

# Configuring Layers and Layer List in Geocortex Web (GXW)

Recurring questions about when GXW will have equivalent functionality to GE/GVH indicate that most of the current capabilities, available today, are not well understood.

This document is a starting point to understanding what is available today, and how it is accomplished.

## But first, why?

Esri's JavaScript 4.x API structure is completely different from JavaScript 3.x API. It was not possible to 'upgrade' GE/GVH. Instead, we needed to write a new viewer framework from scratch; enter GXW.

The Esri landscape has changed significantly since we built GE/GVH, many things that did not previously exist when we built GE/GVH, are now provided by Esri. Specifically:

- Esri identities for authentication, and for authorization of access to items (sharing and security)
- Esri portals (Enterprise Portal, ArcGIS Online) for the storage, search, and retrieval of data (item management)
- Esri geoinformation model (webmap and webscene) defining the baseline for map content configuration

For many reasons, we chose not to re-build GXW versions of functionality that was already clearly covered by Esri.

Enabling customers to 'do more' using Geocortex is still important, and so we have defined extension configuration objects to allow us to add additional capabilities and features on top of what Esri offers.

This means that some things are configured as you build your webmaps and webscenes, and others are configured in Geocortex Web Designer.

## What is available?

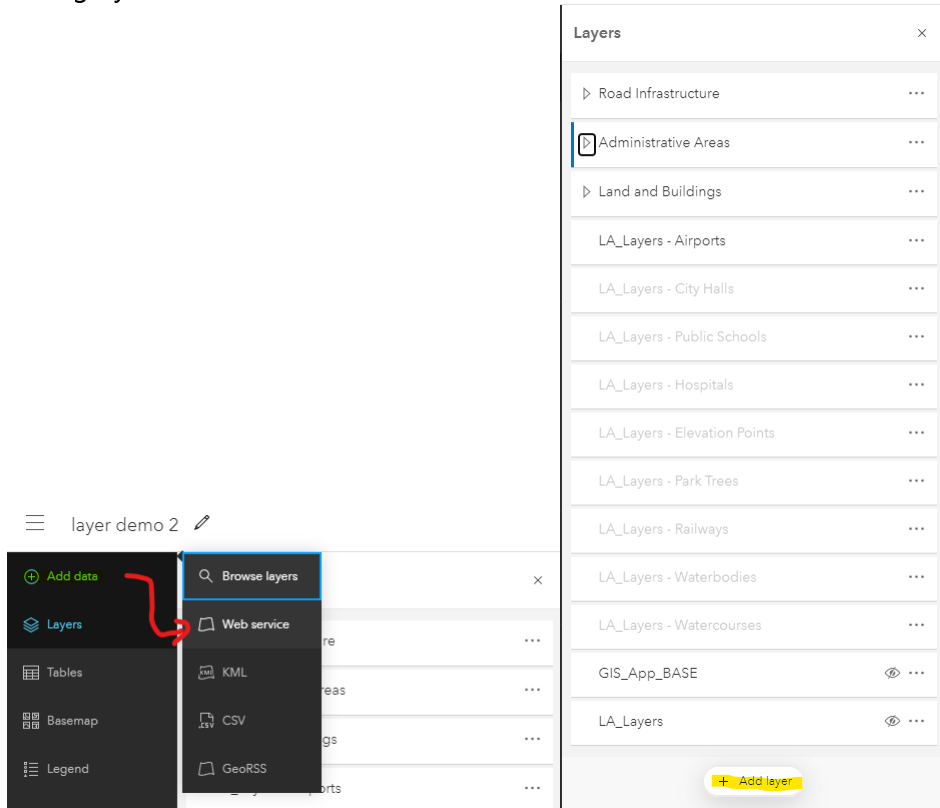
<i>What?</i>	<i>Where? (GXW)</i>	<i>Where? (GE/GVH)</i>
Creating and publishing map services/layers	ArcMap, ArcGIS Pro, Enterprise Portal, ArcGIS Online	ArcMap, ArcGIS Pro, Enterprise Portal, ArcGIS Online
Adding layers	Webmap/Webscene Esri Map Viewer (beta)	Site Essentials Manager
Layer Name Aliasing (renaming)	Webmap/Webscene Esri Map Viewer (beta)	Site Essentials Manager
Setting initial layer visibility	Webmap/Webscene Esri Map Viewer (beta)	Site Essentials Manager
Setting initial layer transparency	Webmap/Webscene Esri Map Viewer (beta)	Site Essentials Manager
Organizing layers into groups (folders)	Webmap/Webscene Esri Map Viewer (beta)	Site Essentials Manager
Setting initial extent of map	Webmap/Webscene Esri Map Viewer (beta)	Site Essentials Manager
Setting default basemap	Webmap/Webscene Esri Map Viewer (beta)	Site Essentials Manager
Hiding a layer from appearing in GXW	Layer List Component GXW Designer	Site Essentials Manager
Representing layers with sublayers as a single layer	Layer List Component GXW Designer	Site Essentials Manager
Configuring independent (multi select) or exclusive (select one at a time) for sublayers*	Layer List Component GXW Designer	Site Essentials Manager
Configuring initial state of sublayers (collapsed / expanded)	Layer List Component GXW Designer	Site Essentials Manager

\* This property of a GroupLayer is part of the webmap/webscene geoinformation model, but Esri hasn't provided a way to configure it yet in Map Viewer, so we've exposed it in GXW Designer.

Also note, just like you could with GE/GVH, within a webmap you can restructure the presented organization of layers, name them, etc. independent of the originating service structure, even if you do not own the layers.

How do I accomplish these things?

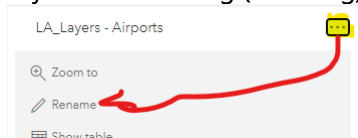
### Adding layers



If you add the web service from the service URL (e.g. [https://server.geocortex.com/arcgis/rest/services/LosAngeles/LA\\_Layers/MapServer](https://server.geocortex.com/arcgis/rest/services/LosAngeles/LA_Layers/MapServer)) you will get a single entry in your layer list with layers in that service nested under it like they were sublayers.

Instead, add the layers one at a time from the layer URL (e.g. [https://prod-dmarc.geocortex.com/arcgis/rest/services/LosAngeles/LA\\_Layers/MapServer/3](https://prod-dmarc.geocortex.com/arcgis/rest/services/LosAngeles/LA_Layers/MapServer/3)) and you will get individual entries in your layer list that you can then organize.

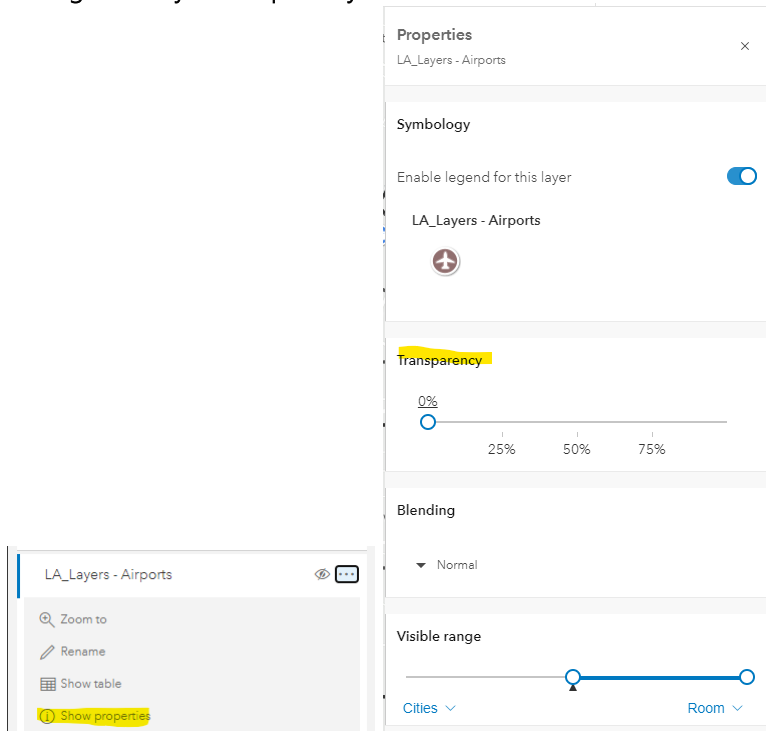
### Layer Name Aliasing (renaming)



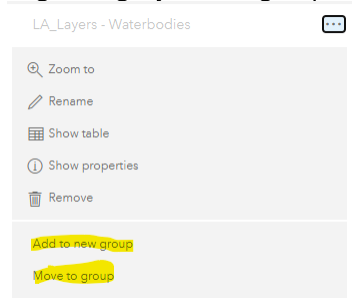
### Setting initial layer visibility



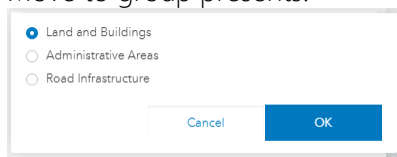
## Setting initial layer transparency



## Organizing layers into groups (folders)



Move to group presents:



Groups can be renamed and reordered just like the layers in the list.

The webmap spec supported nested group layers, and GXW will faithfully show them in the layer list component, however Map Viewer (beta) doesn't yet provide a UI for creating nested group layers. You can however publish a webmap directly from ArcGIS Pro that has a nested group layer structure and everything works as expected.

## Setting initial extent of map

Whatever is visible in Map Viewer when you save the webmap is the initial extent of your map in your GXW app

## Setting default basemap

Whatever basemap is selected and active when you save the webmap is the default basemap in your GXW app

--- The layer list in GXW will reflect the layer structure you created in your webmap. You can then further refine ---

The screenshot displays the 'Layers' panel in a GIS application, showing a hierarchical list of layers. The panel is divided into two main sections: a left sidebar and a main content area.

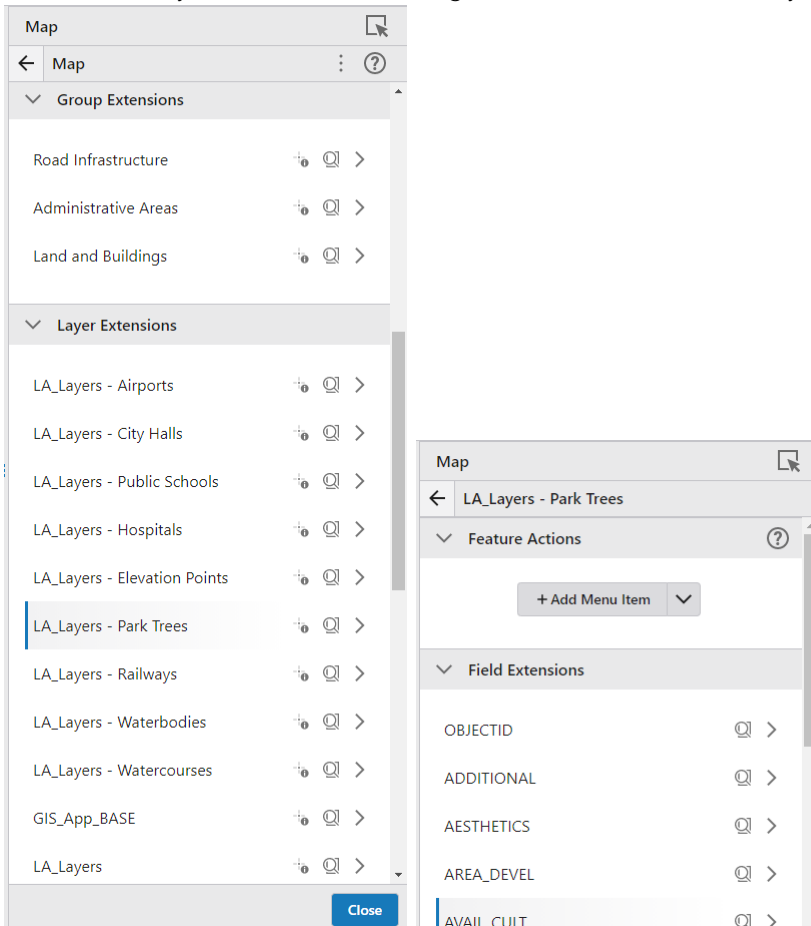
**Left Sidebar (Layers Panel):**

- Layers (with a close button 'x')
- ▶ Road Infrastructure ...
- ▶ Administrative Areas ...
- ▶ Land and Buildings ...
- LA\_Layers - Airports ...
- LA\_Layers - City Halls ...
- LA\_Layers - Public Schools ...
- LA\_Layers - Hospitals ...
- LA\_Layers - Elevation Points ...
- LA\_Layers - Park Trees ...
- LA\_Layers - Railways ...
- LA\_Layers - Waterbodies ...
- LA\_Layers - Watercourses ...
- GIS\_App\_BASE ... (with an eye icon)
- LA\_Layers ... (with an eye icon)

**Main Content Area (Layer List):**

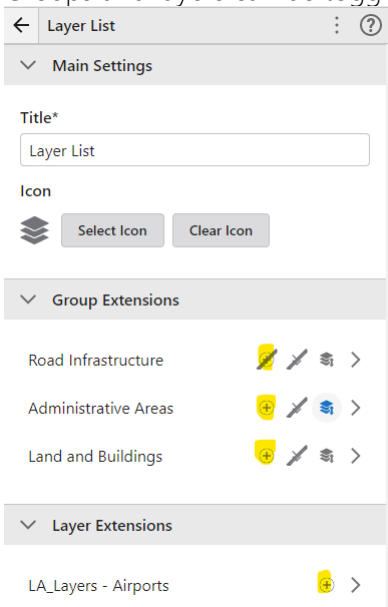
- Road Infrastructure ...
- Administrative Areas ...
- Land and Buildings  
Zoom in to view ...
- LA\_Layers - Airports  
Zoom in to view ...
- LA\_Layers - City Halls  
Zoom in to view ...
- LA\_Layers - Public Schools  
Zoom in to view ...
- LA\_Layers - Hospitals  
Zoom in to view ...
- LA\_Layers - Elevation Points  
Zoom in to view ...
- LA\_Layers - Park Trees  
Zoom in to view ...
- LA\_Layers - Railways  
Zoom in to view ...
- LA\_Layers - Waterbodies  
Zoom in to view ...
- LA\_Layers - Watercourses  
Zoom in to view ...
- GIS\_App\_BASE ...
- LA\_Layers ...

Extensions for all groups and layers are provided in the Map component to allow for configuration of what participates in identify and search; and in the case of layer extensions which attributes participate in search and the configuration of feature actions, external links, layer icon, and other configuration related to how that layer behaves within GXW.



### Hiding a layer from appearing in GXW

Groups and layers can be toggled on and off as to whether they should appear in the layer list.



## Representing layers with sublayers as a single layer

Groups or layers with sublayers can be configured to show or hide children in the layer list.

The image displays two screenshots of a GIS application's layer list interface, illustrating how to configure a layer to show or hide its children.

**Top Screenshot:** The 'Land and Buildings' layer is selected. The 'Children Included' checkbox is checked, and the text 'Children Included' is highlighted in yellow. The 'Layer List' on the left shows 'Land and Buildings' expanded to show its sublayers: 'LA\_Layers - Building Footprints', 'LA\_Layers - Tax Parcels', and 'LA\_Layers - Zoning'. The 'Layer List' on the right shows the 'Land and Buildings' layer with its sublayers listed below it.

**Bottom Screenshot:** The 'Land and Buildings' layer is selected. The 'Children Included' checkbox is unchecked, and the text 'Children Included' is highlighted in yellow. The 'Layer List' on the left shows 'Land and Buildings' collapsed. The 'Layer List' on the right shows the 'Land and Buildings' layer with its sublayers listed below it.

## Configuring independent (multi select) or exclusive (select one at a time) for sublayers\*

\* This property of a GroupLayer is part of the webmap/webscene geoinformation model, but Esri hasn't provided a way to configure it yet in Map Viewer, so we've exposed it in GXW Designer.

This screenshot shows the 'Layer List' panel in GXW Designer. The 'Administrative Areas' group is expanded, and the 'Layer Visibility' dropdown is set to 'Independent'. The 'Layer Extensions' list includes sublayers like 'LA\_Layers - Service Planning Areas', 'LA\_Layers - Communities', 'LA\_Layers - Community Boundaries', 'LA\_Layers - Fire Districts', 'LA\_Layers - Police Departments', 'LA\_Layers - School Districts', 'LA\_Layers - Health Districts', 'LA\_Layers - Census Tracts', and 'LA\_Layers - Zip Codes'. The 'Layer Visibility' dropdown is highlighted with a blue border and the word 'Independent' is written in yellow.

This screenshot shows the 'Layer List' panel in GXW Designer. The 'Administrative Areas' group is expanded, and the 'Layer Visibility' dropdown is set to 'Exclusive'. The 'Layer Extensions' list includes sublayers like 'LA\_Layers - Service Planning Areas', 'LA\_Layers - Communities', 'LA\_Layers - Community Boundaries', 'LA\_Layers - Fire Districts', 'LA\_Layers - Police Departments', 'LA\_Layers - School Districts', 'LA\_Layers - Health Districts', 'LA\_Layers - Census Tracts', and 'LA\_Layers - Zip Codes'. The 'Layer Visibility' dropdown is highlighted with a blue border and the word 'Exclusive' is written in yellow.

# Configuring initial state of sublayers (collapsed / expanded)

The image displays two screenshots of a GIS application interface, illustrating the configuration of sublayer states in a layer list.

**Top Screenshot:** The layer list on the left is collapsed. The 'Road Infrastructure' layer is selected (checked), and its initial state is set to collapsed (indicated by a yellow arrow icon). The right panel shows the 'Layer List' configuration window with the following settings:

- Main Settings:** Title: Layer List
- Icon:** A stack of layers icon, with 'Select Icon' and 'Clear Icon' buttons.
- Group Extensions:** A list of sublayers with their initial states:
  - Road Infrastructure: Checked, Collapsed (yellow arrow icon)
  - Administrative Areas: Checked, Expanded (down arrow icon)
  - Land and Buildings: Checked, Expanded (down arrow icon)
- Layer Extensions:** Empty

**Bottom Screenshot:** The layer list on the left is expanded. The 'Road Infrastructure' layer and its sublayers are selected (checked). The right panel shows the 'Layer List' configuration window with the following settings:

- Main Settings:** Title: Layer List
- Icon:** A stack of layers icon, with 'Select Icon' and 'Clear Icon' buttons.
- Group Extensions:** A list of sublayers with their initial states and an 'Applied' status:
  - Road Infrastructure: Checked, Collapsed (yellow arrow icon), Applied
  - Administrative Areas: Checked, Expanded (down arrow icon)
  - Land and Buildings: Checked, Expanded (down arrow icon)
- Layer Extensions:** Empty