**Installing Linux on a Window PC**

RHESSys operates on Unix, which makes it easy to run on a Mac but more difficult from a Windows PC, which does not support Unix. Consequently, at the current time, there is no direct support for PC users. However, RHESSys can be (and has been) run from Windows operating systems using a virtual machine with a Linux operating system on it. Linux and Unix are very similar, so running RHESSys from Linux is often seamless. There are a number of options for getting Linux on non-Mac devices. Here, we highlight one such method using Windows Subsystem for Linux.

**Windows Subsystem for Linux**

We recommend finding updated instructions for this installation.

https://docs.microsoft.com/en-us/windows/wsl/install-win10

Basic steps include

- Opening command prompt (or similar) in administrator mode.

- TBD

- TBD

**Ubuntu**

After installing Windows Subsystem for Linux, you can select which flavor of Linux you want from the Microsoft store. For those that are new to Linux, Ubuntu is the most common version used and should be more than sufficient for your RHESSys needs. That said, Ubuntu is a large installation (>440 MB in November 2020), so if space is an issue, there are other options without all the bells and whistles that would also likely be fine. You will be asked to create a user name and password for Ubuntu.

Once Ubuntu is operating on your device, you have access to a linux environment from which to run RHESSys. This operates similar to the Unix environment described earlier for Macs, with a couple key differences that we will highlight.

Ubuntu is self contained in a hidden folder on your windows system. Your home folder is likely empty. To search and access files on your PC, you will need to go though the mnt folder (../../mnt/c/).

**Getting libraries**

There are a number of libraries required to compile RHESSys. Note that in the following commands we use sudo, or superuser status. If you don't have permissions to use sudo, the commands can be attempted without sudo, but you are likely to need admin assistance.

To see what libraries already installed in Linux, use

*sudo apt list --installed*

Here is the following list of libraries required (note some may already be installed)

bison

clang

flex

flex-devel (possibly)

libbsd-dev

libglib2.0-dev (possibly standard on ubuntu)

libnetcdf-dev

pkg-config (possibly standard on ubuntu)

python3 (possibly standard on ubuntu)

Optional

build-essential (includes gcc compiler and make, among other things)

To install a package, use

*sudo apt install <package>*

To check if packages are out of date, use

*sudo apt update*  # Updates list of available packages and versions

*sudo apt list --upgradable* # Generates list of packages to upgrade

and to update...

*sudo apt update* # Updates list of available packages and versions

*sudo apt upgrade* # Installs newer versions of packages