *Displaying your Access (.MDB) Data*
- *Displaying your Comma Delimited Data*
- *Displaying your dBase Data*
- *Displaying your Lotus 1-2-3 Data*
- *Displaying your ESRI Shapefile Data*
- *Displaying and Registering Your ASCII Data*
- *Importing and Displaying GML File Data*
- *Displaying Your Remote DBMS Data*
- *Displaying and Importing Data from a Web Map Service*

Displaying your Excel (.XLS) Data

You can create a .tab file from an Excel file that is up to 64K in size.

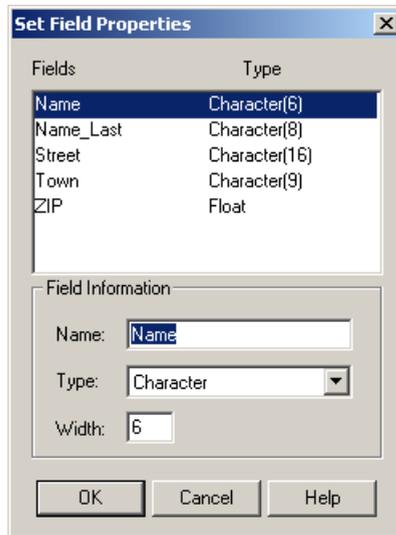
To create a .tab file from your Excel (.XLS) data:

1. In MapInfo Professional on the **File** menu, click **Open** to display the **Open** dialog box.
2. In the **Files of Type** list select (.XLS), navigate to your data, and click **Open**.
3. Select the worksheet you want in your MapInfo data table. Make sure that this data includes either postal codes or longitude/latitude coordinate values.

The default data range for an Excel file is the entire worksheet.

- If you select the **Use Row Above Selected Range for Column Titles** check box, the default data range begins at A2 (row 2).
 - If you clear the **Use Row Above Selected Range for Column Titles** check box, both the **Named Range** and **Current Value** fields revert to their previous values on the Entire Worksheet.
4. Click **OK** to display the **Set Field Properties** dialog box.

This dialog box allows you to reset the name, type and properties of any field (column) that you import from the Excel table. The top of the **Set Field Properties** window shows the Fields (column names) and Type (character, date, etc.) from the Excel spreadsheet. When you select one of these fields, the **Field Information** box entries at the bottom allow you to specify the field name, data type, number of characters (for character and decimal fields) or number of decimals (for decimal fields only).



Note: If you click **Cancel**, MapInfo Professional cancels the import operation.

5. Click **OK** to convert the data to a MapInfo table (.tab) format. Now that you have converted your data, you can plot your data; see the next section to continue.
 - For more information, see *Default Range Options When Importing MS Excel Files* and *Controlling Treatment of Imported Excel Tables* in the *Help System*.
 - For more specific instructions on creating points, see *Putting Longitude/Latitude Coordinates on a Map* in the *Help System*.

Displaying your Access (.MDB) Data

To convert your Microsoft Access (.MDB) data into a MapInfo Professional table:

1. Choose **File > Open**. The **Open** dialog box displays.
2. Choose **Microsoft Access Database** from the **Files of type** menu. The Access databases (.mdb) for the specified location display.
3. Choose an Access database to open. If security is turned on, you will be prompted to give user and password information to open the database.
4. The **Open Access Table** dialog box displays the tables for the opened database.
5. Choose an Access table or tables to open. The table or tables are opened in MapInfo Professional. (Please note that for a table name with a space such as Order Details can be saved in MapInfo Professional but subsequently will not be visible to MapInfo Professional.)

After you open an Access table in MapInfo Professional for the first time, MapInfo Professional creates a definition for the table and gives it a .TAB extension. This enables you to treat it like any other MapInfo Professional table. For example, to open this file you would now open it like any other MapInfo Professional table.

Note: Even though the table has the .TAB extension in MapInfo Professional, your data is still in your original Access database table and is not a duplicate.

The *Help System* contains these related topics:

- *Microsoft Access Table Specifications*
- *Creating an Access Table in MapInfo Professional*
- *Saving a MapInfo Professional Table as an Access Table*
- *Saving an Access Table as Another Access Table*
- *Limitations of Working Directly with Access Tables*
- For more specific instructions on creating points, see *Putting Longitude/Latitude Coordinates on a Map* in the *Help System*.

Displaying your Comma Delimited Data

You can create native .tab files for comma delimited data in MapInfo Professional.

Opening Comma Delimited Files in MapInfo Professional

You can export tables to comma delimited .csv text files. You can open .csv files from our **File > Open** dialog box as well.

To open a comma delimited file:

1. From the **File** menu, click **Open** to display the **Open** dialog box.
2. From the **Files of type** dialog box, select **Comma delimited CSV (.csv)**.
3. Navigate to the folder that contains the file you want to open and click it to select it.
4. Click **Open** to display the **Comma Delimited CSV Information** dialog box.

The **Delimiter** option buttons in this dialog box are disabled intentionally because commas are the only expected delimiters in this file format.

5. Select the **File Character Set** for this file from the drop-down list and select the **Use First Line for Column Titles** check box if applicable.
6. Click **OK** to open the file.

Exporting to a Comma Delimited CSV Format

When you export a file to a comma delimited (CSV) format, a Comma Delimited CSV Information dialog box displays. In this dialog box, you can select a new delimiter, choose the file character set, and choose to use the first column in the file for column headings. When you have made your selections, click **OK**.

- For more specific instructions on creating points, see *Putting Longitude/Latitude Coordinates on a Map* in the *Help System*.

Displaying your dBase Data

When you convert your data to a MapInfo Professional table, you do not in any way change the original data. MapInfo Professional simply creates a conversion table (.tab) of your data.

To open your dBase (.DBF) data into a MapInfo Professional table:

1. On the **File** menu, click **Open** to display the **Open** dialog box.
 2. In the **Files of Type** list, select the format (.DBF), navigate to your data, and click **Open**.
 3. Select the appropriate character set for your MapInfo data table. Windows U.S. and Western Europe ("ANSI") is the default option.
 4. Click **OK** to convert your selected data to a MapInfo table (.tab) format.
 5. On the **File** menu, click **Save Copy As** to make an editable copy of your table. Then, on the **File** menu, click **Close Table** and close the original table. Finally open the editable copy.
- For more information, see *Saving Data in DBF File Format* in the *Help System*.

Displaying your Lotus 1-2-3 Data

To open your Lotus (.WKS, WK1) data into a MapInfo Professional:

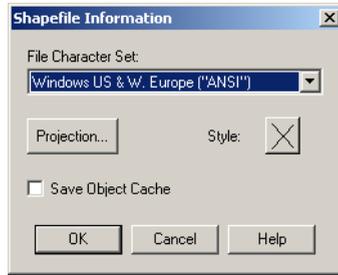
1. On the **File** menu, click **Open** to display the **Open** dialog box.
2. In the **Files of Type** list, select the format (.WK1,.WKS), navigate to your data, and click **Open**.
3. Choose the worksheet you want to convert to a MapInfo data table.
Note: If there are column headings above each column in this worksheet, select the **Use Row Above Selected Range for Column Titles** check box. Then, select **Other** from the drop-down box and specify the cell range of the data you want to include in the MapInfo Professional table.
4. Click **OK** to convert your data to MapInfo Professional table format.

Displaying your ESRI Shapefile Data

One of the prominent graphical formats in our industry is the ESRI shapefile.

To open a shapefile in MapInfo Professional:

1. On the **File** menu, click **Open** to display the **Open** dialog box.
2. Select **ESRI shapefile** in the **Files of type** drop-down list.
3. Navigate to the file's directory and click it to open it.
4. Click **Open** to display the **Please specify a TAB filename** file. This dialog box saves the shapefile into a format that MapInfo Professional can read. The file has the same name as the file you selected but has a .tab extension.
5. Click **Save** to display the **Shapefile Information** dialog box.



- Complete the entries in this dialog box and click **OK** to display the shapefile.

File Character Set

Select the character set appropriate for this file. The default option is **Windows U.S. & Western Europe (ANSI)**, but make your selection based on your local settings.

Projection

Select the appropriate projection for this file by clicking this button, selecting the category and projection and clicking **OK**.

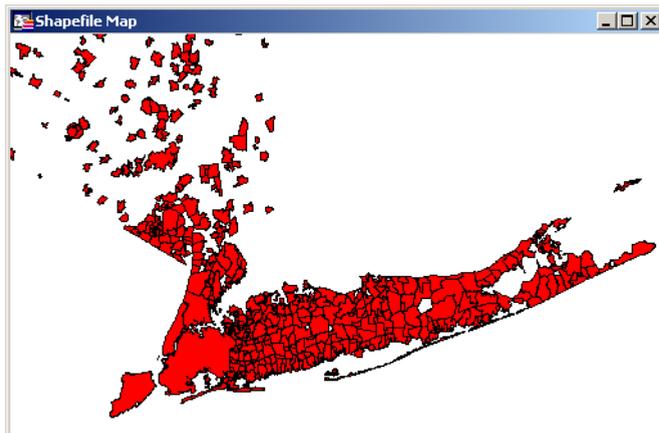
Style

Select any line or region style overrides that are necessary for this image by clicking the **Style** button. When you select this option, the appropriate style options dialog box displays. Make your changes and click **OK** to save them.

Save Object Cache

Select this check box to save the *.MAP file to hard drive. If you choose not to save the object cache, you will have to recreate the *.MAP file the next time you open the shapefile file. However, if you are going to save the shapefile as a *.tab file, you do not have to select the check box.

Note: If after you open the shapefile in MapInfo Professional, you edit the file in ESRI ArcView and save the file, the contents of the *.MAP and *.DAT files are recreated to retain these edits even if you selected **Save Object Cache** before.



- For more information, see *Working with Shapefiles Containing M and Z Values* in the *Help System*.

Registering and Displaying your ASCII Data

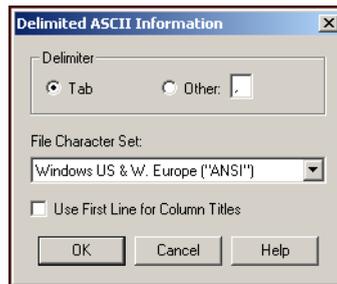
When you are working with ASCII data in MapInfo Professional, you don't actually create the table as you would in the other file formats we have discussed. MapInfo Professional registers your ASCII table by creating a MapInfo (.tab) file that points to the fields in the original file.

Note: Registering your data using MapInfo does not change the original data in any way.

If your delimited ASCII file has an extension other than .TXT (such as .ASC, .CSV, or .DAT, etc.), rename a copy of the file to <FILENAME>.TXT before you begin.

To register your ASCII (.TXT) data:

1. Open the data file using Wordpad/Notepad (on the **Start** menu, point to **Programs** and click **Accessories**) or another text editor. See whether you have column headings and what delimiter (character that separates each piece of data from the next) is used in the data file.
2. In MapInfo Professional, open **File** menu and click **Open** to display the **Open** dialog box.
3. In the **Files of Type** list, select the format (.TXT), navigate to your data, and click **Open**.



4. Specify a tab delimiter or type the other delimiter in the field provided.
 5. Choose the character set your file is using from the **File Character Set** drop-down list.
Select the **Use First Line for Column Titles** check box if you have column headings.
 6. Click **OK** to register your data in MapInfo Professional.
 7. On the **File** menu, click **Save Copy As** to make an editable copy of your table. Then, on the **File** menu, click **Close Table** and close the original table. Finally open the editable copy. You can only read information from these files.
- For more information, see *Working With Spreadsheets and Editing Excel and Lotus Spreadsheets* in the *Help System*.

Opening MapInfo Professional Grid Files

To open MapInfo Professional Grid Files:

1. Choose **File > Open** to display the **Open Table** dialog box.
2. Choose **Grid Image** (*.grd, *.mig), from the **Files of Type** list box.

3. Click the file you want to open and click the **Open** button.

Note: There are some grid files in the introductory data provided on the MapInfo Professional data CD.

Importing Graphic Files

To import a graphic file:

1. Choose **Table > Import** to display the **Import File** dialog box. Specify the location, name, and format of the file you want to import.
2. Click **Import** to display the **Import into Table** dialog box.
3. Specify the name and new table format for the table you are creating.
4. Click **Save**. The file is imported into the file you named with the specified format.

Importing and Displaying GML File Data

You can import **OSGB MasterMap GML Files** into MapInfo Professional. Each layer in the GML file is imported into a separate .TAB file. We provide support for some of the Topography features (OSGB version 2.0), Topographic Area, Lines and Points, Cartographic Symbols and Boundary Lines. Currently, we maintain support for these features and add support for Cartographic Text and Departed Features.

Currently, we support the OSGB recommended styles by mapping the style definitions to existing MapInfo Professional styles. Where it is not possible to render complicated fill patterns, we use the simple dot screen that the OSGB recommended to us. You cannot change the OSGB style mapping to MapInfo styles.

- For more information, see *Importing and Displaying GML File Data* in the Help System.

Importing and Displaying GML 2.1 Files

You can import GML 2.1 files into MapInfo Professional directly. To import successfully, the XML must contain a reference to a valid schema that MapInfo Professional can read. For example, the schema location could be a path relative to the XML file:

```
xsi:schemaLocation="http://www.mapinfo.com/wfs_XX .\mi_usa.xsd"
```

Or, it could be a URI:

```
xsi:schemaLocation="http://www.lm.se/xml/namespace/abc
http://www2.xxx.se/xml/scheman/abc.xsd"
```

- For more specific instructions, see *Importing and Displaying GML 2.1 Files* in the Help System.

Understanding MapInfo Professional's Use of the Topography Layer

OSGB MasterMap's Topographic Layer contains nine themes including roads, tracks and paths, buildings, landforms, water, height, heritage, structures, and administrative boundaries. You can import these themes as TopographicArea, LandformArea, TopographicLine, TopographicPoint, CartographicText, CartographicSymbols, BoundaryLines, and DepartedFeatures. The TopographicArea feature type contains two 'complexes', Topography and Landform, which contain different polygons of information. The Landform polygons overlap the Topography polygons (which represent land features like slopes and cliffs).

We split the TopographicArea feature type output into two layers so it is possible to save them in different tables. The TopographicArea table contains only output whose areas defined in the OSGB user guide as being part of the Topography complex or *Structuring Layer*. There is a feature type in the **GML Import** dialog box called LandformArea, which allows the creation of the LandformArea table. See [Importing GML File Data into .tab Files on page 203](#) for a clearer picture of this process in action.

Viewing a List of Open Tables

You can view a list of open tables but you cannot add or remove tables from this list in any way. This list is view-only.

Note: Hover over an entry in the Tables List to display the path of the open table.

To view a list of open tables:

1. From the **Table** menu, choose **List Open Tables** to display the **Table List** dialog box.
2. Select the **Group by Type** check box to display the tables by format type. Click **OK** to close the dialog box.



You can expand or contract the groups using the + and - to see the file names of the open tables.

Displaying Data Details using the Statistics Window

The Statistics window displays the details of a selected data record. This information must exist in the .TAB file's metadata to display in the Statistics window. As the selection changes, the data is re-tallied, and the statistics window is updated automatically.

To see the details of a data record:

1. Open a .TAB file with statistical data in it.
2. Select a geographical object in the Map window.
3. Do one of the following:
 - Select **Options > Show Statistics Window**
 - Click 

To copy the contents of the **Statistics** window to the clipboard, press and hold the **Ctrl** key and press **C**. Go to the application you want to paste the Statistics data to and do one of the following:

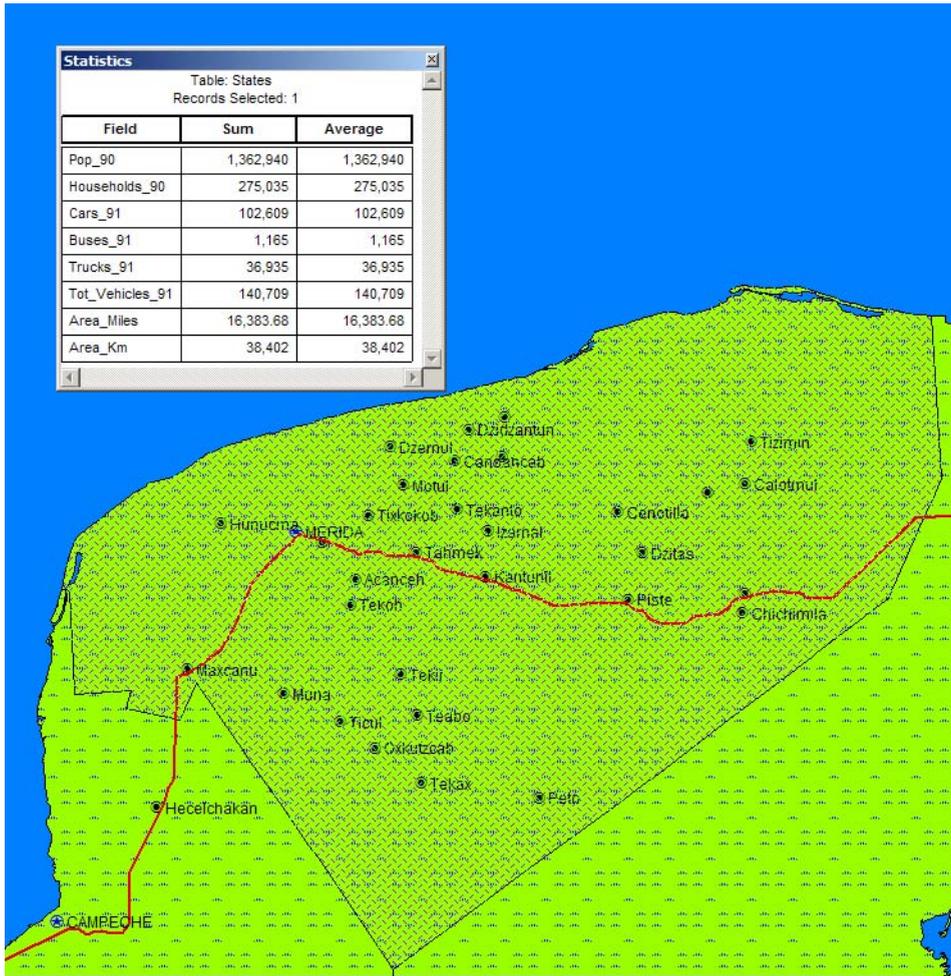
- Right-click to display the shortcut menu, click **Paste**.
- Hold down the **Ctrl** key and press **Insert**.

Displaying your Data on a Map

You cannot select particular contents of the Statistics window.

Note: When you want statistics for an entire table, use **Query > Select All** to select all records in a table.

Figure: Statistics Window



Displaying Your Remote DBMS Data

The process for displaying spatialized data from Oracle, Informix, or SQL Server is different from the tables we have discussed so far. For more information about accessing remote data, see [Working with Remote Tables and Databases in Chapter 6 on page 282](#).

Displaying and Importing Data from a Web Map Service

A Web Map Service (WMS) is a technology that gives you a source for data over your Intranet or over the Internet. This innovation is based on a specification from the Open GIS Consortium (OGC) and allows you to use raster map images from servers that also comply with the specification. You must specify the coordinate system within your data request to ensure that the images you retrieve “sync up” or register with your other map data.

This specification supports transparent pixel definition for image formats as well. This allows you to use the images you retrieve as overlays and not solely as the bottom layer of your map.

WMS data may not exist for the geography you are looking for. Further, the data that is provided is determined by the WMS server.

Note: You must have a working Internet connection to retrieve or use WMS data.

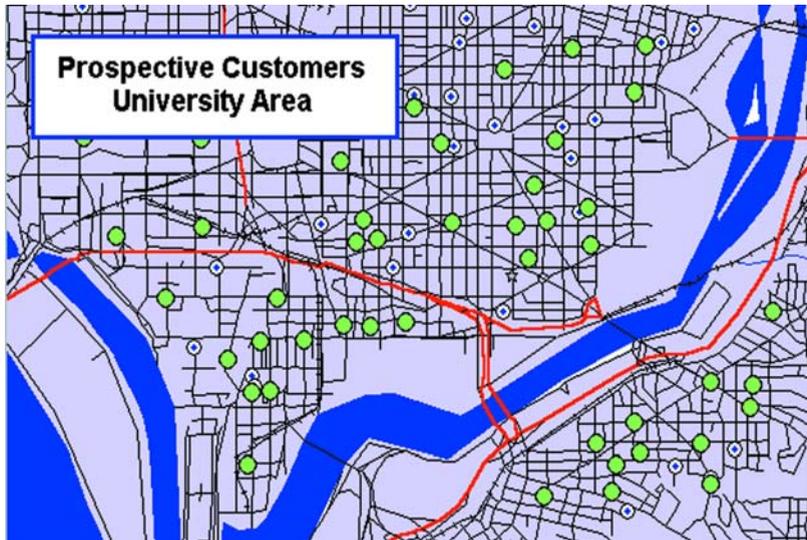
- For instructions on retrieving and displaying data from a Web Map Service, see *Retrieving Map Data from Web Map Services* in the *Help System*.

Geocoding – Assigning Coordinates to Records

To display your data on a map, you must first assign X and Y coordinates to each record. One way that MapInfo Professional assigns these coordinates is by matching geographic information in your database table to geographic information in another table (referred to as a *search table*) that already has X and Y coordinates associated with it.

For example, you want to assign X and Y coordinates to a customer record whose address is 127 Winston Ave. MapInfo Professional reads that address and looks for a matching address in the search table, such as a StreetPro table. (This search table already has X and Y coordinates associated with its records.)

When MapInfo Professional matches 127 Winston Ave in your table to 127 Winston Ave in the search table, it assigns the corresponding X and Y coordinates to your record. The geocoded point becomes part of your database. You can then view these points by displaying your table in a Map window.



What Do I Need to Know Before Geocoding?

It is important to know your data and what you want to use it for before you select a method of geocoding. Ask yourself these questions:

What kind of geographic information do I have in my database?

Do you have street addresses, towns, cities, postal codes, states, countries? Do you have potentially ambiguous information? For example, if you have a database of customer street addresses, will you have 125 Main Street in Smithtown and a 125 Main Street in Nassau? If so, you may have to refine your search using town boundaries or postal codes.

What kind of maps do I have to work with?

You will need computerized maps that are at the level of detail that match your data. For example, if you want to geocode a database of customers in specific counties by street address, you will need maps of the desired counties that go to street level. A map of the United States that only goes to a county level would not work for you. You can purchase the appropriate maps for your geocoding application from MapInfo Professional or your reseller.

How geographically accurate does the placement of my data have to be?

Taking into account the first two questions, you must decide how accurate the geocoding must be. If you are trying to pinpoint the locations of cable wires, crime scenes, or fire hydrants, a high degree of accuracy is needed. In this case, you should geocode your data to street level.

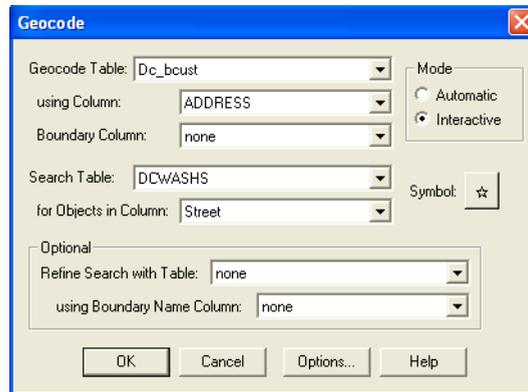
If, however, you are going to use your data to thematically shade postal code boundaries, town boundaries, county boundaries, state boundaries, or country boundaries, you may not need a high degree of accuracy.

In this case, geocoding against boundary files such as USZIPBDY.tab, which we provide, would be sufficient for your needs. Since this file does not include point postal codes (postal codes assigned to a single building or company), the hit rate may not be as good as when you geocode by street.

Understanding the Geocoding Process

To assign X and Y coordinates to the records in your table, choose Geocode from the Table menu. MapInfo Professional displays the **Geocode** dialog box, where you enter the following information:

- The name of your table for which you want to assign X and Y coordinates.
- The column in *your table* that contains the geographic information that will be used for matching.
- The name of the *search table* containing the geographic information that will be used for matching.
- The search table column containing the geographic information for matching:



The dialog box also offers you the option of geocoding your data in two modes: *automatically* or *interactively*. When you geocode a table automatically, MapInfo Professional geocodes exact matches only and ignores all other records. It is the faster method, since MapInfo Professional requires no user interaction once the geocoding process begins. When you geocode a table interactively, MapInfo Professional pauses when it fails to match a record and lets you select from a list of close matches. For more about the automatic and interactive geocoding modes, see **Modes of Geocoding on page 214**.

Note: We recommend that you geocode your table automatically first and then go back and geocode interactively to match the remaining records.

Not Getting Geocoding? Try this Example...

The objective of geocoding is to place data from your database accurately on a map. Let us call your data the *source* table. You can think of the geographical coordinates on a map as a *target* table.

To geocode a record:

- MapInfo has to match an address in the source table with a location on the target table

Most of the problems in geocoding occur in trying to take the address data in the source file and match it to addresses in the target tables.

Modes of Geocoding

MapInfo has two geocoding modes: automatic and interactive. The process MapInfo uses to match target addresses with source addresses is the same in both modes.

Automatic mode matches addresses based on the choices in the **Geocode** dialog box.

When Geocoding is in automatic mode, only exact matches are geocoded. When some of your data fails to match exactly (due, perhaps, to typographical errors), you need to geocode in Interactive mode to match the near misses by hand. It is generally best to do two passes through your table, with the first pass set on Automatic and the second pass set on Interactive. This approach takes less processing time.

- For instructions on geocoding in automatic mode, see *Geocoding Automatically* in the *Help System*.

Interactive mode stops at each address that does not meet the geocode parameters and permits you to assist in the matching process. When you geocode interactively, you are not changing the data. You are merely redirecting MapInfo Professional to look for different information.

- For more information, see *Geocoding Interactively* in the *Help System*.

In most cases, the best geocoding strategy is to geocode in automatic mode and then geocode in interactive mode to deal with the records MapInfo was unable to handle automatically.

Manual mode. Automatic and interactive geocoding work well for databases with “clean” data. Sometimes, however, you know where a point should be on the map, but the location data does not allow for a match. Manual geocoding is the process of placing your data records on the map by clicking its location on the map. This method works best when you have a small table which contains data that you are very familiar with.

- For more information, see *Geocoding Manually* in the *Help System*.

Methods of Geocoding

In addition to geocoding automatically and manually, you have choices in how precise you want the geocoded record to be. Let’s look at the variety of ways you can geocode your table.

Geocoding by Address

Street addresses typically consist of two or three components:

- Street number
- Street name
- Apartment, Suite, Floor, Room number or some other piece of information. Many addresses do not have this component

MapInfo has one procedure for dealing with the street number and another procedure for dealing with the street name. MapInfo deals with the third component, if present, as though it were a part of the street name.

When you geocode your table with street addresses, MapInfo Professional matches the addresses in your table to the street names and address ranges in a street table, such as StreetPro (MapInfo’s premier streets data product) and assigns X and Y coordinates to your records. When you display

your records, MapInfo Professional will spot the record at the location of the record's address. MapInfo Professional places the record on the proper side of the street, offsets it from the side of the street to the specified distance, and insets it from the end of the street the specified percentage of the line. The **Options** dialog box controls these parameters. For more about setting the street offset in the **Options** dialog box, see [Street Offset on page 219](#).

Geocoding by Boundary

In computer mapping, the term boundary is used to designate enclosed regions or areas such as countries, cities, and postal codes. When you geocode your table with boundaries, MapInfo Professional matches the boundary name in your table with the boundary name in the search table. MapInfo Professional assigns the boundary centroid X and Y coordinates to your data records. The *centroid* of a boundary is its approximate center point.

For example, you have a table of wholesale outlet stores. You want to assign X and Y coordinates to each record according to county. MapInfo Professional reads the county name from your table, matches it with the county name in the search table, and assigns the county centroid coordinates to each of your records. The outlet locations will display at the county centroid in a Map window.

Geocoding by US_ZIPS.tab (Postal Code Centroid File)

US_ZIPS.tab is a point file that is included with the base MapInfo Professional package. The file consists of postal code centroid points for every postal code in the United States. This file can be used to geocode any database that includes postal code information. This file includes point postal codes that are assigned to single buildings or companies.

You can use any of the above methods to geocode your records, or you can use a combination of address and boundary geocoding to increase the potential for a successful match.

Geocoding by Server

If you have access to a geocoding server such as MapMarker or Envinsa Server, you can geocode using a more extensive data set.

Refining Your Geocoding Search

When geocoding, you might refer to objects whose names are used for other objects that do not interest you (for example, a city name that is common to two or more states). To eliminate this problem, refine your search by selecting another column (from, typically, another table). To further refine the search, specify the state for each city, rather than just the city name.

If your area of interest isn't unique enough for MapInfo Professional to automatically determine the position or location, you will need to refine your geocode search by specifying a particular boundary that contains your area of interest. This will provide MapInfo Professional with geographic locations on where to position your points.

Finding an Exact Street Match

When MapInfo geocodes, it attempts to find an exact match between source and target street names. That means that the addresses must be the same, character for character. However, matching is not case sensitive; upper and lower case letters are successfully matched with one another. MapInfo does not get an exact match in many cases and uses a file of abbreviation equivalences to improve its “hit rate”. Once you understand the various ways in which a match can fail, you are in a better position to understand what you can do to improve things.

The next table illustrates exact matching. The first column contains a street name from a target table and the second column contains the corresponding street name from a source table. The third column says why they do not match. The fourth column indicates whether the particular problem is one which can be corrected through using the abbreviation equivalence file. This table assumes that the addresses are the contents of a single column in a table. While the street number would often be in the same column, we don’t indicate street numbers here because they are handled differently than street names.

Target Address	Source Address	Comment	Correctable with Abbreviation File?
LaSal St	LaSalle St	“LaSal” is the wrong spelling.	No
La Salle St	LaSalle St	“La Salle” is the wrong spelling.	No
LaSalle Ave	LaSalle St	“Ave” does not match “St”.	No
LaSalle Street	LaSalle St	“Street” does not match “St”.	Yes
LaSalle Ave	LaSalle Av	“Ave” does not match “Av”.	Yes
LaSalle St.	LaSalle St	The target address has a period after “St”. That period is not in the source and causes the match to fail.	Yes
LaSalle	LaSalle St	“St” is missing from target.	No
LaSalle St	LaSalle	Target has “St” and source does not.	No
LaSalle St North	LaSalle St	Target has “North,” which is not in source.	No
LaSalle St North	LaSalle St N	Target has “North” instead of “N”.	Yes
North LaSalle St	N LaSalle St	Target has “North” instead of “N”.	Yes
North LaSalle St	LaSalle St	Target has “North,” which is not in source.	No
LaSalle St Apt 3	LaSalle St	Target has an apartment number which does not match anything in the source.	Yes

Target Address	Source Address	Comment	Correctable with Abbreviation File?
Tenth St	10th St	"Tenth" and "10th" do not match.	Yes
10th Av	Tenth Av	"10th" and "Tenth" do not match.	Yes
Saint John's Lane	St John's Lane	"Saint" and "St" do not match.	Yes

MapInfo's matching process is not case-sensitive; it does not care whether a letter is upper case or lower case. This means that MapInfo treats the following as the same: Main, MAIN, main, maIN.

MapInfo Professional has a file called the Abbreviations File (MAPINFOW.ABB), which you can use to record acceptable alternate spellings for abbreviations. For example Av for Ave. or BL for Blvd. etc. Using this file increases your hit rate because there are more acceptable spellings for the same abbreviations.

- For more information, see *Solving Problems with Abbreviations and Substitutions* in the *Help System*.

Placing Geocoded Points

When you are geocoding to street level (by address), you can specify certain aspects of the resulting points' position in relationship to the street. You can specify the offset of the point from the side of the street, and the inset of the point from the end of the street.

- For more information, see *Street Offset* in the *Help System*.

Street Inset

The street inset is the distance a geocoded point is set from the end of the street. You can specify a distance, or an inset can be a percentage of the length of the street. To avoid skewing the position of inset points, MapInfo Professional performs a proportional calculation that insets the points located at either end of the street the specified percentage or distance, but that decreases the inset as point locations approach the center. Points located at the center of the street remain in their original position.

- For more information, see *Street Inset and Controlling How Much to Inset and Offset a Point when Geocoding* in the *Help System*.

Matching Street Names

MapInfo begins by comparing the street address in the target table with the street addresses in the source table. When it finds an exact match, it may be finished or it may have to deal with region information, such as town, county, or postal code area.

When MapInfo cannot match the street name for a particular row, it applies the abbreviation file to the target address. This file consists of pairs of items, such as "STREET ST" and "AVE AV". When MapInfo finds "STREET" in a target address, it changes it into "ST"; similarly it changes "AVE" to

“AV”. MapInfo doesn’t actually change your data in the target table. It substitutes abbreviations only for the purpose of making matches. The substitution is only effective during the matching process. The address in your table remains the same. It does not write the correct address form back to your table.

Once MapInfo has made an abbreviation substitution it attempts to match the resulting street name against the street names in the source table. When it fails to find an exact match at this point it:

- In Automatic mode, it moves to the next row
- In Interactive mode, it presents you with the closest matches and you pick the best match. MapInfo Professional then moves on to the next row.

At this point MapInfo will have done the best it can at identifying street names. The next step is to deal with address numbers for those addresses where it has matched a name.

Matching Address Numbers

Given that MapInfo has identified a street, it has to deal with street numbers. MapInfo stores address ranges with each street segment. MapInfo takes the street number from the target address and compares it to the ranges for each segment in the source table. For example, assume that we are trying to match “343 LaSalle St”. MapInfo stores the beginning and ending address for each segment, differentiating between left and right sides of the street, as follows:

Name	FromLeft	ToLeft	FromRight	ToRight
LaSalle St	269	331	268	330
LaSalle St	333	375	332	374
LaSalle St	377	401	376	400

To match “343 LaSalle St” MapInfo Professional would scan the address ranges until it finds the one where “343” goes. Since 343 is between 333 and 375, the applications locates this address on that street segment (the middle one in the table). Once MapInfo Professional has matched an address number to a street segment it moves to the next row. When it fails to match a target street number to an address range on the appropriate street it:

- In Automatic mode, it moves to the next row
- In Interactive mode, it presents you with the closest matches and you pick the best match. MapInfo Professional then moves on to the next row.

At this point MapInfo Professional has done the best it can at locating address numbers. Note that one of the options (on the Geocode Options dialog box) is to automatically pick the closest address range in cases where there is no exact match—Use The Closest Address Number. For example, you might have “412” as an address number, but no range which includes that number. However, there is a range which goes from 346 to 400. Since that is the range closest to 412, that is where MapInfo will geocode 412 if you have chosen this particular option. The next step is to deal with addresses which have been located on more than one street.

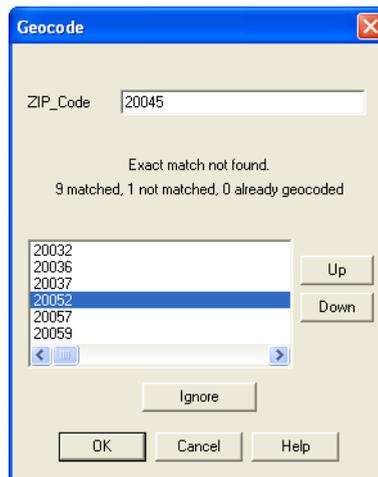
Matching to Region

When MapInfo is geocoding it checks to see how many occurrences of the target address exist. If there is more than one, MapInfo must decide which source address to use. If the user's target table has a column with region data, MapInfo can refine geocoding within a boundary.

For example, assume that you are geocoding a database of records in Cook county, Illinois. The address in the database reads 200 Washington St. Within the county of Cook, there are eight towns. Four of these towns have a Washington St. Three of the four have a 200 Washington St. MapInfo must now place the target address in the appropriate town. MapInfo uses region information to do this. MapInfo now matches a region designation for the target address against the region designator for the source addresses.

When you originally set up your geocoding operation, you had an opportunity to specify a region (boundary) to use in refining your geocoding operation. This dialog box displays when you choose Refine Search with Table and using Boundary Name Column.

If you specified a postal code table you enter the postal code and MapInfo Professional returns possible matches.



You could use any one of several different region types, including county name, town name, and postal code. Since almost all addresses contain postal codes, this is the most reliable way to refine your search. When you set MapInfo to use postal codes to refine its address matching, MapInfo will match the postal code of the target address against the postal code of the various matching source addresses. When it finds the correct match, it is finished with the geocoding process. MapInfo can now get coordinate information from the source table and use it to place a point object into the target table.

However, once MapInfo has completed this process, many addresses may be unmatched. You can match each one of them individually by geocoding in interactive mode. However, if you are working with a large database, you want to do as little of this as possible. There are other ways of improving MapInfo's geocoding performance.

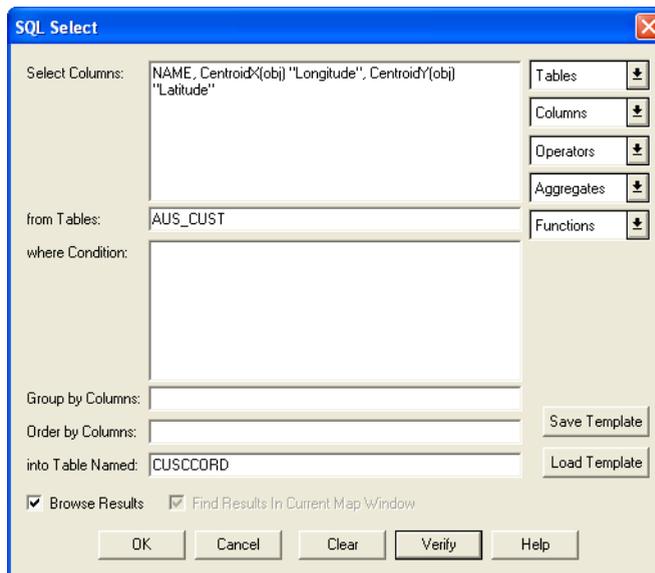
In the Geocode Options dialog box, you can specify that MapInfo automatically pick a different boundary, providing there is only one, from the one you specify (Use A Match Found In A Different Boundary). You might have had MapInfo geocode addresses to Northtown. One particular address,

“223 Locust Ct.” is not in Northtown, but it is in Westville, and no place else. In this case, MapInfo would geocode “223 Locust Ct.” to Westville. However, if MapInfo had found a “223 Locust Ct.” in Westville and another one in Center Valley, it would not geocode the address to either town. It would leave “223 Locust Ct.” ungecoded.

For more information, see *After Geocoding* in the *Help System*. This section contains the following topics:

- *Finding and Examining Ungecoded Records*
- *Extracting Longitude and Latitude from a Geocoded Table*
- *Extracting Longitude and Latitude into a New Table*
- *Extracting Longitude and Latitude into the Original Table*
- *Extracting a Table in a Projection Other than Longitude/Latitude*

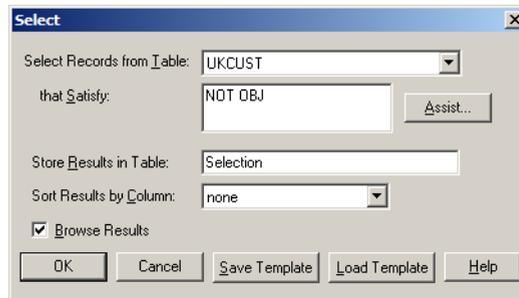
Selecting Records Not Geocoded



The screenshot shows the 'SQL Select' dialog box. The 'Select Columns:' field contains the text: `NAME, CentroidX(obj) "Longitude", CentroidY(obj) "Latitude"`. The 'from Tables:' field contains `AUS_CUST`. The 'where Condition:' field is empty. The 'Group by Columns:' field is empty. The 'Order by Columns:' field is empty. The 'into Table Named:' field contains `CUSCCORD`. On the right side, there are five buttons: 'Tables', 'Columns', 'Operators', 'Aggregates', and 'Functions', each with a dropdown arrow. Below these are two buttons: 'Save Template' and 'Load Template'. At the bottom, there are five buttons: 'OK', 'Cancel', 'Clear', 'Verify', and 'Help'. There are also two checkboxes: 'Browse Results' (checked) and 'Find Results In Current Map Window' (checked).

Your geocoded table may have records that did not geocode, or you may have added new data to your table that have yet to be geocoded. There is a simple selection that can be performed to get a Browser list of the records not geocoded.

1. Open your table if it is not open already, and on the **Query** menu, click **Select**.
2. Fill in the **Select** dialog box. The expression used is “NOT OBJ.” This selects all of the records that are not objects, i.e., not geocoded. Click **OK**.



Locating Newly Geocoded Points

One of the most satisfying results of geocoding is seeing your points displayed correctly on the map. Depending on the settings of your map, newly geocoded points may or may not be visible immediately.

Follow these steps to attempt to locate newly geocoded points on the map.

1. Make sure that the Map window is active by clicking in its title bar.
2. On the **Map** menu, click **Layer Control**. Make sure that the table you geocoded is listed in the **Layer Control** dialog box.

If the layer you are looking for is not listed, click the **Add** button and add that layer.

3. In the **Layer Control** dialog box move the geocoded table to the top, just below the Cosmetic layer, to ensure that the points are not obscured by any other layer.
4. Make sure that the geocoded layer is set to visible. Click **OK** and exit **Layer Control**.

If your points are still not visible, proceed to step 5.

5. On the **Map** menu, click **View Entire Layer**. Select your table and click **OK**. This should put all of the points from your table in view. You may see that your points are on the map, but are not in the location you expected them to be. If they seem misplaced, see [Ungeocoding a Table on page 228](#).
6. If your points still do not display, on the **Map** menu, click **Layer Control**. Select the layer containing your geocoded points, and click **Display**.
7. Select the **Style Override** check box and choose a symbol style that will stand out on your map. Click **OK**, and click **OK** again to exit **Layer Control**.

After following these steps, if you have not found the points that you geocoded, try to select all of the ungeocoded records as described in the section *Selecting Points Not Geocoded*.

Result Codes

When you are using the result code option (in Geocode Options dialog box) MapInfo will generate a code for each record. These codes indicate the steps MapInfo Professional took to geocode the record, whether or not the geocoding was successful, and whether or not the match was exact. You

can use return codes to diagnose MapInfo's geocoding performance. It will help you spot "false positives" resulting from using various geocoding options and to analyze why some records have not been geocoded.

Ungeocoding a Table

Ungeocoding is the process of removing objects that have been attached to data records. There are times when it will be necessary to ungeocode an entire table or selected records in a table. For example, you have geocoded a database of customers using US_ZIPS.tab. Later, you want to geocode the database again, using street addresses instead of postal code centroids since the geocoding will be more precise. MapInfo Professional allows you to delete all graphic objects associated with this table. You can then geocode your database again, using more specific coordinates. Ungeocoding only selected records from your table is useful when the location information changes for a relatively small number of records, such as address changes in a geocoded list of customers.

To ungeocode and remove one or more of the objects in a table:

1. Make the table you are working with the editable layer of the active Map window.
2. Select the object or objects.
3. Click the Map window to make it active.
4. Choose **Edit > Clear Map Objects Only**.

To ungeocode an entire table:

1. On the **Table** menu, point to **Maintenance** and click **Table Structure**. The **Modify Table Structure** dialog box displays.
2. Clear the **Table Is Mappable** check box. Click **OK**.

CAUTION: This action will remove all graphic objects from your table. This action cannot be undone. If you are unsure of losing your points, save a copy of the table first.

3. A warning dialog box appears. If you are sure about removing all the objects, click **OK**.

All graphic objects have been removed from your table.

Make sure that you don't ungeocode your source tables. Unless you have created a backup of that table, you will no longer be able to display that table as a map or use it for geocoding.

Ungeocoding Selected Records

To ungeocode and remove one or more of the objects in a table:

1. Make the table you are working with the editable layer of the active Map window.
2. Select the object or objects.
3. Choose **Edit > Clear Map Objects Only**.

For more information about trouble shooting your geocoding issues, see *Resolving Geocoding Issues* in the *Help System*. This section contains the following topics:

- *Resolving Spelling Errors in your Data Records*
- *Resolving Incorrect Address Numbers in your Data Records*
- *Working with the Abbreviations File*
- *When an Input Address Finds More than One Location*
- *Solving Problems of Space-Delimited Simple Substitution*
- *Resolving Simple Truncation*
- *Resolving Space-Delimited Truncation*
- *Resolving Simple Substitution*
- *Handling Legitimate Spaces*
- *Handling Special Characters*
- *Resolving Alternate Street Names, Street Names have Changed*
- *Resolving Incorrect Address Ranges*
- *Geocoding Post Office Boxes*
- *Correcting Inaccurate Town Names*
- *Correcting Geocoding Errors using Result Codes*
- *Examples of Geocoding Result Codes*

Putting Latitude/Longitude Coordinates on a Map

You may have a file that already contains X and Y coordinates, but not the point objects themselves that you want to display in MapInfo Professional. While the geographic information exists in the table, MapInfo Professional needs to create points to represent these coordinates before displaying them in a Map window. The Create Points command under the Table menu allows you to create points for each record in your database that has X-Y coordinate information.

Note: MapInfo Professional uses the coordinate fields in your table to create point objects. Records that already have graphic objects associated with them will be skipped during the Create Points operation.

For example, you have a table showing transmitter tower locations that was created by recording coordinates using a global positioning system. You want to display the locations on a map in MapInfo Professional. The table already has X and Y coordinate information but MapInfo Professional cannot display this information until you create points for that coordinate data that MapInfo Professional can read.

For more information, see the *Putting Latitude/Longitude Coordinates on a Map* in the *Help System*. This section also contains these topics:

- *Creating Points from an Excel or Lotus Table*
- *Creating Points from a Longitude/Latitude*
- *Creating Points in a Projection*

For more about the Degree Converter tool, see the Tools section of the *Help System*.

Dispersing Points Located in the Same Place

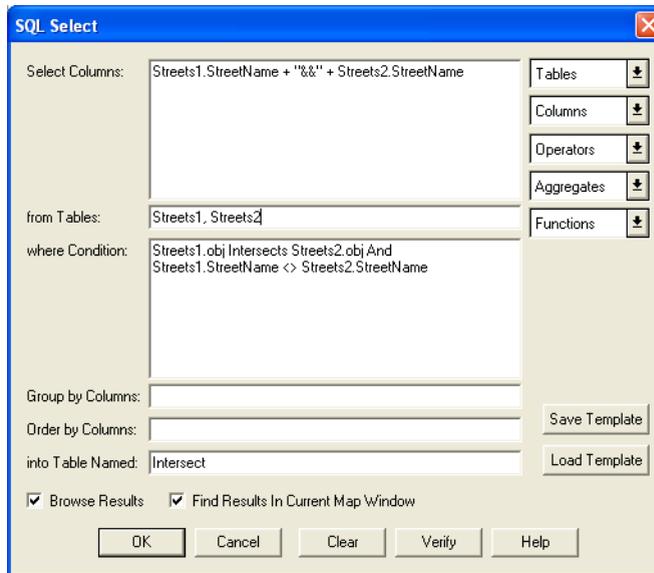
Depending on how you have geocoded your table, you may have several points that are placed at the same location, making it difficult to tell if you are viewing one point or many. For example, if you geocode a table of students by census tract, and view the results on your map, it appears that there is one dot at the center of each tract when there actually may be several there. To see all of your data, you may want to disperse the points over a small area. There are three methods for dispersing points: the Disperse Points tool (a tool that comes with MapInfo Professional), equal dispersion, and dispersion to the right.

- For specific instructions, see the *Dispersing Points Located in the Same Place* in the *Help System*.

Creating Points for Intersections

Many people working with street files are often interested in information that is located at intersections. For some, their only concern is the intersections. In MapInfo Professional you can geocode to intersections in your street file with the Geocode command, but it would be easier to work with a table that contained only intersections. For example, a municipality is interested in tracking the types of traffic control devices at each street intersection. It would be beneficial for them to make an entire layer that contains the intersection of every street.

- For specific instructions, see *Creating Points for Intersections in the Help System*.



Geocoding Data using a Server

Using the MapMarker and Envinsa Web Services, you have more choices for geocoding. For example, you can choose to geocode your records by street address or by postal code centroid, or by geographic centroids. If you have geocoded some records and some did not geocode successfully, you can set fallback conditions to locate those records. If you geocode and there are

no results, poor results, or multiple equal close results, the geocoding server can present you with interactive options so you can select among possible matches or change your input. Further, these web services allow you to set multiple matching conditions when more than one record matches the records you are geocoding and set offsets for placing points right in the geocode properties.

For companies and organizations that use MapMarker and Envinsa servers as a geocoding engine, you can now take advantage of the geocoding servers available to your whole enterprise. If your organization makes this server available on your intranet or over the Internet, you can use our geocoding web services from within MapInfo Professional to perform more sophisticated and accurate data geocoding.

To use MapInfo Professional with a geocoding server, you need MapMarker Java Server 4.0 or later or Envinsa 4.0 or later. MapInfo Professional supports any geography that is supported by Envinsa currently. Envinsa supports MapMarker Java Server V2, V3, and V4. Keep in mind that any Envinsa server only supports the data that is installed.

Before you can access a MapMarker or Envinsa geocoding service, you need to connect MapInfo Professional to its server. This process gives MapInfo Professional all the information it needs to access the geocoding service. You need to enter this information only once per service.

To set up a geocoding server and its preferences, see [Setting up a Geocoding Server on page 145](#) and [Setting the Geocoding Server Preferences on page 140](#).

To geocode a single address using a geocoding service, see [Geocoding a Single Address using a Geocoding Service on page 471](#).

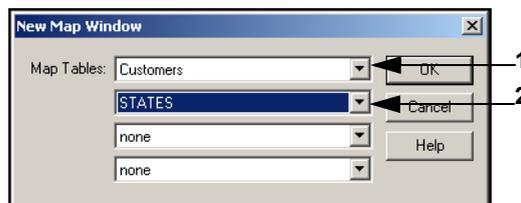
- To geocode a table of addresses using a geocoding service, see *Geocoding a Table using a Geocoding Service* in the Help System.

Displaying Your Data on the Map

Once you have converted your data and geocoded or created points for it, you are ready to display the results.

To display your data in a new Map window:

- On the **Window** menu, click **New Map Window** and select the tables you want in your map. The order in which you select these tables determines the order they display.



1 Select your data from this drop-down list. 2 Select the background map here.

- Click **OK** to display your data on the map you selected.
- To change the symbol used to display your data, click the **Layer Control** , select the row with your data in it, and click the **Display** button to select new display options.

To display your data on an existing Map window:

1. Open the .tab files or .WOR files you want to plot your converted data onto.
2. Open the .tab files or .WOR files you just created and in the **Preferred View** drop-down box select the **Current Mapper** option.
3. Click **Open**.

After Displaying Your Data on the Map

Now that your data is there to see, make it say something to your audience. The whole world of MapInfo Professional functionality is open to you. For details on analyzing your data, see [Creating Thematic Maps, Legends, and Other Maps in Chapter 9 on page 399](#) or see [Drawing and Editing Objects in Chapter 7 on page 325](#) for more about customizing your map.

Finding Data on your Map

The **Find Selection in Current Map Window** command allows you to search and display a selection in the currently active Map window. You can not search for the selection in other types of windows (Browser or Layout, for example) using this command. You can access this option by pressing the <Ctrl G>.

The **Find Selection in All Windows** command allows you to locate the selection in all open windows (including a Browser window) that are currently open.

To access Find Selection in Current Map Window:

1. Perform the **Query > Find** or **Query > Find Selection**.
2. Choose **Query > Find Selection > In Current Map Window**.

Note: Choosing the **In Current Map Window** option shortens the search time.

To access Find Selection in All Windows:

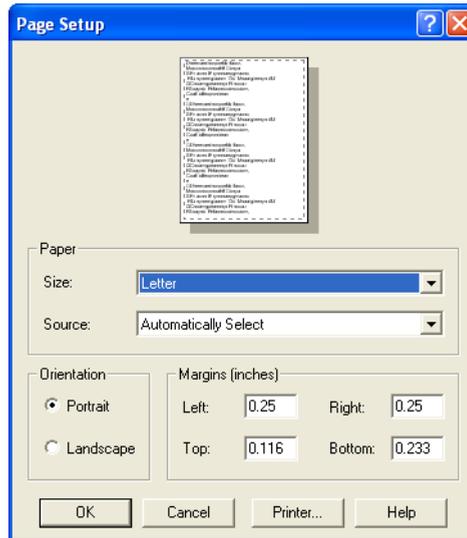
1. Perform the **Query > Find** or **Query > Find Selection**.
2. Choose **Query > Find Selection > In All Windows**.
 - For more information, see *Saving and Closing Query Tables* in the *Help System*.

Printing Your Results

Once you have created the perfect map or graph, you can easily print the individual windows. For presentation, use the Layout menu to bring together all views of your mapping session. Here, you can combine different types of windows to create an attractive and more informative presentation. On the **Window menu**, click **New Layout Window** to display a Layout window that you can use to arrange your maps, browse tables, graphs, legends, titles, logos, etc. See [Working in the Layout Window in Chapter 12 on page 541](#), for tips and techniques about working in the Layout window.

Setting Up the Page

Before you print your map or layout, you will need to set up your page. In the **Page Setup** dialog box (on the **File** menu, click **Page Setup**), specify the paper size, orientation, and margins.



For detailed printing instructions, see *Printing your Map* in the *Help System*. These topics are also in this section:

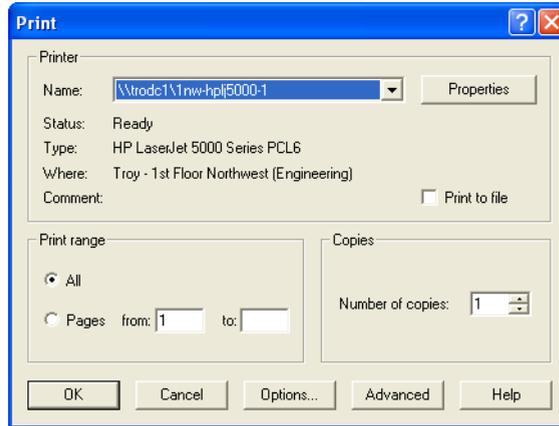
- *Saving or Restoring Printer Information in Workspaces*
- *Advanced Printing Options*
- *Graph/Browser/3DMap Printing Options*
- *Overriding the Default Printer*
- *Printing Maps to PDF Files*

Printing Your Map

When you have your page set up the way you want, you are ready to print.

To print your map:

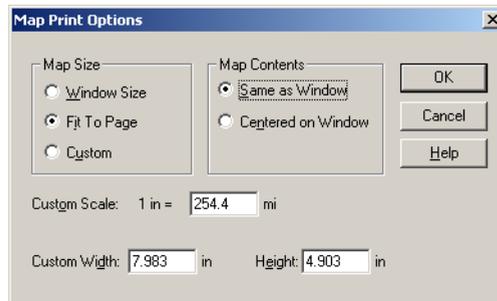
1. On the **File** menu, click **Print** to display the **Print** dialog box. This dialog box allows you to specify printer properties, a page range for printing, and the number of copies to print.



Note: You can override the default printer setting by selecting another print from the Name drop-down list.

2. If you need to change the size of the map, the orientation of your map or want to specify the scale or a custom width or height, click the **Options** button. If you are printing a map, the **Map Print Options** dialog box displays.

Note: If you are printing a graph or a browser or a 3DMap, your options will be different. See [Graph/Browser/3DMap Printing Options](#) for more information.



Note: The Map Window Preference setting **Use Cartographic Scale** affects the entries in this dialog box.

3. Here you can specify the size of the map, how its contents will display, the scale, and its width and height. For details on the other print options, see [Graph/Browser/3DMap Printing Options on page 255](#). When you have completed your selections in this dialog box, click **OK** to continue.
 - **Map Size** — Select the size of the map you are producing in this group; the options are Window Size, Fit to Page, and Custom. As you make selections, the Custom Scale, Custom Width and Custom Height entries change.

- **Window Size** — Click this button to print the map as it displays on your computer screen.
 - **Fit to Page** — Click this button to fit the current map to the page size you have selected in your preferences.
 - **Custom** — Click this button to enter your own custom scale, width, and height entries in the fields provided. Then, type the appropriate entries in the Custom Scale, Custom Width and Height fields.
 - **Map Contents** — Select an option in this group to determine the map contents you want to print; the options are Same as Window and Centered on Window.
 - **Same as Window** — Click this button to print the map contents as it appears in the Map window, with the same proportions and content as you see.
 - **Centered on Window** — Click this button to center as much of the current map that fits on the page. When you select this option, the image may print on more than one page depending upon fit. In general when you select this option, MapInfo Professional assumes you want to select the **Fit to Page** radio button and selects this for you.
4. If your map is particularly complex (a large map, 3D, or one with 10 or more colors) there are more options available using the **Advanced** button. The **Advanced Printing Options** dialog box displays. (See *Advanced Printing Options* in the MapInfo Professional *User Guide*, which is located in the Documentation subfolder of your installation directory). When you have completed your selections, click **OK** to continue.
 5. After you complete your selections, click **OK** on the **Print** dialog box to print your results.

Printing your Map to a PDF File

MapInfo redistributes a third-party tool that allows you to print your MapInfo Professional maps to PDF files for sharing and distribution. When you install this utility, you can select it as a printer in your Windows Print menu.

Any customer or co-worker who has Adobe® Reader® can view and print this PDF file. Click here to go to the Adobe Reader download page or retrieve it from the installation CD.

- For more information, see *Printing your Map to a PDF File* in the *Help System*.

Viewing and Printing Text

Text size is handled differently in maps and layouts. You should keep these differences in mind when printing maps and layouts containing text objects and when fine tuning text.

Text Size in Layouts

In the Layout, the point size of the text is specified relative to the actual size of the page (that is, the size in which it will print), just as it is in word processing and desktop publishing programs. When you zoom in and out on a Layout, the text will be larger or smaller on the screen, but its specified point size (as indicated in its attributes box) remains the same.

The font and size of text objects in the Layout Window may not appear as they do on the printed page. There are several possible reasons for this: fonts available for screen display are not available for your printer, screen character width is different than printer character width, and screen resolution is different than printer resolution.

To find out the true size of a text object in the Layout Window, use the Select tool and click on the object. The edit handles indicate the object's true size.

Text Size in Maps

In maps, text size is specified relative to the screen. When you zoom in and out on a map, the size of the text on the screen and the specified point size of the text will change. If you zoom in, text will appear larger, as will all visible elements of the map. The point size of the text (as indicated in its attributes box) will be appropriate to the text being displayed on screen.

Troubleshooting Print Problems

Good first steps in troubleshooting a printing problem are to make sure you have downloaded and installed the latest patch for MapInfo Professional and are using the latest printer driver for your printer/operating system. You can get additional printer advice in the MapInfo Professional *Printing Guide*, which is located in the Documentation subfolder of your installation directory.

When we discuss printer issues, we make the following assumptions about your print environment:

- The printer/plotter has been installed properly
- The printer/plotter drivers have been installed correctly
- The printer/plotter is connected to the computer or to the network properly
- There is sufficient memory (on the print device and on the computer) to print your files

Any of these issues can affect your ability to print/plot your MapInfo Professional output. Our Technical Support professionals may be able to identify these difficulties, but they are not within their control.

Note: Whenever we use the terms *print* or *printer* we also mean *plotter*.

When Printing a MapInfo Professional Object From Another Application

When you embed a MapInfo map or graph in another application (such as Word or PowerPoint), click outside the map/graph before you use the Print or Print Preview commands. This allows the container application to take over previewing or printing properly. This is particularly true if you have just made changes to the map or graph you are printing.

Working with Fill Patterns

Note that fill patterns on the first row of the **Region Style** dialog box are Windows standard and tend to print faster. The other patterns are bitmaps MapInfo has created for your use. You might want to consider this when you are selecting fill patterns. See also **Recommendations for Effective Pattern Scaling** in the MapInfo Professional *Help System* for more information regarding scaling and printing fill patterns.

Translucent Raster Maps/Grids and Windows 9X Don't Mix

You cannot print a translucent raster map or grid on Windows 9X platforms or export them to EMF or WMF file formats. You need to use a non-metafile (for example, .BMP or .GIF) format to export raster images on Windows 9X.

Customers printing large images (such as destination page size D, E, or A0) no longer have the 28,000 pixel limitation. If you experienced printer difficulties in the past due to this limitation, you should notice a significant improvement in your printed images.

Sometimes the Older Driver is Better

When in doubt, if an older driver worked and the new one does not, go back to the older driver.

Make Room for the Metafile

Make sure you have plenty of temporary disk space, particularly if you are using the Print using the Enhanced Metafile option. The system is trying to create a layered bitmap locally on disk.

Spool Locally, Print Globally

Try spooling print jobs locally rather than at the plotter. This allows the computer to rasterize your output rather than the printer, which can be more efficient.

- For print spooling instructions, see *Troubleshooting Printing Problems* in the *Help System*.

Note: *Speeding up the Printer:* If your printer has Fast, Normal, Best print quality options, we suggest you select **Fast** to improve printer speed.

Understanding Your Data

You cannot work for long in MapInfo Professional® without wanting to add more or enhance your own data in some way. This chapter teaches you how to get the most from your MapInfo tables and how to create reports with your data.

Sections in this Chapter:

- ♦ **Working with MapInfo Tables**234
- ♦ **Creating a Report of your Data**245

Working with MapInfo Tables

After you have brought your data into MapInfo and created .tab files, you can manage them within MapInfo Professional. You can view any database table in MapInfo Professional, once you have converted it to MapInfo format. Additionally you can add or remove fields, change the order, name, type, width, or index of any field. You can also specify or determine the projection of the table from this dialog box. You can also check if the table is mappable (contains map objects). To make these types of changes, see [Editing a Table's Structure on page 242](#).

Keep in mind that you can only view the structure of a spreadsheet or database file that you convert into MapInfo Professional's table structure. See [Displaying your Data on a Map in Chapter 5 on page 200](#) for these instructions.

To view the structure of a table:

- On the **Table** menu, point to **Maintenance** and click **Table Structure**. The **View/Modify Table Structure** dialog box displays.
- For more information, see *Accessing StreetPro Data* in the *Help System*.

Adding to a Table

One important operation in maintaining tables is the ability to update the data contained in the table. MapInfo Professional's Update Column feature allows you to:

- Add a temporary column or update an existing column with data from another table
- Update a table
- Place graphic information into visible columns

Updating Information in a Subset of a Table

Use **Update Column** to update information in a subset of a table. For example, you could marquee the southeast of the United States, then use **Update Column** to set the "sales rep" field to the name of your sales representative for the Selection table.

You can update all the rows in a table or a selection of rows. To update a selection of rows you need to select the rows using **Select**, **SQL Select**, the **Select** tool, the **Boundary Select** tool, or the **Radius Select** tool, and then update the selection.

Adding a Temporary Column using Update Column

If you need to bring data from one table into another, you can use the Update Column command in MapInfo Professional. In fact to bring this data into the table, you can either add a temporary column or you can update an existing column. In both cases, use the **Table** menu to click **Update Column** to bring over the information.

You have tremendous flexibility with how information is imported and what information is transferred. You can perform aggregate functions to transfer averages, minima, maxima, sums, weighted averages, and proportional sums. You can also create expressions to derive additional information from the data.

- For specific instructions and an example, see *Adding a Temporary Column using Update Column* in the *Help System*.

1 Select this table to update from this list.

2 Select this column to update from this list or select **Add new temporary column**.

3 Select the table that contains the update values in this list.

Geographic and Descriptive Joins

A join allows you to join two tables. To do this, MapInfo Professional must know how to associate records in the two tables.

For example, assume you are shading STATES by the values in SALES. Obviously, you want all Pennsylvania sales to be associated with Pennsylvania, all Maryland sales to be associated with Maryland, etc. MapInfo Professional has two ways of doing this:

1. From a common descriptive field.
2. Geographically/graphically.

In this case, the most likely descriptive field contains the state name or an abbreviation for the state name. Thus the STATES table might have a field called **Abbr**, containing the abbreviation of the state name, and SALES might have a field called State, that contains the state abbreviation. MapInfo Professional matches the entries in these two fields so that information in the SALES State field is matched to the record having the same entry in the **Abbr** field of STATE, thus matching NY (sales) to NY (state), PA (sales) to PA (state), etc.

However, if both tables contain graphic information, MapInfo Professional can also make a graphic match.

For example, if you are a conservation official and you want to shade a map of COUNTIES according to the number of FIRES that occurred in the last year. Your FIRES database has been geocoded. In this case MapInfo Professional could examine the coordinates of each fire location and determine the county where the fire had occurred. That would allow MapInfo Professional to associate each fire record with the appropriate county.

- For more information, see *Specifying a Join Based on Descriptive Criteria* and *Specifying a Join Based on Geographic Criteria* in the *Help System*.

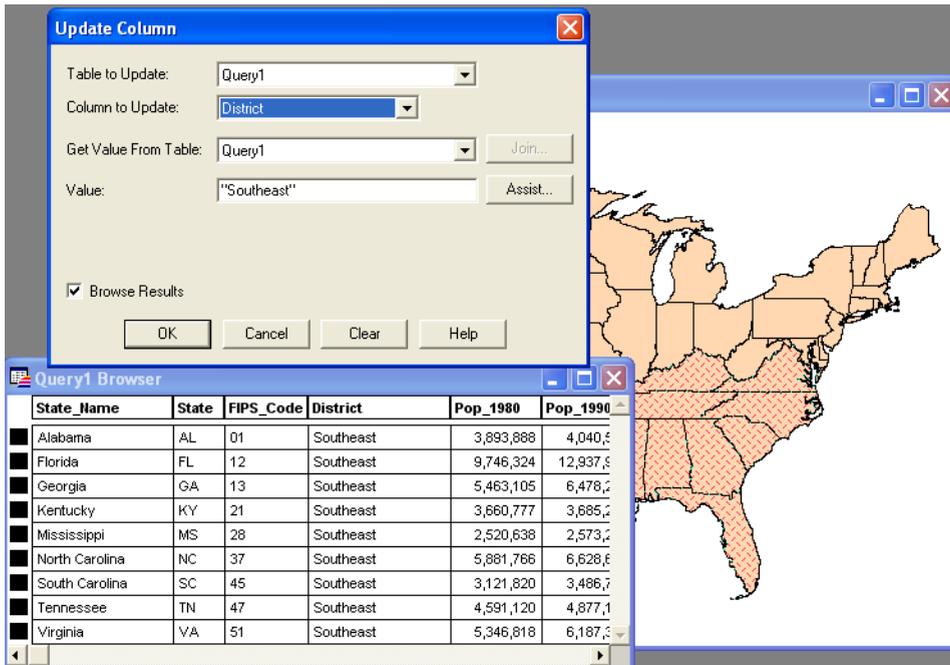
Updating a Table

For a quick visual way to update your table, select the objects in the Map window and use Update Column to update the table with the new value. This would be useful when you want to update a number of objects with the same value.

To include the District column in the STATES table:

1. Create the District column (on the **Table** menu, point to **Maintenance** and click **Table Structure**) in the States table.
2. Add a field for Districts.
3. Redisplay the STATES table in a Map window.

4. Select the appropriate states with the Marquee tool (or other selection method).
5. On the **Table** menu, click **Update Column** and fill in the dialog box as illustrated in the next figure. Be sure to put the value in quotes so MapInfo Professional does not treat it as a new column name.



6. Click **OK**. MapInfo Professional creates a query table of the southeastern states with the District column containing the value Southeast.
7. Save the table to preserve the new information.

Appending Rows to a Table

Use the Append Rows to Table command to attach the records from one table to another. The two tables should have the same set of columns in the same order. To append data to another table:

1. On the **Table** menu, click **Append Rows to Table**. The dialog box displays.
2. Specify the table containing the records you want appended.
3. Specify the table to which the records will be appended and click **OK**.

If the corresponding columns do not have the same data type, a best fit is done to convert the data to the appropriate type. If the order of the columns is not the same between the two tables, use the Table Structure command to reorder the columns before using **Append Rows to Table**.

Note: If tables are mappable, the bounds of the map in one table must be large enough to allow objects from the other table to fit within it. Otherwise, the objects will be distorted to the bounds of the Map window. Use the Check/Set CoordSys Bounds tool to alter the map bounds of the table if this occurs. See [Using the Tools in the Tool Manager in Chapter 4 on page 195](#) for more about the CoordSys Bounds tool.

Appending One Table to Another

To append one table to another:

1. Choose **Table > Append Rows to Table**. The **Append Table** dialog box displays.
2. Choose the table you want to append from. Select a table in the **Append Table** drop down list.
3. Choose the table you are appending to. Select a table in the **To Table** drop down list.
4. Click **OK**. The status of the append operation displays.
5. Click **Stop** to halt the append process.

When the columns of the two tables are not ordered properly, so that columns with corresponding positions do not have corresponding data, use **Modify Structure** to change the order of the columns in one of the tables.

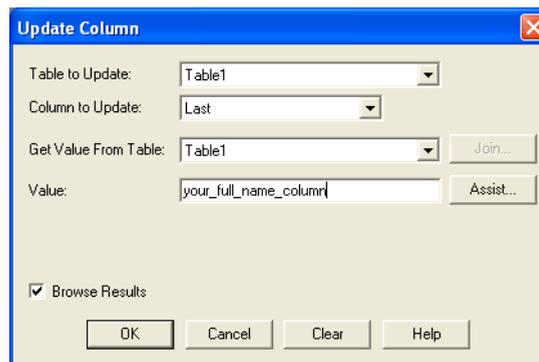
You can use **SQL Select** to reorder the columns of one of the tables and then append the results.

Parsing Data from One Column to Multiple Columns

If you have imported data into MapInfo Professional from another format, there is always the chance that the data will not come in exactly the way you want it. In some instances, items that should appear in separate columns may be put together in one column. The following is a series of column updates that parses one column of full names (first, middle, and last) into three parts. It works even if there is no middle name, or if there is only a last name.

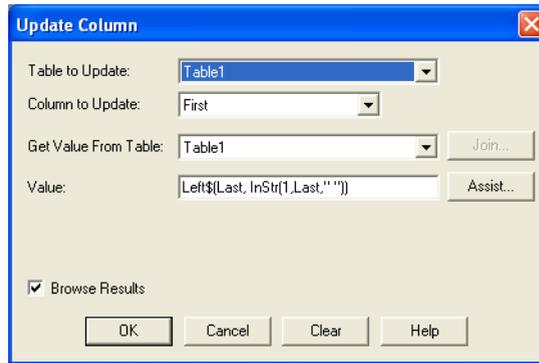
To parse data from one column to multiple columns:

1. On the **File** menu, click **Open** and open the table to be modified.
2. Add three new columns to your table. On the **Table** menu, point to **Maintenance** and click **Table Structure**. Add two character columns of size 15. Call them **FIRST** and **MIDDLE**. Then add a character column called **LAST** of size 30.
3. Put the full name into the column called **LAST** by choosing the **Table** menu, and clicking **Update Column**. Fill in the **Update Column** dialog box.



The column to update is LAST, and we get the Value from the column that has the full name in it. Remember we are only working with one table, so the **Table to Update** and **Get Value From Table** should be the same table. In the following example, the table is TABLE1 and the full name column is your_full_name_column. You should fill in your own values for these two items.

4. To parse the first name out of the full name column, choose the **Table** menu and click **Update Column**. Fill in the **Update Column** dialog box.



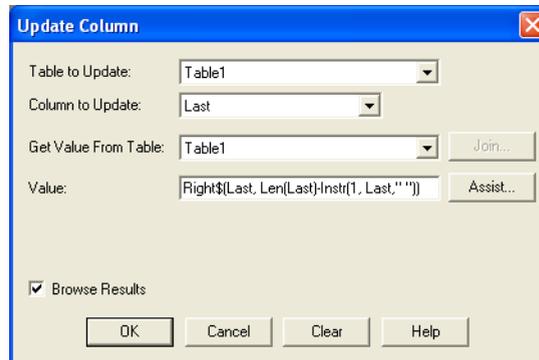
The screenshot shows the 'Update Column' dialog box with the following settings:

- Table to Update: Table1
- Column to Update: First
- Get Value From Table: Table1
- Value: Left\$(Last, Instr(1, Last, " "))
- Browse Results:

The Column to Update is: FIRST

The Value is: `left$(LAST, instr(1, LAST, " "))`

5. To parse the last name out of the full name column, on the **Table** menu, click **Update Column**. Fill in the **Update Column** dialog box.



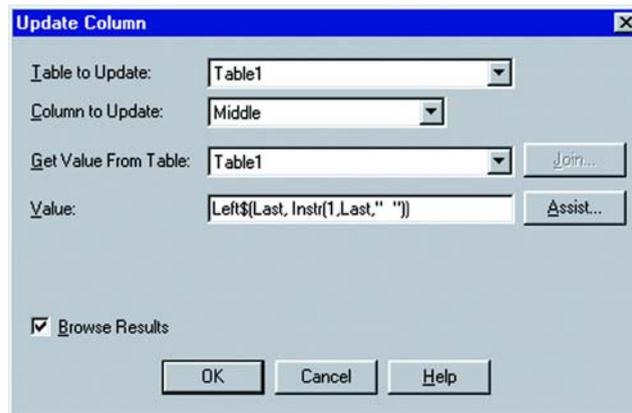
The screenshot shows the 'Update Column' dialog box with the following settings:

- Table to Update: Table1
- Column to Update: Last
- Get Value From Table: Table1
- Value: Right\$(Last, Len(Last)-Instr(1, Last, " "))
- Browse Results:

The Column to update is: LAST

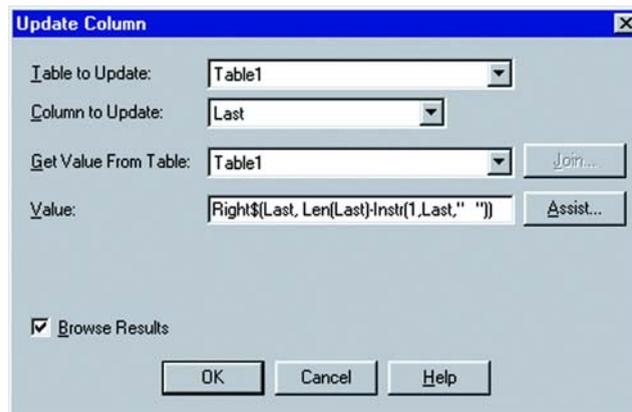
The Value is: `Right$(LAST, Len(LAST)-Instr(1, LAST, " "))`.

6. To parse the middle name out of the full name column, on the **Table** menu, click **Update Column**. Fill in the **Update Column** dialog box.



Update the MIDDLE column with the Value: `Left$(LAST, Instr(1, LAST, " "))`

- Then update the LAST column again by returning to the **Table** menu, clicking **Update Column**, and filling in the dialog box.



The Value is: `Right$(LAST, Len(LAST)-Instr(1, LAST, " "))`

- Click **OK** to update the column.

Placing Graphic Information in Visible Columns

Update Column is also useful to put graphic information into columns so that it is visible. Tables that contain map objects store the graphic information about these objects invisibly. Using Update Column, you can bring some of that information into a column so it can be viewed in a Browser. Update Column with `CentroidX(Obj)`, `CentroidY(Obj)` uses the Session Projection Preferences (if set), otherwise it defaults to Longitude/Latitude. For example, you want to display the longitude and latitude coordinates of a table of radio station point locations in a Browser. In this example, you are only working with one table, RADIOLOC, but you still use **Update Column** as in the Add Temporary Column example.

- For more information, see *Placing Geographic Information in Visible Columns* in the *Help System*.

Mouse Wheel Support for Browser Window

When you are working in the Browser window, you can use the mouse wheel to scroll through the records. Roll the mouse button down to scroll down the list, and roll the mouse button up to scroll up the list. You can still use the **Tab** key to scroll right and the **<Shift Tab>** keys to scroll left in the Browser window.

Adding a Row to a Table

You can add a temporary row to an editable MapInfo table.

To add a row:

1. On the **Window** menu, click **New Browser** window.
2. Choose an editable table from the drop-down list.
3. Click **OK** to display the table in a Browser window.
4. On the **Edit** menu, click **New Row** to add a row to the bottom of the table.
5. Type the new data into each appropriate column of the new row.
6. When you are finished adding rows, on the **File** menu, click **Save Table** to save the new data. The **Save Table** dialog box displays.
7. Click **Save** to save the new row(s).

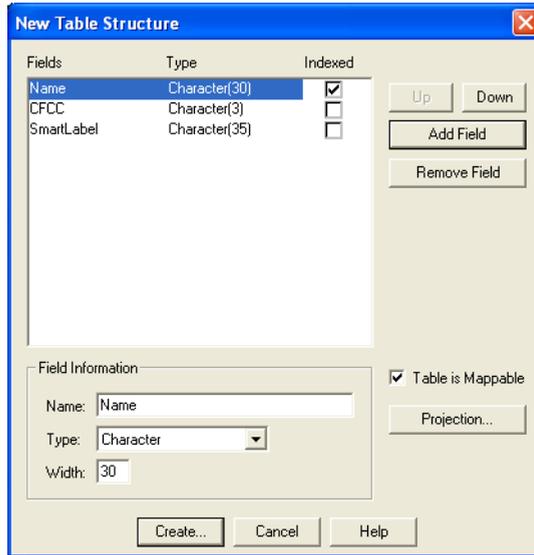
Creating a New Table

You can bring in data tables from several outside sources: dBASE, Excel, Access, Lotus 1–2–3, shapefiles, Grid, comma delimited, and delimited ASCII. You can also create your own database directly in MapInfo Professional. These databases can be opened and displayed as maps (providing they contain graphic objects), Browsers, or graphs.

To create a table in MapInfo Professional:

1. On the **File** menu, click **New Table**. The **New Table** dialog box displays.
2. Choose one or more from the following:
 - **Open New Browser** — Click this check box to display the new buffer in a new Browser window only.
 - **Open New Mapper** — Click this check box to display the new buffer in a new Map window.
 - **Add to Current Mapper** — Click this check box to display the new buffer in the current Map window.
3. Do one of the following and click **OK**:
 - To create a new table and new table structure, click **Create New**.
 - To create a new table based on the structure of an existing table, click **Using Table** and select from the list of open tables.

4. Choose **OK**. The **New Table Structure** dialog box displays.



If you selected **Create New**, this dialog is empty. You can remove a field by highlighting it and clicking the **Remove Field** button.

5. Choose **Add Field** to begin adding new fields to the database's structure. Give the field a name, type, width, and specify whether the field will be indexed.
6. Continue to add fields until you have the structure you want.
7. Use the **Up** and **Down** buttons to reorder the fields. Keep in mind that the order of fields in this dialog box (top to bottom) will actually display as columns (left to right) in the Browser window.
8. Choose **Create**. The **Create New Table** dialog box displays.
9. Specify a location for the new table in the **Save in** box.
10. Enter a name for the table in the **File Name** box.
11. Specify the file type in the **Save as type** drop-down list in one of these formats:
 - **MapInfo (*.tab)**
 - **dBASE DBF (*.tab)**
 - **Microsoft Access (*.tab)**
12. Click **Save**. If you chose either of the MapInfo Professional formats, MapInfo Professional creates your table. If you chose dBASE DBF, proceed to step 12. If you chose dBASE DBF, the **dBASE DBF Information** dialog box displays, asking you to specify a file character set. Choose the one appropriate for your language and click **OK**.
13. Click **Save** in the **Create New Table** dialog box. MapInfo Professional creates the new table.

Note: Do not use "Districts" as a name for your base tables. MapInfo Professional uses "Districts" internally as a system table when beginning a redistricting session.

 - For more information, see *Naming a File* and *Opening Multiple Tables* in the *Help System*.

Creating a New Table by Combining Objects Using Column

If you want to make a new map of the U.S. based on areas such as Midwest, Pacific Coast, Northeast, etc., you could combine all of the state data and create new objects where some common data value is the key to which the new map object states will belong.

To do this, you could draw a rectangle somewhere on the States map. Select some states around the rectangle and specify them as the target. Select the rectangle and do a split operation. The new objects will be created and each split object will have its same state initials. Then, use **Combine Objects Using Column** and specify the state initials fields as the grouping value. The states will be re-created.

The Combine Objects Using Column feature gives you the option of creating a new table for the newly combined objects:

1. Choose **Table > Combine Objects using Column** to display the **Combine Objects using Column** dialog box.
2. Choose the objects from the table you want to combine.
3. Choose the column you want the objects to be grouped by.
4. Choose **New** in the **Store results in table** drop-down list.
5. Press the **Next** button to display the New Table dialog box.
6. Press the **Create** button to display the New/Modify Table Structure dialog box.
7. Press the **Create** button to display the Create New Table dialog box.
8. Press **Save** and a new table is created.

Editing a Table's Structure

You can make changes to the structure of your table directly in MapInfo Professional. You can add or remove fields, change the order, name, type, width, or index of any field. You can also specify or determine the projection of the table from this dialog box. You can also check if the table is mappable (contains map objects).

The Table is Mappable option in the Modify Table Structure dialog box allows you to modify a table so you can map it or, when left cleared, it will ungeocode your table.

To change the structure of the table:

1. Choose **Table > Maintenance > Table Structure**. The **View/Modify Table Structure** dialog box displays.
2. Click the **View/Modify Table** drop-down list, a list of available tables displays.
3. Choose the table you want to modify.
4. Click **OK**.

The **Modify Table Structure** dialog box displays for editable tables and allows you to change the structure of a table. The **View Table Structure** dialog box displays for read-only tables and is only for viewing the table's structure.

Note: Keep in mind that you can only view the structure of a file that you bring into MapInfo Professional.

Copying and Renaming a Table

Because a MapInfo Professional table consists of two or more component files (STATES.tab, STATES.DAT, STATES.MAP, etc.), all of these files for a particular table must be in the same directory. If you move any of the component files to a different directory, you must move all of them. When you want to back up a table to diskette, you must back up all of the component files.

Because each table has at least two files associated with it, you cannot change one file name without changing all the other associated file names. Otherwise, MapInfo Professional would not know where to find all the files that constitute the table.

- For more specific instructions, see *Copying and Renaming a Table* in the *Help System*.

Deleting a Table

Deleting a table allows you to remove the .tab file and all component files associated with the table.

To delete a table:

1. On the **Table** menu, point to **Maintenance** and click **Delete Table**.
2. Choose the table to delete and click **OK**. A message displays to inform you that the table will be permanently deleted and the operation cannot be undone.
3. Click **OK** and MapInfo Professional deletes the table.

Deleting a raster table only deletes the *.tab file. Deleting a grid file removes both the *.tab and grid file.

Packing a Table

Packing a table allows you to compress tables to take up less disk space. You can choose to pack only tabular data or graphic objects or both. Packing tabular data removes deleted records. When you pack a table, MapInfo Professional requires that you have twice as much free space as the table takes up to handle a copy of the database as a scratch file.

To pack a table:

1. On the **Table** menu, point to **Maintenance** and click **Pack Table**. The **Pack Table** dialog box displays.
2. Choose a table from the **Pack Table** drop-down list.
3. Click the appropriate radio button to specify the type(s) of data.

4. Click **OK**.

Note: Packing a table can corrupt customized labels saved to a workspace. If you are going to be working with customized labels, pack the table before you create the labels.

Collecting Data into the Table using Update Column

MapInfo Professional provides a number of powerful aggregating functions that allow you to derive new information. These features are available in Update Column when you specify two tables in the **Update Column** dialog box. The aggregate expressions include **Average**, **Count**, **Minimum**, **Maximum**, **Sum**, **Weighted Average**, **Proportion Sum**, **Proportion Average**, and **Proportion Weighted Average**. Each is defined in the next table.

Aggregate Expressions	Description
Average	Calculates the average of the values for all records in a group.
Count	Counts the number of records in a group.
Minimum	Finds the lowest value for all records in a group.
Maximum	Finds the highest value for all records in a group.
Sum	Calculates the sum of the values for all records in a group.
Weighted Average	Gives more weight to one value over another when averaging.
Proportion Sum	A sum calculation that is adjusted based on how much of one object is within another object.
Proportion Average	An average calculation that is adjusted based on how much of one object is within another object.
Proportion Weighted Average	A weighted average calculation that is adjusted based on how much of one object is within another object.

Note that average, count, min, max, sum, and weighted average operate on data values only. The proportion functions take geographic relationships into account.

Note: To find instructions for using the Update Column feature, see [Adding a Temporary Column using Update Column on page 234](#).

- For more examples, see *Collecting Data into the Table using Update Column* in the Help System.

Browsing a Table

There are times when viewing the tabular data in a table is necessary. In MapInfo Professional, this is called browsing the table.

To browse a table:

1. On the **Window** menu, click **New Browser Window**.
2. Choose the table you wish to browse and click **OK**.

The Browser shows the fields of the data table (column headings) and the records of data (rows).

A Browse menu item gives you further functionality. On the **Browse** menu, click **Pick Fields** to display only the columns of data you want to see. If you wish to show information that is only implicit in the base table, in the **Pick Fields** dialog box choose Expression from the Fields in Table list. For more on expressions see [Deriving Columns in Chapter 9 on page 327](#), or [Creating Query Expressions in Chapter 9 on page 315](#).

To show or hide the Browser window grid, on the **Browse** menu, click **Options**.

To add new records to the Browser:

1. On the **Edit** menu, click **New Row** to add a row (or use **Ctrl-E**).
2. Enter text directly into each field. As you type, press **Tab** or **Shift-Tab** to move from field to field.
3. You must remember to save the new information to the base table before exiting the program.

The square box to the left of each record in the Browser window is the select box. Click it to select the record in the Browser window. If the Map window for the table is open, the record is selected as well. To add records to the selection, **Shift** and drag to select consecutive records, or **Shift-Click** non-consecutive records.

Selecting records creates a subset of the table that you can browse, map, or graph, just like the full table. More on selecting is found later in [Chapter 9: Selecting and Querying Data](#). You can also create a report of your tabular data using the Crystal Reports functionality included with MapInfo Professional. The Crystal Reports *User Guide*, which is located in the Documentation subfolder of your installation directory to help you get the most out of this powerful report writing program.

Creating a Report of your Data

MapInfo Professional includes the full report-writing functionality of Crystal Reports. Crystal Reports enables you to create reports of your tabular data. The Crystal Reports *User Guide* is included online so that you can get the most from this program.

To create a report and print it:

1. On the **Tools** menu, point to **Crystal Reports** and click **New Report**. The **New Report** dialog box displays. It lists all the open tables.
2. Click the table you want to create a report for, and click **Report**. The Crystal Reports user interface displays.

3. In Crystal Reports, **Choose Report > Report Expert** to display the **Create Report Expert** dialog box. The Report Expert walks you through the selection of data, fields, fields to sort by, fields to total, and styles for your report. Click **Preview Sample** to see a sample of your report on the screen.
4. On the **File** menu, click **Print** to print your report.

Note: Tables with columns containing underscores, temporary column, do not display in the default Crystal Report. Use the Expert Wizard to access columns containing these elements.

Opening an Existing Report

To open an existing report:

1. Choose **Tools > Open Report**. The **Choose Crystal Report** dialog box displays.
2. Select the report from the dialog box.

Saving a Report

When you save a report, an .rpt extension is assigned to the report. The report is assigned the default name: (tablename) report.rpt. You may rename the report using the Crystal Reports Save As feature.

All .rpt files are saved in the directory specified in **Options> Preferences > Directories > Crystal Report** files.

Accessing Remote Data

When your data is remote, whether it is a remote Excel file or an Oracle table, the issue of retrieving it gets more complex. This chapter addresses the special circumstances that surround remote data access for use with MapInfo Professional®.

Sections in this Chapter:

- ♦ **Understanding Remote Tables and Databases**.248
 - ♦ **Accessing Data in Remote Spatial Databases.**.251
-
- For information in using Oracle Workspaces, see *Using Oracle Workspace Tables in MapInfo Professional* in the *Help System*.

Understanding Remote Tables and Databases

Not all of the data you may need to work with is local. Sometimes you need to graph or display spatially data that is on several different computers in different locations. And this data can be in different formats and configurations. What MapInfo Professional has to do is synchronize all of that data to ensure that it displays properly on a map.

To access data that is located on a remote Oracle or other SQL Server based DBMS systems, your system requires:

- A database management system such as Oracle, MS Access, Informix, etc.
- Network support required by your DBMS (Oracle-SQL*NET; MS Access-none required)

If these resources are not in place, you will not be able to access the remote data from MapInfo Professional. If you try to connect to this data, warning messages display to explain that you do not have the required DLLs.

Supported Databases and Versions

MapInfo Professional supports the following spatial database servers:

- SQL Server 2000/2005
- Informix 9.x
 - Solaris 32-bit
 - HPUX
- Oracle Spatial 10G, 9iR2, 9iR1

Further, using ODBC drivers, you can access your data from MapInfo Professional using:

- Oracle ODBC Driver 9x
- SQL Server 2000/2005*
- Informix 3.x

To make your database work more productive, MapInfo Professional provides an interface for opening remote tables in EasyLoader. This utility gives you the ability to save tables to a remote database using Save Copy As and to create new tables on remote databases. Additionally it gives you the means to create a new table from existing tables. EasyLoader is available on the MapInfo web site. You can also open tables of data from the following databases and make them mappable but only for point data:

- Oracle 9iR2
- Oracle 10G
- MS Access XP
- MS SQL Server 2000/2005*
- Informix 9.4

About Linked and Live DBMS Tables

A linked table is a MapInfo Professional table that is downloaded from a remote database and retains links to its remote database table. The remote database table is known as a DBMS table. When MapInfo Professional downloads a table, it copies the entire contents of the table to the local machine. Any changes you make to the copy can be committed to the server table at any time. We often recommend that you use linked tables rather than live tables to improve performance.

Note: If you are linking to a large table, it will significantly slow down the performance of your system.

You can perform most operations on a linked table that you do for a regular MapInfo Professional table. For instance, you can view, edit, copy, and save a linked table just as you could a regular MapInfo Professional table. However, there are some things you can't do to a linked table. For instance, you can't pack a linked table. You can't modify the table structure of a linked.

You can download tables from a relational database management system such as Oracle, Informix, or Access. These downloaded tables can be used stand-alone or remain linked to the original server database. You can refresh these linked tables to rerun queries on a regular basis using the refresh button or menu button. After editing in MapInfo Professional, the data in a linked table is saved to the relational database management system in a manner that resolves any multi-editing conflicts.

A linked table may use one style for all objects within a table, or contain different styles for each row, called per row styles. There are two requirements for setting up per row styles:

- A row must exist in the DBMS table
- You must set up a map catalog entry to activate the row style.

Note: Setting up a per row styles is optional.

DBMS Drivers

Before you can access an SQL database, you must have the appropriate DBMS driver for the type of database, and set up a DBMS data source for the data. The DBMS drivers were installed during MapInfo Professional installation, or afterwards, using the DBMS Administrator in your Windows Control Panel. You can install additional DBMS drivers at anytime using the DBMS Administrator. A DBMS driver is a dynamic-link library (.DLL) file that MapInfo Professional uses to connect to an SQL database. Each type of SQL database requires a different DBMS driver.

Linked Tables and Metadata

MapInfo Professional stores information about a linked table in the TAB file's metadata, which is not displayed on the map. MapInfo Professional uses metadata to manage transactions between MapInfo Professional and the server database. Two of the most important kinds of information stored in the metadata include the connection string and the query you build from the DBMS Table Wizard, or Expert dialog box.

- For more information, see *Resolving Editing Conflicts when Saving a Linked Table* in the *Help System*.

About Live Access Tables

You can access remote data as a live access table using MapInfo Professional. It is called a live access because there is no local copy of the data, that is, all operations against the data go directly to the server. This differs from linked tables, which download a snapshot from the remote database into a native MapInfo Professional table.

You can perform most operations on a live access table that you do for a regular MapInfo Professional table. For example, you can view, edit, copy, and save a live access layer just as you can a regular MapInfo Professional table. However, you cannot pack or modify a live access table's structure.

You can create live access tables with or without a cache. The cache is a memory cache, which contains only the rows that are in the map display for that window. This optimizes certain operations such as ToolTips, labeling, etc. on the map. The cache is automatically updated when the view of the map changes, (for example, zooming or panning).

When the live access table is creating a new Map window, the initial view is determined by the entry in the MapInfo_MapCatalog table. The columns DB_X_LL_DB_X_UR_DB_Y_UR describe a rectangular area that is the initial map display. If the live access table is being added as a layer to an existing Map window, the layer will be fit to that Map window.

MapInfo Professional stores information about a live access table in a TAB file. This information is known as metadata. MapInfo Professional uses metadata to store information about the live access table that is needed to manage transactions between MapInfo Professional and the server database. Two of the most important kinds of information stored in the metadata include the connection string and the query you build from the DBMS Table Wizard, or Expert dialog box.

Limitations in Creating a Live Table

This is a list of known problems/issues with live access:

- Every table must have a single unique key column.
- FastEdit is not supported.
- With MS Access if the key is character, it will not display rows where the key value is less than the full column width for example, if the key is char(5) the value 'aaaa' will look like a deleted row.
- Changes made by another user are not visible until the data is refreshed from the server. In addition, if cache is on another user's updates may not appear until the cache is invalidated by a pan or zooming out.
- There will be a problem if a client-side join (through the SQL Select menu item or MapBasic) is performed against two or more SpatialWare tables that are stored in different coordinate systems. This is inefficient (it is better to do the join in the SQL statement that defines the table).

Limitations of Live Access to Remote DBMS Tables

Using live access tables to determine the number of rows is not appropriate for all tables. It works best on large tables, where the number of rows remains stable; that is, new insertions or deletions in the table do not occur on a regular basis.

If the total number of rows stored in the MapCatalog is out of sync with the actual number of rows in the table, problems occur. The map will always include all of the map objects, but other things may not work correctly. For example:

- The row count displayed in the Browser will be incorrect.
- The MapBasic statement to fetch last will not return the correct row.

Thematic maps, particularly ranged thematic maps, may be wrong.

- For more information, see *Improving Live Access Performance* in the *Help System*.

Accessing Data in Remote Spatial Databases

To use your RDBMS tables with MapInfo Professional most effectively, you need to set them up so that you can store coordinates or more complex spatial data and then retrieve them. This will also allow you to geocode your remote table and assign coordinates to each record in the table.

There are four prerequisites for storing and retrieving spatial objects in a DBMS table:

- Coordinate values for the objects must be stored in columns of the remote table as numbers, or as a spatial column if the database supports it, such as SpatialWare, or Oracle Spatial. See [Storing Coordinate Values in a Remote Table](#) for these instructions.
- A spatial index column may be included to increase performance on queries against the coordinates. See [Creating a Spatial Index Column](#) for these instructions.
- You must create a special table on the DBMS system known as the MapInfo_MapCatalog. (MapInfo Professional creates this automatically when you use the EasyLoader.) You create only one catalog per database. See [Creating a MapInfo_MapCatalog](#) for these instructions.
- You must supply information about mappable tables to the MapInfo MapCatalog using the Make Table Mappable command. (This is for tables the EasyLoader does not upload.) See [Making a Remote Table Mappable](#) for these instructions.

Storing Coordinate Values in a Remote Table

The coordinate values for the spatial data must be stored in columns of the remote table. This is a data creation task and can be done at any time. Possible methods for adding the spatial columns include:

- There may already be existing coordinate data.
- Use the EasyLoader application to upload a MapInfo Professional table to a database supported by MapInfo Professional.
- Make a remote table mappable in order to geocode. See [Making a Remote Table Mappable](#) in this chapter.
- Add coordinate values to a MapInfo Professional table, export it to a text file, and import it to your database.

For more information on how to use the EasyLoader tool, please view the Tools section of the *Help System*.

Creating a Spatial Index Column

To increase performance on queries against the coordinates, a spatial index column can be included. This is a data creation task and can be done at any time.

Creating a MapInfo_MapCatalog

Use EasyLoader to create a MapInfo_MapCatalog. MapInfo Professional stores information about where the spatial columns are located in a special table on the DBMS known as the MapInfo_MapCatalog. There must be one catalog per database. The application EasyLoader can be used to create this catalog for each database: Oracle 9, Informix, SQL Server, and MS Access. These applications will need to be customized for any other DBMS, or you can follow the procedure for manually creating a map catalog. This is a one-time only task per database and is required before any tables on that database can be mapped in MapInfo Professional.

These related topics are in the *Help System*:

- *Creating a MapInfo_MapCatalog Automatically*
- *Creating a MapInfo Map Catalog Manually*
- *Spatial Index Types*
- *Updating Spatial Bounds in the MapInfo MapCatalog*

Making a Remote Table Mappable

MapInfo Professional holds catalog information about mappable tables from the Make Table Mappable command. Creating the entry for a table is a once-per-table task and is required before this specific table can be mapped in MapInfo Professional.

The Make DBMS Table Mappable command makes a remote SQL database table (DBMS table) mappable in MapInfo Professional. Any MapInfo Professional table may be displayed in a Browser, but only a mappable table may have graphical objects attached. Only mappable tables can display in Map windows. Use the Make Table Mappable command only for tables that you cannot upload with EasyLoader.

In the Make DBMS Table Mappable command provide MapInfo Professional with the following information from the remote database table so that the table can be mapped in MapInfo Professional:

- The column(s) containing the spatial data to map the table (not applicable to relational Oracle SDO)
- The projection used by the remote database table
- The spatial index column from the remote database table (used by MapInfo Professional to speed access of the spatial data and improve performance)
- The symbol to use for objects
- Per row styles, if your table is set up for it, and the MapInfo_MapCatalog has the appropriate column structure
- Object type for Spatial databases
- Table Bounds (control the extent of the bounding rectangle for the Map window)

MapInfo Professional takes this information and stores it in a table called the MapInfo_MapCatalog. Every time you use a DBMS table MapInfo Professional checks the catalog to see if the table is mappable. As a result, you only have to make a DBMS table mappable once. It will always remain mappable. However, one spatial index column entry per table is allowed in the Map Catalog. Therefore, only one spatial column can be mappable at a time. If the table has more than one spatial column and you want to map another spatial column, you must drop the spatial column currently in the Map Catalog and make the table mappable using the new column.

Once you have the prerequisites in place you are ready to connect to your datasources and the database tables you want to work with. If you are not familiar with the details of your remote database type, discuss your needs with your database administrator to find out the basic information required to connect to your database.

- For more information, see *Making a DBMS Table Mappable* and *Changing the Symbol Style in a Mappable DBMS Table* in the *Help System*.

The Help System contains these additional related topics:

- *Understanding Per Row Object Styles*
- *Making a DBMS Table Mappable for Geocoding*
- *Changing the Symbol Style in a Mappable DBMS Table*

Opening a Connection to an ODBC Data Source

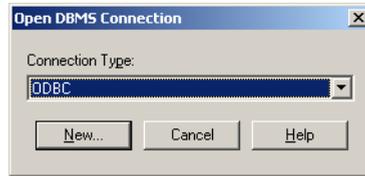
A data source is the location of a specific database. For example, CUSTOMERS could be the name of the data source that provides access to one or more Oracle tables located in a specific directory on a specific network drive. Once connected to the CUSTOMERS data source, you could download information from any of the Oracle tables into a MapInfo Professional *linked table* or use the information directly by opening the table as live access. You could have several data sources, each providing access to different databases in different locations.

Open Database Connectivity is a standard for accessing disparate database systems. It is the oil that moves the wheels of inter-database communication. MapInfo is committed to making this important interface work for your organization.

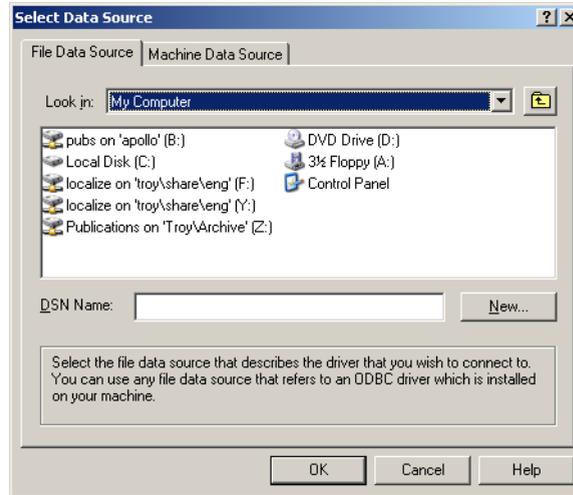
Before you can download a DBMS table, you must connect to the specific data source where the data to be downloaded resides.

To connect to a new data source through ODBC:

1. Choose **File > Open DBMS Connection**. One of the following happens:
 - If you installed the Oracle Spatial (OCI) and ODBC support, this dialog displays. Choose whether to create an ODBC or Oracle connection and click **New**. When you select **Oracle Spatial**, a different process occurs, see [Opening a Connection to an Oracle Spatial Data Source, p. 255](#) for these instructions. When you select **ODBC**, the Select Data Source dialog box displays.



- If the ODBC driver is the only one installed, the Select Data Source dialog displays.



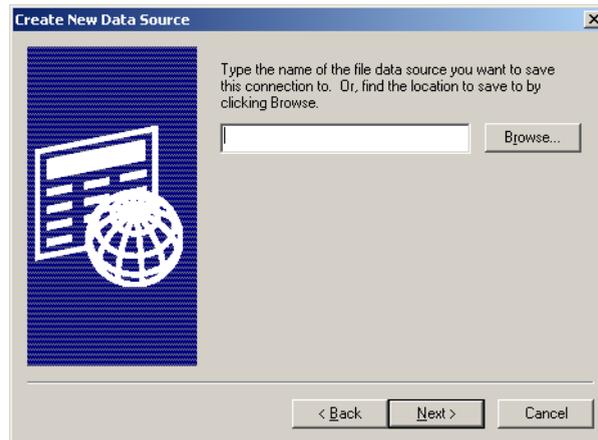
2. Click **New** to display the Create New Data Source dialog box.



From this wizard dialog box you select a driver and choose a name for the connection. You can add multiple data sources, each one associating a driver with data you want to access using the driver. You need to give each data source a name that uniquely identifies that data source.

3. Select the appropriate driver for this database connection from the list and click **Next** to display the next dialog box.

To enter the driver-specific keywords for the database you are connecting to, click the **Advanced** button. We recommend you leave the **Verify this connection** check box selected. Click **OK** to continue.



4. Do one of the following and click **Next** to continue:
 - Type the name you want to use to identify this connection in this field or
 - Click the **Browse** button to identify the location of the connection and save it.

For example, If you create a data source for an Oracle database that contains customer tables, you might name the data source, "CUSTOMERS".

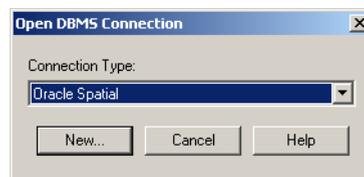
5. Once you have set up your data source, MapInfo Professional displays the data source names in the Select Data Source dialog box, for easy selection.

Opening a Connection to an Oracle Spatial Data Source

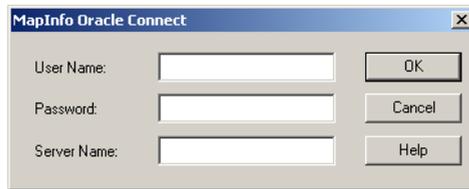
You can only connect to an Oracle database or the Oracle instant client on the machine if you have the Oracle client installed and the OCI driver.

To connect to a new data source using the OCI:

1. Choose **File > Open DBMS Connection**. If you installed the Oracle Spatial (OCI) driver, the Open DBMS Connection dialog displays.



2. Choose **Oracle Spatial** and click **New**. The MapInfo Oracle Connect dialog box displays.



You may need to speak to your Oracle Database Administrator to get this information.

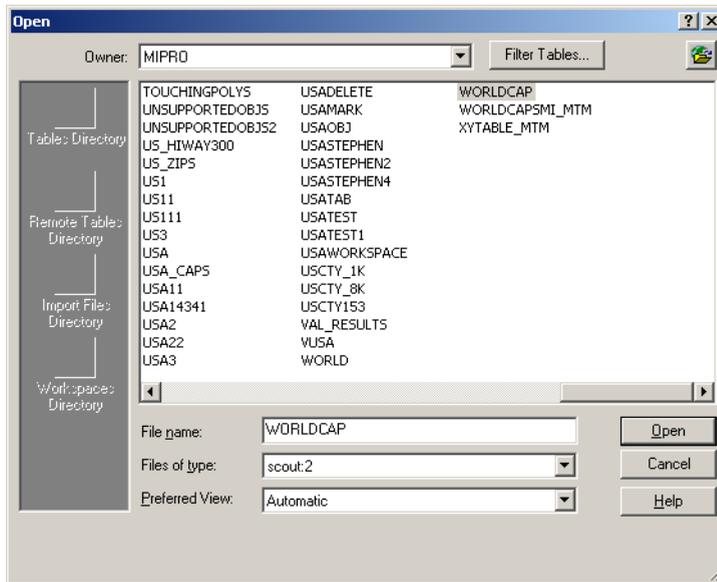
3. Type your user name and password for the Oracle server connection in the fields provided. Type the name of the server on which your tables are located in the **Server Name** field. Click **OK** to continue.
4. To access the tables on the selected server, select **File > Open** and click arrow beside the **Files of type** drop-down list. Scroll to the bottom of the list to find the connection you created. For more details about opening a table from this server, see [Opening a Database Table from a Connection](#).

Opening a Database Table from a Connection

Once you have opened a connection to a database, the connection is available each time you select **File > Open** and click the **Files of Type** drop-down list. From there you can open live or linked tables located on that server through the connection you have created.

To open a particular table based on the data source connection:

1. Choose **File > Open** to display the Open dialog box.
2. From the **Files of type** drop-down list, select the database connection you created in [Opening a Connection to an ODBC Data Source on page 253](#).

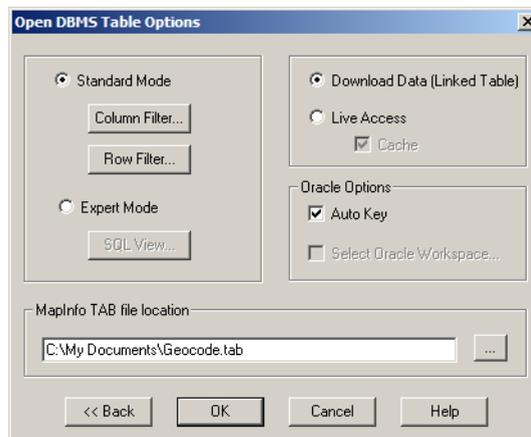


This list displays the remote tables available on the selected data source.

Connections you add to the **Files of type** drop-down list appear at the bottom of the list and contain a sequential number that indicates the order in which the connection was added.

Note: If you do not see the table you are looking for in the list, click the **Filter Tables** button and check the filter options to see if your view is restricted. Check the **Owner** drop-down list too to see if there are other schemas on the server you selected that may contain the table you are looking for.

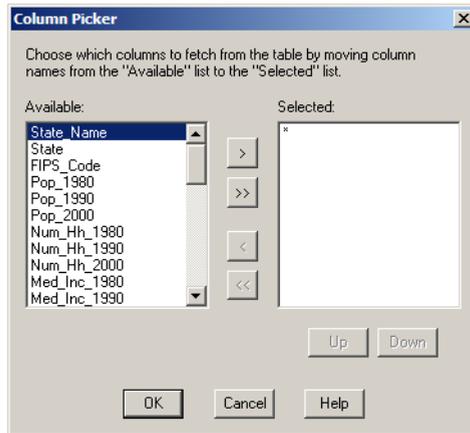
3. Select the table in the list you want to open and click **Open**. The Open DBMS Table Options dialog box displays.



Use this dialog box to select the type of view you want of your remote data.

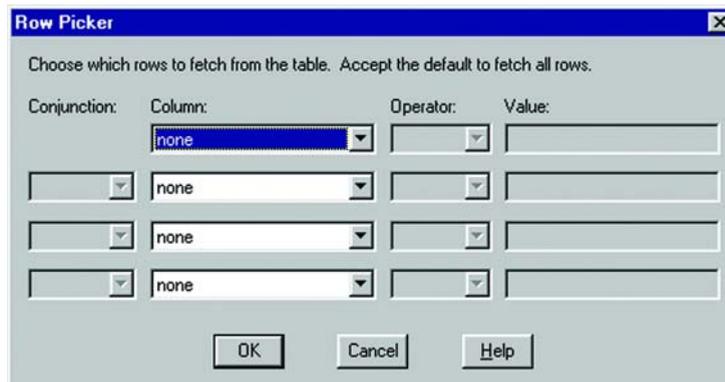
- **Click the Standard Mode** to open particular rows or columns of the selected table. The instructions in this description assume you are opening the table using Standard Mode.
- **Click the Expert Mode** to create a SQL Query to open particular rows or columns of the selected table.

- Click the **Column Filter** button to specify the columns to download. The Column Picker dialog box displays.



An asterisk (*) appears in the **Selected** list when you first open this dialog box. If you leave the asterisk, MapInfo Professional retrieves all the columns in the table from the remote database.

- To move the columns you want to display from the table from the **Available** group to the **Selected** group using the arrow buttons. The single arrow keys move one selected column at a time. The double arrow buttons move all the columns at once from one list to the other.
 - To change the order of the selected columns in the Selected list, highlight the column you want to move and click the **Up** and **Down** buttons until the column is positioned correctly.
 - Click **OK** to complete your selections.
- Note:** If the table is mappable, the **Available** list also displays an additional column called OBJECT, which refers to the spatial column. You can select it to download point objects from the table. If the table is spatialized, MapInfo Professional downloads lines, points, and polygons depending on what the table contains.
- Click the **Row Filter** button to select the row data that you want MapInfo Professional to download.



Leave this dialog box as it is to retrieve all of the rows pertaining to the columns you selected.

- a. Select the column, operator, and value entries that match the data you want to retrieve from the selected table.

Note: This is the same as specifying the WHERE clause in a SQL query.

- b. In the Column list, choose the column(s) from which you want to filter rows.
- c. If you are filtering rows for one column, select a column, operator, and value. If filtering rows on more than one column, select a column from the next drop-down list. This also activates the next row of fields for data entry.
- d. Choose how you would like to filter the rows using the Operator and Value boxes. See *Notes for Completing the Row Picker Query* in the *Help System* for assistance in completing these entries the way you want them.

Click **OK** when you have finished filtering the rows.

6. When you have completed your Standard Mode selections, do one of the following:
 - To open a linked table, click **Download data (Linked Table)** to download the data and create a linked table. Clear the box for live access.
 - To open a live access table, click **Live Access** and choose whether to click the **Cache** check box.

Select the **Cache** check box to keep attributes and objects that have been read in memory. If you perform an operation such as zooming in they do not need to be fetched from the database (since MapInfo Professional looks in memory for a record you may not see the latest updates). If you select the Cache check box, another user's updates may not appear until the cache is invalidated by a pan or zoom out operation.

Clear the **Cache** check box, to retrieve all of the data from the database whenever it is needed. This option provides the most current data but it is be less efficient.

7. Click **OK** to retrieve the data you selected and save it to the table name you specified.
 - For more information, see *Opening a DBMS Table from the Open Table Dialog Box* and *Notes for Completing the Row Picker Query* in the *Help System*.

Creating a New DBMS Table

To create a new DBMS table:

1. Choose **File > New Table**. The New Table dialog box displays.
2. Specify how you want the table opened, (Browser, Mapper, Current Mapper).
3. Specify whether you want the table structure to be based on an existing table or you want MapInfo Professional to create a new table structure.
4. Press the **Create** button. The New Table Structure dialog box displays.
5. Specify the field name, field type, number of characters (width), and whether or not the field is to be indexed for each field in your new database.

You also indicate whether the table is mappable by associating graphic objects with records and, if so, whether the map is to be an earth or a non-earth map.

If you are using the structure from another mappable table, then MapInfo Professional sets the new table projection to the projection of the source table. Collectively, this information is the structure of your database.

6. Press the **Create** button to display the Create New Table dialog box.
7. Select a DBMS database from the **Save as type**: drop-down list. The DBMS connection controls display, (Owner: box and Filter Tables: button).
8. Specify a file name and press the **Save** button. The New DBMS Table Options dialog box displays.

This dialog box has three tabs, **General**, **Spatial**, and **Styles**. However, If you cleared the **Make Table Mappable** check box in step 4 then the DBMS Table Options dialog box will only have the **General** tab. Press the **Help** button to display specific information corresponding to the tab you are currently in.

Follow the instructions listed below, depending upon the tabs that display.

9. Click the General tab and complete the appropriate selections.

TAB file location

Displays the name and path of the .tab file that will be created. You can manually type a filename or use the Save As dialog box (via **Browse** button) to choose a filename. MapInfo Professional uses the last directory where you saved a DBMS .tab when constructing the default filename full path. If this directory does not exist, then the Remote Tables preference directory is used. The filename part of the default path is based on the name of the specified DBMS table name.

Browse (...) button

Displays the Save As dialog box so the user can choose a .tab filename. Initialized with the text in the .tab filename edit box.

Download Data (Linked Table)/Live Access/Cache buttons

Download Data

When the Download Data (**Linked Table** button is selected) you have a linked table. Unchecked provides Live Access. MapInfo Professional will remember the last used settings and continue to use them until you change the settings.

Cache

When the **Cache** check box is selected, you are using the local buffer. Access time to data is faster but you don't get the most current version.

When the **Cache** check box is cleared, you are always reading the remote data, which is the most recent version.

Note: The **Cache** check box should only be enable if the **Live** option is selected. Refresh occurs when you zoom, pan, or pack.

Key Column:

Allows you to specify a key column for the new table. Without a key column a DBMS table cannot be open as live access and can only be opened read only as Linked.

If the **Key Column** check box is selected, then the corresponding combo box is enabled. You can either choose a column that was specified in the New Table Structure dialog box or specify a new column by typing into the combo box's edit control.

By default the **Key Column** check box is selected and a new column is specified. The default name of the new column depends on the DBMS connection: **MI_PRINX** for Oracle Spatial, **SW_MEMBER** for all others.

10. Click the Spatial tab and specify the index type and coordinate column selections.

Index Type:

This setting determines the type of spatial indexing used on the table. Types MapInfo (MICODE) and XY are always available. Server specific types may also be listed. The index type selection affects the state of the other three controls in this tab.

Index Column:

This control is used to specify the primary spatial index column. It's always available, except when the index type is XY.

X Coordinate:

This control is used to specify the X or latitude column in the database. It's only available for MapInfo (MICODE) or XY types. You can either choose a float column that was specified in the New Table Structure dialog box or specify a new column by typing into the combo box's edit control.

Y Coordinate:

This control is used to specify the Y or longitude column in the database. It's only available for MapInfo (MICODE) or XY types. You can either choose a float column that was specified in the New Table Structure dialog box or specify a new column by typing into the combo box's edit control.

11. Click the Styles tab and complete the appropriate selections.

Per Row Style

Check the Per Row Style box to enable per row symbology. The style info for each object is maintained in a character column of the table. If unchecked, then the style of all objects in the table is determined by the default object styles (maintained in the Map Catalog). If **Per Row Style** is checked, then the **Style Column** combo box is enabled. By default **Per Row Style** is checked and a new column named MI_STYLE is specified.

Style Column:

You can either choose a character column that was specified in the New Table Structure dialog box or specify a new column by typing into the combo box's edit control.

Default Object Styles:

Symbol/Line/Region

The default object styles are used when **Per Row Style** is not turned on for a table, or the style info for a particular object does not exist (the style column for that row is empty). The default style info specified here is entered into the map catalog. The default symbol, line and region settings within MapInfo Professional are used to initialize these controls.

12. Press **OK** to open the DBMS table according to your specifications above.

Refreshing Live and Linked Remote Tables

When you open a remote table as a “Live” table, MapInfo Professional enables the **Refresh**  toolbar button so you can refresh the data in that table. This same functionality is available for linked remote database tables.

You can refresh a MapInfo Professional linked table with the most recent data residing on the remote database for that linked table.

To refresh a linked or live table:

1. Do one of the following:
 - Use the **Refresh DBMS Table** button on the DBMS toolbar
 - On the **Table** menu, point to **Maintenance** and click **Refresh DBMS Table**.

Using either method, the Refresh Table dialog box displays.

2. Choose the name of the table to be refreshed from the refresh table list.
3. Choose **OK**. The specified table is refreshed.

Unlinking a Table from a Remote Database

You can unlink a table from its remote database with the Unlink DBMS Table command. Unlinking a table removes the link to the remote database. This command does not work if edits are pending on the linked table. You must first update any pending edits with the Save Table command. The table linkage is removed. Fields that were marked non-editable are now editable. The end product is a normal MapInfo Professional base table.

To unlink a table:

1. On the **Table** menu, point to **Maintenance** and click **Unlink DBMS Table**. The Unlink Table dialog box displays.
2. Choose the name of the table to be unlinked from the Unlink table list.
3. Choose **OK**. The specified table is unlinked.

Saving a DBMS Table

You save changes to an MapInfo Professional linked or live table the same way you save a regular MapInfo Professional table, with the Save Table command.

Saving a linked or live table results saves the records on the remote database. But before MapInfo Professional allows records from a linked or live table to be updated, it evaluates the records in a process called conflict resolution.

If MapInfo Professional finds conflicts between the data on the remote database and any records in the linked table since it was downloaded, the Resolve Conflicts dialog box automatically appears. Use this dialog box to resolve conflicts.

- For more information, see *Saving Changes Made to a DBMS Table* in the *Help System*.

Conflict Resolution for Linked or Live Tables

Because the records in a remote table are from a remote database, it is possible that other users may have changed or deleted them on the remote database since the table was downloaded into MapInfo Professional. As a result, conflicts may exist between the data residing on the remote database and the new data that you want to upload to the remote database.

When saving a remote table, if MapInfo Professional finds conflicts between the data on the remote database and any records in the remote table since it was downloaded, the Resolve Conflicts dialog box automatically displays. Use this dialog box to resolve conflicts as explained in the next table.

This process will be invoked whenever an attempt to save a remote table detects a conflict in an update. The dialog box allows the user to choose which fields from the conflicting records will be used to update the database. Three instances of the record being updated must be considered:

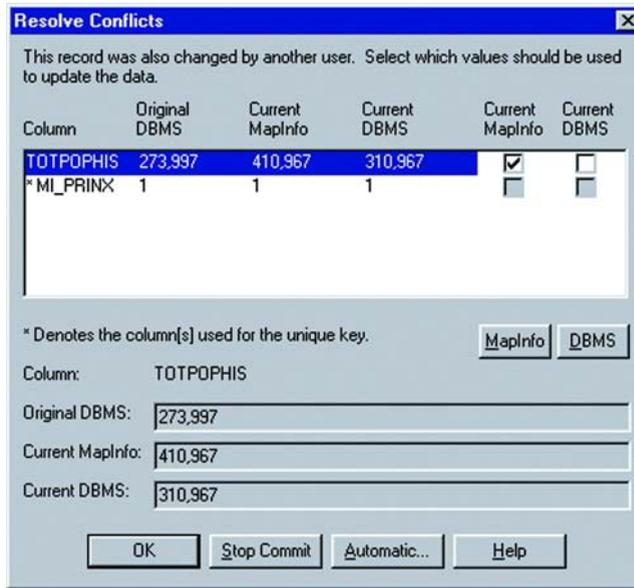
- The original server state of the record (the record as it appeared when initially extracted from the database).
- The current local state of the record (the record as it appears in the session of MapInfo Professional making the update, possibly after editing by the user).
- The current server state of the record (the record as it appears in the database at the time of the update).

A *conflict* exists when the original state of the record does not match the server state. This implies that another user has updated this database since it was extracted by MapInfo Professional.

The Conflict Resolution dialog box displays once for each conflicting record. At any point in this process, you may choose to leave this interactive mode and have the rest of the conflicts resolved automatically. In that case, you can use all local values or all server values to resolve the conflicts in the records.

For each conflict found during a commit, a modal dialog box displays. This box will display enough information for you to decide which data values to use to update the row in question.

Type of conflict	Default resolution
Value changed on server, local value <i>unchanged</i>	Use server value
Value changed on server, local value <i>changed</i>	Use local value



Click **OK** to save the selected values to update this record.

Column

Shows the name of the column in the record that has data which is in conflict and needs to be resolved. If the column name is too long and does not fit into the list box, a truncated representation will be shown instead. Its full value displays in the Column field.

Original DBMS

Shows the original data as it appeared when extracted from the database. If the original data is too long and does not fit into the list box, a truncated representation will be shown instead. Its full value can be displayed in the Original field.

Current MapInfo Professional

Shows the data as it appears in the MapInfo Professional linked table you are trying to save. The MapInfo Professional field will be blank if the record has been deleted from the MapInfo Professional database. If the data from the MapInfo Professional linked table is too long and does not fit into the list box, a truncated representation will be shown instead. Its full value can be displayed in the MapInfo Professional field.

Current DBMS

Shows data as it appears in the remote database at the time of the update. (This data might have been changed by another user since it was downloaded into an MapInfo Professional linked table.) The Current field will be blank if the record has been deleted on the remote database, after being downloaded into an MapInfo Professional linked table. If the current data from the remote database is too long and does not fit into the list box, a truncated representation will be shown instead. Its full value can be displayed in the Current field.

Current MapInfo Professional

Select this check box to update the remote database with the value from the MapInfo Professional linked table.

If the current record on the database or the MapInfo Professional record was deleted, then this check box is not available. Instead, you must use the **MapInfo Professional** or **Current** button.

Current DBMS

Select to retain the current value on the remote database. If the current record on the database or the MapInfo Professional record was deleted, then this check box is not available. Instead, you must use the **MapInfo Professional** or **Current** button.

MI Pro button

This button selects all the MapInfo Professional values. If the record you are trying to resolve was deleted from the MapInfo Professional database, selecting the **MI Pro** button will delete the record from the remote database. If the record you are trying to resolve was deleted from the remote database, selecting the **MI Pro** button will insert the new record into the remote database.

Current button

This button selects all the current DBMS values. If the record you are trying to resolve was deleted from the MapInfo Professional database, selecting the **Current** button will ignore the deletion and retain the current record in the remote database. If the record you are trying to resolve was deleted from the remote database, selecting the **MI Pro** button will insert the new record into the remote database.

Column

Shows the full name of the column highlighted in the list box.

Original DBMS

Shows the full value of the original data highlighted in the list box.

Current MI Pro

Shows the full value of the MapInfo Professional data highlighted in the list box.

Current DBMS

Shows the full value of the current remote database data highlighted in the list box.

Stop Commit

The **Stop Commit** button terminates the entire update. A second dialog box confirms that this is what you really want.

Automatic

The **Automatic** button causes the interactive conflict resolution to end. A dialog box displays to allow you to select the automatic conflict-resolution modes you want to use for the remainder of this update. You can select one two automatic modes from the dialog box. You can accept MapInfo Professional values, or the values currently residing on the remote database.

- For more information, see *Saving a Copy of a Table to a DBMS Table* in the *Help System*.

Disconnecting from a Remote Database

Disconnecting from a remote database server is a simple operation.

To disconnect from a remote database server:

1. From the DBMS Toolbar, do one of the following:

- Click the **DBMS Disconnect**  button.
- On the **File** menu, click **Close DBMS Connection**.

Both operations display the Close DBMS Connection dialog box. The **Connection** list displays all the open connections.

2. Select the connection(s) you want to close and click **OK**. The selected connection(s) close.

Understanding OCI and ODBC Connectivity Error Messages

You must have the OCI and ODBC support installed for MapInfo Professional to connect to remote databases. If you see the following messages, then you have installed the MapInfo DLLs for these features correctly but the drivers are missing:

OCI (Oracle Call Interface)

The MapInfo Oracle OCI Database driver (MIDLOCI.DLL) failed to load. This is most commonly caused by not having an installation of Oracle's OCI client, which is necessary for the MapInfo Oracle OCI Database driver to load.

To fix this issue, please install the Oracle OCI Database driver or rerun the MapInfo Professional Installer to remove the MapInfo Oracle OCI Database client.

Clicking "OK" will allow you to run MapInfo Professional without the ability to open Oracle tables through Oracle's Oracle Call Interface. If you need more information, please contact MapInfo Technical Support.

ODBC (Open DataBase Connectivity)

The MapInfo ODBC Database driver (MIDLODBC.DLL) failed to load. This is most commonly caused by an incomplete installation of MapInfo ODBC Connectivity Support. To fix this issue, please rerun the MapInfo Professional Installer to repair or remove the MapInfo ODBC Connectivity Support.

Clicking "OK" will allow you to run MapInfo Professional without the ability to open remote database tables through ODBC.

If you need more information, please contact MapInfo Technical Support.

A combined message displays if you attempt to add both of these options and neither of them have access to the appropriate database drivers.

Working with Styles in DBMS Tables

Using Per Row Styles for DBMS Table Layers

Per Row Styles allows the use of different object styles on a remote database. You can modify the styles of individual objects or groups of objects and save them to a DBMS table. To use Per Row Styles, the DBMS table must be set up correctly, and your MapInfo MapCatalog must have the appropriate structure:

- The MapCatalog must contain columns that support the use of styles. They are: RENDITIONTYPE, RENDITIONCOLUMN, and RENDITIONTABLE.
- The map table itself must have a character column wide enough to store the complete style string. Style strings vary in width. We recommend a minimum of 50 characters be provided. If you plan to use custom symbols, which use much longer strings, allow 200 characters.
- The entry for the table in the MapCatalog must be set correctly. This means that the RENDITIONTYPE is 1, and the RENDITIONCOLUMN contains the name of the column that will contain the style string. This entry is set by EasyLoader if the MapCatalog contains the new columns, or it may be set using the Make Table Mappable function.

Changing the Symbol Style in a Mappable DBMS Table

The Change DBMS Table Symbol command allows you to change the symbol attributes for the point objects in a mappable DBMS table.

1. On the **Table** menu, point to **Maintenance** and click **Change DBMS Table Symbol**. The Select DBMS Table is displayed. The dialog box only displays mappable DBMS tables.
2. Select a DBMS table to display the Change Table Object Style dialog box. Use the dialog box to specify new style attributes for the objects in the selected table.
3. You must close, reopen, and refresh the linked table for the style change to take effect.

Converting Unsupported Geometries in Oracle, Informix, and SQL Server

Some times when you are creating a Map in MapInfo Professional and you are storing the results in Oracle, Informix, or SQL Server, you create maps which use geometries that are not supported by these DBMS engines. Oracle does not support arcs, ellipses, rectangles, and rounded rectangles. Informix and SQL Server do not support arcs, ellipses, and rounded rectangles.

Note: If you have created a map you do not want to lose but cannot save to the DBMS of your choice due to unsupported geometries, you can use the Save As command and save the map without the unsupported geometries.

Oracle Geometry Conversion Behavior

If you try to save a map with unsupported spatial geometry types in Oracle, these are the results:

- **Spatial Geometry Types with All Unsupported Objects:** If you have created a map that might contain all of the unsupported objects and you are trying to save to Oracle, this message displays:

```
Table has unsupported objects (rounded rectangles, rectangles,
ellipses or arcs). Convert to regions and/or polylines?
```

Click **Yes** to convert the unsupported objects to regions or polylines; you would select **No** to decline to convert the unsupported objects. If you decline, you cannot save the map you have created to the Oracle database. A confirmation message explains that the operation is canceled.

- **Spatial Geometry types with Region Objects Only:** If you have created a map that contains region objects only and you are trying to save to Oracle, this message displays:

```
Table has unsupported objects (rounded rectangles, rectangles, or
ellipses). Convert to regions?
```

Click **Yes** to convert the unsupported objects to regions; you would select **No** to decline to convert the unsupported objects. If you decline, you cannot save the map you have created to the Oracle database.

- **For Spatial Geometry types with Line Objects Only:** If you have created a map that contains line objects only and you are trying to save to Oracle, this message displays:

```
Arc is an unsupported object. Convert to polylines?
```

Click **Yes** to convert the unsupported objects to polylines; you would select **No** to decline to convert the unsupported objects. If you decline, you cannot save the map you have created to the Oracle database.

Informix and SQL Server Geometry Conversion Behavior

If you try to save a map with unsupported spatial geometry types in Informix or SQL Server, these are the results:

- **Spatial Geometry Types with All Unsupported Objects:** If you have created a map that might contain all of the unsupported objects and you are trying to save to Informix or SQL Server, this message displays:

```
Table has unsupported objects (rounded rectangles, ellipses or
arcs). Convert to regions and/or polylines?
```

Click **Yes** to convert the unsupported objects to regions or polylines; you would select **No** to decline to convert the unsupported objects. If you decline, you cannot save the map you have created to the Informix or SQL Server database.

- **Spatial Geometry types with Region Objects Only:** If you have created a map that contains region objects only and you are trying to save to Informix or SQL Server, this message displays:

```
Table has unsupported objects (rounded rectangles or ellipses).
Convert to regions?
```

Click **Yes** to convert the unsupported objects to regions; you would select **No** to decline to convert the unsupported objects. If you decline, you cannot save the map you have created to the Informix or SQL Server database.

- **For Spatial Geometry types with Line Objects Only:** If you have created a map that contains line objects only and you are trying to save to Informix or SQL Server, this message displays:

```
Arc is an unsupported object. Convert to polylines?
```

Click **Yes** to convert the unsupported objects to polylines; you would select **No** to decline to convert the unsupported objects. If you decline, you cannot save the map you have created to the Informix or SQL Server database.

Supporting Oracle Spatial

Oracle Spatial is an implementation of a spatial database from Oracle Corporation. You can install it in addition to the MapInfo Professional ODBC Connectivity component. Although it has some similarities to the previous Oracle SDO relational implementation, it is significantly different. Oracle Spatial maintains the Oracle SDO implementation via a relational schema. However, MapInfo Professional does not support the Oracle SDO relational schema via the Oracle Call Interface (OCI). MapInfo Professional does support simultaneous connections to Oracle Spatial through the OCI and to other databases through ODBC.

The Multipoint and Collection object types are translated into the Spatial Objects Oracle MULTIPOINT and COLLECTION, respectively, via Oracle OCI and vice versa. However, Oracle's COLLECTION object is broader in scope than MapInfo Professional's Collection, which only allows one REGION, one polyline and one multipoint. Therefore, conversion from MapInfo Professional object to Oracle objects and the conversion from Oracle objects to MapInfo Professional objects may not be a one-to-one translation.

The following table shows the relationship between MapInfo Professional objects and Oracle objects.

Oracle Spatial Objects	MapInfo Professional Objects
MULTIPOINT	Multipoint
COLLECTION	Collection
Point (cluster)	Multipoint
Line String	Polyline
Multiple Line String	
Polygon	REGION
Multiple Polygons	

The table indicates how Oracle Spatial objects are translated into MapInfo Professional objects. All point elements in an Oracle COLLECTION will be translated into one multipoint in a MapInfo Professional Collection; all Oracle Line objects (including single and multiple) will be translated into

one MapInfo Professional polyline; and all Oracle Polygons (including single and multiple) will be translated into one MapInfo Professional REGION. Therefore, when an Oracle COLLECTION is modified and then saved back into Oracle Server by using MapInfo Professional, the original structure of the Oracle COLLECTION object may be changed if it is more complicated than the MapInfo Professional Collection.

Oracle Spatial Requirements

To connect to Oracle Spatial within MapInfo Professional, you must have the Oracle Spatial or Oracle 9i and 9i release 2, or 10G client installed. See your Oracle documentation for detailed information.

Primary Key used for New Table Creation or When Saving a Remote Copy

An Unique key ensures that an entry does not match any other entry from a different record. If a record does not contain any value, no error is reported. A Primary key requires that every record contains a unique value in that field. By making these values Primary keys, we enforce that every record has a value in this field.

Primary Key Auto-Increment for Oracle Databases

The Primary auto-increment feature manages the Primary key value for you. When you add a new record to a remote Oracle table, MapInfo Professional locks the table, checks for the highest value of the Primary key of the table, increments it by one (1), and then puts that value in the Primary key field. Informix and SQL Server users do not require this feature as the server-side software manages the Primary key automatically.

Use the Auto Key check box in the Open DBMS Table Option dialog box to enable this feature. When you select the Auto Key check box, the Primary key field is uneditable and the Unique key is automatically incremented. If you do not select this check box, the Primary key field remains editable, which supports backwards compatibility.

To access this feature:

1. From the **File** menu, click **Open** and select an Oracle database from the **Files of Type** drop-down list. Click **OK** to display the Open DBMS Table Options dialog box.
2. Select the **Auto Key** option to increment the Primary key of the selected table automatically for any new records.
3. Click **OK** to continue.

Oracle Object Map Verification Supporting Object/Map Validation

The Check Regions command enables you to remove region line segments that intersect each other. You can also think of this as nodes within a single polygon of a region where the polygon intersects itself, as when a node has more than 2 line segments emanating from it.

These cases can be broken down into two other instances.

- If a polygon has 2 looped sections, and the path traced by the nodes of the polygon follow a cursive figure 8 pattern, then we call this a *Figure 8 polygon*.

- If the same 2 looped polygon can trace its path as a cursive capital letter B, then we call this a *Bow Tie polygon*.

We think of Figure 8 as worse than Bow Tie because the area of a Figure 8 is always incorrect, while the area of a Bow Tie can be correct and accurate. Both Figure 8's and Bow Ties are detected.

Supporting SpatialWare

SpatialWare is a MapInfo Corporation product that helps users store, access, manage, and manipulate spatial data as a standard part of their business data. You can query both spatial and non-spatial data within a single SQL Server query using SpatialWare. All of the strengths of SQL Server as a relational database are extended to spatial data using SpatialWare. Spatial data may for example be directly managed and edited by many different users simultaneously.

Bound Objects in SpatialWare Spatial Queries

For both linked and live access tables, spatial objects in SpatialWare and Oracle Spatial queries are now submitted as a bound (binary) object. This change has been made for all implementations of SpatialWare: Oracle, Informix, and Oracle Spatial. Previously, a string was generated for the object. Because of the limitations on the string size, polygon complexity was also limited. Submitting spatial objects as bound objects removes this limitation. The string describing the spatial object will be stored in the .tab files and reconstructed into a bound object when the table is opened. The SW SPW lib will be used to construct the bound object from the SpatialWare string.

Creating Legends from/for a Live Table

You can retrieve unique styles from the table using the Create Legend wizard. You can retrieve styles from the map catalog, if performance is your primary concern, but if you prefer a more visually descriptive and appealing graphical representation of the unique map styles in your live table, you can create legends from a live table instead.

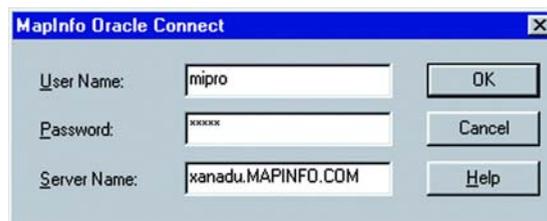
When are unique map styles available for a live table?

In general, remote databases have no consistent way of storing styles for geographic data. MapInfo Professional gives you two different ways of associating styles with geographic data for remote databases. The first way is to specify a common style for a database table in the map catalog, which is used for all records in that database table. The second way is to have an additional column for the database table that specifies a style for each record in that table. (MapInfo Professional uses the map catalog to keep track of the style column for a database table.) Unique map styles are available for a database table when it has this designated style column.

To see this functionality:

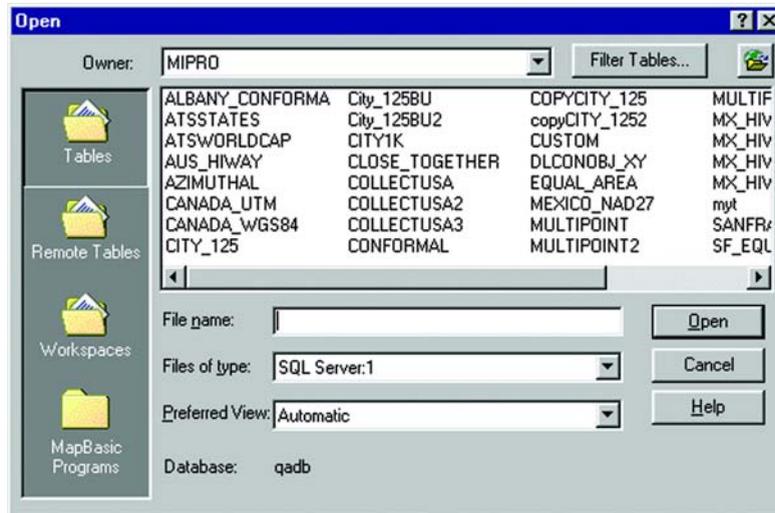
1. Open a remote DBMS connection and select a live table for display.
2. From the **Map** menu, click **Create Legend** to display the Create Legend Step 1 of 3 dialog box.
3. Select a layer to create a legend from and click **Next** to display the Create Legend Step 2 of 3 dialog box. For purposes of this demonstration, click **Next** to display the Create Legend Step 3 of 3 dialog box.

4. In the **Styles from** box, there are three options. The first option, **map catalog**, provides the existing support and is still the default for live tables.
 - Select **map catalog** to retrieve the default styles for the selected legend frame from the map catalog. Use this option when you are concerned with performance. Retrieving map styles from live tables on a remote database can take a long time, but retrieving a default style from the map catalog can be significantly faster. Remember that styles in the map catalog may not be as visually descriptive as the other options. This is the default option for live tables, but is disabled for other types of tables.
 - Select **Unique Map Styles** to retrieve all unique object styles for the live access table. MapInfo Professional retrieves all unique map styles from the database table for a more visually appealing legend. For extremely large tables, this option can take longer than the first option. This option is selected by default when the legend frame is not a live access table.
 - Select **Unique Values in a Column of the Selected Table** to retrieve the styles associated with the values saved in a particular column in the database table for a more visually appealing legend. For extremely large tables, this option can take longer than the first option.
5. Then click the **Save Frame Setting to Metadata** check box to preserve the choice you made in this dialog box. When you re-open this dialog box the settings from the metadata are used as default values instead of the system set default values. There is legend metadata for the **Styles from** radio buttons that we preserve.
 - **File Data Source** — Displays all file DSNs (data source names) and subdirectories contained within the directory displayed in the Look In box. Double-clicking a DSN connects to the data source.
 - **Look In** — Displays the current directory in which the subdirectories and file DSNs display. Click the **Down Arrow** to the right of the text box to display the entire path.
 - **DSN Name** — Displays the file DSN name selected in the File Data Sources list, or you can enter a new file DSN name.
 - **New** — Adds a new file data source. If you click this button, the Create New Data Source dialog box appears with a list of drivers. Choose the driver for which you are adding a file DSN. After you click **Next**, you may specify the keywords for the file DSN. See [Opening a Connection to an ODBC Data Source on page 253](#), for instructions on creating a new data source.
6. If your connection type is **Oracle Spatial**, the MapInfo Professional Oracle Connect dialog box displays.



7. Enter the server name, user name, and password, and then click **OK**.

When you have chosen or created a connection the Open DBMS dialog box displays. It contains a list of tables for that connection, which displays in the Tables field. The directory path of the database connection or the database name also displays. This field is not present for data sources that do not provide this information.



8. Click the name of the table you want to download to highlight it.
9. As an optional step, use the **Filter** button to select which types of tables to list. The default shows Tables, View, and Synonyms, and hides System tables.
10. Click **Open**. The Open DBMS Table Options dialog box displays.

For data sources that make use of owners, such as Oracle, the Owner field is activated. It allows you to list tables owned by different users.

- See *Troubleshooting DBMS Table Issues* in the *Help System*.

Drawing and Editing Objects

The drawing and editing capabilities in MapInfo Professional® allow you to create and customize an unlimited variety of objects for your maps. Easy-to-use drawing tools and commands are accessible from the Drawing Toolbar. You can also display nodes, line directions and centroids to give you better control when editing objects.

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Understanding the Drawing and Editing Tools

MapInfo Professional has a complete set of drawing tools and editing commands. These tools allow you to draw and modify objects on your map. You can also use these tools to customize the colors, fill patterns, line types, symbols, and text on your map.

However, these tools and commands give you more than the ability to modify your map. You can draw a variety of objects that you can use to perform powerful geographic analyses. For example, you can draw circles, polygons, and other bounded objects. You can then search for records within those boundaries.

Note: You can only draw and edit objects on a map when the layer the object is on is editable.

We have covered making a layer editable in depth elsewhere in this User Guide. See [Making the Layers “Editable” on page 167](#).

Note: We have increased the size of the allowed objects in MapInfo Professional. That is, we have increased the number of nodes permitted per object for regions, polylines, and multipoints and we have increased the number of polygons allowed in a multipolygon region and increase the number of polylines in a multiple segment polyline.

- For more general information, see *Understanding the Drawing and Editing Tools* in the *Help System*.

Using the Drawing and Editing Commands

There are nine drawing tools, each located in the Drawing toolbar, which you can review in [Reviewing the Drawing Toolbar on page 157](#). The Drawing toolbar contains six additional buttons to aid you in drawing and editing.

Icon	Tool Button	Description
	Reshape	Toggle in and out of Reshape mode with this button when you want to add, delete, or move nodes in an editable layer (also available on the Edit menu).
	Add Node	The Add Node button allows you to put additional nodes on an object for more precise editing.
	Line Style	Displays the Line Style dialog box where you can change the color, width, and type of selected line objects or set new defaults for future objects.
	Region Style	Displays the Region Style dialog box where you can change the fill pattern and border of selected region objects or set new defaults for future objects.

Icon	Tool Button	Description
	Symbol Style	Displays the Symbol Style dialog box where you can change the symbol type, color, and size of selected objects or set new defaults for future objects.
	Text Style	Displays the Text Style dialog box where you can change the font, size, color, and attributes of selected text or set new defaults for future text and labels.

Adding a Node

Nodes can be added only to lines, polylines, and regions.

The maximum number of nodes for regions and polylines is 1,048,572 nodes for a single polygon region or polyline. The limit drops by seven nodes for every two additional polygons.

To add a node :

1. Choose **Drawing Toolbar > Add Node** button.
2. Move the cursor to the point on the segment where you want to add a node.
3. Click to add the node. Press the **Backspace** key to delete the last node added.
4. Choose **Edit > New Row**, a new row is added to the bottom of the table.

Adding Nodes to an Object (Overlay Nodes Command)

To add nodes to an existing object:

1. Select one or more objects in the editable map layer of the active Map window. These are the objects to which you want to add nodes.
2. Choose **Objects > Set Target**. The objects you selected in Step 1 appear in a different style to indicate that they are the editing targets.
3. Select one or more objects from any layer of the active Map window. Presumably, these are objects that intersect your target object(s).
4. Choose **Objects > Overlay Nodes**.

MapInfo Professional adds nodes, if appropriate, to the target object(s).

When you choose **Overlay Nodes**, MapInfo Professional adds nodes to the current target objects. MapInfo Professional calculates all points where the target objects intersect the currently selected objects; MapInfo Professional then adds nodes to the target objects at the points of intersection unless the target objects already have nodes at those locations. If the target objects do not intersect the selected objects, MapInfo Professional does not add any nodes.

If you use **Overlay Nodes** to add nodes to a line, MapInfo Professional converts the line to a polyline. If you use **Overlay Nodes** to add nodes to an ellipse, rectangle or rounded rectangle object, MapInfo Professional converts the object to a region. **Overlay Nodes** does not affect text or point objects, and you may not use point or text objects to add nodes to other objects.

Drawing Objects

Drawing objects in MapInfo Professional is easy. Once you have made the layer editable, choose the appropriate tool. Using the shape tools, you can draw arcs, ellipses, circles, lines, rectangles, and rounded rectangles on your map. You can either draw the object directly on the Cosmetic Layer (and save it to another or new layer later) or make a map layer editable and draw the objects there.

Once you have drawn the object, you can move the object, delete it, copy it to the Clipboard, or paste it to another Map window.

Also, you can delete the last node of the object by pressing the **Backspace** key. If there is only one node left in the object, it will not be deleted.

Specifying an Object's Geographic Attributes

If the selected object is editable (resides in an editable layer) then you can specify attributes for the object by accessing that Objects Attributes dialog box.

Note: If the object is not editable then you can only access a read-only dialog box.

To specify an object's geographical attributes:

1. Choose **Map > Layer Control**. The Layer Control dialog box displays.
2. Select the layer containing the map object.
3. Check the **Editable** box.
4. Click **OK**.
5. Select the map object.
6. Do one of the following:
 - Choose **Edit > Get Info**.
 - Double-click the map object with the **Select** tool.

The Object Attributes dialog box displays.

7. Type in attributes as appropriate.
8. Click **OK**.

Use the Help search option to locate information for a specific map object (for example, Arcs, Points, Polygons etc.).

Reverting to a Previous Version

Use Revert Table in the File menu to access a previous version of a table when you have made changes that you do not want to make permanent and haven't saved yet. Revert Table replaces the selected table currently in memory with the last version saved.

To revert to a previous version:

1. Choose **File > Revert Table** to display the Revert Table dialog box. Here you can choose the table to revert to (that is, return to its previous state).
 2. Once you have chosen a table to revert, MapInfo Professional prompts you on whether you wish to discard the changes you have made in the table.
 3. Click **Discard**. MapInfo Professional discards the changes you have made to the table. However, if you have second thoughts, click **Cancel**.
- For instructions on drawing specific objects such as lines, polylines, squares, etc, see *Drawing Objects* in the *Help System*.

Using the Ruler Window as You Draw

The Ruler window will show the distance of line segments as you draw, as well as the cumulative distance of the drawn object. If necessary, a rubber-banding line displays to show what points are being used to compute the distance. The Ruler window also displays what type of calculation is used to compute the distance: Spherical or Cartesian. The type of calculation depends on the projection of the map.

The following drawing tools will display a rubber-banding line:

- Arc
- Ellipse
- Rectangle
- Rounded Rectangle

You can also use the Ruler window with the Marquee Select and Radius Select tools. Just click the Ruler tool to display the Ruler window.

If the Ruler window is not active, the drawing and selection tools noted above do not display distance. The rubber-banding line does not display.

- For more instructions, see the *Measuring the Distance between Two Points* topic in the *Help System*.

Object Styles

MapInfo Professional draws objects using the default color, fill pattern, line type, symbol, and text settings for the layer you are drawing on. The default style can be set in the Styles Preferences dialog box.

To change the style of an *existing* object:

1. On the **Map** menu, click **Layer Control** and make the layer editable.
2. Select the object and choose the appropriate style command from the **Options** menu.

The style commands are also available on the **Drawing** Toolbar. These commands also set the styles for any subsequent objects to be drawn on the layer.

3. Save your changes.

For closed shapes such as circles and squares, you can change the fill pattern and color, the style and color of the border, and the line width of the border. For arcs and lines, you can change the type of line, its color, and the width of the line. In addition, you can use interleaved line styles to create the appearance of intersections for overlapping intersections and lines within a single layer. Interleaved line styles are available for use with lines of the same style and color (they can be different widths). Interleaved line styles are not available for solid lines or borders.

Any edits to an object's default settings will be applied during the entire work session until you make new changes. To save the settings, you must save the table where the object resides.

You can also change the display of an object in Layer Control. In the Layer Control dialog box, click the **Display** button to bring up the Display Options dialog box. Click the **Style Override** check box to activate the **Style Override** button. Click the **Style** button to bring up the appropriate style dialog box.

Note: The settings you specify through the Display Options dialog box are temporary unless you save the table to a workspace.

- For more information, see *Using Interleaved Line Styles* in the *Help System*.

Printing Fill Patterns

When it comes to printing objects, some fill patterns print faster than others. In general, the fill patterns on the top row of the pattern list in the **Pattern** drop-down list print the fastest. The difference in printing speed varies from printer to printer. The fill patterns on the top row are also the ones most likely to plot correctly on pen plotters, although results depend on which plotter driver you use. For more coaching on printing fill patterns, review the *MapInfo Professional Printer Guide*, which is located in the Documentation subfolder of your installation directory. To review the list of fill patterns available in the MapInfo Professional product, see **Fill Patterns Used in MapInfo Professional** in the MapInfo Professional *Help System*.

Drawing Polygons and Polylines

Drawing polygons is different than drawing other shapes because you are creating a region on which you can perform other editing and analysis.

For instance, you want to create school districts for your map. You have a street map of your town to guide you in defining the school district boundaries.

To create a polygon:

1. Choose the **Polygon** tool. The tool becomes a cross hair.
2. Click a starting point for the polygon.
3. Continue to click to add segments to the polygon.
4. When you are ready to complete the object, double-click the last end point.

You can delete the last node by pressing the **Backspace** key.

Note: If there is only one node left in the object it will not be deleted.

You can then use the Combine command to combine this region with another, reshape the region, etc.

Polylines are made up of multiple line segments that are treated as one object. Unlike lines created with the Line tool, you can smooth polylines into a continuous curve using the Smooth command. Again, you can delete the last node by pressing the **Backspace** key.

Note: If there is only one node left in the object it will not be deleted.

Drawing Orthogonal Polygons

You can draw orthogonal (right angle) polygon line segments when you press the **Ctrl** key. Using this key you can draw the polygon at 45 degree increments relative to the slope of the last line segment. This functionality works for Add Line, Add Polyline, the Ruler Tool, Custom Polyline and Custom Polygon tools, and the Add Polygon operations.

This functionality is useful when you want to draw perpendicular lines at an angle rather than horizontal to the map.

Note: Snap and Autotrace functionality must be turned off to use this feature, because when these features are activated, the **Ctrl** and **Shift** keys have other purposes. The **Shift** and **Ctrl** keys also do not operate when you are using the **Polygon Select** tool.

To see this functionality:

1. From the **File** menu, click **Open** and select a map to display.
2. Make a layer editable using the Layer Control dialog box.
3. Select the **Polygon** tool from the **Drawing** toolbar.

Note: This works with any of the Line, Polyline, the Ruler Tool, Custom Polyline and Custom Polygon tools as well, we are just using the Polygon tool as an example.

4. Click and draw a single line in any direction other than horizontal following these directions:
 - To draw the next segment perpendicular to the last segment, press **Ctrl** while dragging the cursor.
 - To draw the next segment perpendicular to horizontal, press **Shift** while dragging the cursor.

Tracing Polylines and Polygons

When you are drawing a new polyline or polygon, you can use **Autotrace** to trace nodes from existing polylines or polygons. The Autotrace tool is only in effect when you are using a polygeometric tool (Add Polyline, Add Polygon, or Select Polygon) and Snap is on.

To trace the nodes of an existing polyline or polygon:

1. Press the **S** key to activate Snap Mode.
2. Press the **T** key to activate Autotrace.
3. Click on the first node of the polyline/polygon you want to trace.
4. Move the mouse to another node of the same object. Follow the procedure below for the type of object you are tracing:
 - **Polyline:** Hold down the **Shift** key or the **Ctrl** key and click.
 - **Polygon:** Hold down the **Shift** key for the shorter set of nodes or the **Ctrl** key for the longer set of nodes and click.

Pressing the **Shift** or **Ctrl** keys highlights the trace path. Click to automatically trace the segments between the nodes and add them to the polyline/polygon you are drawing.

5. Continue until you have traced the entire polygon/polyline and right-click to end.

Note: Autotrace only one object at a time; clicking nodes in different objects will produce a straight line between the two nodes.

Converting a Polyline to a Region

To convert a polyline into a region:

1. Make the Map window active.
2. Open **Layer Control** and make the layer that contains the polyline editable.
3. Select the polylines you want to convert to a region.
4. On the **Objects** menu, click **Enclose**. The Create Region Objects From Enclosed Areas dialog box displays.
5. Click **OK** to convert the polyline you selected to a region.

You can also convert regions to polylines. For these instructions, see [Converting Regions to Polylines on page 298](#).

Splitting Polylines at Nodes

A single-section polyline can be split into two polylines at a selected node.

To split a single-section polyline:

1. From an editable layer, select a single-section polyline
2. Click the **Reshape** button from the Drawing tools.
3. Select one node (other than the first or last node).
4. Select the **Objects** menu, then **Polyline Split at Node**
5. If a layer is not a cosmetic layer or if the polyline is in the Layout window, the Data Disaggregation dialog box will appear. Here the user can specify how data is disaggregated.
6. After selecting the data disaggregation method, click **OK**. The selected polyline will be split at the node into two polylines.

Error messages display under the following conditions:

- You did not select a node of the polyline.
- You selected a beginning or ending node of the polyline.
- You selected more than one node of the polyline.
- The object that you selected is not a polyline object.
- You attempted to split a multi-segmented polyline (only single-section polylines can be split).

Notice the difference in the way the angle draws between the **Ctrl** and **Shift** created polygons in the next figure.

Converting Objects into Polyline Objects

If a region contains lakes or islands, and you convert that region to a polyline, the polyline has multiple sections. Each lake or island comprises one section of the polyline. When you convert a circle or ellipse into a polyline, the polyline contains 102 nodes. When you convert an arc into an ellipse, the number of nodes depends on the starting and ending angle of the arc. If the arc spans 180 degrees (for example, the starting angle is zero and the ending angle is 180), a polyline based on the arc will contain 52 nodes; if the arc spans 90 degrees, a polyline based on the arc will contain 26 nodes; etc.

The *Help System* contains these related topics:

- *Displaying Distance while Drawing Objects*
- *Displaying Distance, Length, Perimeter, and Area Calculations*
- *Specifying Distance, Length, Perimeter, and Area Calculations for a Particular Map*

Drawing Symbols

Symbols on your maps make your map more expressive and easier to understand. This section explains how to change a style currently used by MapInfo Professional and create your own custom symbols. We also discuss in detail the rules governing symbols.

To draw symbols, make the layer you want to draw the symbols to editable and choose the **Symbol** tool. Place the cursor where you want the symbol to be and click. The symbol displays using the default symbol style settings.

The *Help System* contains these related topics:

- *Adding Point Symbols to your Map*
- *Specifying Symbol Styles of Point Objects*
- *Changing the Location of Point Symbols*

Changing a Symbol Style on a Map

To change a symbol's style on a map:

1. Select the symbol with an appropriate selection tool.
2. Do one of the following:
 - Click the **Symbol Style** button
 - On the **Options** menu, click **Symbol Style**

Using either method, the Symbol Style dialog box displays.

Note: The options in the Symbol Style dialog box may be different depending upon the size and complexity of the image.

Here you can change the symbol, font, color, and size, as well as create background effects and bold face for symbols.

Select the **Display at Actual Size** check box to see the symbol you selected at the size it was originally created.

Click the **Reload** button to refresh the list of custom symbols stored in the Application Data CUSTSYMB directory. Select this button if you added a new custom symbol and do not see the symbol(s) in the list.

Click the **Full View** button to display the entire view of custom symbol in a separate window. This button displays only when you select the Custom Symbols font type. You use this button when the preview is too large to display completely in the sample area.

3. Make the desired changes, and click **OK**.

The symbol displays with the style changes you specified. These settings also apply to any subsequent symbols you draw until you change the settings.

Supported Fonts for Symbols

You have many options when drawing symbols. We support a number of TrueType fonts that carry their own symbol sets. We have also organized a number of symbol fonts around different industries, such as real estate and transportation, making it easy for you to find the symbols you need. MapInfo Professional supports the following fonts:

- MapInfo Cartographic
- MapInfo Transportation
- MapInfo Real Estate
- MapInfo Miscellaneous
- MapInfo 3.0 Compatible Symbols (vector symbols, available as a True Type font in MapInfo Professional): the 36 shapes from the MapInfo symbol set
- MapInfo Oil & Gas
- MapInfo Weather
- MapInfo Arrows
- Installed font symbols: symbols available from the installed fonts that offer a symbol set
- Custom symbols: from here you can access user-created bitmap symbols which you have saved to the CUSTSYMB directory. This directory is created during MapInfo Professional installation. See [Working with Custom Symbols \(page 285\)](#) for more about this process.

The MapInfo Symbols font is a TrueType font. When you use these symbols, the Background and Effects options in the Symbol Style dialog box are unavailable.

Working with Custom Symbols

You can create and use your own custom bitmaps as symbols in MapInfo Professional. To access these custom symbols, place them in the CUSTSYMB directory and select them from the Custom Symbols option in the Font list of the Symbol Style dialog box (**Options > Symbol Style**). All of the custom symbols in MapInfo Professional are stored in the CUSTSYMB directory. If you cannot find this directory, there are a couple of places you could check. The location of this file depends largely on the administration of your computer, the version of MapInfo Professional you use, and the location of your installation directory.

Usually, this directory is located in Program Files\MapInfo\Professional\ (or one of its subdirectories) or in \Documents and Settings\user's login directory\Applications Data\MapInfo\MapInfo\version number\. If you cannot find this directory, click **Start** and **Search** and search for \CUSTSYMB on your system.

Note: If you add custom symbols while you are working in MapInfo Professional, open the Symbol Style dialog box and click the **Reload** button to ensure that the new symbol(s) you have added display. Otherwise, you have to exit MapInfo Professional and re-enter it to get the new symbols to display in the Custom Symbols list.

When you change the style of a custom symbol, the Effects options in the Symbol Style dialog box change. You can either show a background or apply a color.

- **Show Background** displays the custom symbol with the background color with which it was created.
- **Apply Color** replaces all non-white pixels with a color you choose from the color palette.
- **Display at Actual Size** shows the symbol at its actual size.

When you are creating extended custom symbols we recommend you check the **Show Background** check box if you do not require transparency. This setting improves performance significantly during exporting and Drag and Drop operations.

MapInfo Professional ships with custom symbols that you can use to enhance your maps.

The *Help System* contains the following related topics:

- *Understanding the Custom Symbol Types*
- *Understanding the Custom Symbol Sizes, Shape, and Color Rules*
- *Adding User-Defined Custom Symbols*

Creating a Custom Symbol

To create a custom symbol:

1. Create your own custom symbol and save it as a bitmap.
2. Place the bitmap in the directory you have assigned for symbols.
3. Restart MapInfo Professional if it is running.
4. Open your map and choose **Map > Layer Control** to display the Layer Control dialog box.
5. Make the map layer where you want to place the symbol editable.
6. Choose **Options > Symbol Style** to display the Symbol Style dialog box.
7. Click the **Font** drop-down menu and choose **Custom Symbols**.
8. You must click the **Reload** button to view the newly added custom symbol.
9. Select your custom symbol and choose **OK**.
10. Click on the map using the **Symbol** tool to display your custom symbol.

Note: The bitmap file has to be 256 color and under 128k in size. Bitmaps should also be the same dimension in x and y.

- For more information, see *Finding the Custom Symbol Directory* in the *Help System*.

Displaying Overlapping Symbols

When point objects display at the same coordinate, you can miss the significance of their proximity because the data overlaps each other, preventing you from making the connection.

The Dispersed Groups symbol font gives you a way to display symbols that represent different organizations, events, or services that occupy the same coordinate location without overlapping each other. When you zoom out from the coordinate point, these symbols display around the coordinate point side by side. This font is installed when you install MapInfo Professional.

This symbol style is useful in several industries:

- *Crime mapping*: See multiple incidents at the same address and for traffic incident analysis
- *Insurance*: See multiple policy holders, policies, claims, or inspection requirements at the same address
- *Wireless telecom*: See multiple assets on the same mast/tower
- *Health care*: See multiple incidents at the same address
- *Retail*: See multiple attributes of a retail store, for example what internal franchised departments it contains or specific services that it offers.
- For specific instructions, see *Displaying Overlapping Symbols* in the *Help System*.

Working with Text on the Map

Although the labeling feature takes care of most of your text needs, you will still need to create text objects with the Text tool to annotate your map or layout (for example, map titles and subtitles). Unlike labels, text objects have no connection to data.

To create text, make sure the layer you want to draw the text to is editable and choose the **Text** tool. The cursor changes to an I-beam. Place the cursor where you want the text to be and type in the text you want.

To enter text onto a map:

1. Click the **Text** button in the **Drawing** toolbar. The cursor turns into an I-beam when moved over the active window.
2. Click the cursor at the place on the map, layout, or data displayed in the Browser window where you want to enter the text. A blinking cursor appears. In a Browser, press **Tab** to move to the next cell.
3. Type the desired text. The text will appear at the blinking cursor as you type.
4. When you want to move to a new line of text press **Enter**.
5. When you are finished entering text, press **Esc** or click the **Select** button in the **Main** toolbar and click the mouse somewhere else on the Map or Layout.

Note: The font used is the current font, as indicated in **Options > Text Style**.

To change the style of the text:

1. Select the text with the **Select** tool.
2. Do one of the following:
 - Click the **Text Style** button in the **Drawing** toolbar
 - Choose **Options > Text Style**

Using either method, the Text Style dialog box displays where you can change the font, the size, color and create various effects such as haloing or drop shadows.

These settings will remain in effect for any text you subsequently draw on the map until you change them.

3. To save changes, on the **File** menu, click **Save**. To save objects drawn to the Cosmetic Layer, on the **Map** menu, click **Save Cosmetic Objects**.

Editing Objects

In all likelihood, you will need to change or edit some of the objects you have drawn or mapped. To begin this process, you need to make the layer that you want to change editable (on the **Map** menu, click **Layer Control**).

To edit an object:

1. Select the object with the **Select** tool.
 - If the object is a line, edit handles appear at either endpoint.
 - If the object is a boundary or region, edit handles appear at the outer corners of the object.
2. Drag the object to a new position or change its line style, fill pattern, or symbol.
3. On the **File** menu, click **Save** to save your changes.

To delete an object:

1. Click the object with the **Select** tool.
2. Do one of the following:
 - On the **Edit** menu, click **Clear** or on the **Edit** menu, click **Cut**.
 - Press the **Delete** key.

Using either method, MapInfo Professional deletes the object. To view an object's nodes, centroids, and line direction when editing and drawing, set the conditions in the (Layer Control) Display Options dialog box.

Positioning and Sizing your Map Objects

To move an object to a new location, make the object's layer editable and click the object to select it. Hold down the mouse button for at least one second until the cursor turns into a four-headed arrow. Drag the object to its new location and release the button. The object maintains its shape.

To move an object (in an editable layer) one pixel at a time, click it and press and hold the **Ctrl** key and press the **Arrow** button corresponding to the direction you want the object to move. To move the object 10 pixels at a time, press and hold the **Ctrl** and **Shift** keys and press the **Arrow** button corresponding to the direction you want the object to move.

Also, if you click the on the fifth edit handle (rotate handle) and hold down the mouse button, you can rotate the highlighted box to the desired angle. A rubber banding box is drawn representing the bounds of the rotated object. If you press and hold **Shift** key while the rubber banding box is being drawn, the rotation will be limited to 45 degree increments.

Moving Objects on the Map

You can move selected objects within its editable map layer easily.

To move an object on the map:

1. Click your map to make it active.
2. Make the layer where the object is located editable (on the **Map** menu, click **Layer Control**).
3. Select the object(s) using the **Select** tool.

If you select more than one object at a time to move, the objects move in the same way. Take care to ensure that you do not move an object off the map or off land by mistake.

Note: When you move the objects, you move them all at once, maintaining their positions relative to one another.

4. Do one or all of the following:
 - To move the selected object(s) using the mouse, hold down the mouse button and drag the object to its new location
 - To move the selected object(s) one screen pixel at a time, press and hold the **Ctrl** key and press the **Arrow** key in the direction you want the object(s) to move
 - To move the selected object(s) 10 screen pixels at a time, press and hold the **Ctrl** and **Shift** keys and press the **Arrow** key in the direction you want the object(s) to move

Note: Since the moves are made in screen pixels, the zoom level affects how far the object is moved.

Offsetting Objects on the Map

The Offset feature makes a copy of the object(s) you select from the original source object(s) and saves them in the original data file.

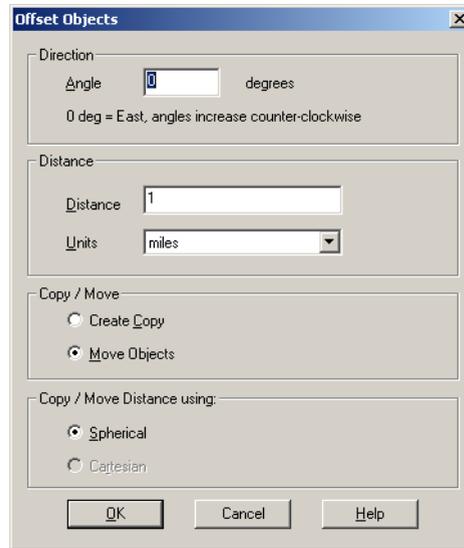
You can both move and offset the objects you select using this process. The difference between these two operations is whether MapInfo Professional makes a copy of the data (as in the case of copy) or simply moves the objects and stores the new value in the original table.

To move/offset selected objects on the map:

1. Click your map to make it active.
2. Make sure a layer is editable (on the **Map** menu, click **Layer Control**).

The offset/move functionality is available when any layer is editable, not just when the objects you want to move or offset are in the editable layer. However, you can only move an object within its editable layer. Copy is always permitted as long as a layer is editable.

3. Select the object(s) using the Select tool.
4. On the **Objects** menu, click **Offset** to display the Offset Objects dialog box.



5. To move your selected objects, enter or select from the following options and click **OK** to apply the changes. To copy your selected objects to offset them, enter or select from the following options and click **Next**. Then go to **step 6**.

- **Angle** — To offset your selected object at an angle, type the angle (in degrees) in this field. The new object is created based on the original object and is offset in the direction of the angle you specified, measured from the positive X-axis. If you enter a positive angle, the object is offset counterclockwise; if you enter a negative angle, the object is offset clockwise.
- **Distance/Units** — To set the offset distance and units, type the distance and select the units in the Distance box. The list of units is as follows: inches, links, feet, U.S. Survey feet, yards, rods, chains, miles, nautical miles, millimeters, centimeters, meters, and kilometers.

Note: MapInfo Professional takes the default units from the map window in which you've selected the object.

- **Create Copy** — Click this option to create a copy of the selected object(s) in the data. When you complete this process, MapInfo Professional saves the copy to the editable layer.
- **Move Objects** — Click this option to move the object without creating a copy in the data. You can only move an object within its own editable layer. When you move objects, the Data Aggregation dialog box does not display, since you are only moving the data within the layer.

- **Copy or Move Distance Using** — The option you select in this box depends largely upon the projection of your source map. If your map has a latitude/longitude projection, MapInfo Professional enables the **Spherical** type only. If you are working with a non-Earth projection, MapInfo Professional enables the **Cartesian** type only.

When you click **Spherical**, MapInfo Professional calculates the copy/move distance by mapping the data into a Latitude/Longitude On Earth projection.

When you click **Cartesian**, MapInfo Professional calculates the copy/move distance by considering the data to be projected to a flat surface and distances are measured using Cartesian distance calculations.

6. The Data Aggregation dialog box displays if one of these conditions are true:

- You clicked the **Create Copy** option
- You selected objects in a different table from the table associated with the editable layer
- The editable layer is not the cosmetic layer and has no text associated with the geographical objects in it

You may notice that the only controls available to you in this dialog box are **Blank**, **Value**, and **No Data**.

Type a value you will remember in the **Value** field of this dialog box. For more information about data aggregation, see [Aggregating and Disaggregating Data in Chapter 11 on page 387](#).

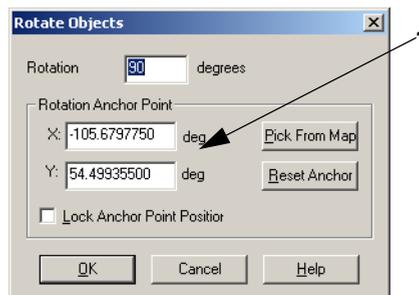
7. Click **OK** to copy the data and offset the objects you selected.

Rotating Objects on the Map

To rotate an object or objects by a specific angle, use the Rotate Objects tool, which is available whenever you have selected an object(s) in an editable layer in a Map or Layout window.

To rotate an object or objects in a Map or Layout window:

1. On your editable layer, select the object(s) you want to rotate.
2. On the **Objects** menu, click **Rotate** to display the Rotate Objects dialog box.



3. In this dialog box, you specify the angle and the anchor point of the rotation. Type the rotation angle in the Rotation field.

Note: The rotation angle can be positive (counter clockwise) or negative (clockwise).

- Determine the anchor point by doing one of the following:
 - Accept the default anchor point of the selected object(s) by leaving the X and Y coordinates that display in these field as they are

Note: The default anchor point varies depending upon how many objects you have selected and the kind of objects they are. See [Understanding an Object's Default Anchor Point on page 292](#) for more about default anchor points.

 - Type new entries in the X and Y coordinate fields to select a new anchor point
 - Click the **Pick from Map** button and click the anchor point you want on the Map or Layout window. Click the mouse button only once to establish this point.

Note: When the **Pick from Map** button is disabled, you can select locations directly from the open map. If a map is not open, you can select another tool (like the **Select** tool) and use that tool instead of the **Pick from Map** functionality.

To return to the default anchor point, click the **Reset Anchor** button.

- Decide whether or not you want to lock the anchor point. Click the **Lock Anchor Point Position** check box to lock the anchor point.

When you lock the anchor point, you ensure that the anchor point will not be recalculated when you return to the Map or Layout window. If you do not lock the anchor point, MapInfo Professional recalculates the anchor point in the based on the rotated selection. Once the objects are rotated, they may have a different anchor point.

Note: You cannot maintain an anchor point lock when you change the selection from the Map window to the Layout window or from the Layout to the Map window.

- When you have completed these entries or selections, click **OK** to rotate your object(s).

Understanding an Object's Default Anchor Point

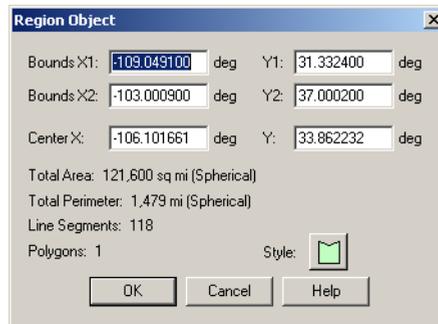
When rotating objects in an editable layer, the default anchor varies depending upon how many objects you are rotating and the kind of objects you select. If you select:

- A single object (not a polyline), the default anchor point is the object's centroid
- A single polyline or several objects, the default anchor point is the center of the polyline's or the selected objects minimum bounding rectangle (MBR)
- Multiple objects, the default anchor point is the center of the MBR of the selected objects

Changing your Map Object Attributes

When you double-click a region, line, point or text object with the Select tool, MapInfo Professional displays an Object Attribute dialog box. This dialog box gives you the object's size, its position, and other information specific to the object.

For example, if you double-click a region, MapInfo Professional displays the perimeter, centroid, and area. It also shows the type of distance calculation that was used to obtain these values.



If the layer is Selectable but not editable, you can only view these attributes. If the layer is also editable, then you can change these attributes by typing new values into the text boxes of the dialog box. The illustration above shows the Object Attribute dialog box for a region object in an editable layer. You can also access this dialog box on the **Edit** menu (click **Get Info**).

Changing an object's size and position with the Object Attribute dialog box gives you much greater control over its exact size and position than you have through drawing it on the screen. For example, you have a list of ten radio towers and their X and Y coordinates. You could geocode these points using the Create Points command. However, if you bring up the Points Object Attribute dialog box and type the new X and Y coordinates, you can create ten points with the Symbol tool and then individually place them in the correct location.

You can also use the Text Object Attribute dialog box to change the point's actual text. For example, you have typed the title "World Population" on a Map window. You want to fix your typographical error. Bring up the Object Attribute dialog box for the text object. You can correct your error in the box that displays the text.

- For more information, see *Changing Attributes for Multiple Layers* in the *Help System*.

Reshaping Map Objects

You can reshape regions, polylines, lines, arcs and points. A region is an object created with the Polygon tool. You cannot reshape objects created with the Rectangle tool, the Rounded Rectangle tool, or the Ellipse tool.

To reshape an object:

1. Select an object with the Select tool.
2. Do one of the following:
 - On the **Edit** menu, click **Reshape**
 - Use the **Reshape** button on the **Drawing** toolbar.

You are now in Reshape mode. MapInfo Professional draws nodes at every juncture where two polyline or polygon line segments meet.

3. To reshape the object, move the nodes, add nodes, or delete nodes from the object.

To move a node, click it and, while holding down the mouse button, drag the node to the desired location. The line segments connected to the node are moved to a new position.

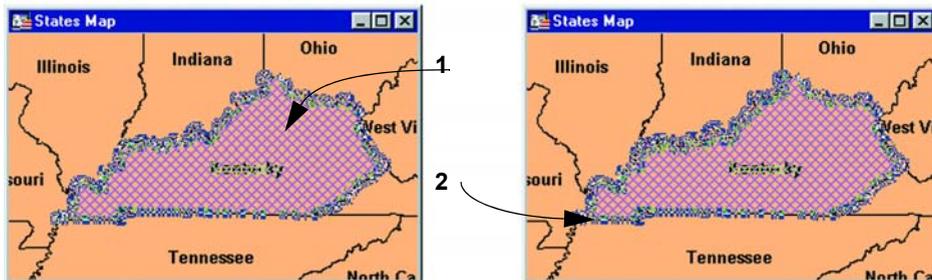
To add a node, click the **Add Node** tool from the Drawing Toolbar, position the cursor where you want to add the node, and click the mouse button. MapInfo Professional adds a node. You can move this node or delete it, just as you would any node.

To delete a node, position the cursor over the node, click it, and press the **Delete** key. To delete the last node when creating a polyline or polygon, click the **Backspace** key.

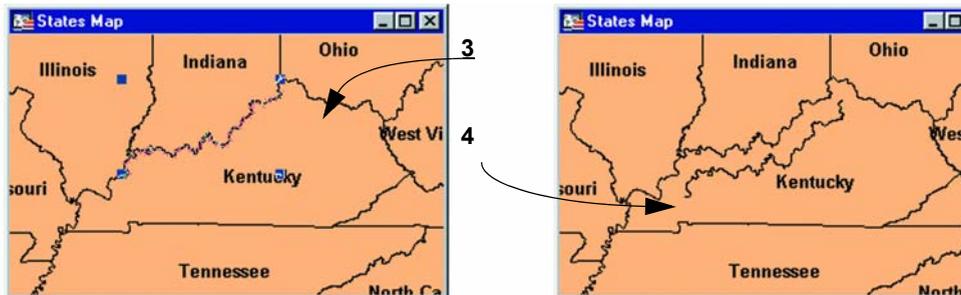
The **Reshape** command is very useful when you are creating sales territories or other merged boundaries. For example, you are merging postal code boundaries together to create school districts. Some postal code boundaries fall into more than one school district. Use the **Reshape** command to reshape the school district to incorporate a section of a postal code boundary.

Selecting Multiple Nodes

Reshape mode allows you to easily select nodes of an existing object and copy and paste them, drag them to reshape the object, delete them, etc. To trace an existing object, we recommend that you use the autotrace feature, which is explained in the next section, Snap to Nodes. The following illustrations show how to copy the border between Kentucky and Indiana.



1 Select the object. Click **Reshape** mode to display the nodes. 2 Select the nodes you want to copy.



3 Choose **Copy** and **Paste** to display the new objects with edit handles. 4 Click and drag the object to move to another location.

To reshape an object (such as the state of Kentucky):

1. Select Kentucky to enable **Reshape** mode.
2. Select the first node with the Select tool. **Shift-click** the last node to be copied. MapInfo Professional selects all nodes between following the shortest route. (To select all nodes *except* those between the shortest distance, use **Ctrl-click** with the **Select** tool.)
3. On the **Edit** menu, click **Copy** to copy the nodes to the clipboard.
4. Paste the duplicate nodes onto the map. On the **File** menu, click **Paste**. The object you copied is drawn on top of the original object as a polyline.
5. To move the polyline click it and drag the polyline to a new location.

Using “Snap To” to Select Nodes and Centroids

You can use nodes to reshape an object and align objects with each another. MapInfo Professional refers to this process as snapping to a node. In the Map window, regions, polylines, lines, arcs and rectangles all have nodes that can be attached (or snapped) to each other. When the Snap mode is enabled, MapInfo Professional searches for nodes and centroids as you move around a window. MapInfo Professional automatically snaps the cursor to a node or centroid when the cursor comes within the snap tolerance of the node. The crosshairs display when the node is “snapped to”.

Note: You can also use the snap to capability to snap to visible centroids in region objects.

To toggle Snap to Nodes, press the **S** key. The Status Bar displays with the word “SNAP” when Snap mode is activated. When you activate the Snap mode, a circle displays around your cursor showing the size of the tolerance of the Snap mode in pixels. The **S** key acts like a toggle on/off switch. You can set the snap tolerance in pixels in the Map Window Preferences dialog box. The **Snap Tolerance** field allows you to specify a tolerance. If you set the snap tolerance to 3 pixels, whenever you move the cursor within 3 pixels of a node, the cursor will snap to the node.

Snap mode works in the Map Window and Layout window (but not raster layers). It works with all MapInfo Professional tools in the Main and Drawing toolbars except Pan, Drag Map, and Text tool. Additionally, snap mode works on object types, including regions, points, multipoints, collection objects, lines and polylines, rectangles, and arcs. It is not available for text objects, ellipses, and rounded rectangles. You set the Snap in one window at a time and can save it with your workspace.

Snap to Nodes applies to all selectable layers—this is useful if you are drawing an object in one layer and want to attach it to an object in another layer. If you do not want to snap to objects in certain layers, make those layers unselectable.

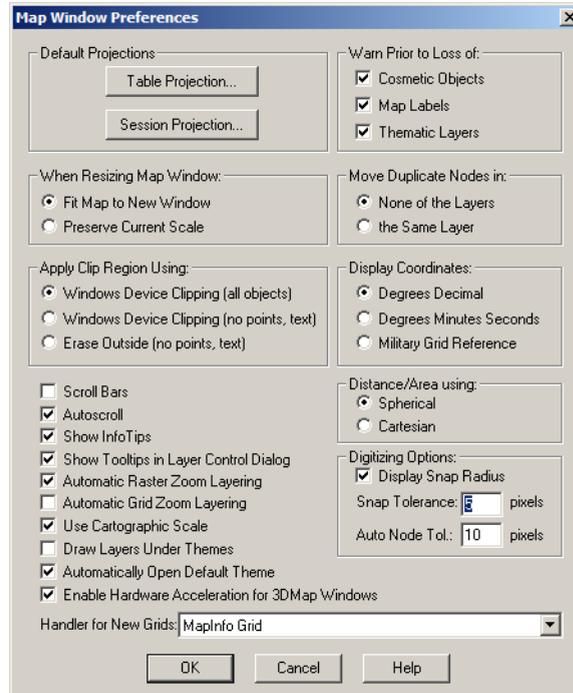
Snap and Thin Settings Saved in Metadata

The Snap and Thin settings remove self-intersections and overlaps in your data based on values you establish. When you complete your selections and entries in the Set Values for Node Snap & Thinning dialog box, MapInfo Professional saves these values to the table’s metadata. This allows the Snap and Thin changes to be retrieved after the table is saved or you have left MapInfo Professional.

Setting Snap Preferences for a Visible Snap Area

The Map Window Preferences dialog box has a **Display Snap Radius** check box that controls whether or not the snap radius displays when **Snap** mode is on. The snap tolerance (in pixels) can also be selected.

- From the **Options** menu, select **Preferences**, then **Map Window** to display the Map Window Preferences dialog box.



Under the Snap Options section, you can change the snap tolerance to make the snap radius larger or smaller (measured in pixels). If you clear **Display Snap Radius**, the radius will not be displayed when snap mode is turned on. Remember to click **OK** to save your preferences.

Move Duplicate Nodes

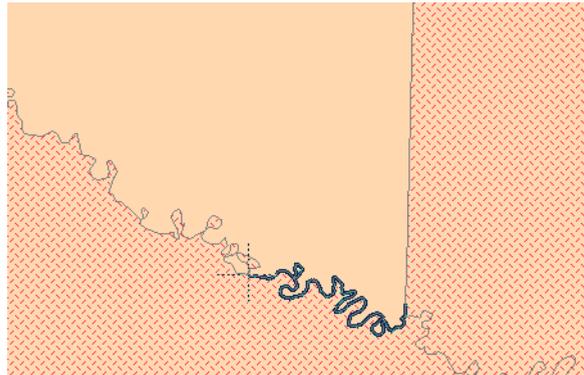
In most maps, nodes of various objects are usually connected, especially for adjoining streets and boundaries that share a common border. Using the Move Duplicate Nodes Option under Map Window Preferences, you can specify where MapInfo Professional looks for connected nodes in order to move them in unison. Choose the **None of the Layers** button to turn the option off. Choose the **Same Layer** button so that connected nodes in the same layer are moved when one of them is moved.

Autotracing Objects

You can trace the nodes of an object, for example, the Yucatan in Mexico using the Polyline or Polygon tools. This makes it easier to digitize objects that share a border because you don't have to re-digitize the shared border. You can also use this feature to trace an existing polygon/polyline network, for example, a street, a county, or some other polyline or boundary. A Status Bar entry displays showing that this mode is enabled.

To trace a border:

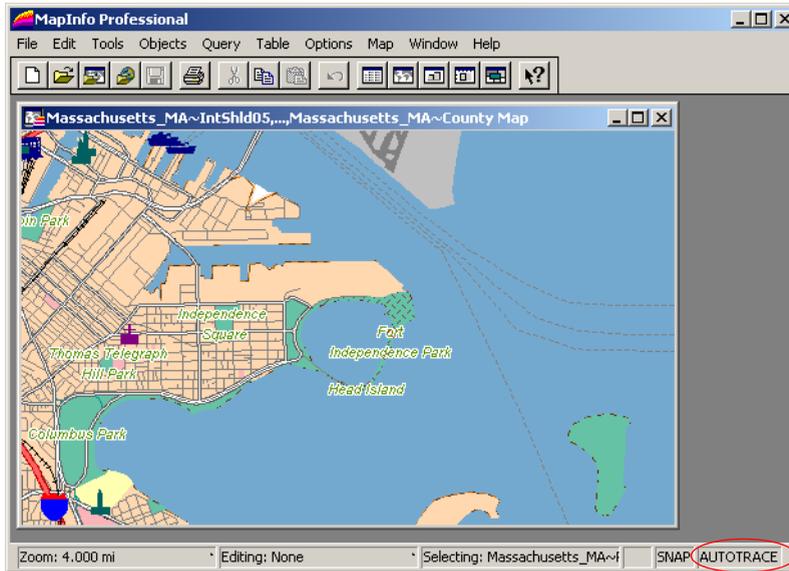
1. Open a Map layer you want to trace a polygon or polyline on.
2. Make the layer editable.
3. Press the **S** key to turn on the Snap process and the **T** key to turn on the Autotrace functionality.
4. Select the **Polygon**  or **Polyline**  tool from the Drawing toolbar and select the first node you want to trace.
5. Drag the mouse along the nodes of the line or object you want to trace.



The rules that apply to AutoTrace are:

- To enable the AutoTrace mode, you must be using a “poly” tool such as **Add Polygon** or **Add Polyline**
- You must press **S** to enable the Snap feature to use the AutoTrace feature

You can use the **Shift/Ctrl** key functionality for this mode. When you AutoTrace a polygon, the path contains the least number of nodes necessary to complete the AutoTrace, which is similar to the **Shift** key behavior. If you want to trace the longer path, press the **Ctrl** key to override default AutoTrace direction. When you are autotracing a closed polyline, the trace line never crosses the start and end points of the polyline (so the **Ctrl** key has no effect).



AutoTrace entry in Status Bar.

Smoothing and Unsmoothing Lines

You can use the Smooth command to convert polyline angles into polyline curves.

To smooth a polyline angle into a polyline curve:

- Click a polyline with the Select tool and on the **Objects** menu, click **Smooth**. MapInfo Professional smooths the line so that it appears to be one continuous line with curves instead of angles.
- To undo the process choose either the **Undo Smooth** command or on the **Objects** menu, click **Unsmooth**.

Both the Smooth and Unsmooth commands can be used only on polylines. A polyline is a line drawn with the Polyline tool. Smooth and Unsmooth do not work with objects drawn with the Line tool. If you attempt to smooth or unsmooth any object besides a polyline, MapInfo Professional displays a warning message.

Converting Regions to Polylines

You may find it necessary, on occasion, to change an object into a polyline or a polyline into a region during an editing session. You can do so simply by selecting the object and on the **Objects** menu, click **Convert to Region** or **Convert to Polyline**.

For instance, you select a group of nodes that you want to copy and paste elsewhere on your map. MapInfo Professional treats the group as a polyline and copies it to the clipboard. After you paste the polyline on your map, you can convert it to a region on the **Objects** menu, click **Convert to Region**.

If you want to create a buffer zone within one mile of a boundary, meaning you want a zone that extends one mile from the boundary to the outside and to the inside, you must first convert the region to a polyline and then create the buffer. If you first create the buffer on the region, you will include too much territory in the buffer (the entire region in the buffer plus the one mile buffer that extends outside of the region).

Converting objects to polylines and regions allows you to perform node-editing operations on objects that ordinarily do not allow node editing. For example, you cannot add nodes to a rectangle object. If, however, you first convert the rectangle into a polyline or region, you can then add nodes to the object.

The *Help System* contains these related topics:

- *Editing Street Maps (StreetPro)*
- *Adding a Segment to an Existing Street*
- *Adding a New Street*
- *Renaming a Street*
- *Editing Street Colors*

Merging One Map into Another

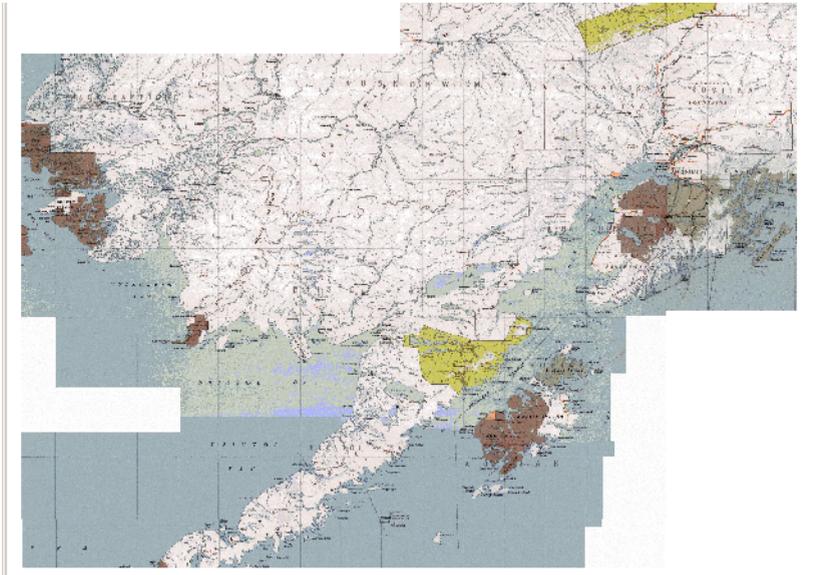
There are two ways to merge layers from one Map window to another:

1. You can use the Drag Map Window functionality to drag the layers of an existing Map window onto the another Map window. To see this method, see *Merging Maps using the Drag Map Window Tool* in the *Help System*.
2. You can copy the map layers you want from one map to the other in the Layer Control dialog box. To see this method, see *Merging Maps from Layer Control* in the *Help System*.

When you merge the layers from the source map on top of the destination map, the destination map settings take precedence. This means that the clip regions and coordinate systems, for example, are based on the settings in the destination map. If the destination map does not allow raster reprojection and the source map has a raster layer, the coordinate system of destination map could change.

Consider this example of a vector map and a raster map. Many times you want to add detail to a map by merging it with another open map. You can think of the map you are dragging or copying layers from as the source map.

Figure: Alaska Raster Map (Source Map)



You can think of the map that you are dragging or copying the layers to as the destination map.

Figure: Alaska Vector Map (Destination Map)



Note: MapInfo Professional does not copy the Cosmetic layer objects or thematic layers from a source map to the new window, so any symbols or features you have created there do not merge.

- For more information, see *Merging Maps using the Drag Map Window Tool* and *Merging Maps from Layer Control* in the *Help System*.