

# Advanced Map Design

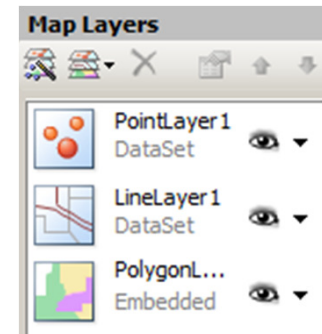
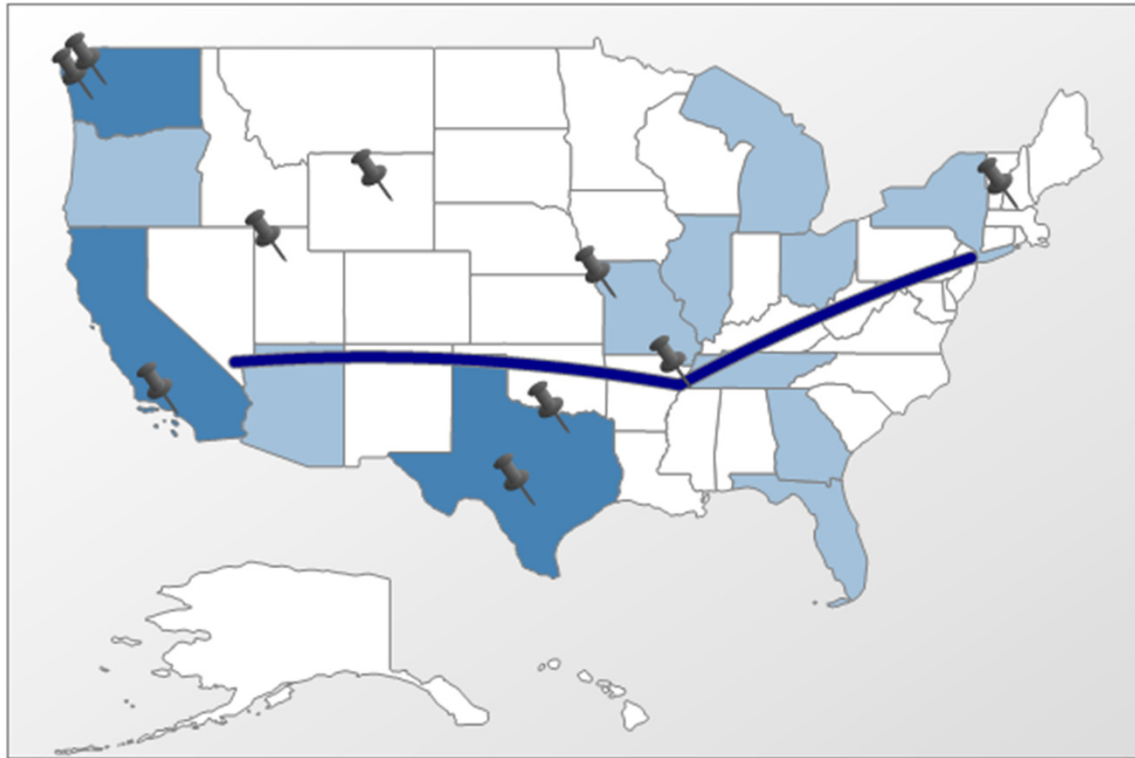
Working with map layers



# Overview

- Map Layers
- Map Elements
- Custom Points

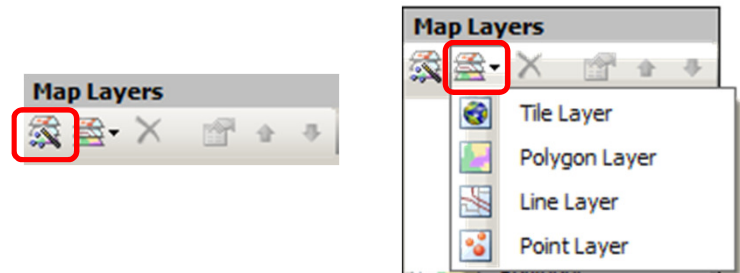
# Map Layers



# Adding a Map Layer

- **Add new layer**

- Launch Map Layer Wizard
- Add manually in Map Layers pane

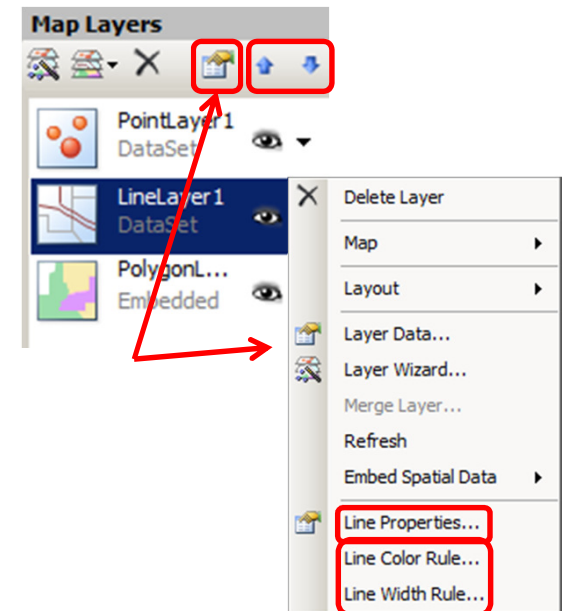


- **Arrange sequence of layers**

- Place spatial items with smallest area at top

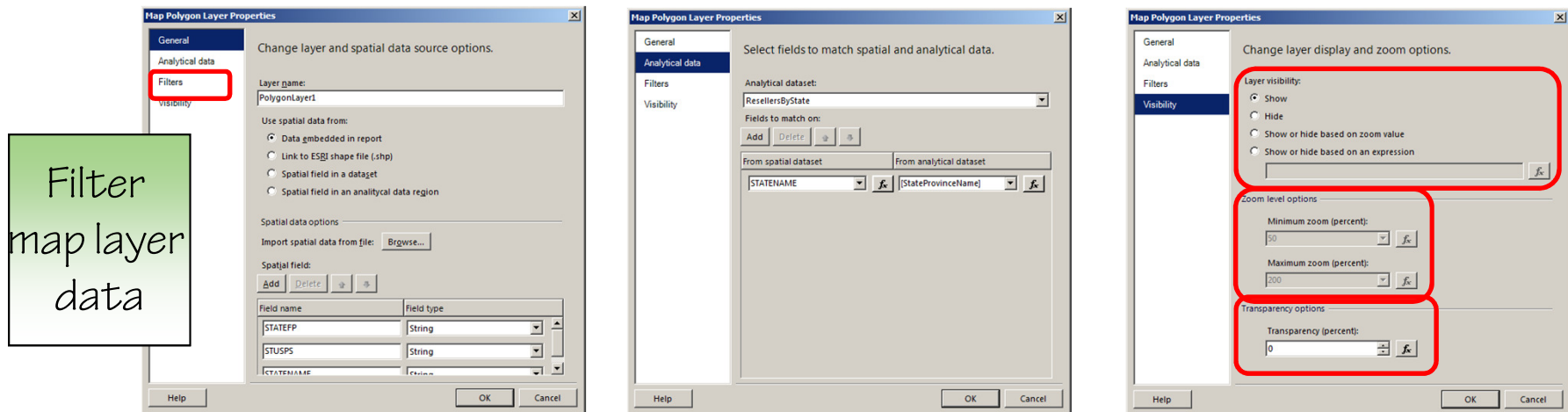
- **Set layer properties**

- Use button or context menus in Map Layers pane
- Access values directly in Properties pane



# Map Layer Data Properties

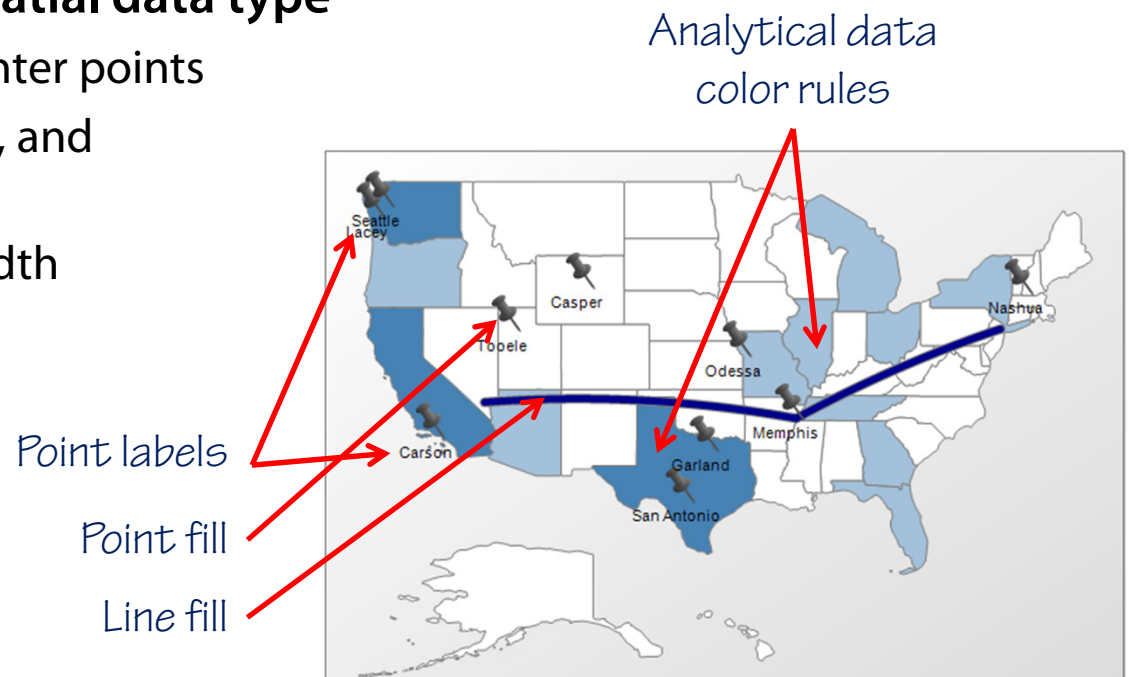
- Where is the data coming from?



- Should a filter modify the data in the layer?
- Does the visibility of the layer need to change?
  - Conditional visibility
  - Zoom level
  - Transparency

# Map Layer Properties

- **Properties applicable to all spatial data types**
  - Label text expression and properties: font type, size, and color
  - Fill, border, shadow, and action
- **Properties specific to spatial data type**
  - Polygons: color and center points
  - Points: point color, size, and marker type
  - Lines: line color and width





# Color Rule Options

## ■ Select color scheme

- Palette - random, light, semi transparent , bright pastel
- Color ranges - start, middle, and end colors
- Custom – user-defined color collection

Start color:  

Middle color:  

End color:

## ■ Distribute data across subranges

- Equal interval – identical size of each subrange
- Equal distribution – similar number of records in each subrange
- Optimal – algorithm finds boundaries
- Custom – user-defined subrange start and end values

Equal distribution

Number of subranges:  

Range start:  

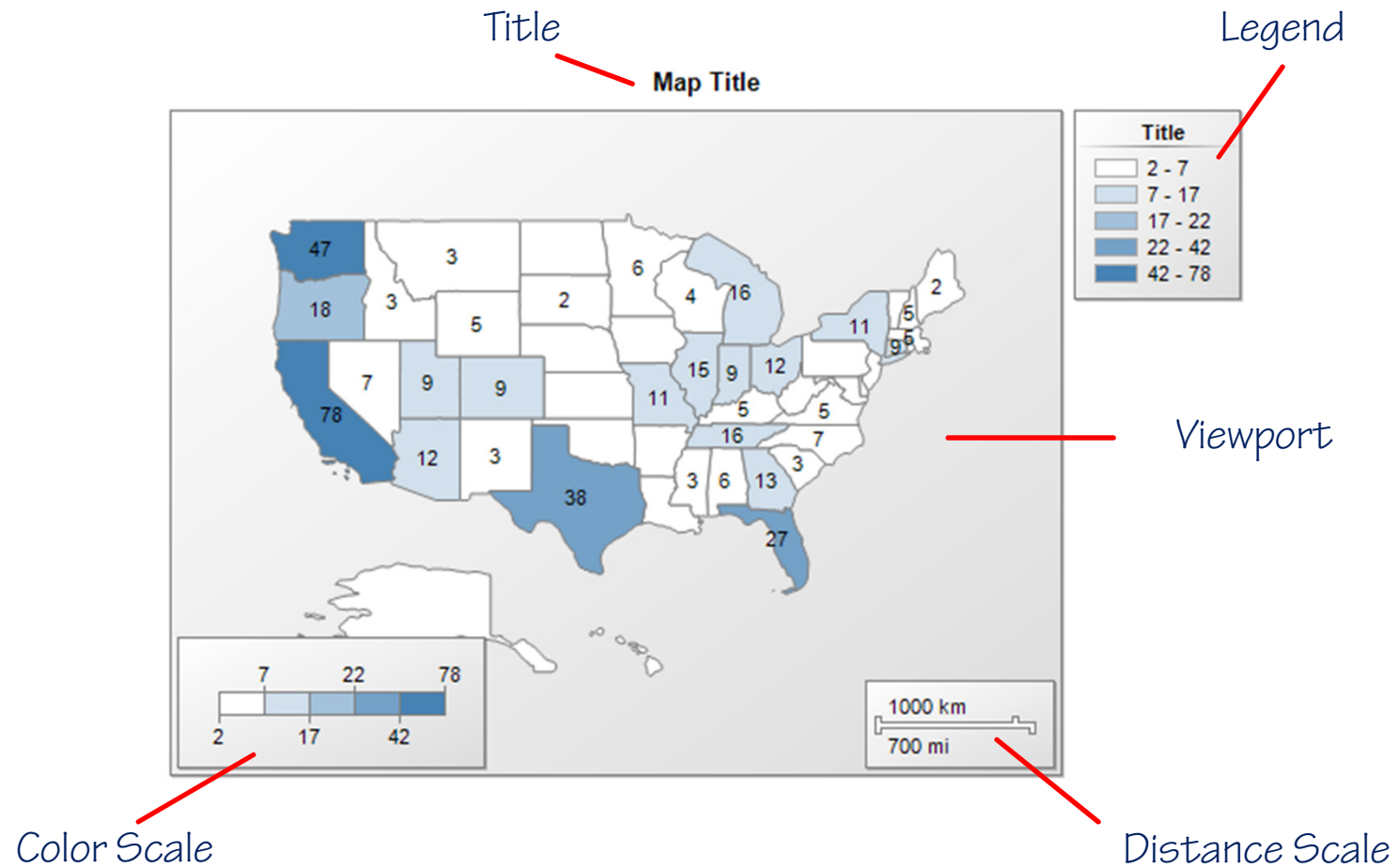
Range end:

Start value | End value

0	10
10	30
30	100


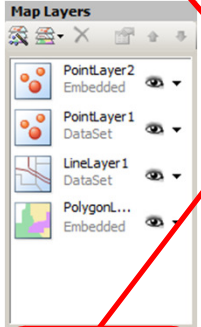
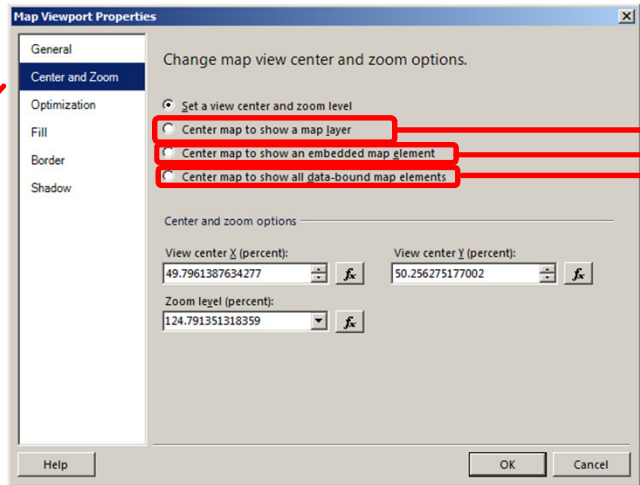
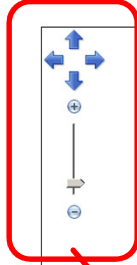
0-20
20-40
40-60
60-80
80-100

# Map Elements





# Viewport Properties



Centering and zoom level

Center on map layer

Center on embedded element

Center on all data-bound elements

Map Viewport Properties

General

Center and Zoom

Optimization

Fill

Border

Shadow

Change map view center and zoom options.

Set a view center and zoom level

Center map to show a map layer

Center map to show an embedded map element

Center map to show all data-bound map elements

Center and zoom options

View center X (percent): 49.7961387634277

View center Y (percent): 50.256275177002

Zoom level (percent): 124.791351318359

Center view to show this map layer:

PolygonLayer1

Zoom level (percent): 124.791351318359

Layer: PolygonLayer1

Center view on the map element matching this condition:

STATEFP =

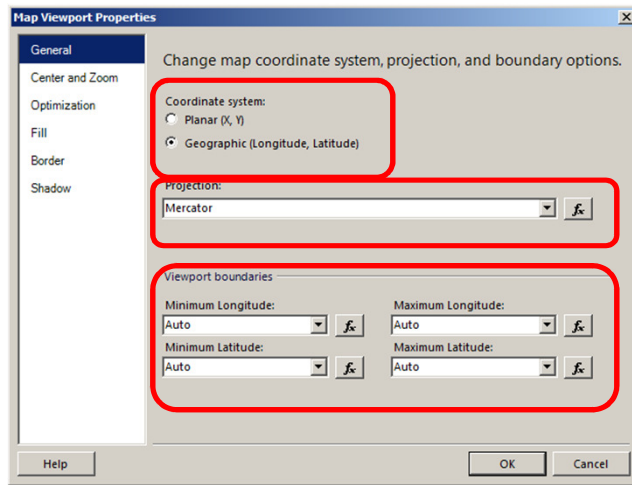
STUSPS =

STATENAME = Texas

Zoom level (percent): 124.791351318359

Zoom level (percent): 124.791351318359

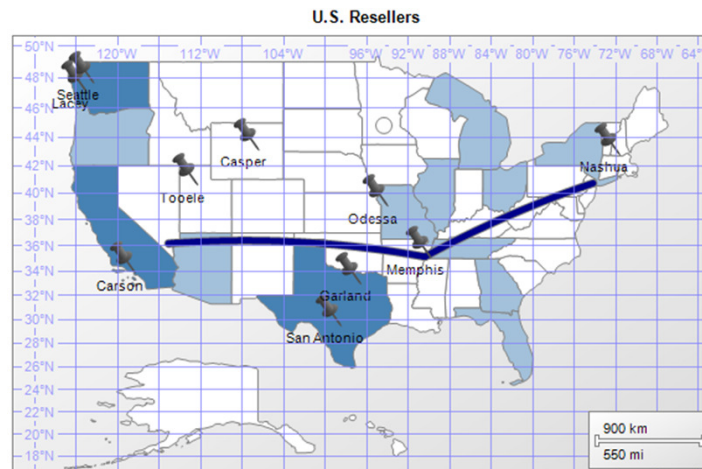
# Viewport Projection



High  
distortion

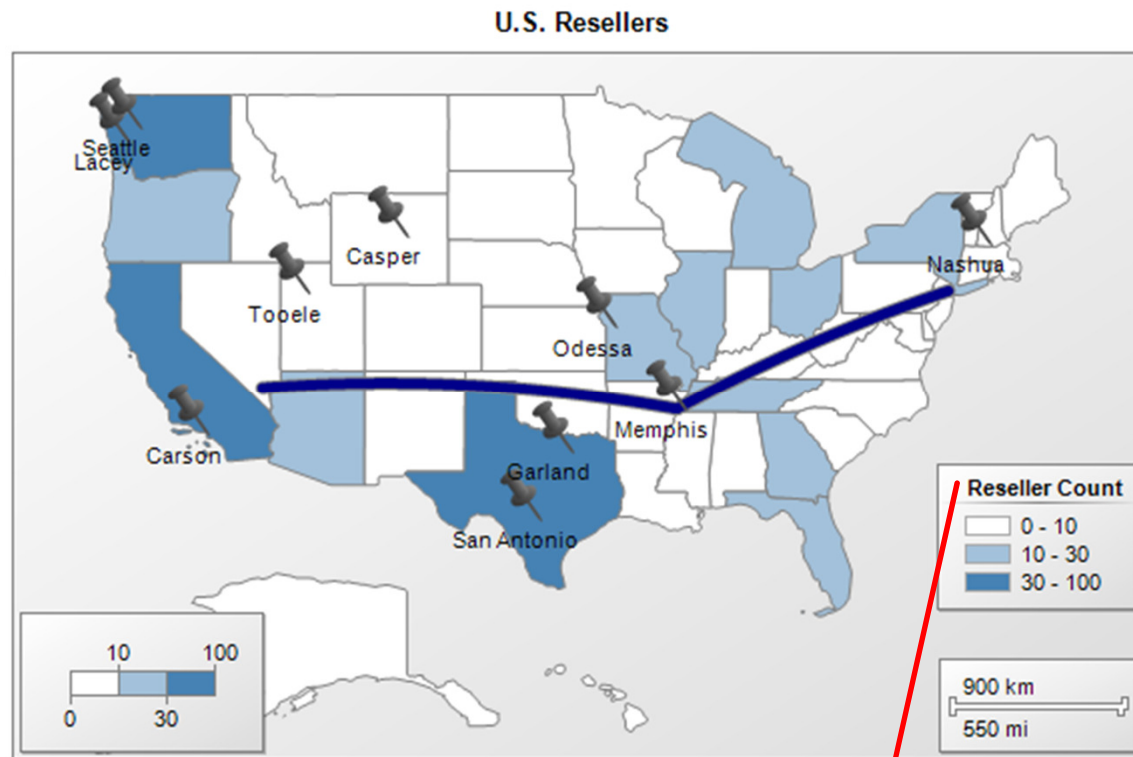
Low  
distortion

High  
distortion



Minimal  
relative  
distortion

# Scales and Legend



Properties

**Legend1** MapLegend

Layout

Layout	Column
<input checked="" type="checkbox"/> Location	
Docked	False
DockOutside	False
DockPosition	RightCenter
Left	80.55
Top	60
Unit	Percentage
Margin	
Left	2pt
Top	2pt
Right	2pt
Bottom	2pt
Size	
Auto	True
Height	20
Unit	Percentage
Width	20
ZIndex	0

**Size**  
The size of the panel measured in percents or in pixels.

ition

Title optional

# Legend Format Options

Legend options

Show in this legend:

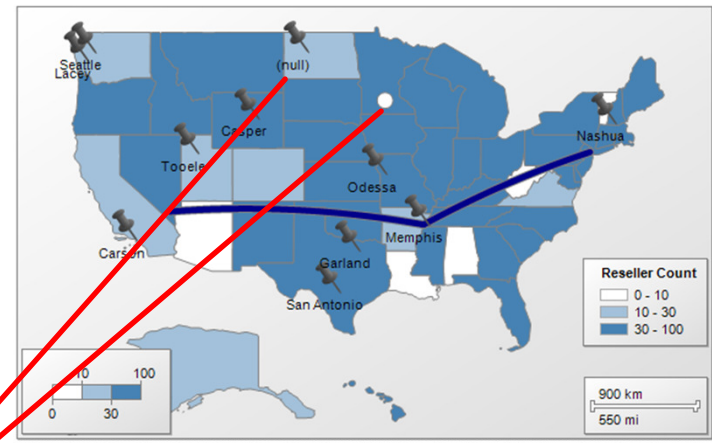
Legend text:  
 

Format	Example
#FROMVALUE {C0}	\$600,000
#FROMVALUE {C2}	\$600,000.00
#TOVALUE	700000
#FROMVALUE{N0} - #TOVALUE{N0}	600,000 – 700,000

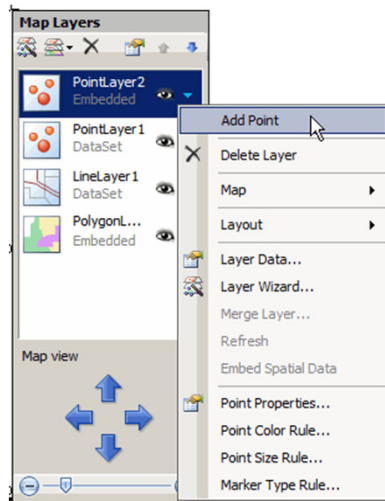


# Custom Points

- Add a new point layer (or use layer with embedded data)
- Use context menu to add point
- Click on map to set location
- Configure data values
- Fine-tune coordinates



New points



Properties dialog box for a Point layer. The 'Data' section is highlighted with a red box, showing fields for ResellerName, AccountNumber, City, and ResellerSalesAmount. The 'Spatial' section is also highlighted with a red box, showing the VectorData field with the value POINT(-101.544138983468 47.668918486) and the X and Y coordinates.

Data	
ResellerName	
AccountNumber	
City	
ResellerSalesAmount	

Spatial	
VectorData	POINT(-101.544138983468 47.668918486)
X	-101.54413898346829
Y	47.6689184860447

**ResellerName**  
Gets or sets the field value.

# Order of Precedence

Lowest



Highest

- Layer properties
- Map element properties
- Rules affecting color, size, width, and marker type for analytical data
- Overridden map element or custom point

2. Map elements

4. Custom

1. Layers

3. Rules



# Summary

- **Map Layers**
  - Map Layers pane, map layer data properties, map layer properties, color rules
- **Map Elements**
  - Viewport properties, projection, scales, legends
- **Custom Points**
  - Embedded versus non-embedded data, custom point properties, order of precedence

# References

- **Understanding Map Layers and Elements**
  - <http://msdn.microsoft.com/en-us/library/ee240845.aspx#MapLayers>
- **Varying Polygon, Line, and Point Display by Using Rules and Analytical Data**
  - <http://msdn.microsoft.com/en-us/library/ee240825.aspx>
- **Radical Cartography Projection Reference**
  - <http://www.radicalcartography.net/?projectionref>
- **How to Add Custom Locations to a Map**
  - [http://msdn.microsoft.com/en-us/library/ee240823\(SQL.105\).aspx](http://msdn.microsoft.com/en-us/library/ee240823(SQL.105).aspx)