

Package ‘maptiles’

July 23, 2026

Title Download and Display Map Tiles

Version 0.12.0

Description To create maps from tiles, 'maptiles' downloads, composes and displays tiles from a large number of providers (e.g. 'OpenStreetMap', 'Stadia', 'Esri', 'CARTO', or 'Thunderforest').

URL <https://github.com/riatelab/maptiles/>

BugReports <https://github.com/riatelab/maptiles/issues/>

License GPL-3

Depends R (>= 3.5.0)

Imports sf, curl, digest, graphics, grDevices, png, terra (>= 1.8-21), tools, utils

Suggests covr, tinytest

Encoding UTF-8

Config/roxygen2/version 8.0.0

NeedsCompilation no

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```

    name = "orthophoto_IGN",
    url = paste0(
      "https://data.geopf.fr/wmts?",
      "request=GetTile",
      "&service=WMTS",
      "&version=1.0.0",
      "&style=normal",
      "&tilematrixset=PM_6_18",
      "&format=image/jpeg",
      "&layer=ORTHOIMAGERY.ORTHOPHOTOS.BDORTHO",
      "&tilematrix={z}",
      "&tilerow={y}",
      "&tilecol={x}"
    ),
    citation = "IGN, BD ORTHO@"
  )

# Find TileMatrixSet and Style values
layer <- "ORTHOIMAGERY.ORTHOPHOTOS.BDORTHO"
path <- "https://data.geopf.fr/wmts?"
param_info <- "service=wmts&request=GetCapabilities&version=1.0.0"
url <- paste0("WMTS:", path, param_info, ",layer=", layer)
## Not run:
tmp <- tempfile(fileext = ".xml")
sf::gdal_utils(
  util = "translate",
  source = url, destination = tmp,
  options = c("-of", "WMTS")
)
readLines(tmp)

## End(Not run)

```

get_credit

Get basemap tiles attribution

Description

Get the attribution of map tiles.

Usage

```
get_credit(provider)
```

Arguments

provider provider name or provider object (as produced by [create_provider](#)).

Examples

```
get_credit("OpenStreetMap")
```

`get_providers`*Providers*

Description

List of builtin providers with their name, URL, subdomains and attribution text.

Usage

```
get_providers()
```

Value

A list of is returned.

Examples

```
get_providers()
```

`get_tiles`*Get basemap tiles from map servers*

Description

Get map tiles based on a spatial object extent. Maps can be fetched from various map servers ('OpenStreetMap', 'Stadia', 'Esri', 'CARTO', or 'Thunderforest').

Usage

```
get_tiles(  
    x,  
    provider = "OpenStreetMap",  
    zoom,  
    crop = FALSE,  
    project = TRUE,  
    verbose = FALSE,  
    apikey,  
    cachedir,  
    forceDownload = FALSE,  
    retina = TRUE  
)
```

Arguments

x	sf, sfc, bbox, SpatRaster, SpatVector or SpatExtent object. If x is a SpatExtent it must express coordinates in lon/lat WGS84 (epsg:4326).
provider	tile server to get the tiles from. It can be one of the builtin providers (see Details for the list) or a named list produced by create_provider (see Examples).
zoom	zoom level (see Details).
crop	TRUE if results should be cropped to the specified x extent, FALSE otherwise. If x is an sf object with one POINT, crop is set to FALSE.
project	if TRUE, the output is projected to the crs of x. If FALSE the output uses "EPSG:3857" (Web Mercator).
verbose	if TRUE, tiles filepaths, zoom level and attribution are displayed.
apikey	API key. Not needed for Thunderforest or Stadia servers if environment variables named "THUNDERFOREST_MAPS" or "STADIA_MAPS" are set.
cachedir	name of a folder used to cache tiles. If not set, tiles are cached in a tempdir folder.
forceDownload	if TRUE, existing cached tiles may be overwritten.
retina	if TRUE, tiles are downloaded in high resolution if they exist. Stadia and CARTO provide such tiles.

Details

Zoom levels are described in the OpenStreetMap wiki: https://wiki.openstreetmap.org/wiki/Zoom_levels.

Here is the complete list of builtin providers:

"OpenStreetMap", "OpenStreetMap.DE", "OpenStreetMap.France", "OpenStreetMap.HOT", "Open-TopoMap",
 "Stadia.AlidadeSmooth", "Stadia.AlidadeSmoothDark", "Stadia.OSMBright", "Stadia.Outdoors",
 "Stadia.StamenToner", "Stadia.StamenTonerBackground", "Stadia.StamenTonerLines", "Stadia.StamenTonerLabels",
 "Stadia.StamenTonerLite", "Stadia.StamenWatercolor", "Stadia.StamenTerrain", "Stadia.StamenTerrainBackground",
 "Stadia.StamenTerrainLabels",
 "Esri.WorldStreetMap", "Esri.WorldTopoMap", "Esri.WorldImagery", "Esri.WorldTerrain", "Esri.WorldShadedRelief",
 "Esri.OceanBasemap", "Esri.NatGeoWorldMap", "Esri.WorldGrayCanvas",
 "CartoDB.Positron", "CartoDB.PositronNoLabels", "CartoDB.PositronOnlyLabels", "CartoDB.DarkMatter",
 "CartoDB.DarkMatterNoLabels", "CartoDB.DarkMatterOnlyLabels", "CartoDB.Voyager", "CartoDB.VoyagerNoLabels", "CartoDB.VoyagerOnlyLabels",
 "Thunderforest.OpenCycleMap", "Thunderforest.Transport", "Thunderforest.TransportDark", "Thunderforest.SpinalMap", "Thunderforest.Landscape", "Thunderforest.Outdoors", "Thunderforest.Pioneer",
 "Thunderforest.MobileAtlas", "Thunderforest.Neighbourhood"

Value

A SpatRaster is returned.

Examples

```
## Not run:
library(sf)
library(maptiles)
nc <- st_read(system.file("shape/nc.shp", package = "sf"), quiet = TRUE)
nc_osm <- get_tiles(nc, crop = TRUE, zoom = 6)
plot_tiles(nc_osm)

# Create a provider from a custom url
osm_tiles <- create_provider(
  name = "osm_tiles",
  url = "https://tile.openstreetmap.org/{z}/{x}/{y}.png",
  citation = "© OpenStreetMap contributors."
)
# Download tiles and compose raster (SpatRaster)
nc_osm2 <- get_tiles(
  x = nc, provider = osm_tiles, crop = FALSE,
  zoom = 6, project = FALSE, verbose = TRUE
)
# Plot the tiles
plot_tiles(nc_osm2)
# Add attribution
mtext(get_credit(osm_tiles), side = 1, line = -1)

## End(Not run)
```

maptiles

Download and Display Map Tiles

Description

To create maps from tiles, maptiles downloads, composes and displays tiles from a large number of providers (e.g. OpenStreetMap, Stamen, Esri, CARTO, or Thunderforest).

Author(s)

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- Diego Hernangómez ([ORCID](#)) [contributor]
- Robert J. Hijmans ([ORCID](#)) [contributor]
- Hugh A. Graham [contributor]
- Miles McBain (Slippy map tiles functions, from slippymath package) [copyright holder]

See Also

Useful links:

- <https://github.com/riatelab/maptiles/>
- Report bugs at <https://github.com/riatelab/maptiles/issues/>

plot_tiles

Plot map tiles

Description

Plot map tiles.

Usage

```
plot_tiles(x, adjust = FALSE, add = FALSE, ...)
```

Arguments

x	a SpatRaster object.
adjust	if TRUE, plot the raster without zoom-in or zoom-out in the graphic device: add margins if the raster is smaller than the graphic device, zoom-in if the raster is larger than the graphic device. This feature does not work with an unprojected (lon/lat) raster.
add	whether to add the layer to an existing plot (TRUE) or not (FALSE).
...	balpha, smooth, or other arguments passed to be passed to plotRGB

Note

This function is a wrapper for [plotRGB](#) from the terra package.

Examples

```
## Not run:
library(sf)
library(maptiles)
nc <- st_read(system.file("shape/nc.shp", package = "sf"), quiet = TRUE)
nc_osm <- get_tiles(nc, crop = TRUE)
plot_tiles(nc_osm)

## End(Not run)
```

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