

ecCodes Home

What is ecCodes

ecCodes is a package developed by ECMWF which provides an application programming interface and a set of tools for decoding and encoding messages in the following formats:

- WMO FM-92 **GRIB** [edition 1](#) and [edition 2](#)
- WMO FM-94 **BUFR** [edition 3](#) and [edition 4](#)
- WMO GTS [abbreviated header](#) (only decoding).

A useful set of [command line tools](#) provide quick access to the messages. C, Fortran 90 and Python interfaces provide access to the main ecCodes functionality.

ecCodes is an evolution of **GRIB-API**. It is designed to provide the user with a simple set of functions to access data from several formats with a key/value approach.

For GRIB encoding and decoding, the **GRIB-API** functionality is provided fully in ecCodes with only minor interface and behaviour [changes](#). Interfaces for C, Fortran 90 and Python are all maintained as in GRIB-API. However, the GRIB-API Fortran 77 interface is no longer available.

In addition, a new set of functions with the prefix "codes_" is provided to operate on all the supported message formats. These functions have the same interface and behaviour as the "grib_" functions.

A selection of **GRIB-API tools** has been included in ecCodes ([ecCodes GRIB tools](#)), while new tools are available for the BUFR ([ecCodes BUFR tools](#)) and GTS formats. The new tools have been developed to be as similar as possible to the existing **GRIB-API tools** maintaining, where possible, the same options and behaviour. A significant difference compared with GRIB-API tools is that bufr_dump produces output in **JSON** format suitable for many web based applications.

ecCodes is now the primary GRIB encoding/decoding package used at ECMWF. GRIB-API is no longer maintained (as of December 2018). Replacing GRIB-API with ecCodes is expected to be transparent for current GRIB-API users. In particular the "grib_" functions are included in the ecCodes library. Users are strongly advised to start the migration process.

Name clashes prevent a simultaneous use of the GRIB-API and ecCodes packages. A similar name clash is also present between the existing GRIB-API tools and the new tools provided with ecCodes. However, the behaviour of the tools is exactly the same as those provided with the current version of GRIB-API.

What's new

- [Python 3 interface for ecCodes](#)
- [GRIB-API migration](#)

Quick Links

- [Download](#)
- [Installation](#)
- [Examples](#)
- [Documentation](#)
- [Training material](#)
- [Frequently Asked Questions](#)
- [Known bugs or issues](#)
- [History of Changes](#)

Report a bug or issue

Please send an email to software.support@ecmwf.int or go to [Issues](#) if you have any suggestions for improvements or have discovered a bug with this software package.

Search

Latest News

Page: [ecCodes version 2.12.0 released \(ecCodes\)](#)

Page: [ecCodes version 2.9.2 released \(ecCodes\)](#)

Page: [ecCodes version 2.10.0 released \(ecCodes\)](#)

Page: [ecCodes version 2.9.0 released \(ecCodes\)](#)

Page: [ecCodes version 2.8.2 released \(ecCodes\)](#)

Go to [Latest news](#) to access older news items

Releases

[Download the latest tarball](#)

Installation instructions can be found [here](#).

Normally the data needed for testing is downloaded during the "ctest" step but you can also download all the data from here:

[eccodes_test_data.tar.gz](#)

Note: Untar this into the top-level of the CMake "build" directory (not the source directory)

File	Modified
ZIP Archive eccodes-2.12.0-Source.tar.gz	Feb 15, 2019 by Shahram Najm
ZIP Archive eccodes-2.10.0-Source.tar.gz	Dec 05, 2018 by Shahram Najm
ZIP Archive eccodes-2.9.2-Source.tar.gz	Nov 09, 2018 by Shahram Najm
ZIP Archive eccodes-2.9.0-Source.tar.gz	Sep 27, 2018 by Shahram Najm
ZIP Archive eccodes-2.8.2-Source.tar.gz	Aug 06, 2018 by Shahram Najm
ZIP Archive eccodes-2.8.0-Source.tar.gz	Jun 25, 2018 by Shahram Najm
ZIP Archive eccodes-2.7.3-Source.tar.gz	Apr 18, 2018 by Shahram Najm
ZIP Archive eccodes-2.7.0-Source.tar.gz	Mar 02, 2018 by Shahram Najm
ZIP Archive eccodes-2.6.0-Source.tar.gz	Dec 20, 2017 by Shahram Najm
ZIP Archive eccodes-2.5.0-Source.tar.gz	Oct 03, 2017 by Shahram Najm
ZIP Archive eccodes-2.4.1-Source.tar.gz	Aug 08, 2017 by Shahram Najm
ZIP Archive eccodes-2.4.0-Source.tar.gz	Jun 29, 2017 by Shahram Najm
ZIP Archive eccodes-2.3.0-Source.tar.gz	May 23, 2017 by Shahram Najm
ZIP Archive eccodes-2.2.0-Source.tar.gz	Mar 23, 2017 by Shahram Najm
ZIP Archive eccodes-2.1.0-Source.tar.gz	Jan 30, 2017 by Shahram Najm
ZIP Archive eccodes-2.0.2-Source.tar.gz	Nov 22, 2016 by Shahram Najm
ZIP Archive eccodes-2.0.0-Source.tar.gz	Oct 20, 2016 by Shahram Najm
First non-beta version	
ZIP Archive eccodes-0.16.0-Source.tar.gz	Jun 28, 2016 by Shahram Najm
ZIP Archive eccodes-0.13.0-Source.tar.gz	Feb 17, 2016 by Shahram Najm
ZIP Archive eccodes-0.12.0-Source.tar.gz	Nov 19, 2015 by Shahram Najm
ZIP Archive eccodes-0.11.0-Source.tar.gz	May 18, 2015 by Shahram Najm
ZIP Archive eccodes-0.10.0-Source.tar.gz	Mar 30, 2015 by Shahram Najm

[Download All](#)

Recently Updated

- [Read the GTS bulletin keys as well as GRIB/BUFR messages](#)
Mar 21, 2019 • updated by Shahram Najm • [view change](#)
- [What is ecCodes](#)
Mar 13, 2019 • updated by Shahram Najm • [view change](#)
- [grib_keys_iterator](#)
Mar 11, 2019 • updated by Shahram Najm • [view change](#)
- [grib_index](#)
Mar 11, 2019 • updated by Shahram Najm • [view change](#)
- [compute_geopotential_on_ml.py](#)
Mar 08, 2019 • updated by Xavier Abellan • [view change](#)
- [compute_wind_speed_height.py](#)
Mar 08, 2019 • updated by Xavier Abellan • [view change](#)
- [Time interval extraction in bufr_filter for compressed data](#)
Feb 26, 2019 • updated by Shahram Najm • [view change](#)
- [Area extraction in bufr_filter for compressed data](#)
Feb 26, 2019 • updated by Shahram Najm • [view change](#)
- [Releases](#)
Feb 25, 2019 • updated by Shahram Najm • [view change](#)
- [Releases](#)
Feb 25, 2019 • updated by Daniel Varela Santoalla • [view change](#)
- [Frequently Asked Questions](#)
Feb 21, 2019 • updated by Shahram Najm • [view change](#)
- [BUFR tools examples](#)
Feb 18, 2019 • updated by Shahram Najm • [view change](#)
- [bufr_filter](#)
Feb 18, 2019 • updated by Shahram Najm • [view change](#)
- [BUFR: Access keys by condition](#)
Feb 18, 2019 • updated by Shahram Najm • [view change](#)
- [ECMWF=3 sequence table](#)
Feb 15, 2019 • updated by Sandor Kertesz • [view change](#)

Show More 