

# Package ‘leaflet.esri’

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**Type** Package

**Title** 'ESRI' Bindings for the 'leaflet' Package

**Version** 1.0.0

**Description** An add-on package to the 'leaflet' package, which provides bindings for 'ESRI' services. This package allows a user to add 'ESRI' provided services such as 'MapService', 'ImageMapService', 'TiledMapService' etc. to a 'leaflet' map.

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**Depends** R (>= 3.1.0), leaflet (>= 2.0.0), leaflet.extras (>= 1.0.0)

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**Suggests** htmlwidgets

**URL** <https://github.com/bhaskarvk/leaflet.esri>,  
<https://bhaskarvk.github.io/leaflet.esri/>

**BugReports** <https://github.com/bhaskarvk/leaflet.esri/issues>

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addEsriBasemapLayer	<i>Adds a ArcGIS Basemap layer</i>
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---

**Description**

Adds a ArcGIS Basemap layer

**Usage**

```
addEsriBasemapLayer(map, key, autoLabels = FALSE, layerId = NULL,
  group = NULL, options = NULL)
```

**Arguments**

map	The leaflet map
key	ID of the layer
autoLabels	whether to show corresponding labels layer
layerId	Unique ID for the layer
group	The group this layer belongs to.
options	Basemap Layer Options. You can pass <a href="#">tileOptions()</a> .

**Examples**

```
leaflet() %>%
  addEsriBasemapLayer(esriBasemapLayers$oceans, autoLabels = TRUE)
```

---

addEsriDependency	<i>Adds esri-leaflet dependency to the leaflet widget</i>
-------------------	---

---

### Description

Adds esri-leaflet dependency to the leaflet widget

Adds esri-leaflet-clustered-feature-layer dependency to the leaflet widget

Adds esri-leaflet-geocoder dependency to the leaflet widget

Adds esri-leaflet-heatmap dependency to the leaflet widget

Adds esri-leaflet-renderers dependency to the leaflet widget

### Usage

```
addEsriDependency(map)
```

```
addEsriClusterDependency(map)
```

```
addEsriGeocoderDependency(map)
```

```
addEsriHeatmapDependency(map)
```

```
addEsriRenderersDependency(map)
```

### Arguments

map	The leaflet map widget
-----	------------------------

---

```
addEsriDynamicMapLayer
```

*Render and visualize Map Services from ArcGIS Online and ArcGIS Server.*

---

### Description

Map Services are a way to expose the contents of a map as a web service and expose capabilities for exporting tile images, querying and identifying features and more. Also supports custom popups and identification of features.

### Usage

```
addEsriDynamicMapLayer(map, url, options = dynamicMapLayerOptions(),  
  popupFunction = NULL, popupOptions = NULL, layerId = NULL,  
  group = NULL)
```

**Arguments**

map	The leaflet map
url	URL of the <a href="#">Map Service</a> .
options	options for the dynamic map layer.
popupFunction	Uses the provided function to create a popup that will identify features whenever the map is clicked. Your function will be passed a GeoJSON FeatureCollection of the features at the clicked location and should return the appropriate HTML. If you do not want to open the popup when there are no results, return false.
popupOptions	See <a href="#">popupOptions</a> .
layerId	A unique ID for the layer.
group	The name of the group this layer should be added to.

**Examples**

```

popupFunc <- htmlwidgets::JS(
  "function (error, featureCollection) {
    if (error || featureCollection.features.length === 0) {
      return false;
    } else {
      return \"Risk Level: \" + featureCollection.features[0].properties.CLASS_DESC;
    }
  }")

leaflet() %>% setView(-96.8, 38.5, 4) %>%
  addEsriBasemapLayer(esriBasemapLayers$Gray, autoLabels = TRUE) %>%
  addEsriDynamicMapLayer(
    url = paste0("https://maps7.arcgisonline.com/arcgis/rest/services/",
                 "USDA_USFS_2014_Wildfire_Hazard_Potential/MapServer"),
    popupFunction = popupFunc)

## for more examples see
# browseURL(system.file("examples/dynamicMapLayers.R", package = "leaflet.esri"))

```

---

addEsriFeatureLayer *Adds an ArcGIS Feature Layer.*

---

**Description**

FeatureLayer is used to visualize, style, query and edit vector geographic data hosted in both ArcGIS Online and published using ArcGIS Server. Copyright text from the service is added to map attribution automatically.

**Usage**

```
addEsriFeatureLayer(map, url, useServiceSymbology = FALSE,
  options = featureLayerOptions(), layerId = NULL, group = NULL,
  markerType = NULL, markerIcons = NULL, markerIconProperty = NULL,
  markerOptions = leaflet::markerOptions(), clusterOptions = NULL,
  clusterId = NULL, labelProperty = NULL,
  labelOptions = leaflet::labelOptions(), popupProperty = NULL,
  popupOptions = leaflet::popupOptions(), stroke = TRUE, color = "#03F",
  weight = 5, opacity = 0.5, fill = TRUE, fillColor = color,
  fillOpacity = 0.2, dashArray = NULL, smoothFactor = 1, noClip = FALSE,
  pathOptions = leaflet::pathOptions(), highlightOptions = NULL,
  fitBounds = FALSE)
```

**Arguments**

map	The leaflet map
url	url of the <a href="#">FeatureService</a> or <a href="#">MapService</a> .
useServiceSymbology	whether to use the symbology set when a service was published.
options	options for the featurelayer
layerId	A unique ID for the layer.
group	The name of the group this layer should be added to. the same parameter under <a href="#">addTiles</a> )
markerType	The type of marker. either "marker" or "circleMarker"
markerIcons	Icons for Marker.
markerIconProperty	The property of the feature to use for marker icon. Can be a JS function which accepts a feature and returns an index of markerIcons. In either case the result must be one of the indexes of markerIcons.
markerOptions	The options for markers Can be a single marker using <a href="#">makeIcon</a> or a list of markers using <a href="#">iconList</a>
clusterOptions	if not NULL, markers will be clustered using <a href="#">Leaflet.markercluster</a> ; you can use <a href="#">markerClusterOptions()</a> to specify marker cluster options
clusterId	the id for the marker cluster layer
labelProperty	The property to use for the label. You can also pass in a JS function that takes in a feature and returns a text/HTML content.
labelOptions	A Vector of <a href="#">labelOptions</a> to provide label options for each label. Default NULL
popupProperty	The property to use for popup content You can also pass in a JS function that takes in a feature and returns a text/HTML content.
popupOptions	A Vector of <a href="#">popupOptions</a> to provide popups
stroke	whether to draw stroke along the path (e.g. the borders of polygons or circles)
color	stroke color
weight	stroke width in pixels

opacity	stroke opacity (or layer opacity for tile layers)
fill	whether to fill the path with color (e.g. filling on polygons or circles)
fillColor	fill color
fillOpacity	fill opacity
dashArray	a string that defines the stroke <b>dash pattern</b>
smoothFactor	how much to simplify the polyline on each zoom level (more means better performance and less accurate representation)
noClip	whether to disable polyline clipping
pathOptions	Options for shapes
highlightOptions	Options for highlighting the shape on mouse over. you can use <a href="#">highlightOptions()</a> to specify highlight
fitBounds	Whether to set the maps bounds to fit the data in the featureLayer options

### Examples

```

leaflet() %>%
  addEsriBasemapLayer(esriBasemapLayers$Streets) %>%
  setView(-122.667, 45.526, 13) %>%
  addEsriFeatureLayer(
    url = paste0("https://services.arcgis.com/r0o16HdIME0BI4Mb/arcgis/rest/services/",
                 "Heritage_Trees_Portland/FeatureServer/0"),
    useServiceSymbology = TRUE,
    labelProperty = "COMMON_NAM", labelOptions = labelOptions(textsize = "12px"),
    popupProperty = JS(paste0(
      "function(feature) {",
      "  return L.Util.template(",
      "    \"<h3>{COMMON_NAM}</h3><hr />\",
      "    <p>This tree is located at {ADDRESS} and its scientific name is {SCIENTIFIC}.</p>\",
      "    \",\",
      "    feature.properties\",
      "  );\",
      "}")
    )))
## for more examples see
# browseURL(system.file("examples/featureLayers.R", package = "leaflet.esri"))
# browseURL(system.file("examples/multipleFeatureLayers.R", package = "leaflet.esri"))

```

---

```
addEsriHeatmapFeatureLayer
```

*Add Esri Heatmap Feature Layer.*

---

### Description

Add Esri Heatmap Feature Layer.

**Usage**

```
addEsriHeatmapFeatureLayer(map, url, radius = 25, gradient = NULL,
  options = featureLayerOptions(), layerId = NULL, group = NULL)
```

**Arguments**

map	The leaflet map
url	url of the <a href="#">FeatureService</a> or <a href="#">MapService</a> .
radius	Radius for the heatmap
gradient	The gradient
options	options for the featurelayer
layerId	A unique ID for the layer.
group	The name of the group this layer should be added to. the same parameter under <a href="#">addTiles</a> )

---

addEsriImageMapLayer *Render and visualize Image Services from ArcGIS Online and ArcGIS Server.*

---

**Description**

Image Services provide access to raster data through a web service.

**Usage**

```
addEsriImageMapLayer(map, url, options = imageMapLayerOptions(),
  popupFunction = NULL, popupOptions = NULL, layerId = NULL,
  group = NULL)
```

**Arguments**

map	The leaflet map
url	URL of the <a href="#">Image Service</a>
options	options for the image map layer.
popupFunction	Uses the provided function to create a popup that will identify features whenever the map is clicked. Your function will be passed a GeoJSON FeatureCollection of the features at the clicked location and should return the appropriate HTML. If you do not want to open the popup when there are no results, return false.
popupOptions	See <a href="#">popupOptions</a> .
layerId	A unique ID for the layer.
group	The name of the group this layer should be added to.

**Examples**

```
leaflet() %>%
  addEsriBasemapLayer(esriBasemapLayers$Imagery) %>%
  setView(-120.23, 43.5, 5) %>%
  addEsriImageMapLayer(
    url = paste0(
      "http://imagery.oregonexplorer.info/arcgis/rest/services/",
      "NAIP_2011/NAIP_2011_Dynamic/ImageServer"
    ),
    options = imageMapLayerOptions(bandIds = c(3, 0, 1)))

## for more examples see
# browseURL(system.file("examples/imageMapLayers.R", package = "leaflet.esri"))
```

---

addEsriTiledMapLayer *Access tiles from ArcGIS Online and ArcGIS Server to visualize and identify features.*

---

**Description**

If you have published a Feature Service in ArcGIS Online, it can be used to create a static set of tiles as well. You can find details about that process in the [ArcGIS Online Help](#). Your map service must be published using the Web Mercator Auxiliary Sphere tiling scheme (WKID 102100/3857) and the default scale options used by Google Maps, Bing Maps and [ArcGIS Online](#). Esri Leaflet will not support any other spatial reference for tile layers.

**Usage**

```
addEsriTiledMapLayer(map, url, options = tiledMapLayerOptions(),
  layerId = NULL, group = NULL)
```

**Arguments**

map	The leaflet map
url	URL of the <a href="#">Map Service</a> with a tile cache.
options	options for the tiledmap layer.
layerId	A unique ID for the layer.
group	The name of the group this layer should be added to.

**Examples**

```
leaflet() %>% setView(-81.47, 30.70, 12) %>%
  addEsriTiledMapLayer(
    url = "https://services.arcgisonline.com/ArcGIS/rest/services/USA_Topo_Maps/MapServer")

## for more examples see
# browseURL(system.file("examples/tiledMapLayers.R", package = "leaflet.esri"))
```

---

 dynamicMapLayerOptions

*Options for dynamic map layer.*


---

## Description

Options for dynamic map layer.

## Usage

```
dynamicMapLayerOptions(format = "png24", transparent = TRUE, f = "json",
  attribution = "", layers = NULL, layerDefs = NULL, opacity = 1,
  position = "front", maxZoom = NULL, minZoom = NULL,
  dynamicLayers = NULL, token = NULL, proxy = NULL, useCors = TRUE, ...)
```

## Arguments

format	Output format of the image.
transparent	Allow the server to produce transparent images.
f	Server response content type.
attribution	Attribution from service metadata copyright text is automatically displayed in Leaflet's default control. This property can be used for customization.
layers	An array of Layer IDs like [3, 4, 5] to show from the service.
layerDefs	A string representing a query to run against the service before the image is rendered. This can be a string like "3:STATE_NAME="Kansas"" or an object mapping different queries to specific layers 3:"STATE_NAME="Kansas"", 2:"POP2007>25000".
opacity	Opacity of the layer. Should be a value between 0 (completely transparent) and 1 (completely opaque).
position	Position of the layer relative to other overlays.
maxZoom	Closest zoom level the layer will be displayed on the map.
minZoom	Furthest zoom level the layer will be displayed on the map.
dynamicLayers	JSON object literal used to manipulate the layer symbology defined in the service itself. Requires a 10.1 (or above) map service which supports dynamicLayers requests.
token	If you pass a token in your options it will be included in all requests to the service.
proxy	URL of an <a href="#">ArcGIS API for JavaScript proxy</a> or <a href="#">ArcGIS Resource Proxy</a> to use for proxying requests.
useCors	If this service should use CORS when making GET requests.
...	extra options

---

esriBasemapLabels      *Esri basemap labels.*

---

### Description

Taken from <https://esri.github.io/esri-leaflet/api-reference/layers/basemap-layer.html#optional-labels>.

### Usage

```
esriBasemapLabels
```

### Format

An object of class list of length 7.

---

esriBasemapLayers      *Esri Basemap Layers.*

---

### Description

BasemapLayer is used to display Esri hosted basemaps and attributes data providers appropriately. The Terms of Use for Esri hosted services apply to all Leaflet applications. Taken from <https://esri.github.io/esri-leaflet/api-reference/layers/basemap-layer.html>.

### Usage

```
esriBasemapLayers
```

### Format

An object of class list of length 9.

---

featureLayerOptions    *Options for featureLayers.*

---

### Description

Options for featureLayers.

### Usage

```
featureLayerOptions(where = NULL, minZoom = NULL, maxZoom = NULL,
  cacheLayers = NULL, fields = NULL, from = NULL, to = NULL,
  timeField = NULL, timeFilterMode = NULL, simplifyFactor = NULL,
  precision = NULL, token = NULL, proxy = NULL, useCors = NULL,
  renderer = NULL, ...)
```

### Arguments

where	String An optional expression to filter features server side. String values should be denoted using single quotes ie: where: "FIELDNAME = "field value"; More information about valid SQL syntax can be found at <a href="http://resources.arcgis.com/en/help/main/10.2/index.html#/SQL_reference_for_query_expressions_used_in_ArcGIS/00s500000033000000/">http://resources.arcgis.com/en/help/main/10.2/index.html#/SQL_reference_for_query_expressions_used_in_ArcGIS/00s500000033000000/</a> .
minZoom	Integer Minimum zoom level of the map that features will display. example: minZoom:0
maxZoom	Integer Maximum zoom level of the map that features will example: maxZoom:19
cacheLayers	Boolean Will remove layers from the internal cache when they are removed from the map.
fields	Array An array of fieldnames to pull from the service. Includes all fields by default. You should always specify the name of the unique id for the service. Usually either "FID" or "OBJECTID".
from	Date When paired with to defines the time range of features to display. Requires the Feature Layer to be time enabled.
to	Date When paired with from defines the time range of features to display. Requires the Feature Layer to be time enabled.
timeField	false The name of the field to lookup the time of the feature. Can be an object like start:"startTime", end:"endTime" or a string like "created".
timeFilterMode	"server" (default) or "client" Determines where features are filtered by time. By default features will be filtered by the server. If set to "client" all features are requested and filtered by the app before display.
simplifyFactor	Integer How much to simplify polygons and polylines. More means better performance, and less means more accurate representation.
precision	Integer How many digits of precision to request from the server. Wikipedia has a great reference of digit precision to meters at <a href="http://en.wikipedia.org/wiki/Decimal_degrees">http://en.wikipedia.org/wiki/Decimal_degrees</a> .

token	String If you pass a token in your options it will be included in all requests to the service.
proxy	URL of an <a href="#">ArcGIS API for JavaScript proxy</a> or <a href="#">ArcGIS Resource Proxy</a> to use for proxying requests.
useCors	Boolean If this service should use CORS when making GET requests.
renderer	L.svg or L.canvas The vector renderer to use to draw the service. Usually L.svg but setting to L.canvas contains performance benefits for large polygon layers.
...	extra options

---

imageMapLayerOptions *Options for image map layer.*

---

### Description

Options for image map layer.

### Usage

```
imageMapLayerOptions(format = "jpgpng", f = "json", opacity = 1,
  position = "front", maxZoom = NULL, minZoom = NULL, from = NULL,
  to = NULL, bandIds = NULL, noData = NULL, noDataInterpretation = NULL,
  pixelType = NULL, renderingRule = NULL, mosaicRule = NULL,
  token = NULL, proxy = NULL, useCors = TRUE, ...)
```

### Arguments

format	Output format of the image.
f	Server response content type.
opacity	Opacity of the layer. Should be a value between 0 and 1.
position	Position of the layer relative to other overlays.
maxZoom	Closest zoom level the layer will be displayed on the map.
minZoom	Furthest zoom level the layer will be displayed on the map.
from	Date When paired with to defines the time range of data to display. Requires the Image Layer to be time enabled.
to	Date When paired with from defines the time range of data to display. Requires the Image Layer to be time enabled.
bandIds	If there are multiple bands, you can specify which bands to export.
noData	The pixel value representing no information.
noDataInterpretation	Interpretation of the noData setting.
pixelType	Leave pixelType as unspecified, or UNKNOWN, in most exportImage use cases, unless such pixelType is desired. Possible values: C128, C64, F32, F64, S16, S32, S8, U1, U16, U2, U32, U4, U8, UNKNOWN.

renderingRule	A JSON representation of a <b>raster function</b>
mosaicRule	A JSON representation of a <b>mosaic rule</b>
token	If you pass a token in your options it will be included in all requests to the service.
proxy	URL of an <b>ArcGIS API for JavaScript proxy</b> or <b>ArcGIS Resource Proxy</b> to use for proxying requests.
useCors	If this service should use CORS when making GET requests.
...	extra options

---

leaflet.esri      *leaflet.esri: 'ESRI' bindings for the 'leaflet' Package.*

---

### Description

An add-on package to the 'leaflet' package, which provides bindings for 'ESRI' services. This package allows a user to add 'ESRI' provided services such as 'MapService', 'ImageMapService', 'TiledMapService' etc. to a 'leaflet' map.

### Author(s)

Bhaskar V. Karambelkar

---

tiledMapLayerOptions      *Options for TiledMapLayer.*

---

### Description

Options for TiledMapLayer.

### Usage

```
tiledMapLayerOptions(correctZoomLevels = TRUE, zoomOffsetAllowance = 0.1,
  proxy = NULL, useCors = TRUE, token = NULL, tileOptions = NULL)
```

### Arguments

correctZoomLevels	Correct Zoom levels.
zoomOffsetAllowance	If correctZoomLevels is enabled this controls the amount of tolerance for the difference at each scale level for remapping tile levels.
proxy	URL of an <b>ArcGIS API for JavaScript proxy</b> or <b>ArcGIS Resource Proxy</b> to use for proxying requests.
useCors	Dictates if the service should use CORS when making GET requests.
token	Use this token to authenticate all calls to the service.
tileOptions	Other options for tile layer. You can pass <code>tileOptions()</code> .

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