Wavewatch3 Installation Instructions (CPC International Desks, Draft Version)

1. **Prerequisite for Windows Subsystem for Linux (WSL) installation**
* Prepare environment for WSL installation
	+ Search and Open Windows Powershell (type **Windows PowerShell** on your Windows search bar)
	+ Run PowerShell **as Administrator: (Start menu > PowerShell > right-click > Run as Administrator)** and type the one line command below to enable the "Windows Subsystem for Linux" :

**dism.exe /online /enable-feature /featurename:Microsoft-Windows-Subsystem-Linux /all /norestart**

* Enable Virtual Machine feature using the one line command below:

**dism.exe /online /enable-feature /featurename:VirtualMachinePlatform /all /norestart**

1. **WSL Installation**
* Use the command below to install

**wsl -- install**

* Wait until the WSL and Ubuntu installation is complete
* Reboot your computer
* Create a username and password when prompted
1. **Install Additional Linux Libraries**
* **Search and open ubuntu using your Windows search window (bottom left)**
* **Use your ubuntu terminal to type the commands below and install the libraries**
* **Run Updates**

**sudo apt-get update**

**(you may need to enter your password)**

* + **Install ImageMagick**

**sudo apt install imagemagick**

**sudo apt install gcc**

**sudo apt install gfortran**

**sudo apt install g++**

**sudo apt install make**

1. **Xming Installation**
* Download the xming installation file from:

<https://sourceforge.net/projects/xming/files/latest/download>

* Double-click the xming installation file (in your Downloads folder) to initiate the installation.
	+ Choose the default settings
* When the installation completes, search for xming and double-click to open it.
1. **OpenGrADS Installation**
* Using your ubuntu terminal change your directory to /usr/local/bin, by typing

 **cd /usr/local/bin**

* Download grads package using:

**sudo wget** [**https://sourceforge.net/projects/opengrads/files/grads2/2.0.2.oga.2/Linux/grads-2.0.2.oga.2-bundle-x86\_64-unknown-linux-gnu.tar.gz**](https://sourceforge.net/projects/opengrads/files/grads2/2.0.2.oga.2/Linux/grads-2.0.2.oga.2-bundle-x86_64-unknown-linux-gnu.tar.gz)

* Unpack the package using:

 **sudo** **tar -xzvf grads-2.0.2.oga.2-bundle-x86\_64-unknown-linux-gnu.tar.gz**

* Copy GrADS binaries and associated files to the current folder:

**sudo cp -rf grads-2.0.2.oga.2/Contents/\* .**

* You may remove the unwanted files and folders:

**sudo rm -rf grads-2.0.2.oga.2**

**sudo rm -rf grads-2.0.2.oga.2-bundle-x86\_64-unknown-linux-gnu.tar.gz**

But, you may receive an error message that indicates missing libraries. Follow the steps below to fix the issue:

**cd /usr/local/bin/Linux/Versions/2.0.2.oga.2/x86\_64/gex**

**sudo cp ../libs/libXaw.so.7 .**

**sudo cp ../libs/libXpm.so.4 .**

**sudo cp ../libs/libXmu.so.6 .**

**sudo cp ../libs/libXt.so.6 .**

**sudo cp ../libs/libSM.so.6 .**

**sudo cp ../libs/libICE.so.6 .**

1. **Netcdf4 installation**

Change the directory to your home folder

**cd $HOME**

**mkdir netcdf**

**cd netcdf**

**wget** [**https://ftp.cpc.ncep.noaa.gov/International/wavewatch3/netcdf-4.0.tar**](https://ftp.cpc.ncep.noaa.gov/International/wavewatch3/netcdf-4.0.tar)

* Unpack the package using:

**tar -xvf netcdf-4.0.tar**

**cd netcdf-4.0**

* Configure and make

**./configure prefix=$HOME/netcdf**

**make**

**make install**

**cd ..**

**rm –rf netcdf-4.0**

**rm netcdf-4.0.tar**

1. **Edit your .bashrc**

Change directory to your home directory

**cd $HOME**

Type **gedit .bashrc & (or any text editor)**

Insert the following lines towards end of the .bashrc file

**export NETCDF\_LIBDIR=$HOME/netcdf/lib**

**export NETCDF\_INCDIR=$HOME/netcdf/include**

**export NETCDF\_CONFIG=$HOME/netcdf/bin/nc-config**

**export WWATCH3\_NETCDF=NC3**

save and exit

Close and reopen your Ubuntu terminal

1. **WW3 Installation**
* Download the tar.gz bundle and unpack:
* Change directory to your home folder:

**cd $HOME**

**mkdir wwatch3**

**cd wwatch3**

**wget** <https://github.com/NOAA-EMC/WW3/releases/download/6.07/wwatch3.v6.07.tar.gz>

**Run the install script:**

**tar –xvf wwatch3.v6.07.tar.gz**

**./install\_ww3\_tar**

* Change your directory to wwatch3.v6.07/model/bin

**cd model/bin**

* Download the appropriate switch file

**wget** [**https://ftp.cpc.ncep.noaa.gov/International/wavewatch3/switch\_cpc**](https://ftp.cpc.ncep.noaa.gov/International/wavewatch3/switch_cpc)

**wget** [**https://ftp.cpc.ncep.noaa.gov/International/wavewatch3/wgrib2**](https://ftp.cpc.ncep.noaa.gov/International/wavewatch3/wgrib2)

**chmod 755 wgrib2**

* Change your directory to wwatch3

**cd ../../**

* Setup you’re your Wavewatch III model using Gnu compiler and the cpc switch

**./model/bin/w3\_setup model –c Gnu –s cpc**

* Change directory to the bin folder

**cd model/bin**

**cp switch\_cpc switch**

**cp comp.Gnu comp**

**cp link.Gnu link**

* Compile and finalize the installation

**./w3\_automake**

* If everything goes well, it will take a few minutes to install all the required programs
* Change directory to your home folder to edit your .bashrc

**cd $HOME**

**gedit .bashrc & (or any text editor)**

* Add the following command at the end of your .bashrc

**PATH=$PATH:$HOME/.local/bin:$HOME/wwatch3/model/bin:$HOME/wwatch3/model/exe**

* Save and exit
* Close and reopen your Ubuntu terminal