

# Access ECMWF Public Datasets

## Introduction

This service will allow you to access the **ECMWF public datasets**. You will **need to have an account** on ECMWF web site. If you **don't have an account**, please self register at <https://apps.ecmwf.int/registration/>.

The procedure is very **simple**: the user writes a request, submits it and retrieves a file (**grib** or **netcdf** format) including the requested data.



This method is supported on UNIX/Linux and Windows platforms with Python. No assumption should be made regarding service availability and individual user support..

## Step-by-step guide

This method allows users to download ECMWF public datasets in a **programmatic** way.

1. [Install ECMWF key](#)
2. [Install client libraries](#)
3. [Check data availability](#)
4. [Choose dataset](#)
5. [Script examples](#)
6. [Request syntax](#)

## Install ECMWF KEY

If you don't have an ECMWF account, please self register at <https://apps.ecmwf.int/registration/> and then follow **ONE** of the steps below.

You can also try visiting <https://api.ecmwf.int/v1/key/> to retrieve your credentials.



Note that the key expires in 1 year. You will receive an email to the registered email address 1 month before the expiration date with the renewal instructions.

## Contact

[contact-us](#)

## Useful links

[Accessing Forecasts](#)

[ECMWF Registration](#)

[ECMWF Public Datasets web interface](#)

[ECMWF Public Datasets S2S /TIGGE history](#)

## WebAPI UPDATES

### Blog Posts

Blog: [ERA5 access migrated to the Climate Data Store \(CDS\)](#)

created by

Cristian Simarro Mar 05, 2019

ECMWF Web API

Blog: [IMPORTANT New interpolation software: MIR](#)

created by

Cristian Simarro Jan 29, 2019

ECMWF Web API

Blog: [New Public Dataset: CERA-SAT Monthly](#) created by

Matthew Manoussakis

ECMWF Web API Oct 15, 2018

Blog: [ERA5 and C3S users should migrate they work to CDS](#)

created by

Matthew Manoussakis  
ECMWF Web API Aug 02, 2018

Blog: [Change in the Web API behaviour: expected fields vs. retrieved fields](#) created by

Cristian Simarro Feb 26, 2018

ECMWF Web API

Blog: [New Public Dataset: CERA-SAT](#) created by

Matthew Manoussakis

ECMWF Web API Dec 08, 2017

## Install client libraries

The client currently supports both Python 2.7.x and Python 3.



The `ecmwf-api-client` library was added to the Python Package Index (PYPI):

<https://pypi.org/project/ecmwf-api-client/>

Install via pip with:

```
pip install ecmwf-api-client
```

If you do not have admin privileges you can always install the client in your user space:

```
pip install --user ecmwf-api-client
```

If you have [Anaconda](#) installed you can install the Web API Python client library doing:

```
conda install -c conda-forge ecmwf-api-client
```

Alternatively, you can first install **Python (and pip) on your Windows environment**.

1. Download windows installer exe from [Python.org](#) download page
2. Run the exe.
3. Screen will be shown to chose the installation option.
4. Uncheck "install for all user" option.
5. Go for the custom installation.
6. On next screen specify the directory path for which your user have full access on the computer (take a note of this as you will need it to set the environment variables).
7. Uncheck "create shortcuts for installed application" option.
8. Make sure "Add python to environment variable" option is Unchecked .
9. Complete the installation.

Then add the installation and Script folder path in PATH using set (temporary) or setx (permanent) in a Command Prompt window. This is to make sure that your computer knows where to find the Python interpreter. To do this you will have to modify a setting called PATH, which is a list of directories where Windows will look for programs. Further details and examples are available [here](#). You may choose also to set your environment variables into a batch file (e.g. `set-env.bat` which you will need to run from the Command Prompt.

```
@echo off  
  
set PY_HOME=C:\...\python37  
  
set PATH=%PY_HOME%;%PY_HOME%\Scripts;%PATH%
```

You can now install it via pip (see instructions above).

For languages other than Python please see [Web-API Downloads](#)

Blog: [New models added on Public Dataset UERRA](#) created by Matthew Manoussakis  
ECMWF Web API Nov 23, 2017

Blog: [New Public Dataset: CAMS Reanalysis](#) created by Matthew Manoussakis  
ECMWF Web API Nov 13, 2017

Blog: [Limit the period of a request via the Web User Interface](#) created by Matthew Manoussakis  
ECMWF Web API Nov 10, 2017

Blog: [New Public Dataset: C3S Seasonal forecasts](#) created by Matthew Manoussakis  
ECMWF Web API Nov 02, 2017

Blog: [New Public Dataset: CERA-20C Observation Feedback](#) created by Matthew Manoussakis  
ECMWF Web API Oct 03, 2017

Blog: [Web-API client version 1.5.0 released](#) created by Matthew Manoussakis  
ECMWF Web API Sep 20, 2017

Blog: [New Public Dataset: ERA5 reanalysis](#) created by Matthew Manoussakis  
ECMWF Web API Aug 03, 2017

Blog: [New Public Dataset: CAMS climate forcing](#) created by Matthew Manoussakis  
ECMWF Web API Jun 02, 2017

Blog: [New Public Dataset: UERRA Harmonie and UM-4dvar](#) created by Matthew Manoussakis  
ECMWF Web API May 25, 2017

Blog: [New Public Dataset: Year Of Polar Prediction \(YOPP\)](#) created by Matthew Manoussakis  
ECMWF Web API May 10, 2017

Blog: [New Public Dataset: Global ECMWF Fire Forecasting model \(GEFF\)](#) created by Matthew Manoussakis  
ECMWF Web API Feb 27, 2017

Blog: [New Public Dataset: CERA-20C daily](#) created by Cristian Simarro  
Jan 30, 2017  
ECMWF Web API

## Check Data availability

To check the availability of **ECMWF Public Datasets** go to the web interface:

<http://apps.ecmwf.int/datasets/>

Using this interface you can **discover** all the ECMWF Public Datasets that are available from our archive. We strongly recommend you to navigate through our public datasets to become familiar with their availability. You may select a **Public Dataset** and start navigating through its content.



Please take into account some considerations about the content:

- Different **ECMWF Public Datasets** include different "parameters" , "times" , and "steps"
- In each **ECMWF Public Dataset** not all the "parameters" are available from all "steps"
- In each **ECMWF Public Dataset** not all the "steps" are available from all "times"

The web interface above will help you to check and understand the availability. For any kind of selections the system will update the attributes in a dynamic way to reflect the current availability. (i.e. if you change the steps some parameters will be added or removed).



### Tip

We encourage users to use the "**View MARS request**" feature at the bottom of the page once the selection has been done. Using this MARS request you can build your own Python script. If you are interested on the syntax go to **Brief request syntax**.

- If you click on the ERA-interim [http://apps.ecmwf.int/datasets/data/interim\\_full\\_daily/](http://apps.ecmwf.int/datasets/data/interim_full_daily/) you will get a web page reflecting the availability of this specific Public Dataset as the period that it is available, the forecast steps and the parameters that are available etc.
- From this page you have the option to define the values of your requests such as the "date", the "time" the "steps" and the "parameters" that you are interested in.
- In the case of ERA-Interim if you select time "06:00:00" only, the system updates the availability of the "steps" dynamically. In that case only the "step" 00 is available (checkable).
- Additionally if you select "step" 00 you will see that only a subset of the parameters are now available and only these parameters can now be checked.

Spend some time to understand how it works, make some selections try to execute the MARS scripts.

## Choosing a dataset

See [Available ECMWF Public Datasets](#).

## Script examples

- [Python S2S examples](#)
- [Python TIGGE examples](#)
- [Python ERA-40 examples](#)
- [Python ERA-15 examples](#)
- [Python ERA-20c examples](#)
- [Python CAMS real-time examples](#)
- [Python MACC Reanalysis examples](#)
- [Python CAMS GFAS examples](#)
- [Python ERA-interim examples](#)

Blog: [New Public Dataset: CERA-20C monthly](#) created by Cristian Simarro Jan 12, 2017  
ECMWF Web API

Blog: [New S2S origin: KMA is now available](#) created by Cristian Simarro Jan 11, 2017  
ECMWF Web API

Blog: [New Public Dataset: ERA5\\_test reanalysis](#) created by Karl Hennermann Nov 04, 2016  
ECMWF Web API

Blog: [New Public Dataset: CAMS GHG flux inversions](#) created by Cristian Simarro Jul 20, 2016  
ECMWF Web API

Blog: [New Public Dataset: S2S, ECCO, Reforecasts](#) created by Cristian Simarro Jun 29, 2016  
ECMWF Web API

Blog: [New Public Dataset: CAMS NRT dataset](#) created by Cristian Simarro Jun 22, 2016  
ECMWF Web API

Blog: [New Public Dataset: S2S, ECCO, Realtime](#) created by Cristian Simarro Jun 22, 2016  
ECMWF Web API

Blog: [New Public Dataset: CAMS Global Fire Assimilation System](#) created by Cristian Simarro May 20, 2015  
ECMWF Web API

Blog: [New Public Dataset: ERA-20C Monthly Means, ERA-20C Wave Monthly Means](#) created by Cristian Simarro May 20, 2015  
ECMWF Web API

Blog: [New Public Dataset: ERA-20C Daily, ERA-20C Wave, ERA-20C Observations](#) created by Cristian Simarro May 13, 2015  
ECMWF Web API

Blog: [New Public Dataset: S2S](#) created by Cristian Simarro May 13, 2015  
ECMWF Web API

Blog: [Limit target size](#) created by Cristian Simarro Apr 29, 2015  
ECMWF Web API

Blog: [Limit number of fields](#) created by Cristian Simarro Apr 01, 2015  
ECMWF Web API

## Request syntax

See [Brief request syntax](#)

## Related articles

## Content by label

There is no content with the specified labels



## Recently Updated

[Web-API Troubleshooting](#)

Jun 14, 2019 • updated by Matthew Manoussakis • view change

[Sample client scripts](#)

May 21, 2019 • updated by Cristian Simarro • view change

[Limit target size](#)

May 15, 2019 • updated by Matthew Manoussakis • view change

[Install ECMWF Web API Python client library](#)

May 10, 2019 • updated by Cristian Simarro • view change

[Install ECMWF API Key](#)

May 10, 2019 • updated by Cristian Simarro • view change