

# Mapbox GL Map Properties

These properties affect the Mapbox GL Map component and the layers that you can insert into it. For a guide to using the component, see [Mapbox GL Map](#).

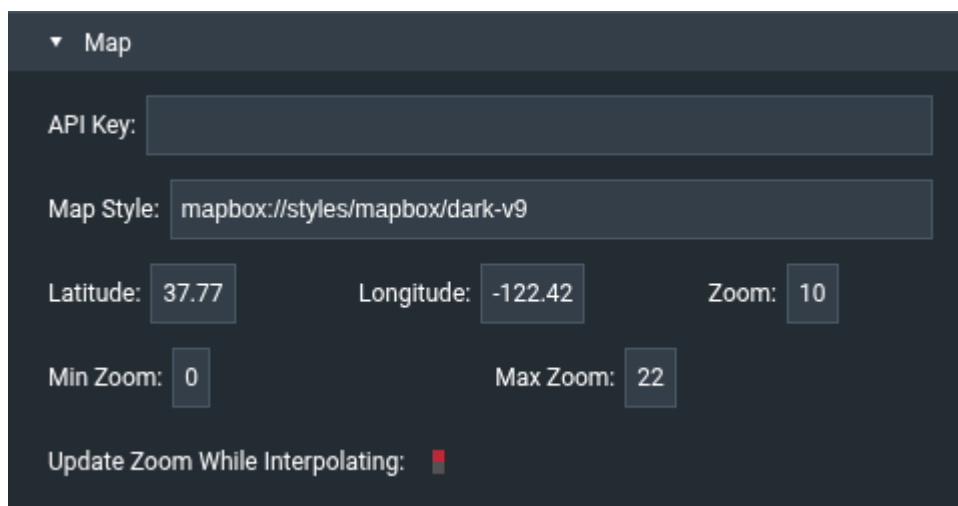
The map and its layers are also affected by [Common Properties](#). Properties that are not shown in the Property Inspector can be edited in the [Advanced properties](#).

To insert a layer, right-click the Mapbox GL Map in the [Outline](#) and select **Insert > Components > layer type**.

- [Mapbox GL Map](#)
- [Mapbox Heatmap Layer](#)
- [Mapbox Marker Layer](#)
- [Mapbox Cluster Layer](#)
- [Mapbox GeoJSON Layer](#)
- [Mapbox Draw Layer](#)
- [Mapbox Tile Layer](#)
- [Mapbox Group](#)

## Map

### Map section



The screenshot shows the 'Map' section of a property inspector. It contains several input fields and a checkbox. The 'API Key' field is empty. The 'Map Style' field contains the value 'mapbox://styles/mapbox/dark-v9'. The 'Latitude' field contains '37.77', the 'Longitude' field contains '-122.42', and the 'Zoom' field contains '10'. The 'Min Zoom' field contains '0' and the 'Max Zoom' field contains '22'. The 'Update Zoom While Interpolating' checkbox is checked, indicated by a red square.

| Property                        | Value                               |
|---------------------------------|-------------------------------------|
| API Key                         |                                     |
| Map Style                       | mapbox://styles/mapbox/dark-v9      |
| Latitude                        | 37.77                               |
| Longitude                       | -122.42                             |
| Zoom                            | 10                                  |
| Min Zoom                        | 0                                   |
| Max Zoom                        | 22                                  |
| Update Zoom While Interpolating | <input checked="" type="checkbox"/> |

| Property                        | Description                                                                                                                                                                           |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| API Key                         | Your Mapbox access token (apikey). The map shows a message until a valid key is entered.                                                                                              |
| Map Style                       | URL of the Mapbox style (styleUrl), in the form mapbox://styles/:owner/:style. The default is mapbox://styles/mapbox/dark-v9.                                                         |
| Latitude, Longitude             | Set or return the center of the map.                                                                                                                                                  |
| Zoom                            | Sets or returns the zoom level. The default is 8.                                                                                                                                     |
| Min Zoom, Max Zoom              | The lowest and highest zoom levels that the user can reach. Defaults: 0 and 22.                                                                                                       |
| Update Zoom While Interpolating | When selected, the <b>Zoom</b> property is updated continuously while the map is zooming. When cleared (default), it is updated only when zooming is finished, which performs better. |

## Repeater section

▼ Repeater

Symbol:

Drag symbol here

Data:

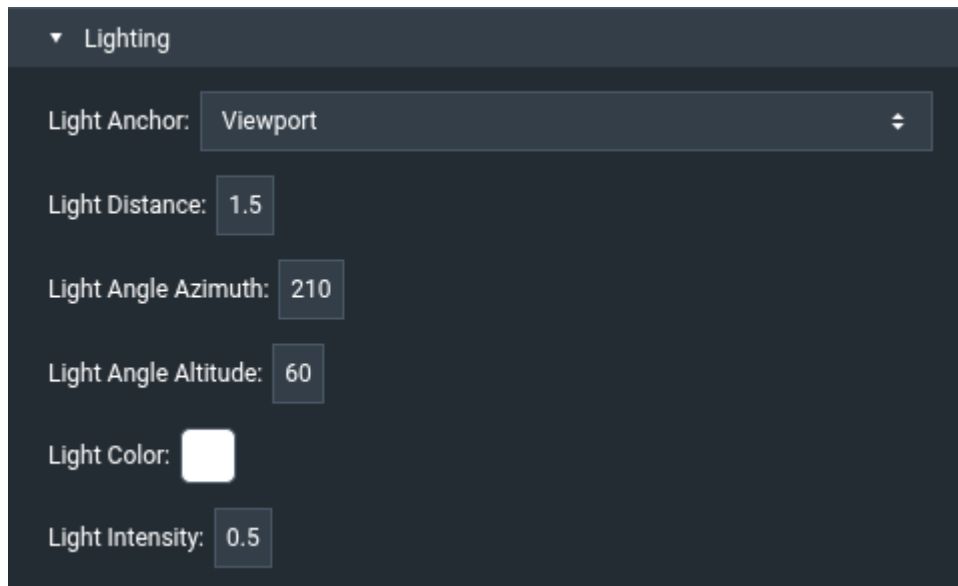
Null

Latitude Field:

Longitude Field:

| Property                        | Description                                                                    |
|---------------------------------|--------------------------------------------------------------------------------|
| Symbol                          | The <a href="#">symbol</a> that is repeated once for each row of <b>Data</b> . |
| Data                            | The table that drives the repeater.                                            |
| Latitude Field, Longitude Field | The table columns that contain the coordinates of each symbol instance.        |

## Lighting section



The light affects 3D features, such as extruded GeoJSON layers.

| Property             | Description                                                                                                             |
|----------------------|-------------------------------------------------------------------------------------------------------------------------|
| Light Anchor         | <b>Viewport</b> (default): the light position is relative to the viewport. <b>Map</b> : the light rotates with the map. |
| Light Distance       | Radial distance of the light source from the center. The default is 1.5.                                                |
| Light Angle Azimuth  | Horizontal angle of the light, from 0 to 360 degrees. The default is 210.                                               |
| Light Angle Altitude | Vertical angle of the light, from -90 to 90 degrees. The default is 60.                                                 |
| Light Color          | The color of the light. The default is white.                                                                           |
| Light Intensity      | Intensity of the light, from 0 to 1. The default is 0.5.                                                                |

## Animation section



These properties animate the position of repeater items when the data changes.

| Property                    | Description                                                                                                                                               |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Animate Id Values           | When selected, items whose <b>Id Field</b> value stays the same move smoothly to their new position when the data changes.                                |
| Id Field                    | The table column that uniquely identifies each row.                                                                                                       |
| Id Value Animation Duration | Duration of the movement in milliseconds. The default is 300.                                                                                             |
| Id Value Animation Easing   | Easing function: Linear, Ease In Out (default), Ease In, Ease Out, Cubic In Out, Cubic In, Cubic Out, Elastic In Out, Elastic In, Elastic Out, or Bounce. |

## Advanced properties

| Property                                         | Description                                                                    |
|--------------------------------------------------|--------------------------------------------------------------------------------|
| pitch, bearing                                   | Set or return the tilt and rotation of the map in degrees.                     |
| enableTilt                                       | Whether the user can tilt the map with the mouse (default TRUE).               |
| boundsWest, boundsNorth, boundsEast, boundsSouth | Return the current extent of the map. Set them to fit the map to a new extent. |
| boundsAnimationSpeed                             | Speed of the animation when the bounds change. The default is 1.2.             |
| fittingBounds                                    | Output only. TRUE while the map is animating to new bounds.                    |
| onMapInit                                        | Event fired when the map has been initialized.                                 |

## Heatmap Layer

A heatmap layer uses color to show the density of points.

### Heat Map section

▼ Heat Map

Table:

Lat Field:

Lng Field:

Filter:

Opacity:

Weight:

Weight Field:

Circle Radius:

First Stop Color:

Second Stop Color:

Third Stop Color:

Second Stop Threshold:

Third Stop Threshold:

| Property                                              | Description                                                                                                                                          |
|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Table                                                 | The table that contains the points.                                                                                                                  |
| Lat Field, Lng Field                                  | The table columns that contain the latitude and longitude of each point.                                                                             |
| Filter                                                | A <a href="#">Mapbox filter expression</a> as a JSON array. Only points that match the filter are shown. The default is <code>[]</code> (no filter). |
| Opacity                                               | Opacity of the layer. The default is 1.                                                                                                              |
| Weight                                                | How much each point contributes to the heatmap. A value of 10 equals 10 points with weight 1 in the same place. The default is 1.                    |
| Weight Field                                          | Optional table column that provides the weight of each point.                                                                                        |
| Circle Radius                                         | Radius of each point. The default is 5.                                                                                                              |
| First Stop Color, Second Stop Color, Third Stop Color | The colors of the heatmap gradient. Defaults: green, orange, and red.                                                                                |
| Second Stop Threshold, Third Stop Threshold           | The density values at which the second and third colors are reached. Defaults: 20 and 70.                                                            |

## Cluster section

| Property | Description                                                          |
|----------|----------------------------------------------------------------------|
| Cluster  | When selected, nearby points are clustered before they are drawn.    |
| Radius   | Cluster radius. The default is 5.                                    |
| Max Zoom | Maximum zoom level at which points are clustered. The default is 15. |

## Selection section

The heatmap, marker, and cluster layers have a **Selection** section with **Select Child On Click**, **Multi-select**, **Deselect Child On Click**, **Selected Index**, **Hover Index** and **Select Child On Hover**. **Selected Index** and **Hover Index** return the row indexes of the clicked or hovered points. See [Selection](#).

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## Marker Layer

A marker layer shows a circle, an icon, and/or a label at each location in a table.

## Marker section

▼ Marker

Table:

Lat Field:

Lng Field:

Filter:

Circle Radius:

Circle Radius Field:

Circle Opacity:

Circle Opacity Field:

Circle Color:

Circle Color Field:

Icon:

Icon Field:

Icon Offset Horizontal:

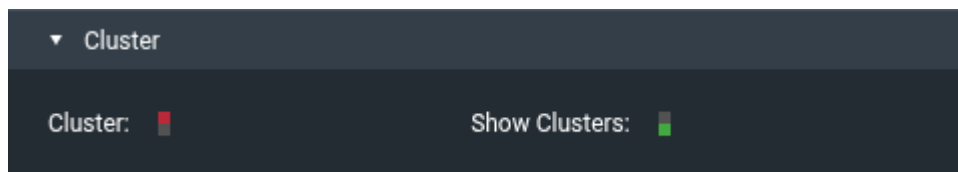
Icon Offset Vertical:

Show Labels: ☐

| Property                             | Description                                                                                            |
|--------------------------------------|--------------------------------------------------------------------------------------------------------|
| Table                                | The table that contains the locations.                                                                 |
| Lat Field, Lng Field                 | The table columns that contain the latitude and longitude of each marker.                              |
| Filter                               | A Mapbox filter expression as a JSON array. See <a href="#">Heatmap Layer</a> .                        |
| Circle Radius, Circle Radius Field   | Radius of the circle markers (default 3), or the table column that provides the radius of each marker. |
| Circle Opacity, Circle Opacity Field | Opacity of the circle markers (default 1), or the table column that provides it.                       |

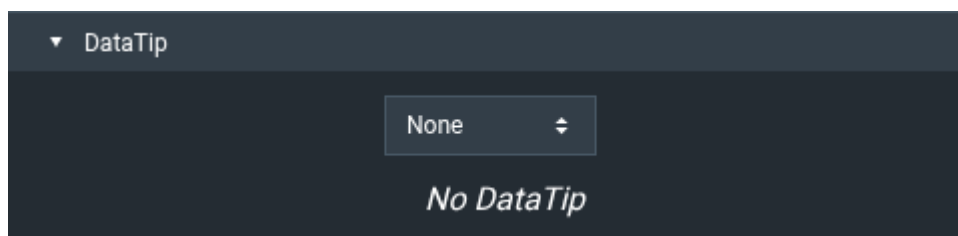
| Property                                     | Description                                                                                                |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Circle Color, Circle Color Field             | Color of the circle markers (default white), or the table column that provides it.                         |
| Icon, Icon Field                             | Path or URL of an image to show as the marker, or the table column that provides the image of each marker. |
| Icon Offset Horizontal, Icon Offset Vertical | Offset of the icon from the location, in pixels.                                                           |
| Show Labels                                  | When selected, shows a text label at each marker.                                                          |
| Label Field                                  | The table column that provides the label text.                                                             |
| Label Color                                  | Color of the label text. The default is black.                                                             |
| Label Outline Color, Label Outline Width     | Color (default white) and width (default 1) of the text outline.                                           |

## Cluster section



| Property                                              | Description                                                                                                |
|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Cluster                                               | When selected, markers that are close to each other are combined into clusters when the map is zoomed out. |
| Show Clusters                                         | Whether the clusters are drawn (default TRUE).                                                             |
| Radius                                                | Radius within which markers are clustered. The default is 50.                                              |
| Max Zoom                                              | Maximum zoom level at which markers are clustered. The default is 15.                                      |
| Circle Radius, Circle Opacity, Circle Color           | Appearance of the cluster circles.                                                                         |
| Icon                                                  | Path or URL of an image to show for clusters.                                                              |
| Show Labels                                           | Whether the number of markers is shown on each cluster (default TRUE).                                     |
| Label Color, Label Outline Color, Label Outline Width | Appearance of the cluster labels.                                                                          |

## DataTip section



A data tip shows a [symbol](#) next to a marker, similar to a [callout](#). The Marker Layer and the Cluster Layer have this section.

| Property           | Description                                                           |
|--------------------|-----------------------------------------------------------------------|
| (type)             | <b>None</b> (default), <b>Static</b> , or <b>Mouse-Over</b> .         |
| Symbol             | The symbol used as the data tip.                                      |
| Position, Anchor   | Where the data tip appears relative to the marker.                    |
| Hide Trigger       | Hides the data tip.                                                   |
| Ignore Bounds      | When selected, the data tip is not kept inside the map bounds.        |
| X Offset, Y Offset | Offset of the data tip in pixels (under <b>Advanced</b> ).            |
| DataTip Clip Mode  | <b>No Clipping</b> , <b>Clip By Page</b> , or <b>Clip By Parent</b> . |

## Animation section

Same as the [Animation section](#) of the map: **Animate Id Values**, **Id Field**, **Id Value Animation Duration**, and **Id Value Animation Easing**.

## Advanced properties

| Property                                                         | Description                                                                                                                |
|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| transitionDuration                                               | Duration in milliseconds of style transitions. The default is 300.                                                         |
| circleLayerCustomStyles, clusterLayerCustomStyles                | JSON with additional <a href="#">Mapbox circle layer</a> paint properties for the markers or clusters.                     |
| labelFont, labelSize, labelOffsetHorizontal, labelOffsetVertical | Font (default Open Sans Regular, Arial Unicode MS Regular), size (default 16) and offset of the labels.                    |
| queryViewport                                                    | When TRUE, <b>viewportIndexes</b> returns a comma-separated list of the row indexes that are currently visible on the map. |
| dataTipShow                                                      | Trigger that shows the data tip.                                                                                           |

## Cluster Layer

▼ Marker

Table:

Lat Field:

Lng Field:

Filter:

A cluster layer shows only clusters of locations. It uses the **Table**, **Lat Field**, **Lng Field** and **Filter**

properties of the marker layer, and the [Cluster](#), **DataTip** and **Selection** sections. Clustering is always on.

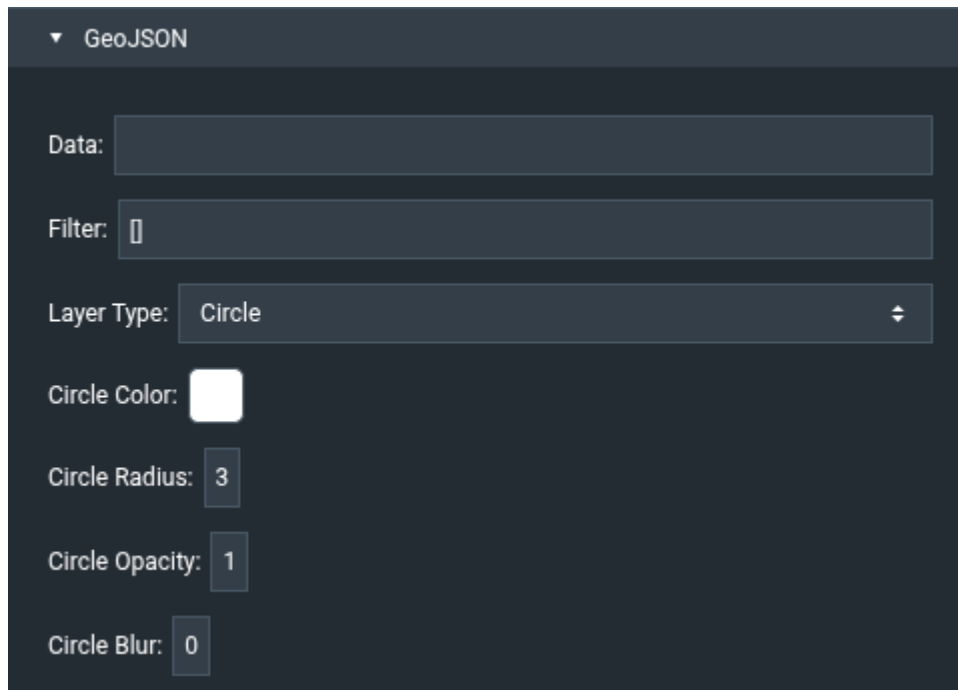
When the user hovers over or clicks a cluster, the following output properties return the rows that are in the cluster:

| Property             | Description                                                                                                                             |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| hoverData            | Table of the rows in the hovered cluster (when <b>Select Child On Hover</b> is selected). <b>Hover Index</b> returns their row indexes. |
| selectedData         | Table of the rows in the clicked cluster. <b>Selected Index</b> returns their row indexes.                                              |
| clusterMaxDataLength | Maximum number of rows returned for a cluster (Advanced). The default -1 returns all rows.                                              |

## GeoJSON Layer

A GeoJSON layer draws [GeoJSON](#) features.

### GeoJSON section



The screenshot shows the configuration panel for a GeoJSON layer in Mapbox Studio. The panel has a dark theme. At the top, there's a dropdown menu labeled 'GeoJSON'. Below it, there are several input fields: 'Data:' with a text input, 'Filter:' with a JSON array input containing an empty array '[]', 'Layer Type:' with a dropdown menu set to 'Circle', 'Circle Color:' with a color picker showing white, 'Circle Radius:' with a numeric input set to '3', 'Circle Opacity:' with a numeric input set to '1', and 'Circle Blur:' with a numeric input set to '0'.

| Property | Description                                 |
|----------|---------------------------------------------|
| Data     | GeoJSON string that defines the features.   |
| Filter   | A Mapbox filter expression as a JSON array. |

| Property                                                        | Description                                                                                                                                                              |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Layer Type                                                      | How the features are drawn: <b>Fill</b> , <b>Extrude</b> (3D polygons), <b>Line</b> , or <b>Circle</b> (default). The section shows the properties of the selected type. |
| Circle Color, Circle Radius, Circle Opacity, Circle Blur        | Appearance of circles (Circle type).                                                                                                                                     |
| Line Cap                                                        | <b>Butt</b> (default), <b>Round</b> , or <b>Square</b> .                                                                                                                 |
| Line Join                                                       | <b>Bevel</b> , <b>Round</b> , or <b>Miter</b> (default).                                                                                                                 |
| Line Color, Line Width, Line Opacity, Line Blur, Line Gap Width | Appearance of lines (Line type).                                                                                                                                         |
| Line Dash Length                                                | Dash pattern of lines.                                                                                                                                                   |
| Fill Color, Fill Outline Color, Fill Opacity                    | Appearance of polygons (Fill type).                                                                                                                                      |
| Extrude Color, Extrude Opacity                                  | Appearance of extruded polygons (Extrude type).                                                                                                                          |
| Extrude Height, Extrude Base Height                             | Top and bottom height of extruded polygons, in meters (maximum 65535).                                                                                                   |

## Style section

▼ Style

Data:

Style Type:

Style Type Field:

Target Property:

Target Property Field:

Geo Property:

Geo Property Field:

Data Key Field:

Data Value Field:

The Style section styles individual features with data from a table. See [Styling Areas on a GeoJSON Layer](#).

| Property   | Description                                                             |
|------------|-------------------------------------------------------------------------|
| Data       | The style table (styleData).                                            |
| Style Type | <b>Interval</b> (default), <b>Exponential</b> , or <b>Categorical</b> . |

| Property                               | Description                                                                                                   |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Style Type Field                       | Table column that provides the style type for each row.                                                       |
| Target Property, Target Property Field | The Mapbox paint property to set, for example <code>fill-color</code> , or the table column that provides it. |
| Geo Property, Geo Property Field       | The GeoJSON feature property that is matched with the table, or the table column that provides it.            |
| Data Key Field                         | The table column with values that match the Geo Property.                                                     |
| Data Value Field                       | The table column with the value of the style property.                                                        |

## Advanced properties

| Property                                                                                           | Description                                                                                                                                        |
|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>circleStrokeColor</code> , <code>circleStrokeWidth</code> , <code>circleStrokeOpacity</code> | Outline of circles.                                                                                                                                |
| <code>lineMiterLimit</code> , <code>lineRoundLimit</code>                                          | Mapbox line join limits.                                                                                                                           |
| <code>fillOutlineVisible</code>                                                                    | Whether polygon outlines are drawn (default TRUE).                                                                                                 |
| <code>selectionProperty</code>                                                                     | GeoJSON feature property that is returned when a feature is clicked or hovered.                                                                    |
| <code>selectChildOnClick</code> , <code>selectionClick</code>                                      | When <code>selectChildOnClick</code> is TRUE, <code>selectionClick</code> returns the <code>selectionProperty</code> value of the clicked feature. |
| <code>selectChildOnHover</code> , <code>selectionHover</code>                                      | When <code>selectChildOnHover</code> is TRUE, <code>selectionHover</code> returns the <code>selectionProperty</code> value of the hovered feature. |
| <code>layerCustomStyles</code>                                                                     | JSON with additional Mapbox paint properties for the layer.                                                                                        |
| <code>transitionDuration</code>                                                                    | Duration in milliseconds of style transitions. The default is 300.                                                                                 |
| <code>fast</code>                                                                                  | When TRUE, paint properties are updated without validation, which is faster.                                                                       |

## Draw Layer

A draw layer adds the [Mapbox GL Draw](#) tools to the map, so that the user can draw points, lines and polygons.

| Property          | Description                                                                                                                                      |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>data</code> | GeoJSON of the drawn features (Advanced). It is updated when the user creates, changes or deletes a shape. Set it to load shapes into the layer. |

## Tile Layer

A tile layer shows raster tiles over the map. See [Populating a Tile Layer](#).

## Tiles section

▼ Tiles

URL:

Data:

URL field:

Min Zoom:  Max Zoom:

Tile Size:

▼

▲

Opacity:

Min Brightness:

Max Brightness:

Contrast:

Hue Rotate:

Faded Duration:

| Property                       | Description                                                                                                                          |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| URL                            | URL template of the tiles, for example <code>http://server/tile/{z}/{y}/{x}</code> .                                                 |
| Data, URL field                | Optional table and column that provide tile URLs. When both are set, a tile source is shown for each row, and <b>URL</b> is ignored. |
| Min Zoom, Max Zoom             | Zoom range in which the tiles are shown. Defaults: 0 and 22.                                                                         |
| Tile Size                      | Tile size in pixels, up to 512 (default).                                                                                            |
| Opacity                        | Opacity of the tiles (Advanced). The default is 100%.                                                                                |
| Min Brightness, Max Brightness | Brightness range of the tiles (Advanced). Defaults: 0% and 100%.                                                                     |
| Contrast                       | Contrast adjustment, from -100% to 100% (Advanced). The default is 0%.                                                               |
| Hue Rotate                     | Hue rotation in degrees, 0 to 360 (Advanced).                                                                                        |
| Faded Duration                 | Fade duration in milliseconds when new tiles appear (Advanced). The default is 300.                                                  |

## Mapbox Group

A Mapbox group holds components, or a symbol repeater, that are placed at map coordinates. It works like the [Map Group](#) of the Google Map, and shows the same **Repeater** section: **Symbol**, **Data**, **Latitude Field**, and **Longitude Field**.

The **numChildren** output property returns the number of children. Selection of repeater items uses **selectedIndex**, **multiSelect**, and **selectChildOnClick**.

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[Next: ESRI Map](#)

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Last update: **2026/10/22 13:59**

