Drone Data Processing Pipeline & Analysis Using Open Source

Installation Steps and Resource Links

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[A] Installing WebODM

Ref: https://docs.opendronemap.org/installation/

1. Ensure that virtualization is enabled on Windows system
2. Install Python if not installed already. https://www.python.org/downloads/
3. Install Docker for Windows https://docs.docker.com/desktop/install/windows-install/
4. Turn on the WSL 2 feature on Windows, https://learn.microsoft.com/en-us/windows/wsl/install
5. Open Windows PowerShell command prompt as Administrator mode and run
   `wsl-install`
6. Refresh docker and under Resources>WSL Integration> slide to Ubuntu
7. Open Windows PowerShell command prompt as Administrator mode andSet WSL 2 as your default version. `wsl --set-default-version 2`
8. Go to Ubuntu and run following commands
   ```
   $ sudo apt update
   $ curl -fsSL https://get.docker.com -o get-docker.sh
   $ sh get-docker.sh
   $ sudo apt install -y git python python-pip
   ```
9. Download and Launch WebODM
   ```
   $ git clone https://github.com/OpenDroneMap/WebODM
   $ cd WebODM
   $ ./webodm.sh start
   ```

(Optional Settings)

Allocating of more memory with WSL2. Run Powershell to find configured memory for ODM (`free -mh`)

First ensure that the .wslconfig file is defined in the Users folder e.g. C:/Users/<name of user>/.wslconfig (If not created the file earlier)

1. You can use this command "notepad.exe %UserProfile%/.wslconfig" in the windows explorer address bar then paste the text below as the content for the file

Console

```
[wsl2]
#Limits VM memory to use no more than 4 GB, this can be set as whole
numbers using GB or MB
memory=16GB
#Sets the VM to use two virtual processors
processors=4
```

For more wsl configuration options please use this link https://learn.microsoft.com/en-us/windows/wsl/wsl-config#wslconfig

2. Save the file
3. Run the command "wsl --shutdown" to stop the wsl service
4. Run the command "restart-service LxssManager" in PowerShell running as administrator to restart wsl

The trick is to ensure that you shut down and restart wsl after making changes to the config file

[B] Installing VisualSfm and Meshlab
http://ccwu.me/vsfm/download/VisualSFM_windows_cuda_64bit.zip

https://github.com/cnr-isti-vclab/meshlab/releases/download/Meshlab-2020.04/MeshLab2020.04-windows.exe

[C] PDAL

https://anaconda.org/conda-forge/pdal
https://pdal.io/en/2.6.3/

[D] QGIS and GRASS

https://qgis.org/en/site/forusers/download.html
https://grass.osgeo.org/

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