Guide for installation of Python and test run of STORMflag

STORMflag is a set of python scripts which requires a variety set of python libraries. The easiest method is to install Anaconda distribution with Python 3.7 and to further install Py-Art module over it. Step by step procedure for installation and running of STORMflag and dependencies is given below.

1) Download and install Anaconda distribution for Windows with Python 3.7 or higher from the below link https://www.anaconda.com/distribution/
    a. Step by step installation can be followed from the webpage https://www.datacamp.com/community/tutorials/installing-anaconda-windows
    b. **In 6th step shown in the webpage, choose the method titled as "Alternate approach" as the method adopted here is to run python commands from command prompt of windows**.

2) From a command prompt (cmd.exe) run the following commands, answer Y when asked to install additional packages. This will install Py-Art module which isn

    conda install basemap netcdf4
    conda install -c conda-forge arm_pyart

3) Download the Stormflag.zip from shared location and extract zip file to "C" drive of local windows machine. (it can be any drive, here the entire process is shown with C: drive as the location)

Steps (1),(2) and (3)are to be performed only once in a machine as it will permanently install python and Py-Art. After installation, Stormflag can be run by step 4.

4) Open a command prompt and type

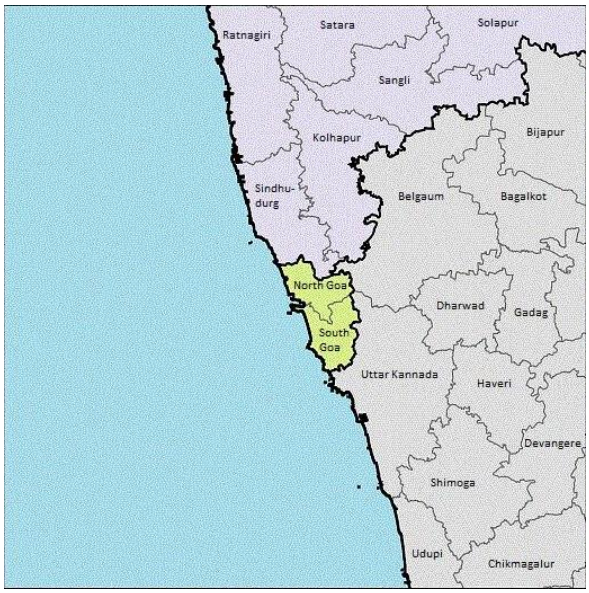
    c:

    cd Stormflag

    python run.py

5) run.py file runs all required scripts one by one.

    a. First it automatically downloads the latest required files of Doppler Weather Radar installed at Goa state of India from a pre-configured FTP folder.
    b. Then on the files downloaded, the image processing and radar data processing will be carried out.
    c. Graphic images for present location of clouds and future locations of clouds will automatically be saved in 3 subfolders inside the folder c:/Stormflag/ "Date of running the tool".
    d. Text files with positional coordinates and district name of present cloud location will be saved in the sub folder "Text files".
    e. The images and text file will be automatically sent to stake holders as an alert email.



Administrative map of area covered under the range of Doppler Weather Radar at Goa

Weather radar at Panaji, Goa covers parts of three states of India. Namely Goa, Karnataka and Maharashtra. The darker boarder lines indicate state boundaries and lighter boarder lines represent district boundaries. The scripts are so configured that alert messages will be sent to each state's meteorological office, if thunderstorm clouds are within or near by their state boundaries. To avoid false alarm emails while reviewing, the version of STORMflag is configured in a way that it will send warning emails only to the email id rahulm.imd@gmail.com.

Special note:

Files namely max1.gif and rawdata.raw are already placed inside the folder "Stormflag" which are the input files. The result of the run can be found inside the folder "Storrmflag" where a new folder with the date of run of script must have formed. Inside this new folder, the resultant gif images can be found. These output image files are the track and intensity forecast output. They can be compared to the actual radar images for the date on which the input files were actually generated by radar. These original radar observations also are attached along with images of 30 minutes interval.