

Package ‘Argentum’

May 6, 2026

Title Access and Import WMS and WFS Data from Argentine Organizations

Version 1.0.0

Description Provides functions to retrieve information from Web Feature Service (WFS) and Web Map Service (WMS) layers from various Argentine organizations and import them into R for further analysis. WFS and WMS are standardized protocols for serving georeferenced map data over the internet. For more information on these services, see <<https://www.ogc.org/publications/standard/wfs/>> and <<https://www.ogc.org/publications/standard/wms/>>.

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URL <https://github.com/thomasartopoulos/argentum/>,
<https://thomasartopoulos.github.io/argentum/>

BugReports <https://github.com/thomasartopoulos/argentum/issues>

Encoding UTF-8

RoxygenNote 7.3.2

VignetteBuilder knitr

Imports httr, xml2, sf, readr

Suggests testthat (>= 3.0.0), mockery, knitr, rmarkdown

Config/testthat/edition 3

NeedsCompilation no

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Repository CRAN

Date/Publication 2025-02-13 03:30:02 UTC

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argentum_download_layers

Download WFS Layers to Folder

Description

This function downloads WFS layers from specified organizations to a local folder. It can download all layers from an organization or specific layers by name.

Usage

```
argentum_download_layers(
  organization,
  output_dir = file.path(tempdir(), "wfs_layers"),
  layer_names = NULL,
  format = c("gpkg", "shp", "geojson"),
  overwrite = FALSE
)
```

Arguments

organization	A character string specifying the name of the organization
output_dir	Path to the directory where files will be saved. Defaults to a temporary directory.
layer_names	Optional vector of layer names to download. If NULL, downloads all available layers
format	Output format for the files. One of "gpkg" (GeoPackage), "shp" (Shapefile), or "geojson" (GeoJSON)
overwrite	Logical; should existing files be overwritten?

Details

Download WFS Layers to Folder

Value

Invisibly returns a data frame with download results

Examples

```
# Get available organizations
orgs <- argentum_list_organizations()
if (nrow(orgs) > 0) {
  argentum_download_layers(orgs$Name[1], output_dir = tempdir())
}
```

argentum_get_capabilities

Get WMS or WFS Capabilities

Description

Get WMS or WFS Capabilities

Usage

```
argentum_get_capabilities(url, max_tries = 3, timeout = 30)
```

Arguments

url	The full URL of the WMS or WFS service, including all parameters
max_tries	The maximum number of attempts to connect
timeout	The timeout for each attempt in seconds

Value

An XML document containing the service capabilities

Examples

```
try({
  capabilities <- argentum_get_capabilities("http://example.com/wfs")
  print(capabilities)
})
```

argentum_import_wfs_layer

Import WFS Layer

Description

Import WFS Layer

Usage

```
argentum_import_wfs_layer(wfs_url, layer_name)
```

Arguments

wfs_url	The URL of the WFS service
layer_name	The name of the layer to import

Value

An sf object

Examples

```
tryCatch({  
  sf_layer <- argentum_import_wfs_layer("http://example.com/wfs", "example_layer")  
  print(sf_layer)  
}, error = function(e) {  
  message("Error occurred: ", e$message)  
})
```

argentum_interactive_download

Download WFS Layers Interactively

Description

This function provides an interactive interface to download WFS layers. Users can select an organization, choose specific layers or download all, and specify the output format and directory.

Usage

```
argentum_interactive_download(output_dir = NULL)
```

Arguments

output_dir Optional; Path to the directory where files will be saved. If NULL, user will be prompted

Details

Download WFS Layers Interactively

Value

Invisibly returns a data frame with download results

Examples

```
# Try to download interactively
tryCatch({
  results <- argentum_interactive_download()
}, error = function(e) {
  message("Error: ", e$message)
})
```

```
argentum_interactive_import
      Import WFS Layer Interactively
```

Description

Import WFS Layer Interactively

Usage

```
argentum_interactive_import()
```

Value

An sf object

Examples

```
sf_layer <- argentum_interactive_import()
```

argentum_list_layers *List Layers for a Given Organization*

Description

This function retrieves and lists the available layers for a specified organization.

Usage

```
argentum_list_layers(organization)
```

Arguments

organization A character string specifying the name of the organization

Value

A data frame containing layer information with columns 'Name' and 'Title'

Examples

```
# This example uses a mock organization name.  
# In a real scenario, use an actual organization name from argentum_list_organizations()  
tryCatch({  
  orgs <- argentum_list_organizations()  
  if(nrow(orgs) > 0) {  
    layers <- argentum_list_layers(orgs$Name[1])  
    print(layers)  
  } else {  
    message("No organizations found.")  
  }  
}, error = function(e) {  
  message("Error occurred: ", e$message)  
})
```

argentum_list_organizations *List Organizations with WMS and WFS Services*

Description

List Organizations with WMS and WFS Services

Usage

```
argentum_list_organizations()
```

Value

A data frame containing organization information including WMS and WFS URLs

```
argentum_select_organization
      Select Organization
```

Description

Select Organization

Usage

```
argentum_select_organization(search = NULL, interactive_select = interactive())
```

Arguments

`search` An optional search term to filter organizations
`interactive_select` Logical; whether to run in interactive mode. Defaults to `interactive()`

Value

A data frame containing the selected organization's information, or NULL if no selection is made

Examples

```
# List available organizations
orgs <- argentum_list_organizations()
print(orgs)

# Select organization non-interactively
selected_org <- argentum_select_organization(interactive_select = FALSE)
print(selected_org)

if(interactive()){
  # Select an organization interactively
  selected_org <- argentum_select_organization()

  # Select an organization with a search term
  selected_org <- argentum_select_organization("Example")
}
```

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