

Install Wgrib2 on Ubuntu/ Red Hat or any other Linux OS

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About GRIB File

If you are a Meteorologist or Climate Scientist or Engineer working on a forecast or Reanalysis data set, you would have probably come across the `grib` file format. It is a shortened name for "General Regularly distributed Information in Binary form" which is a WMO standard for storing and transferring gridded datasets. The gridded datasets may be forecast data from Atmospheric, Ocean, or Climatology models. The GRIB files may have extensions like '.grib2', '.grib', 'grb', or '.gb' and in some cases, it may not even have a file name extension.

There are mainly two types of GRIB file formats i.e. `GRIB1` and `GRIB2`. Some info on the GRIB file format may be referred to here at <https://confluence.ecmwf.int> and here at <https://weather.gc.ca>.

About `wgrib2`

`wgrib2` is one of the most versatile and fast tools available for reading and manipulating GRIB2 gridded datasets. For complete technical documentation, you may refer https://www.nco.ncep.noaa.gov/pmb/docs/grib2/grib2_doc/. The official documentation is available at <https://www.nco.ncep.noaa.gov>. Some of the frequently used options with examples are listed at <https://www.ftp.cpc.ncep.noaa.gov/wd51we/wgrib2/tricks.wgrib2>. Since this post is not about working with `wgrib2`, I will go ahead and install the package now.

Install `wgrib2` on Linux

This guide is on how to install `wgrib2` on a Ubuntu OS. A guide for Windows users is given at the end of this article.

Firstly, update the OS before proceeding further:

```
sudo apt-get update && apt-get upgrade
```

Install all necessary dependencies on Ubuntu and its derivatives:

```
sudo apt-get install -y build-essential libaec-dev zlib1g-dev libcurl4-openssl-dev  
→ libboost-dev curl wget zip unzip bzip2 gfortran gcc g++
```

If you use Redhat or its derivatives, use the following commands:

```
sudo groupinstall "Development Tools"  
sudo dnf install gcc-gfortran csh perl
```

Make a working directory for compilation and move into it:

```
mkdir -p ~/Downloads/wgrib2  
cd ~/Downloads/wgrib2
```

Download the latest source code and extract it to the current working directory:

```
wget -c ftp://ftp.cpc.ncep.noaa.gov/wd51we/wgrib2/wgrib2.tgz  
tar -xzvf wgrib2.tgz
```

Move to the `grib2` directory where all the necessary compilation files are located:

```
cd grib2
```

Compile the source code:

```
make
```

Note that it does not require `configure` as we do for many of the source compilations. If everything goes well, you should have compiled the `wgrib2` executable under the `wgrib2` directory. Check if it is properly compiled using the following command:

```
wgrib2/wgrib2 -config
```

which should print information like the below:

```
wgrib2 v3.1.1 4/2022 Wesley Ebisuzaki, Reinoud Bokhorst, John Howard, Jaakko  
→ Hyvätti, Dusan Jovic, Daniel Lee, Kristian Nilssen, Karl Pfeiffer, Pablo  
→ Romero, Manfred Schwarb, Gregor Schee, Arlindo da Silva, Niklas Sondell, Sam  
→ Trahan, George Trojan, Sergey Varlamov
```

```
Compiled on 14:16:59 Jan 10 2023
```

```
Netcdf package: 4.8.1 of Oct 31 2022 22:16:44 $ is installed  
hdf5 package: system is installed  
Jasper 2.0.33 is installed  
mysql package is installed  
regex package is installed  
flush_mode determined by stat()
```

```

tigge package is installed
interpolation package is not installed, default vectors:
UGRD/VGRD VUCSH/VVCSH UFLX/VFLX UGUST/VGUST USTM/VSTM VDFUA/VDFVA MAXUW/MAXVW
  UOGRD/VOGRD UICE/VICE U-GWD/V-GWD USSD/VSSD
Geolocation library status (by search order)
  gctpc geolocation is enabled
  spherical geolocation is enabled
UDF package is not installed
version ftime=2
maximum number of arguments on command line: 10000
maximum number of -match,-not,-if, and -not_if options: 2000
maximum number of -match_fs,-not_fs,-if_fs, and -not_if_fs options: 2000
maximum number of -fgrep, -egrep, -fgrep_v, -egrep_v options: 200
RPN registers: 0..19
memory files: @mem:0, @mem:1 .. @mem:29
stdout buffer length: 100000
default decoding: g2clib emulation
g2clib decoders are not installed
Supported decoding: simple, complex, rle, ieee, png, jpeg2000
Supported encoding: simple, complex, ieee, jpeg2000
default WMO names: NCEP
C compiler: gcc
  CPPFLAGS= -Wall -Wmissing-prototypes -Wold-style-definition
  ↪ -Werror=format-security -ffast-math -O3 -DGFORTTRAN
OpenMP: control number of threads with environment variable OMP_NUM_THREADS
INT_MAX: 2147483647
ULONG_MAX: 18446744073709551615

```

If you wish to access `wgrib2` directly from the terminal anywhere as we do for other commands like `ls` , `cp` , `df` etc., copy the `wgrib2` binary into the appropriate location as indicated below:

```
cp -rfv wgrib2/wgrib2 /usr/local/bin/wgrib2
```

If you wish to clean up the compilation directory, simply delete the working directory we have used so far with the following command:

```
rm -rfv ~/Downloads/wgrib2
```

That's it for Linux users.

Install `wgrib2` on Windows

For Windows, there is a precompiled version is available at <https://www ftp.cpc.ncep.noaa.gov/wd51we/wgrib2/Windows10/>. Click on the directory that contains the latest version of `wgrib2` and download all *.exe and *.dll files. Save all the downloaded files and run `wgrib2.exe` . That's it.

You can download this article from here for free.

