



MapViewer™ 8

Mapping & spatial analysis for publication-quality thematic maps.

Full User's Guide

MapViewer™ Registration Information

Your **MapViewer** serial number is located on the CD cover or in the email download instructions, depending on how you purchased MapViewer.

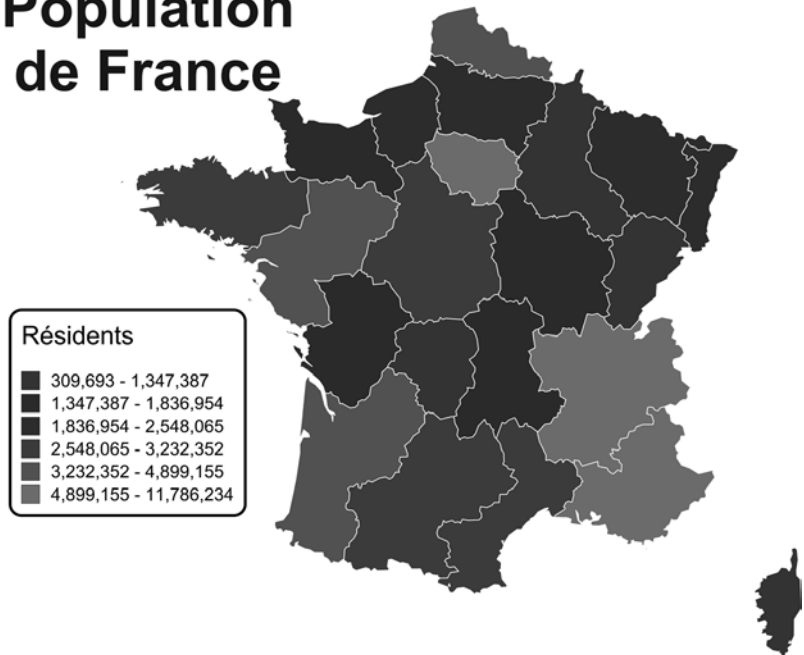
Register your **MapViewer** serial number online at www.goldensoftware.com. This information will not be redistributed.

Registration entitles you to free technical support, free minor updates, and upgrade pricing on future **MapViewer** releases. The serial number is required when you run **MapViewer** the first time, contact technical support, or purchase **MapViewer** upgrades.

For future reference, write your serial number on the line below.

Thematic Mapping and Spatial Analysis Software for
Business, Science, and Education

Population de France



Golden Software, LLC
809 14th Street, Golden, Colorado 80401-1866, U.S.A.
Phone: 303-279-1021 Fax: 303-279-0909
www.goldensoftware.com

COPYRIGHT NOTICE

Copyright Golden Software, LLC 2015

The **MapViewer™** program is furnished under a license agreement. The **MapViewer** software and quick start guide may be used or copied only in accordance with the terms of the agreement. It is against the law to copy the software or quick start guide on any medium except as specifically allowed in the license agreement. Contents are subject to change without notice.

MapViewer is a registered trademark of Golden Software, LLC. All other trademarks are the property of their respective owners.

January 2015

Table of Contents

Chapter 1 - Introducing MapViewer	1
Introduction to MapViewer™	1
Who Uses MapViewer?	2
System Requirements	2
Installation Directions	2
Installing MapViewer	2
Updating MapViewer	2
Uninstalling MapViewer	3
Three-Minute Tour	3
Example MapViewer Files	3
Using MapViewer	4
Using Scriptor	4
Example Scriptor Files	4
How MapViewer Works	5
File Types	7
Data Files	7
Boundary Files	7
MapViewer GSM Files	7
MapViewer Documentation	7
New Features	8
General	8
Maps	8
Other	8
Labels/Text	8
Objects	9
Legend	9
Worksheet	9
Automation	9
Import/Export	9
More Coordinate Systems	10
Chapter 2 - MapViewer User Interface	12
MapViewer User Interface	12
Plot Window	13
New Plot	13
Worksheet Window User Interface	14
Ribbon	14
Minimizing the Ribbon	15
Customizing the Ribbon	15

Reset the Ribbon.....	17
Quick Access Toolbar Commands	17
Customizing the Quick Access Toolbar	17
Displaying the Quick Access Toolbar Below the Ribbon.....	17
Tabbed Documents.....	18
Selecting and Closing Windows	18
Change Order of Tabs	18
Unsaved Changes.....	18
Tab Style	18
No Tabs	19
Status Bar	19
Managers	19
Object Manager	19
Property Manager.....	22
Inset Manager	24
Coordinates Manager	28
Data Manager	29
Manager Layout	31
Application/Document Control Menu Commands.....	33
Application/Document Control Close	34
Application/Document Control Maximize.....	34
Application/Document Control Minimize	34
Application/Document Control Move	35
Document Control Next.....	35
Application/Document Control Restore	35
Application/Document Control Size.....	35
Chapter 3 - Tutorial.....	37
Tutorial Introduction.....	37
Tutorial Lessons	37
Note about the Documentation	37
Using the Tutorial with the Demo Version.....	38
Lesson 1 - Data Files	38
Lesson 1.0 - Data Files	38
Lesson 1.1 - Opening a Data File.....	38
Lesson 2 - Boundary Files	38
Lesson 2.0 - Boundary Files.....	38
Lesson 3 - Creating a Thematic Map	40
Lesson 3.0 - Creating a Thematic Map	40
Lesson 3.1 - Zooming In to Get a Better View.....	41

Lesson 3.2 - Viewing the Hatch Map Data.....	42
Lesson 3.3 - Changing the Map Type	42
Lesson 4 - Editing Map Properties.....	43
Lesson 4.0 - Editing Map Properties.....	43
Lesson 4.1 - Changing the Hatch Map Colors	44
Lesson 4.2 - Changing the Number of Classes.....	44
Lesson 4.3 - Displaying the Primary IDs.....	45
Lesson 5 - Adding Map Accessories.....	46
Lesson 5.0 - Adding Map Accessories.....	46
Lesson 5.1 - Adding a Legend.....	46
Lesson 5.2 - Drawing Objects on the Plot	47
Lesson 5.3 - Adding Graticule Lines to Show the Map Coordinate System.....	48
Lesson 6 - Using Layers to Create Two Thematic Maps in One Plot Window	49
Lesson 6.0 - Using Layers to Create Two Thematic Maps in One Plot Window.....	49
Lesson 6.1 - Creating a Pin Map.....	50
Lesson 7 - Changing the Projection.....	51
Lesson 7.0 - Changing the Projection.....	51
Lesson 8 - Saving and Exporting the Map.....	52
Lesson 8.0 - Saving and Exporting the Map	52
Lesson 8.1 - Using the Map in Other Applications - Tutorial	53
Lesson 8.2 - Opening an Existing Map File - Tutorial.....	53
Advanced Tutorial	53
Lesson 1 - Boundary Editing - Advanced Tutorial.....	53
Lesson 2 - Downloading Online Maps - Advanced Tutorial.....	57
Lesson 3 - Querying - Advanced Tutorial	59
The End - Tutorial	63
Chapter 4 - Boundary Files.....	64
MapViewer Boundary Types.....	64
Boundary Files.....	65
Linking Data to Boundaries - The Primary ID	66
Creating Custom Boundaries.....	67
Chapter 5 - Data Files and the Worksheet.....	68
Worksheet Window.....	68
New Worksheet.....	68
MapViewer Data.....	68
Multiple Rows with the Same PID	69
Working with Worksheet Data.....	70
Worksheet Error Codes and Special Numeric Values	71
Selecting Cells	72

Selecting Cells with the Mouse	73
Selecting Cells with the Keyboard	74
Active Cell	74
Active Cell Location Box	75
Cell Edit Box	75
Symbol Specifications in the Data File	76
Worksheet Technical Specifications	76
Data Tab Commands - Worksheet Window	77
Clear - Worksheet	77
Insert - Worksheet	77
Delete - Worksheet	78
Shift Cells Left or Shift Cells Up	78
Delete Entire Row or Entire Column	78
Leave Deleted Cells Empty	78
Delete Unlinked Data - Worksheet	78
Import - Worksheet	79
Find - Worksheet	79
Find Next - Worksheet	79
Replace - Worksheet	79
Find and Replace	79
The Find Page	79
The Replace Page	82
Format Cells	83
Number Page	83
Alignment Page	83
Background Page	83
Text String	83
Preserve Cell Formatting	83
Data as Numbers, Text, or Date/Time	84
Format Cells - Number	84
Type	85
Decimal Digits	85
Thousands Separator	85
Sample	85
Date/Time Format	85
OK or Cancel	86
Format Cells - Alignment	86
General	86
Left	86

Center	87
Right	87
Format Cells - Background	87
None	87
Color Palette.....	87
Sample	88
Row and Column Label Bars	88
Selecting a Column or Row Dividing Line.....	88
Hiding Columns or Rows	88
Displaying Hidden Columns or Rows	88
Column Width.....	89
Changing Column Widths with the Mouse	90
Hide a Column	90
Display Hidden Columns.....	90
Row Height.....	90
The Row Height Dialog.....	90
Changing Row Heights with the Mouse.....	91
Hide a Row.....	91
Display Hidden Rows	91
Sort - Worksheet.....	91
Selecting Cells to Sort.....	92
Sort Order.....	92
Secondary Sort	92
Final Sort	92
Ascending or Descending Sort.....	92
Ignore Case.....	93
Labels in First Row	93
Transform - Worksheet	93
Transform With.....	94
Transform Equation	94
First and Last Columns and Rows	94
Empty Cells	95
Text Cells.....	95
Number Cells.....	95
Combining Text, Numbers, and Empty Cells	96
Functions	96
Insert	96
Examples	97

Example Functions	97
Statistics - Worksheet	98
The Statistics Dialog	98
Select Items to Compute.....	99
Data Group	99
Results Group	100
Data Range to Include Group.....	100
OK or Cancel	101
Transpose	101
Text To Number	102
Number To Text	103
Chapter 6 - Plot Properties.....	105
Plot Properties	105
Plot Properties	105
Scale	105
The Scale Page	106
Move/Size All Layers.....	107
Using Scaling to Minimize Distortion on Latitude/Longitude Maps	108
Limits Page	110
Example.....	111
Limits and Map Scale	111
Limits and Post Maps	111
Limits, Scale, and Adding Map Layers	111
The Limits Page	112
Moving Map Coordinate Systems on the Page	113
Limit to Selected Shape	113
Limiting the Map to an Area.....	113
Using Multiple Objects with Limit to Selected Shape	113
Coordinate System.....	114
The Coordinate System Page	114
Assign Coordinate System.....	115
The Assign Coordinate System Dialog	116
Example 1: Select a Predefined Coordinate System (i.e. UTM)	118
Example 2: Create and Select a Custom Coordinate System (i.e. Lambert Conformal Conic)....	119
Example 3: Saving a Custom Coordinate System	119
Define Coordinate System	119
Example 1: Defining a Custom Coordinate System	121
Example 2: Saving a Custom Coordinate System	121
Calibration	121

Using the Calibration Command to Recalibrate a Map	122
Zooming In and Out During Calibration	122
Setting the Projection Type During Calibration	122
Digitize Calibration Limits	123
Units	124
The Units Page	124
Coordinate Display Units	124
Surface Display Units	124
Surface Area Units	124
Graticule	125
Graticule Appearance	125
Graticules and Layers	125
Removing the Graticule	125
Legends, Post Maps, Prism Maps, and Graticules	126
Copying the Graticule	126
Graticule Properties	126
Graticules Page	126
Graticule Ticks Page	128
Map Collar	130
Removing the Collar	130
Map Collar Properties	130
Collar Page	130
Collar Ticks Page	131
Chapter 7 - Object Properties	133
Line Properties	133
Sample	133
Style	133
Color	134
Opacity	134
Width	134
End Styles	134
Line Properties Dialog	134
Style	135
Color	135
Width	135
Opacity	135
Sample	135
Line Palette	135

Custom Line Style	136
The Custom Line Dialog	136
Fill Properties.....	137
Fill Properties Dialog.....	139
Fill Palette	140
Custom Fill Pattern.....	141
Symbol Properties	143
Symbol Properties	143
Symbol Page	144
Info Page	145
Symbol Properties Dialog	145
Symbol Properties	145
Symbol Page	145
Info Page	146
Text and Font Properties	146
Text Properties	147
Font Properties	147
Default Settings.....	150
Pin Map and Post Data Font Properties.....	150
Text Editor	150
Text Editor Test Template	153
Text Editor Template Library.....	153
Symbol Properties Dialog	155
Date/Time Format	156
Language (Country)	156
Predefined Date/Time Formats.....	156
Sample	157
Text Editor Create/Edit Template	157
Label Formats.....	159
Info Page	161
IDs Section	162
Geometry Section	162
Info Section.....	163
Attributes Section.....	163
Options Section.....	163
Editing Attributes	164
Exporting Attributes	164
Data Statistics Section.....	164

Information Displayed for Objects	164
Attribute Editor	165
Name	166
Value.....	166
Adding New Attributes	166
Deleting Attributes	166
Reordering Attributes.....	166
Editing Attributes	166
Hyperlink	167
Adding Hyperlinks	167
Exporting Hyperlinks.....	167
Hyperlink Abbreviations	167
Viewing Hyperlinks	167
Color Palette.....	168
Custom Colors	168
Colors Dialog	168
Standard Page	168
Custom Page	169
Custom Color Spectrums.....	170
Colormap Dialog	171
The Colormap Dialog	172
Anchor Nodes	175
Anchor Node Value.....	175
Add Anchor Node	175
Delete Anchor Node.....	176
Positioning an Anchor Node	176
Selecting a Color for an Anchor	176
Chapter 8 - Map Layers	177
Layers	177
Create New Layer.....	177
Using Layers.....	177
Delete Map Layer (Break Apart Overlay)	179
Lock Layer.....	179
Locked State Indicators	179
Moving or Sizing a Locked Layer	179
Collapse All Layers	179
Expand All Layers.....	179
Chapter 9 - Creating Thematic Maps	180
What is a Thematic Map?	180

Creating and Editing Thematic Maps	180
Select Data Source and Columns Dialog	182
Copying and Pasting Maps	182
Map Tab Commands	184
Map Types.....	185
Chapter 10 - Base Maps	188
Base Map	188
Creating a Base Map.....	188
Editing a Base Map	188
Creating Custom Boundaries.....	188
Thematic Maps without Data.....	188
Base Maps from Golden Software	188
Chapter 11 - Pin Maps	189
Pin Map.....	189
Creating and Editing a Pin Map	189
Pin Map Properties.....	189
Map Page	189
Pin Placement Based on Location Files	191
Pin Classes	193
Classes Dialog	193
General.....	194
Data Filename	195
Data Columns	195
Data Limits.....	196
Create Attributes.....	197
Pin Labels.....	197
Labels.....	197
Labels Settings	198
Source Coordinate System	198
Chapter 12 - Hatch Maps.....	199
Hatch Map.....	199
Creating and Editing a Hatch Map.....	199
Hatch Map Properties.....	199
Map Page	199
Data/Text Classes Dialog.....	200
Number of Classes	201
Classification Method	201
Saving and Loading Classes.....	201
No Data and Undefined Data	201

Class Information.....	201
Save Class Info to Worksheet File	202
Jenks' Natural Breaks	202
Color Spectrum.....	202
General Page	203
Data Filename	204
Data Columns.....	204
Data Limits.....	204
Chapter 13 - Contour Maps	205
Contour Map.....	205
Creating and Editing Contour Maps.....	205
Contour Map Properties.....	205
Map Page	205
Levels Dialog	206
Number of Levels	207
Classification Method	207
Editing Line and Fill Properties	208
Labels.....	208
Hachures.....	208
Adding and Deleting Levels.....	208
Saving and Loading Levels	208
Hachures Dialog.....	208
Hachure End Styles	209
Hachure Length and Direction.....	209
Affected Levels	209
Hachure Options	209
Labels Dialog	210
Label Spacing	210
Affected Levels	210
Label Font and Format	211
General Page	211
Data Filename	212
Data Columns.....	212
Data Limits.....	212
After Switching to Base Map	212
Gridding.....	213
Gridding Method	213
Grid Line Geometry	213

General.....	214
Notes on Grids and Gridding.....	215
Chapter 14 - Symbol Maps	216
Symbol Map	216
Creating and Editing a Symbol Map	216
Symbol Map Properties	216
Map Page	216
Symbol Origin Dialog	219
General Page	219
Data Filename	220
Data Columns.....	220
Data Limits.....	220
After Switching to Base Map	221
Chapter 15 - Density Maps	222
Density Map	222
Creating and Editing a Density Map	222
Density Map Properties	222
Map Page	222
General Page	224
Data Filename	224
Data Columns.....	224
Data Limits.....	225
Chapter 16 - Territory Maps	226
Territory Map.....	226
Categorizing Objects.....	226
Creating and Editing a Territory Map.....	226
Territory Map Properties.....	226
Map Page	226
General.....	227
Territories	228
Fill.....	228
Undefined Objects	228
Territories Dialog	228
Automatically Creating Territories	229
Number of Territories	229
Geographical Summary.....	229
Territory Properties	229
Source Objects	230

Adding Objects to Territories	230
Data/Text Classes Dialog - Territories	230
Data	231
Number of Classes	231
Classification Method	231
Saving and Loading Classes.....	232
No Data and Undefined Data	232
Class Information.....	232
Save Class Info to Worksheet File	232
Data Statistics	232
Color Spectrum.....	232
General Page - Bar, Pie, and Territory Maps.....	233
Data Filename	234
Data Columns	234
Data Limits.....	235
Pick Columns to Add Dialog	235
Territory Page.....	235
Editing the Active Territory.....	236
Territory Fill.....	236
Chapter 17 - Vector Maps.....	238
Vector Map.....	238
Creating and Editing a Vector Map.....	238
Vector Map Properties.....	238
Map Page	238
Vector Color Classes	240
General Page - Contour, Gradient, Hatch, Line Graph, Prism, Symbol, and Vector Maps	242
Data Filename	243
Data Columns	243
Data Limits.....	243
After Switching to Base Map	244
Gridding.....	244
Gridding Method	245
Grid Line Geometry	245
General.....	245
Notes on Grids and Gridding	246
Chapter 18 - Line Graph Maps	247
Line Graph Map.....	247
Creating and Editing a Line Graph Map	247
Line Graph Map Properties.....	247

Line Graph Construction	247
Map Page	249
General Page - Contour, Gradient, Hatch, Line Graph, Prism, Symbol, and Vector Maps	250
Data Filename	251
Data Columns	251
Data Limits	252
After Switching to Base Map	252
Graph Page	252
Line	253
Fill	253
Negative Data	254
Background	254
Chapter 19 - Gradient Maps	255
Gradient Map	255
Creating and Editing a Gradient Map	255
Gradient Map Properties	255
Map Page	255
General Page	257
Data Filename	257
Data Columns	257
Data Limits	258
After Switching to Base Map	258
Gridding	258
Gridding Method	259
Grid Line Geometry	259
General	260
Notes on Grids and Gridding	260
Chapter 20 - Bar Maps	261
Bar Map	261
Creating and Editing a Bar Map	261
Bar Map Properties	261
Map Page	261
General Page	264
Data Filename	264
Data Columns	264
Data Limits	265
Pick Columns to Add Dialog	266
Bars Page	267
General	267

Size	268
Fill	268
Bar Labels Page	269
Label And Lead	269
Leader Line	270
Font	270
3D Settings Page	270
Chapter 21 - Flow Maps	272
Flow Map	272
Creating and Editing a Flow Map	272
Flow Map Properties	272
Map Page	272
Classes Dialog	274
Number of Classes	275
Classification Method	275
Saving and Loading Classes	275
Class Information	276
General Page - Flow Map	276
Data Filename	277
Data Columns	277
Data Limits	278
Chapter 22 - Prism Maps	279
Prism Map	279
Creating and Editing a Prism Map	279
Prism Map Properties	279
Map Page	280
Color Classes	281
Texture Mapping	283
General Page - Contour, Gradient, Hatch, Line Graph, Prism, Symbol, and Vector Maps	285
Data Filename	285
Data Columns	286
Data Limits	286
After Switching to Base Map	286
3D Settings Page	287
View	287
Lighting	288
Chapter 23 - Pie Maps	289
Pie Map	289
Creating and Editing a Pie Map	289

Pie Map Properties.....	289
Map Page	289
General Page	291
Data Filename	292
Data Columns.....	292
Data Limits.....	292
Pick Columns to Add Dialog	292
Pies Page	293
Slice Fill	294
Pie Labels Page.....	294
Label And Lead	295
Leader Line	295
Font	295
3D Settings Page	296
3D Settings	296
Wall Fill.....	297
Chapter 24 - Cartogram Maps	298
Cartogram Map	298
Creating and Editing a Cartogram Map.....	298
Cartogram Map Properties.....	298
Map Page	298
General Page	300
Data Filename	301
Data Columns.....	301
Data Limits.....	301
After Switching to Base Map	301
Chapter 25 - Multi-Graph Maps	302
Multi-Graph Map	302
Creating and Editing a Multi-Graph Map	302
Multi-Graph Map Data.....	302
Multi-Graph Properties	303
Multi-Graph Line and Scatter Plots.....	303
Map Page	303
General Page - Multi Graph Map	305
Data Filename	306
Data Columns.....	306
Data Limits.....	306
Axes Page	307
Ticks.....	307

Graph Page	308
Line	309
Fill.....	309
Negative Data.....	309
Background	309
Chapter 26 - Downloading Online Maps	310
Download Maps.....	310
Data Source	311
Server Information.....	311
Layer Information	311
Favorites Section	311
Adding New Categories	312
Adding New Data Sources	312
Editing Custom Data Sources.....	312
Deleting Custom Data Sources.....	312
Select Area to Download	312
Select Image Resolution to Download	314
Image Preview.....	314
Log.....	315
OK, Cancel and Help.....	316
Server Responsiveness	316
Base Map Naming Convention.....	316
Add Data Source Dialog	316
Name	317
Type.....	317
URL	317
Next	317
Back.....	317
Cancel or Finish	317
Help	317
View Data Source Dialog	317
Editing the URL.....	318
Next	318
Back.....	318
Cancel or Finish	319
Help	319
Layer Information Dialog.....	319
OK	319

Help	319
Server Information Dialog	319
Server Connectivity	320
Server Information	320
Help	321
Chapter 27 - Map Features	322
Data Labels	322
Data Labels Page	322
Pick Columns to Add Dialog	324
Edit Post Labels	325
Enter Edit Post Labels Mode	325
Move Individual Data Labels	325
Edit Individual Data Labels	325
Exit Edit Post Labels Mode	325
Move Around the Plot Window in Edit Mode	326
Custom Label Location and Changed Coordinate System	326
Reset Labels to Default	326
Legend	326
Legend Properties	326
Legend Page	326
Legend Arrangement	327
Legend Size	327
Unlinking the Legend	328
Frame Line	328
Frame Fill	328
Layer Page	328
General	329
Title	330
Layers in Legend	330
Samples	330
Labels	330
Pick Layers to Add Dialog	331
Scale Bar	331
Scale Bars on Projected Maps	331
Scale Bar Properties	332
Inset Page	335
Visibility and Layer Properties	336
Inset Line and Fill Properties	336

Chapter 28 - File Menu Commands	337
File Menu Commands.....	337
File List (File Menu)	337
Open	338
The Open Dialog	338
Close	339
Close All.....	339
Save.....	340
Save As	340
Save In.....	341
Button Shortcuts.....	341
File List	341
File Name.....	341
Save As Type.....	341
File Types.....	341
File Names, Formats, and File Extensions	341
Import - Plot.....	342
The Import Dialog	342
Remarks	344
Export	344
The Export Dialog.....	344
Search Commands	347
Exit	347
Chapter 29 - Home Tab Commands	348
Home Tab Commands.....	348
Paste	349
Paste Special	349
Formats	349
Other Options.....	349
Paste or Cancel	350
Copy.....	350
Cut.....	350
Delete.....	350
Copy All Layers	350
Copy to Another Layer	350
Move to Another Layer.....	351
Undo	351
Redo.....	352
View Linked Data	352

Load Data	352
Reload	352
Digitize	353
Digitized Coordinates Window	353
Digitizing Information from a Map	353
Coordinate System Information.....	354
Reproject Data File.....	354
Find and Search	356
Find Object Dialog.....	357
Find Next	358
Chapter 30 - Drawing.....	359
Draw Tab Commands.....	359
Text	360
Editing Text Properties.....	360
Text Properties	360
Default Properties	361
Drawing Text Along a Curve	361
To Draw Text Along a Spline Polyline or Polyline:	361
Polygon.....	361
Polygon Properties.....	361
Drawing a Polygon	362
Drawing Tips	362
Spline Polygon	362
Spline Polygon Properties	362
Spline Polygons and Thematic Maps	363
Spline Areas and Primary IDs	363
Polyline.....	364
Polylines and Thematic Maps	364
Polylines and Primary IDs.....	364
Polyline Properties.....	364
Drawing a Polyline.....	364
Drawing Tips	365
Spline Polyline	365
Spline Polylines and Thematic Maps.....	365
Spline Polylines and Primary IDs	365
Drawing a Spline Polyline	365
Drawing Tips	366
Point.....	366
Rectangle.....	367

Rectangle Properties.....	367
Drawing a Rectangle.....	367
Drawing a Square	367
Drawing Tips	367
Rounded Rectangle.....	367
Rounded Rectangle Properties.....	367
Drawing a Rounded Rectangle	367
Drawing a Rounded Square	368
Drawing Tips	368
Ellipse.....	368
Ellipse Properties.....	368
Drawing an Ellipse.....	368
Drawing a Circle.....	368
Drawing Tips	368
Reshape.....	369
Break Apart	370
Lock Object	370
Blend.....	370
Create Blended Boundary Bitmap Dialog	371
Blending Source:	371
Width in Pixels:	371
Height in Pixels:	371
Maintain Aspect Ratio:	371
Color Depth:	371
Blended Boundary Image	372
Creating a Blended Boundary Image.....	372
Blended Boundary Images and Filled Objects.....	372
Blended Boundary Images and Prism Maps.....	372
Boundary Backdrop	373
Creating a Boundary Backdrop.....	373
The Boundary Backdrop Dialog	373
Create Backdrop for All Visible Layers:	373
Backdrop Soft Edge Width:	373
Resulting Backdrop Image:	374
Edge Inner/Outer Color:.....	374
Place Backdrop Image on Another Layer:	374
Crop to Shape.....	374
Image Filters	375

Spatial Filter	375
Apply Spatial Filter Dialog:	375
Median Filter	376
Apply Median Filter Dialog:	376
Dimension n of Neighborhood (n x n) in Pixels:	377
Image Colors	377
Adjust Saturation	377
Sharpen	377
Adjust Brightness	378
Adjust Contrast	378
Adjust Image Dialogs.....	378
Convert Color Depth	379
Convert Image Color Depth Dialog:	379
Collect Colors	379
Select Transparent Colors	379
Collect Colors and Select Transparent Color Dialogs.....	380
Collect Colors Dialog.....	380
Select Transparent Color Dialog	381
Define Region	382
Ellipse - Region	383
Ellipse Properties.....	383
Drawing an Ellipse.....	383
Drawing a Circle.....	383
Drawing Tips	383
Rectangle - Region	384
Rectangle Properties.....	384
Drawing a Rectangle.....	384
Drawing a Square	384
Drawing Tips	384
Polygon - Region.....	384
Polygon Properties.....	384
Drawing a Polygon	385
Drawing Tips	385
Auto Buffer Zone.....	385
Buffer Zone Settings Dialog.....	385
Create buffer zone around:.....	386
Buffer width:	386
Error tolerance:	386
Define Regions by PIDs	387

Regions by Selection Dialog.....	387
Add Regions	388
Clear Regions	388
Chapter 31 - Boundary Editing	389
Boundary Tab Commands	389
Multi-Assign Attributes.....	389
Assign Attributes to Selected Objects Dialog.....	390
Example.....	391
Redefine Attributes.....	391
Redefine Attributes Dialog	391
Example.....	392
Polygon to Polyline	392
Points to Polyline.....	393
Polyline to Points.....	393
Polyline to Polygon	393
Polyline to Polygon with Shared Border	394
Symmetric Shape to Polygon	394
Spline to Regular Object	394
Emphasize and Emphasize Group	394
Emphasize Dialog.....	395
Move Centroids	395
Thin Boundary	396
Thin Boundary Dialog	397
Smooth Boundary	397
Spline Smooth Boundary Dialog	398
Reshape.....	398
Reverse Islands/Lakes	399
Connect Polylines	400
Break Polyline.....	400
Break at Intersection.....	400
Union of Polygons.....	401
Union of Areas Dialog	401
Difference between Combine Islands/Lakes and Union of Areas.....	402
Intersect Polygons.....	402
Intersect Areas Dialog	403
Difference of Polygons	403
Creating a Difference of Polygons:	404
Divide Polygons	404
Creating a Division of Polygons	404

Enclose	404
Creating an Enclosure	405
Enclose, Difference of Areas, Divide Area, and Combine Territory Areas Dialogs	405
Intersection Points	406
Creating a Intersection Points	406
Convex Hull	407
Creating a Convex Hull	408
Create Convex Hull Dialog	408
Triangulation	409
Creating a Triangulation Diagram	409
Delaunay Triangulation Dialog	410
Thiessen Polygons	411
Creating a Thiessen Polygon Diagram	411
Thiessen Polygons Dialog	412
Delaunay Triangulation and Thiessen Polygon Dialogs	413
Split	413
Combine	414
Chapter 32 - Analysis	415
Analysis Tab Commands	415
Query	416
Query Dialog	416
Query Map Data	420
Query Map Data Dialog	420
Query within Range	422
Query within Range Dialog	422
Boundary Records	423
Territory Records	424
Object Data Report	424
Object Coordinates Report	424
Object Property Report	425
Object Property Report Dialog	425
Object Centroids Report	425
Report Centroids Dialog	426
Text Look-Up Table Report	426
Report Text Coordinates Dialog	426
Map Document Report	427
Records in Regions	427
Data Records in Specified Zone Dialog	428
Browse Database Records	429

Browse Data Dialog	430
Create Data	430
Create Data Column Dialog	430
Shortest Path.....	432
Shortest Path Dialog.....	432
Closest Neighbor	433
Find Closest Neighbor Dialog	433
Bordering Neighbors.....	434
Polylines in Polygon.....	434
Find Polylines in Polygon Dialog	434
Touched by Polyline.....	435
Find Objects Touched by Polyline Dialog.....	435
Area And Neighbors Dialog.....	436
Area Information.....	436
Area Statistics	436
Weighted Mean Center.....	437
Weighted Mean Center	437
Measure Distance.....	438
Distance of Travel	439
Distance of Travel Dialog.....	439
Tabulated Distance.....	441
Calculate Tabulated Distances Dialog	442
Geocode.....	443
Assign Latitude/Longitude Coordinates to U.S. Address or Street Intersection Dialog	443
Address Abbreviation Lists.....	445
Interactive Geocoding.....	446
Chapter 33 - Selecting and Arranging Objects.....	447
Selecting Objects	447
Select Tool	448
Arrange Tab Commands.....	448
Resize and Reposition Objects.....	449
Width and Height	449
Horizontal and Vertical Position	449
Resize and Reposition with the Mouse and Keyboard	449
Select by Object.....	450
Select Dialog	450
Select All.....	450
Deselect All	450
Block Select.....	451

Invert Selection	451
Select/Deselect From List	451
Select/Deselect from List Dialog	451
Select Hidden Objects	452
Move to Front	452
Move to Back	452
Move Forward	452
Move Backward	452
Align Objects	453
Sort Objects	453
Sort Objects Dialog	453
Disperse Points	454
Disperse Points Dialog	454
Auto Rearrange Text	455
Auto Rearrange Text Dialog	456
Rotate	457
Free Rotate	457
Rotate Prism	457
Rotating a Prism Map:	457
Chapter 34 - Changing the View	458
View Tab Commands	458
Fit Page	459
Fit to Window	459
Zoom Selected	459
Zoom Realtime	459
Actual Size	459
Full Screen	459
Zoom In	460
Zoom Out	460
Zoom with a Wheel Mouse	460
Zoom with the Keyboard	460
Zoom Rectangle	460
Pan Realtime	460
Pan with a Wheel Mouse	460
Redraw	461
Auto Redraw	461
Rulers	461
Drawing Grid	461
Status Bar	461

Show Objects	461
Show/Hide All	462
New Window	463
Cascade	463
Tile Horizontal.....	464
Tile Vertical	464
Arrange Icons	465
Reset Windows	465
Chapter 35 - Coordinate Systems.....	466
Introduction to Map Projections.....	466
Map Coordinates	467
Map Coordinates in a New Map Window	467
Latitude and Longitude Coordinates.....	468
Latitude and Longitude in Decimal Degrees	469
Other Ways the Map Coordinate System Can Be Redefined.....	469
Projecting Maps in MapViewer.....	470
Map Projection	470
Characteristics of Projections	471
Geometric Forms of Projection	472
Ellipsoids.....	473
Datums.....	474
Custom Datum Definition	475
Supported Projections.....	476
Albers Equal Area Conic Projection	476
Azimuthal Equidistant Projection	478
Bonne Projection.....	480
Cassini Projection.....	481
Eckert IV Projection.....	482
Eckert VI Projection.....	483
Equidistant Conic Projection (Simple Conic Projection)	484
Equidistant Cylindrical Projection.....	486
Geographic Coordinate System	487
Gnomonic Projection.....	488
Hotine Oblique Mercator Projection.....	490
Hotine Oblique Mercator 2-Point Projection.....	492
Lambert Azimuthal Equal Area Projection	494
Lambert Conformal Conic Projection	496
Mercator Projection	498
Miller Cylindrical Projection.....	500

Mollweide Projection	501
New Zealand Map Grid	502
Oblique Mercator Projection	504
Orthographic Projection	506
Polyconic Projection	508
Robinson and Robinson-Sterling Projections	510
Sinusoidal Projection	511
State Plane Coordinate System	512
Stereographic Projection	513
Transverse Mercator Projection	515
Universal Transverse Mercator (UTM) Projections	517
Van der Grinten Projection	519
Projection References	520
Chapter 36 - Importing, Exporting, and Printing	521
Import - Plot	521
The Import Dialog	521
Remarks	523
Import ID Options	523
IDs and Hyperlinks	524
Import to Worksheet	524
Map Limits	524
Georeferenced Images	525
Projecting Images	526
Data File Formats	527
Export	527
The Export Dialog	528
Export Options Dialog - Scaling Page	530
Export Options Dialog - Size and Color Page	532
Pixel Dimensions	532
Document Size	532
Pixels Per Inch	533
Example	533
Maintain Aspect Ratio	533
Maintain Pixel Dimensions	533
Color Format	534
Reduction Method	534
Defaults	534
Transparency	534

Export Options Dialog - Spatial References Page	534
Coordinate System	535
Reference File Format	536
Print	536
Print Dialog - Plot Window	537
Printer	537
Print Range	537
Copies	538
Printing Method.....	538
Print Dialog - Worksheet Window	538
Printer	538
Print Range	539
Number of Copies.....	539
Collate	539
OK or Cancel	539
Page Setup.....	539
Page Setup - Worksheet.....	539
Page Setup Worksheet - Page.....	540
Paper.....	540
Orientation	540
Scaling	541
Printer	541
Page Setup Worksheet - Margins.....	541
Margins.....	542
Center on Page	542
From Edge (inches)	542
Page Setup Worksheet - Options	542
Print	543
Page Order.....	543
Headers and Footers.....	543
Examples	544
Cancel Printing.....	544
Chapter 37 - Options, Defaults, and Customizations	545
File Options.....	545
Options Dialog	545
General.....	545
The Options Dialog	545
Options - Updates	547
The Options Dialog	547

Options - User Interface	549
The Options Dialog	549
Options - Selection	551
The Options Dialog	552
Options - Rendering	553
The Options Dialog	553
Options - Rulers and Grid	554
The Options Dialog	554
Options - Defaults Properties	556
The Options Dialog	556
Default Settings	557
Using Custom Setting Files	558
Formats for Attribute Values	559
Colors	559
Line Property Syntax	559
Fill Property Syntax	559
Font Property Syntax	560
Symbol Property Syntax	561
Numeric Label Property Syntax	561
Customizing Commands	562
Customizing the Quick Access Toolbar	562
Customizing the Ribbon	562
Customize the Keyboard	564
Sharing Customizations Between Computers	564
Displaying Classic Menu Appearance	565
Chapter 38 - MapViewer Automation	566
Introducing Scripter	566
Scripter Windows	566
Working with Scripts	567
Scripter BASIC Language	568
Visual BASIC Compatibility	568
Running Scripts	569
Running Scripts from the Command Line	569
Debugging Scripts	570
Overview of MapViewer Objects	573
Using MapViewer Objects	573
Using Collection Objects	574
MapViewer Object Model	575
Object Hierarchy	577

Object Variables	578
Derived Objects	578
Named and Positional Arguments	578
Optional Arguments	579
Parent and Application Properties	579
Comments	580
Double Quotes and Text	580
Line Continuation	580
Operators	580
Coordinate Arrays	580
Getting User Input	581
Creating Dialog Boxes	581
Program Statements	582
Global Variables	582
Specifying Cell Coordinates	583
Variables	585
User-Defined Types	586
Improve Automation Performance	587
Examples	587
Automation Examples	587
Creating and Printing a Hatch Map - Automation	587
Opening, Saving, and Closing Documents	588
DensityMap Object Script Example	589
UserDialog Example	592
Suggested Reading - Scripter	593
Chapter 39 - MapViewer Help	594
MapViewer™ Help	594
Context Sensitive Help	595
Technical Support	595
Check for Update	596
Golden Software Home Page	596
MapViewer Product Page	596
Frequently Asked Questions	596
Knowledge Base	596
MapViewer Software User Forums	596
Problem Report	597
Suggestions	597
Information Request	597
Sales Information	597
About MapViewer	597

Appendix A - Mathematical Functions	598
Mathematical Functions.....	598
Data Types.....	598
Variable Names.....	598
Precedence.....	598
Built-in Functions	599
Trigonometric Functions.....	599
Bessel Functions	599
Exponential Functions	599
Miscellaneous Functions	600
Statistical Functions of an Interval.....	600
String Comparison.....	601
95% and 99% Confidence Interval for the Mean	604
Average Deviation	604
Coefficient of Kurtosis	605
Coefficient of Skewness	606
Coefficient of Variation.....	607
Critical Value of K-S Statistic at 90%, 95%, and 99% Significance Level	607
Kolmogorov-Smirnov Goodness of Fit Statistic for Normal Distribution	608
Mean	609
Standard Deviation.....	609
Standard Error of the Mean	610
Variance	610
Statistics References	611
Appendix B - Math Text Instructions	612
Math Text Instruction Syntax.....	612
List of Math Text Instructions.....	613
Appendix C - File Formats	614
File Format Chart	614
MapView GSM Files.....	618
Microsoft Access .MDB and .ACCDB File Description.....	618
Microsoft Access .MDB and .ACCDB Import Options Dialog	619
AN? ACR-NEMA Medical Image.....	620
ASCII .DAT, .TXT, .CSV Data Files.....	622
Worksheet Formatting	622
Format.....	622
Golden Software DAT Files	623
Data Export Options Dialog	623
DAT and CSV XYZ Points Export	624

Export Options	624
Golden Software Data Export Automation Options	625
Data Import Options	625
The Data Import Options Dialog	626
Data Export Options Dialog	628
ASCII [.DAT, .TXT] Data File Export Automation Options	629
Golden Software Blanking .BLN File Description	630
File Format	630
Attributes	631
Import Options Dialog	632
Import Automation Options	632
Export Options Dialog	632
Export Automation Options	632
Loading a BLN	632
Golden Software Blanking .BLN Import Options Dialog	632
Golden Software Blanking [.BLN] Import Automation Options	632
Golden Software Blanking .BLN Export Options Dialog	633
Attributes	633
BLN Options Page	633
Golden Software Blanking [.BLN] Export Automation Options	634
Image (Bitmap) File Descriptions	635
Bitmap Format Files	638
Image (Bitmap) Export Options Dialog	639
Image (Bitmap) Export Automation Options	639
Atlas Boundary .BNA File Description	642
File Format	642
Attributes	643
Example 1	644
Example 2	644
Import Options Dialog	645
Import Automation Options	645
Export Options Dialog	645
Export Automation Options	645
Atlas BNA Examples	645
Atlas Boundary [.BNA] Import Options Dialog	646
Atlas Boundary [.BNA] Import Automation Options	646
Atlas Boundary [.BNA] Export Options Dialog	647
Attributes	647
Atlas Boundary [.BNA] Export Automation Options	648

ASCII Database .DBF File Description	649
ASCII Database .DBF Import Automation Options	649
SDTS Topological Vector Profile and Raster Profile (TVP, DDF) File Description	650
SDTS Topological Vector Profile .TVP Import Options Dialog	651
SDTS Topological Vector Profile [.TVP] Import Automation Options.....	653
DICOM3 Medical Image .DIC, .DCM File Description.....	654
DICOM Import Options Dialog.....	655
USGS Digital Line Graph .DLG File Description	656
USGS Digital Line Graph .DLG Import Options Dialog.....	659
USGS Digital Line Graph [.DLG] File Info Dialog	662
USGS Digital Line Graph Boundary [.DLG] Import Automation Options.....	663
AutoCAD .DXF File Description	664
AutoCAD DXF Import Options Dialog.....	666
AutoCAD DXF Import Options - Layer Name Dialog.....	668
AutoCAD DXF Import Automation Options	669
AutoCAD DXF Export Options Dialog.....	670
File Compatibility	671
AutoCAD DXF Export Automation Options.....	673
ESRI ArcInfo Export Format .E00 File Description	675
ESRI ArcInfo Export Format [.E00] Import Options Dialog	676
ESRI ArcInfo Export Format [.E00] Import Automation Options.....	677
ER Mapper .ECW File Description.....	678
ER Mapper [.ECW] Import Automation Options	679
.EMF Windows Enhanced Metafile File Description.....	679
ER Mapper .ECW Import Options Dialog	680
Windows Enhanced Metafile .EMF Import Options Dialog	680
Windows Enhanced Metafile .EMF Import Automation Options.....	681
Windows Enhanced Metafile .EMF Export Options Dialog.....	681
Windows Enhanced Metafile [.EMF] Export Automation Options.....	682
Encapsulated PostScript .EPS File Description	683
Creating EPS Files	684
Encapsulated PostScript [.EPS] Export Options Dialog.....	685
Encapsulated PostScript .EPS Export Automation Options.....	686
Graphics Interchange Format .GIF File Description	688
.GIF Export Options Dialog	689
Golden Software Boundary .GSB File Description.....	690
Attributes.....	691
Golden Software Boundary .GSB Import Options Dialog	691
Golden Software Boundary .GSB Import Automation Options.....	691
Export Options Dialog	692

Golden Software Boundary .GSB Export Options Dialog..... 692

Golden Software Boundary [.GSB] Export Automation Options..... 693

Golden Software Interchange .GSI File Description..... 694

 Attributes..... 694

Golden Software Interchange .GSI Import Options Dialog 695

Golden Software Interchange .GSI Import Automation Options..... 695

Golden Software Interchange .GSI Export Options Dialog..... 695

Golden Software Interchange .GSI Export Automation Options..... 696

GPX GPS Exchange Format File Format Description 698

 File Structure..... 698

 Import Options 698

 Export Options..... 698

HTML Image Map [.HTM] [.HTML] File Description 698

Export Options Dialog - HTML Image Map Page..... 698

 Size Limits 699

 Links 699

 Default Settings..... 699

HTML Image Map .HTM .HTML Export Automation Options..... 699

JPG File Interchange Format .JFIF, .JPG, .JPEG File Description..... 701

JP2 JPG 2000 File Interchange Format .JP2, J2K, .JPC, .JPT, .JPEG2000, .J2000 File Description .. 702

 Spatial Reference Information..... 702

 Import Options Dialog..... 702

 Export Options Dialog 702

Export Options Dialog - JPEG-2000 Options Page 702

 Quality/Compression Settings..... 703

 Container Format 703

Export Options Dialog - JPEG Options Page..... 703

Google Earth Keyhole Markup .KML and .KMZ File Description..... 704

 Attributes..... 705

Google Earth .KML and .KMZ Export Options Dialog..... 705

 Coordinate System..... 705

 Attributes..... 705

 The Export Options Dialog..... 705

Google Key Markup .KML and .KMZ Export Automation Options 708

LAS LiDAR Binary File Description..... 709

 File Format..... 709

 Import Options Dialog..... 710

 Import Automation Options 710

 Export Options Dialog 710

Export Automation Options.....	710
LiDAR Import Filtering Dialog.....	710
Total Points	711
Validity Filtering.....	711
Spatial Filtering.....	712
Sample Filtering.....	712
Classification Filtering	712
Select All or Clear All	712
OK or Cancel	712
MapInfo Interchange Format .MIF File Description	712
MapInfo Interchange Format .MIF Import Automation Options	713
MapInfo Interchange Format .MIF Export Options Dialog.....	714
Attributes.....	714
MapInfo Interchange Format .MIF Export Automation Options.....	715
Adobe Portable Document Format .PDF File Description	716
Import.....	717
Export	717
GeoPDF.....	717
PDF Import Options Dialog	717
GeoPDF.....	717
Render Resolution	718
Import Which Pages	718
Antialiasing	718
PDF Adobe Import Automation Options	718
Adobe Acrobat .PDF Vector Export Options Dialog	719
Scaling Page.....	719
Spatial References Page.....	719
Vector PDF Options Page.....	720
Adobe Acrobat .PDF Raster Export Options Dialog	721
Adobe Acrobat Portable Document Format .PDF (Vector) Export Automation Options.....	722
Portable Network Graphic .PNG File Description.....	723
.PNG Export Options Dialog	724
Portable Any Map .PNM File Description.....	724
Golden Software PlotCall .PLT File Description.....	725
Golden Software PlotCall .PLT Automation Options	726
Stanford Polygon .PLY File Description	728
Sun Raster Image .RAS, .SUN File Description	730
Silicon Graphics .RGB Image File Description	730
.SP1 SEG Standard Data Exchange File Description	731

Import Options Dialog.....	731
SEG P1 Import Options Dialog	731
Coordinate Format	732
DMS or Gradians	732
Scale Factors	732
OK or Cancel	732
ESRI Shapefile .SHP File Description.....	732
Attributes.....	734
ESRI Shapefile [.SHP] Import Options Dialog.....	738
ESRI Shapefile .SHP Import Automation Options.....	738
ESRI Shapefile .SHP Export Options Dialog.....	739
Attributes.....	739
Scaling Page.....	740
Spatial References.....	740
ESRI Shapefile .SHP Export Automation Options	740
LizardTech MrSID .SID File Description	742
LizardTech MrSID .SID Import Options Dialog.....	743
LizardTech MrSID .SID Import Automation Options	743
.SVG Scalable Vector Graphics File Description.....	744
Truevision Targa .TGA File Description	744
Tagged Image File Format .TIF File Description.....	745
GeoTIFF	745
Import Options	745
Import Automation Options	745
Export Options.....	745
Export Automation Options.....	746
Tagged Image .TIF Export Options Dialog	746
Size and Color Page.....	746
Spatial References Page.....	746
TIF Options Page.....	746
Lotus (WKx) Data Files	747
.WMF Windows Metafile File Description	747
Windows Metafile .WMF and .EMF Import Automation Options	748
Windows Metafile .WMF and .EMF Export Automation Options.....	748
AVS X-Image .XIMG File Description.....	749
Excel Data File Description	749
Excel .XLS	749
Excel .XLSX	750
Excel .XLSM.....	750

Use Caution when Saving Excel Files!	750
Special Characters Used in Excel Files.....	750
Import Options Dialog.....	750
Special XLS Characters	751
Excel .XLSX Import Options Dialog	752
Excel .XLS Export Options Dialog	753
Microsoft Excel Export Automation Options	754
Microsoft Excel Merge Automation Options	754
SYLK Spreadsheet [.SLK] File Description.....	754
Custom File Extensions	756
Appendix D - Date/Time Formats.....	757
Date/Time Formatting.....	757
Using Date/Time Formatting	757
Date/Time Formatting Tips	757
Date Time Formats.....	758
Date/Time Formats.....	758
Date/Time Format	760
Language (Country)	760
Predefined Date/Time Formats.....	760
Sample	761
Appendix E - Gridding Methods	762
Gridding Methods	762
Anisotropy.....	762
Search	764
Search Options	765
Search Ellipse	765
No Search	766
Data Metrics	767
Inverse Distance to a Power	773
Kriging.....	775
Specifying Kriging Options.....	775
Kriging Type.....	776
Kriging References	776
Local Polynomial	777
Specifying Local Polynomial Options	778
Minimum Curvature	779
Specifying Minimum Curvature Options.....	780
Internal and Boundary Tension	781
Convergence	782

Relaxation Factor	782
Modified Shepard's Method	782
Specifying Modified Shepard's Method Options	783
Moving Average	784
Search Ellipse	784
Specifying Moving Average Options	784
Natural Neighbor	785
Specifying Natural Neighbor Options	785
Nearest Neighbor	786
Polynomial Regression	786
Specifying Regression Options	786
Radial Basis Function	787
Specifying Radial Basis Function Options	787
Triangulation with Border Color Interpolation	789
Triangulation with Linear Interpolation	790
Index	792

Chapter 1

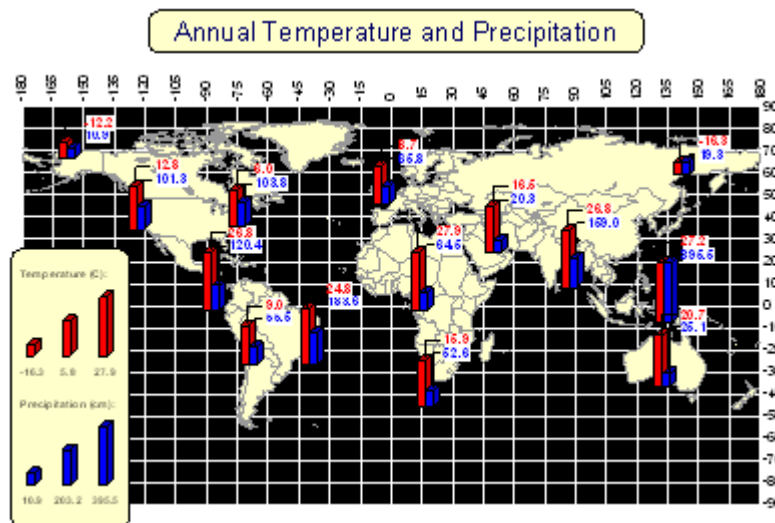
Introducing MapViewer

Introduction to MapViewer™

MapViewer is an analytical, thematic mapping program. With thematic maps, data are linked to polygons, polylines, or points on a map, making it easy for you to visualize data distribution.

With **MapViewer**, you can define sales territories, outline marketing strategies, view demographic distributions, show ecological distribution, present epidemiological studies, produce geologic maps, teach cartography, or display any geographically distributed data. **MapViewer** helps you present your data in the most informative ways.

Although **MapViewer** includes a wide variety of boundary files, it does not limit you to only working with the included boundary files. You can define your own territories by tracing existing boundaries, drawing completely new boundaries, or importing boundaries from files. Then, you can use the data included with **MapViewer** to produce various types of maps, create your own data file in **MapViewer**, or import your own data for use with the map.



Many options are available for customizing maps. This graphic shows a multivariate bar chart, legend, graticule, and text.

MapViewer can create the following map types: base, pin, hatch, contour, symbol, density, territory, vector, line graph, multi-graph, gradient, bar, flow, prism, pie, and cartogram maps. In addition, you can add map features such as data labels, graticules, legends, scale bars, and map collars. Most maps can be calibrated, scaled, limited in range, and projected. In addition, you can analyze the maps with tools such as queries.

It is recommended that all users spend a few minutes working through the tutorial. The tutorial introduces you to many of **MapViewer**'s features and helps you to understand how **MapViewer** works. The tutorial is short and easy to follow. It will be a few minutes well spent.

The **Scripter™** program, included with **MapView**, is useful in creating, editing, and running script files that automate **MapView** procedures. By writing and running script files, simple mundane tasks or complex system integration tasks can be performed precisely and repetitively without direct interaction. **MapView** also supports ActiveX Automation using any compatible client, such as Visual BASIC.

The new features in **MapView 8** are summarized:

- Online at www.goldensoftware.com/products/mapviewer#what-s-new
- In the program, click **Home | Help | Contents** and click on the New Features page in the Introduction book.

Who Uses MapViewer?

People in many different disciplines benefit from **MapView**. Scientists and engineers use **MapView** for spatial data analysis. Journalists, or anyone who creates articles, papers, or websites with maps, benefit from the visually appealing maps created with **MapView**. **MapView** maps can easily communicate complex location-based data. Educators, students, large and small businesses, government agencies, independent consultants, GIS analysts, researchers, and more consider **MapView** to be a valuable asset.

System Requirements

The minimum system requirements for **MapView** are:

- Windows XP SP2 or SP3, Vista, 7, 8 (excluding RT), and higher
- 512MB RAM minimum for simple data sets, 1GB RAM recommended
- At least 500 MB of free hard disk space
- 1024 x 768 or higher monitor resolution with a minimum 16-bit color depth

Installation Directions

Installing **MapView** requires logging onto the computer with an account that has Administrator rights. Golden Software does not recommend installing **MapView 8** over any previous versions of **MapView**. **MapView 8** can coexist with older versions (e.g. **MapView 7**) as long as both versions are installed in different directories. By default, the program installation directories are different.

Installing MapViewer

To install **MapView** from a CD:

1. Insert the **MapView** CD into the CD-ROM drive. The install program automatically begins on most computers. If the installation does not begin automatically, double-click on the Autorun.exe file located on the **MapView** CD.
2. Choose Install **MapView** from the **MapView** Auto Setup dialog to begin the installation.

To install **MapView** from a download:

1. Download **MapView** according to the emailed directions you received.
2. Double-click on the downloaded file to begin the installation process.

Updating MapViewer

To update **MapView**, open the program and click the **File | Online | Check for Update** command. The Internet Update program will check Golden Software's servers for any free updates.

If there is an update for your version of **MapViewer** (e.g. **MapViewer 8.0** to **MapViewer 8.1**), you will be prompted to download the update.

Uninstalling MapViewer

Windows XP: To uninstall **MapViewer**, go to the Control Panel and double-click Add/ Remove Programs. Select **MapViewer 8** from the list of installed applications. Click the Remove button to uninstall **MapViewer 8**.

Windows Vista: To uninstall **MapViewer** when using the Regular Control Panel Home, click the Uninstall a program link. Select **MapViewer 8** from the list of installed applications. Click the Uninstall button to uninstall **MapViewer 8**.

To uninstall **MapViewer** when using the Classic View Control Panel, double-click Programs and Features. Select **MapViewer 8** from the list of installed applications. Click the Uninstall button to uninstall **MapViewer 8**.

Windows 7: To uninstall **MapViewer** go to the Windows Control Panel and click the Uninstall a program link. Select **MapViewer 8** from the list of installed applications. Click the Uninstall button to uninstall **MapViewer 8**.

Windows 8: From the Start screen, right-click the **MapViewer 8** tile and click Uninstall in the context menu. Alternatively, click the down arrow in the bottom left corner of the Start screen. Right-click the **MapViewer 8** tile and click Uninstall in the context menu.

Three-Minute Tour

We have included several example files so that you can quickly see some of **MapViewer's** capabilities. The **MapViewer** samples folder includes an example of each map type, many boundary files, and population, demographic, or location data files. Only two example files are discussed here, and these examples do not include all of **MapViewer's** many map types and features. The **Object Manager** is a good source of information as to what is included in each file.

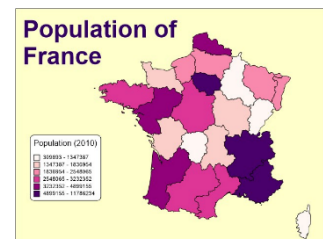
Example MapViewer Files

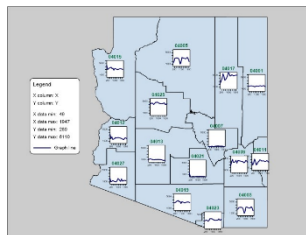
To view the example **MapViewer** files:

1. Open **MapViewer**.
2. Click the **File | Open** command.
3. Click on a .GSM file located in the Samples folder. By default, the **MapViewer** Samples folder is located in C:\Program Files\Golden Software\MapViewer 8\ Samples.
4. Click *Open* and the file opens.

HatchMap.gsm

The hatch map sample file contains a map with a single map layer, title, map collar, and legend. The map shows the population of France by region, where darker regions have a greater population than lighter regions.





MultiGraphMap.gsm

The multi-graph map sample file contains a map with a single map layer, map collar, and legend. The map displays unique line graphs for each county.

Using MapViewer

The general steps to progress from a data set and boundary file to a finished map are as follows:

1. Create or import the boundary file in the **MapViewer** plot window. The boundaries can be created in **MapViewer**, imported from the **MapViewer** samples folder, or imported from another source. Boundaries to be used in a map must have assigned Primary IDs.
2. Create or import the data file. The data file must consist of a Primary ID (PID) column and at least one data column. The data file can be created in the **MapViewer** worksheet window or outside of **MapViewer**, for example by using an ASCII text editor or Excel.
3. Select a map type to create a thematic map. The data file in step two is linked to the boundary file in step one in the Open Data File dialog. Boundaries are linked to their specific data values by their Primary ID.
4. Click on the map layer in the **Object Manager** to view and edit the map properties in the **Property Manager**. Add more layers and map features, such as scale bars and legends, as desired.
5. Click the **File | Save** command to save the plot as a MapViewer .GSM file, which by default contains all the information to recreate the map.

Using Scriptor

Tasks can be automated in **MapViewer** using Golden Software's **Scripter** program or any ActiveX Automation-compatible client, such as Visual BASIC. A script is a text file containing a series of instructions for execution when the script is run. Scriptor can be used to perform almost any task in **MapViewer**. Scripts are useful for automating repetitive tasks and consolidating a sequence of steps. Refer to the **MapViewer Automation** help book in the online help for more information about Scriptor. The C:\Program Files\Golden Software\MapViewer 8\Samples\Scripts folder includes several example scripts so that you can quickly see some of **Scripter's** capabilities.

Example Scriptor Files

To run a sample script:

1. Open **Scripter** by navigating to the installation folder, C:\Program Files\Golden Software\MapViewer 8. Double-click on the Scriptor.exe application file.
2. Click the **File | Open** command.
3. Select a sample script .BAS file in the C:\Program Files\Golden Software\MapViewer 8\Samples\Scripts folder.
4. Click *Open* and the script file opens.
5. Click the **Script | Run** command and the script is executed.
6. Most sample scripts will open **MapViewer** and display a map in the plot window.

How MapViewer Works

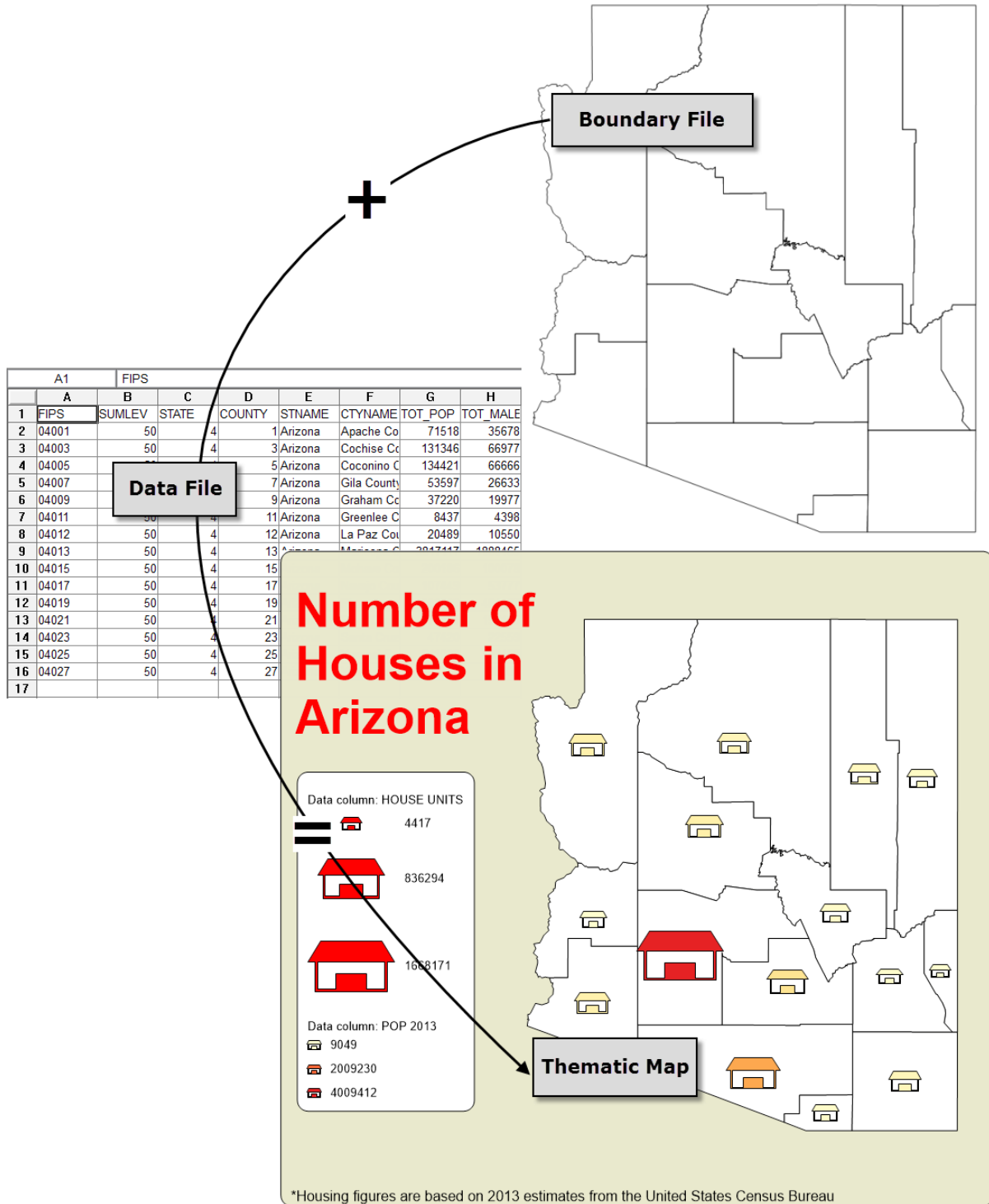
To create a thematic map in **MapViewer**, you need both a vector boundary file and a data file containing the data you want to represent on the map. With these two components, you can create any of the thematic map types. The boundary file can be imported as a base map before the data file is loaded and thematic map is created. Alternatively, the boundary file and data file can be loaded as the thematic map is created.

Boundary files may consist of polygons, polylines, and points. Polygons, polylines, and points are also called boundaries or boundary objects. Polygons are closed shapes that can display a fill property. Polylines are a connected set of XY coordinate positions forming either straight or curved lines. Points consist of a symbol marking an XY coordinate position.

MapViewer thematic maps link data to polygons, polylines, or points on maps. Boundary objects are linked to data by using Primary IDs. A Primary ID (PID) is a unique identifier associated with each polygon, polyline, or point represented on the thematic map. This Primary ID is also found in the corresponding data file.

The data contains the Primary IDs and the data for each polygon, polyline, or point you would like to represent on a map. Each row contains the Primary ID and data values for a single boundary object on the map.

The graphic on the following page illustrates the relationship between map boundaries and worksheet data. Notice that the Primary IDs are displayed for all areas on the map and are contained in column A of the worksheet portion shown.



This graphic illustrates the relationship between the boundary file and the data when creating a thematic map in MapViewer. Each polygon (county) contains the Primary ID (FIPS CODE). The Primary IDs are also located in column A of the worksheet. The data (POP 2013 and HOUSE UNITS) are linked to the counties on the map to create the bivariate symbol map above.

File Types

MapViewer uses three basic file types: data, boundary, and **MapViewer** .GSM files.

Data Files

Data files contain the input data provided by the user, and are used to produce thematic maps or pin data points to a map. These files are generally referred to as "XYZ data files" or "data files" throughout the documentation. Data can be read from various file types, and most contain a numeric/text primary ID as well as numeric Z values or text classes. The Z values contain the variable to be modeled, such as elevation, concentration, rainfall, or similar types of values.

Boundary Files

Boundary files are vector files that contain polygons, polylines, and/or points. Boundary files are used to create a base map or boundary portion of a thematic map.

MapViewer GSM Files

MapViewer .GSM files preserve all the objects and object settings contained in a plot window. These files are called **MapViewer** .GSM files throughout the documentation. **MapViewer 8** can open .GSM files from previous versions of **MapViewer**. By default, the data files linked to the layers are embedded within a **MapViewer** .GSM file, so a **MapViewer** .GSM file contains all the components to exactly recreate the saved map.

MapViewer Files [.GSM] contain all information displayed in a plot window. This includes boundaries, drawing objects, graticules, associated data files, and window settings. All layers and thematic information are also stored. These files are binary and cannot be edited.

To load a [.GSM] file into the current document window, use the **File | Open** command. To save the current document window as a [.GSM] file, use the **File | Save** or **File | Save As** command.

Occasionally, you may want to merge two [.GSM] files together. To do so, use the **File | Import** command. When a [.GSM] file is imported, all layers of the file are inserted before the active layer in the current document. Therefore, if you want the map in the file to be placed behind the map in the current document, use the **Object Manager** and make the bottom layer active before performing the import. If you want the map in the file to be placed in front of the layer in the current map, use New Layer to create a new layer (which is placed on top of all existing layers). Then import the [.GSM] file (which is placed before this top layer), and delete the new layer.

MapViewer Documentation

The **MapViewer 8** documentation includes a quick start guide and the online help file. Basic information about each command and feature are included in the online help file. The online help file also includes advanced information such as creating multiple layer maps with multiple thematic elements. Other sources of **MapViewer** help include our support forum, FAQs, and technical support.

Various font styles are used throughout the **MapViewer** documentation. **Bold** text indicates tab or menu commands, dialog names, and page names. *Italic* text indicates items within a dialog such as group box names, options, and field names. For example, the **Import File** dialog contains a *Look in* list. Bold and italic text may occasionally be used for emphasis. Often, hyperlinks replace the **Bold** text for commands and dialogs. Click the hyperlink to see the help page for the command or dialog.

Also, menu commands appear as **Draw | Shape | Text**. This means, "Click on the **Draw** tab at the top of the ribbon bar, and then click on **Text** within the **Shape** section." The first word is always the tab name, and the second word is the ribbon section. If applicable, the next word is a command group. The final word is the command. The **Draw | Image | Filters | Spatial** command is an example of a command contained in a command group.

New Features

General

- Find commands easily with the sleek new ribbon bar user interface
- Keep your data and your map together by embedding data in GSM files
- Be able to use bigger files with the new 64-bit installation option
- Import and export data with an unlimited number of attribute fields
- Zoom easily and more precisely using mouse scroll wheel at cursor location
- Change coordinate systems easier than ever with a **Surfer**-like Coordinate System dialog
- Click Move/Size Inset command, Draw commands, and Zoom commands just once to use them multiple times consecutively
- Pin managers to easily collapse and expand them with a single click
- Move and size objects easily with the new position/size toolbar
- Find and edit object properties quickly with the **Object Manager** and **Property Manager**
- Get helpful hints with the Tip of the Day, which displays on startup

Maps

- New map type: Create a line/scatter plot for each boundary by using the new Multi-Graph map
- New map option: Display your cartogram map as contiguous to keep adjacent areas connected
- New map option: Size pin map symbols proportional to a data value in between the min and max symbol sizes
- Download raster maps from online WMS servers
- Territory map: Create territory from text column in worksheet
- Hatch map: Bin classes from text column in worksheet
- Pie map: Remove 100% line
- Pin map: Save classes based on string values
- Allow scaling of plot containing prism map

Other

- Query across multiple layers
- Set scale bar title offset
- Use new Collect Colors command to quickly add custom colors to the color list with a click

Labels/Text

- Unicode support
- Use the new text editor to have more control over your text properties
- Control label opacity
- Customize your plot by moving/editing/hiding individual data labels

- Display graticule labels in Degree Minute Second (DMS) format
- Move posted label and have leader line point back to centroid

Objects

- Set partial transparency/opacity
- Create an immovable title block by locking objects (or layers)
- Draw text that follows a curve
- Reverse any color spectrum
- Utilize additional line styles
- Fill objects with linear or radial gradient fills

Legend

- Edit legend entry formatting and font properties
- Support label frequency for map types with numeric legend entries
- Pie map: Specify 1 or 0 Samples in legend
- Symbol map: Choose symbol levels

Worksheet

- Custom and locale-based date/time formats
- Allow commas as decimal delimiters
- Percentage format support
- Transpose rows to columns and vice versa
- Transform: PI() and ROUND() added to Formulas list
- New "Mode" statistics calculation
- Ignore blanking value when calculating statistics

Automation

- Support for /x flag when running via command line
- Pass command line arguments to a script
- TXT import: Use comma as decimal symbol option
- Updated MVProjection Type values to include new projections
- Allow Inset to list all layers it contains
- Ignore blanking value when calculating Statistics

Import/Export

General

- Tiff Import: Support YCbCr Color Format
- PDF Import: Increase DPI
- PDF Export: Support compression, page size option
- PDF Vector Export: Support partial transparency for image fill patterns
- Import bitmap at original DPI
- GSI Export: save symbol properties, save coordinate system info internally
- BLN Export: Blanking Flag option in BLN Export Options dialog
- KML Export: Option to export text as 'label' placemarks instead of icons or areas/curves
- Improved export of stock fill patterns
- Remember last export file type

New Import and Export Formats

- Google Earth KML/KMZ
- Excel XLSX
- JPEG2000 (JP2)
- SEG SP1

New Import Formats

- Excel XLSM
- Access 2007
- MrSID
- GPX
- Zipped Shapefiles
- LASer LiDAR data
- PDF (as raster)
- TerraGo GeoPDF
- ECW ER Mapper
- Tiled TIF (import all tiles at once)
- 56-bpp Landsat based GeoTIFF

New Export Formats

- SVG Scalable Vector Graphics
- HTML Image Map
- GeoPDF
- Transparent TIF/PNG/GIF/PDF/GSI
- Vector PDF with layers

More Coordinate Systems

General

- Save custom projection and datum information
- Search for Coordinate System/EPSC code in Assign Projection dialog
- Set Datum to Popular Visualization when ellipsoid same as Popular Visualization
- WGS84: change spheroid definition to be compatible with ArcMap

New Coordinate Systems

- New Zealand Transverse Mercator 2000
- Hungarian National Grid EOVS
- Russia Pulkovo
- Posgar94
- Sweref99
- British National Grid & Ordnance Survey (OSGB36)
- WGS84 Web Mercator
- Japan Plane Rect.
- Swiss LV95 and LV03
- Bursa-Wolf (7-parameter) Transformation Version of the CH1903 Coordinate System
- South African Grid

- Taiwan TWD67 and TWD97
- Irish National Grid
- Portuguese National Grid
- Australian GDA94 with GDA94 datum
- Michigan GeoRef (1point+azimuth)
- Kentucky Single Zone
- ISG
- Europe UTM zone 29N using European 1950 - Port./Spain datum
- ITM: Irish Transverse Mercator
- SVY21
- More Australian grid coordinate systems
- WGS84 Web Mercator (900913) and WGS84 Web Mercator (EPSG 3857)
- France: RGF93 / CC (zones 42-50)

New Projections

- New Zealand Map Grid
- Hotine Oblique Mercator 2-Point
- Gauss-Boaga
- Mount Eden Circuit 2000
- Support Ordnance Survey
- SCOPQ (MTM)

New Datums

- D_Hartebeesthoek_1994
- Potsdam 1983 (PD83)
- NGO 1948
- NWS-84
- Japanese Geodetic Datum 2000
- ITRF94

Customer Service Resources

Before calling, please check the following available resources as your question may already be answered.

Registration: Register online at www.goldensoftware.com or fax to the number below
Knowledge Base: www.goldensoftware.com/knowledge-base or in the MapViewer program using the File Online Knowledge Base command
Forums: www.goldensoftware.com/forum or in the MapViewer program using the File Online Forums command
Frequently Asked Questions: In the MapViewer program using the File Online Frequently Asked Questions command
Tutorial: Complete the tutorial section in this quick start guide or in the MapViewer program using the Home Help Tutorial command
Online Help: In the MapViewer program using the Home Help Contents command
Support Videos: www.goldensoftware.com/products/mapviewer#training-videos for MapViewer specific training videos and webinars

Business Hours

Technical Support:

Monday through Friday, 8:00 AM - 5:00 PM, Mountain Time

Product Sales:

Online orders available 24 hours, 7 days a week with 2 business hour delivery

Golden Software Contact Information

www.goldensoftware.com

mapviewersupport@goldensoftware.com

phone: 303-279-1021

fax: 303-279-0909



www.goldensoftware.com

Golden Software, LLC
809 14th Street
Golden, Colorado 80401 USA

Phone +1 303 279 1021
Fax +1 303 279 0909

www.goldensoftware.com