

Package: cmemsarco (via r-universe)

May 11, 2026

Title Cloud-Native Access to Copernicus Marine ARCO Zarr Stores

Version 0.1.0

Description Build and query a catalog of Copernicus Marine Service (CMEMS) Analysis-Ready Cloud-Optimized (ARCO) Zarr datasets. Provides GDAL-ready data source names for direct access to 'timeChunked' and 'geoChunked' Zarr stores without file downloads or directory listings. Default DSNs use '/vsicurl/' for zero-configuration access. Catalog is built by walking the CMEMS STAC API at <<https://stac.marine.copernicus.eu>>.

License MIT + file LICENSE

Encoding UTF-8

Roxygen list(markdown = TRUE)

RoxygenNote 7.3.2

Imports dplyr, httr2, purrr, tibble

URL <https://github.com/hypertidy/cmemsarco>

BugReports <https://github.com/hypertidy/cmemsarco/issues>

Depends R (>= 4.1.0)

LazyData true

Suggests knitr, rmarkdown, terra, vapour

VignetteBuilder knitr

Config/pak/sysreqs libssl-dev

Repository <https://hypertidy.r-universe.dev>

Date/Publication 2026-02-03 01:24:23 UTC

RemoteUrl <https://github.com/hypertidy/cmemsarco>

RemoteRef HEAD

RemoteSha 32dd02c6e806a214aa5cdf8779e4b857b4b30a85

Contents

cmems_arco_dsn	2
cmems_arco_only	3
cmems_arco_url	3
cmems_catalog	4
cmems_catalog_data	4
cmems_gdal_dsn	5
cmems_gdal_dsn_s3	6
cmems_gdalinfo_cmd	7
cmems_latest	7
cmems_s3_uri	8
cmems_setup	8

Index	9
--------------	----------

cmems_arco_dsn	<i>Construct GDAL DSN directly</i>
----------------	------------------------------------

Description

Convenience wrapper combining `cmems_arco_url()` and `cmems_gdal_dsn()`.

Usage

```
cmems_arco_dsn(
  product_id,
  dataset_id,
  version,
  chunk_type = c("time", "geo"),
  bucket_version = "045",
  array = NULL,
  use_s3 = FALSE
)
```

Arguments

product_id	Product identifier
dataset_id	Dataset identifier (without version)
version	6-digit version string (YYYYMM)
chunk_type	"time" or "geo"
bucket_version	Bucket suffix (e.g., "045", "042"). Varies by product.
array	Optional array/variable name
use_s3	Use <code>/vsis3/</code> instead of <code>/vsicurl/</code> (requires <code>cmems_setup()</code>)

Value

GDAL DSN string

cmems_arco_only	<i>Filter catalog to ARCO datasets only</i>
-----------------	---

Description

Removes datasets that don't have Zarr URLs (static/native-only datasets).

Usage

```
cmems_arco_only(catalog)
```

Arguments

catalog	A catalog tibble from <code>cmems_catalog()</code>
---------	--

Value

Filtered tibble with only ARCO datasets

cmems_arco_url	<i>Construct ARCO Zarr URL directly</i>
----------------	---

Description

Build a Zarr URL from known identifiers without querying STAC. Requires knowing the bucket version suffix which varies by product family.

Usage

```
cmems_arco_url(
  product_id,
  dataset_id,
  version,
  chunk_type = c("time", "geo"),
  bucket_version = "045"
)
```

Arguments

product_id	Product identifier
dataset_id	Dataset identifier (without version)
version	6-digit version string (YYYYMM)
chunk_type	"time" or "geo"
bucket_version	Bucket suffix (e.g., "045", "042"). Varies by product.

Value

HTTPS URL to the Zarr store

cmems_catalog	<i>Build CMEMS ARCO catalog from STAC</i>
---------------	---

Description

Walks the STAC catalog to retrieve all products, datasets, and Zarr URLs.

Usage

```
cmems_catalog(product_ids = NULL, progress = TRUE)
```

Arguments

product_ids	Character vector of product IDs, or NULL for all products
progress	Show progress messages

Value

A tibble with columns: product_id, dataset_version_id, dataset_id, version, timeChunked_url, geoChunked_url, native_url, and GDAL/S3 variants

Examples

```
## Not run:
# Single product
cat <- cmems_catalog("SEALEVEL_GLO_PHY_L4_NRT_008_046")

# All products (takes a few minutes)
full <- cmems_catalog()

## End(Not run)
```

cmems_catalog_data	<i>CMEMS ARCO Catalog</i>
--------------------	---------------------------

Description

Cached catalog of Copernicus Marine ARCO Zarr datasets with URLs for timeChunked and geoChunked stores. Updated periodically via data-raw/update_catalog.R.

Usage

```
cmems_catalog_data
```

Format

A tibble with columns:

product_id CMEMS product identifier
dataset_version_id Full dataset identifier with version suffix
dataset_id Dataset identifier without version
version 6-digit version string (YYYYMM), NA for static datasets
timeChunked_url HTTPS URL to timeChunked.zarr (spatial slice access)
geoChunked_url HTTPS URL to geoChunked.zarr (time series access)
native_url URL to native files (if available)
timeChunked_gdal GDAL DSN using /vsicurl/ (no setup needed)
geoChunked_gdal GDAL DSN using /vsicurl/ (no setup needed)
timeChunked_gdals3 GDAL DSN using /vsis3/ (needs cmems_setup())
geoChunked_gdals3 GDAL DSN using /vsis3/ (needs cmems_setup())
timeChunked_s3 S3 URI for timeChunked store
geoChunked_s3 S3 URI for geoChunked store

Source

STAC catalog at <https://stac.marine.copernicus.eu/metadata/catalog.stac.json>

See Also

[cmems_catalog\(\)](#) to refresh, [cmems_latest\(\)](#) to filter to latest versions, [cmems_arco_only\(\)](#) to remove non-ARCO datasets

cmems_gdal_dsn	<i>Convert URL to GDAL Zarr DSN (vsicurl)</i>
----------------	---

Description

Creates a GDAL DSN using /vsicurl/ which works without environment variable configuration.

Usage

```
cmems_gdal_dsn(url, array = NULL)
```

Arguments

url	HTTPS URL to a Zarr store
array	Optional array/variable name to access directly

Value

GDAL DSN string

Examples

```
url <- "https://s3.waw3-1.cloudferro.com/md1-arco-time-045/arco/PRODUCT/dataset/timeChunked.zarr"
cmems_gdal_dsn(url)
cmems_gdal_dsn(url, array = "sla")
```

cmems_gdal_dsn_s3	<i>Convert URL to GDAL Zarr DSN (vsi3)</i>
-------------------	--

Description

Creates a GDAL DSN using `/vsi3/` which requires `cmems_setup()` to configure AWS environment variables first.

Usage

```
cmems_gdal_dsn_s3(url, array = NULL)
```

Arguments

url	HTTPS URL to a Zarr store
array	Optional array/variable name to access directly

Value

GDAL DSN string

Examples

```
url <- "https://s3.waw3-1.cloudferro.com/md1-arco-time-045/arco/PRODUCT/dataset/timeChunked.zarr"
cmems_setup()
cmems_gdal_dsn_s3(url)
```

cmems_gdalinfo_cmd	<i>Generate gdalinfo command</i>
--------------------	----------------------------------

Description

Generate gdalinfo command

Usage

```
cmems_gdalinfo_cmd(dsn)
```

Arguments

dsn	GDAL DSN string
-----	-----------------

Value

Shell command string

cmems_latest	<i>Filter catalog to latest version per dataset</i>
--------------	---

Description

Filter catalog to latest version per dataset

Usage

```
cmems_latest(catalog)
```

Arguments

catalog	A catalog tibble from cmems_catalog()
---------	---

Value

Filtered tibble with only the latest version of each dataset

cmems_s3_uri *Convert S3 HTTPS URL to s3:// URI*

Description

Convert S3 HTTPS URL to s3:// URI

Usage

```
cmems_s3_uri(url)
```

Arguments

url HTTPS URL to a Zarr store

Value

S3 URI string

cmems_setup *Set up GDAL environment for CMEMS S3 access*

Description

Sets AWS environment variables required for /vsis3/ access to CMEMS. Not needed if using the default /vsicur1/ DSNs.

Usage

```
cmems_setup()
```

Value

Invisible TRUE

Examples

```
cmems_setup()
```

Index

* datasets

- cmems_catalog_data, 4

- cmems_arco_dsn, 2
- cmems_arco_only, 3
- cmems_arco_only(), 5
- cmems_arco_url, 3
- cmems_arco_url(), 2
- cmems_catalog, 4
- cmems_catalog(), 3, 5, 7
- cmems_catalog_data, 4
- cmems_gdal_dsn, 5
- cmems_gdal_dsn(), 2
- cmems_gdal_dsn_s3, 6
- cmems_gdalinfo_cmd, 7
- cmems_latest, 7
- cmems_latest(), 5
- cmems_s3_uri, 8
- cmems_setup, 8
- cmems_setup(), 2, 6