

CPD3 installation

Laptop requirements:

The minimum requirements for the data acquisition computer are:

- 1 GB RAM (1GB is the minimum - 2 GB is preferred)
- the ability to run 64 bit software (this is important!)
- needs to be able to boot from USB

Pretty much any computer bought in the last 7 years should meet these criteria. Note: the computer will need to be wiped of whatever is on it, in order to install Linux so be sure you've gotten everything off it before the installation!

There are three components to the installation:

- (1) Installing Linux (Xubuntu)
- (2) Setting up the networking
- (3) Aerosol software installation and setup

All three of these things can be done in your office – they don't have to be done at the station. If the internet is better at your office or you want to be sure you have everything setup before you travel to the site then doing this at your office can be a good idea.

I) Xubuntu Installation process

There are two ways to do this: (1) Using a USB stick we sent you or (2) creating your own USB stick. These instructions will explain how to make a USB stick with the software on it and then how to use it to install Xubuntu.

Making the USB stick

The ISO of the Xubuntu operating system can be downloaded from this site:

<https://xubuntu.org/getxubuntu/>

But you have to follow a specific procedure to set the USB stick up properly (you cannot just copy the ISO).

Please read this tutorial about how to make a USB stick that is set up properly to install the operating system: <https://tutorials.ubuntu.com/tutorial/tutorial-create-a-usb-stick-on-windows#6> (note: the tutorial is for Ubuntu but setting up the USB stick works the same for Ubuntu and Xubuntu)

Once you have the USB stick

The computer you will use for the station data acquisition laptop needs to be hooked up to the network - ethernet cable or wifi will work.

The USB stick has the Linux operating system (Xubuntu) on it (but not the aerosol software) Insert USB stick with computer off (or reboot once USB stick is installed). *The computer is probably already set to boot from USB – but if not need to go into the computer BIOS and set it so it is. Access the BIOS by pressing F12 when the booting messages mention that, otherwise try pressing Delete or F2 for the full BIOS setup and select the USB stick as the boot device..*

Start computer.

After a few seconds of a black screen with a few white icons at the bottom, you should see a blue Xubuntu boot screen. If the screen seems to freeze up (blank with just a cursor and a message about waiting for the installer with a timer), type '<control><alt><F2>' then '<control><alt><F1>' several times until a screen about installing appears.

Next screen will ask about 'automatic updates' and '3rd party installation' – click both boxes. If the computer is not connected to the network during the Xubuntu installation the checkbox about "download updates" will be unselectable. Choose 'continue'.

Next screen asks about erasing disk and doing the installation. Choose install now and continue. Accept the partitioning and click 'continue'.

Next screen asks about time zone. This the computer time but not the data logging time so you can choose local time or whatever. If you want the computer time to be UTC then you can just enter "UTC" in the box. Click 'continue'.

Next screen asks about keyboard preferences (i.e., is it a US QWERTY keyboard or something else). Choose the appropriate keyboard. Click 'continue'

Next screen is to set computer name and password and login info:

We recommend:

Name: aerosol

Computer name: aerosol-xxx where xxx=station ID (like arn for El Arenosillo)

User name: aerosol

Password: the regular password (**ask us if you don't know what this is**)

Select login = automatic

Choose 'continue'.

Now you have to wait a while (takes ~30min on older computer) for the installation.

Once the install is done, you'll get a screen - choose 'restart now' option.

Screen will prompt you to remove the USB stick and press <enter>. Then computer will reboot.

The reboot will result in a Linux desktop.

II) Setting up the network

Once you've got the Xubuntu installed, it's a good time to set up the networking for the station. If the site uses DHCP networking then you can skip the network set up. If you are doing this at your office, you will want to wait to set the station network settings until you are at the station. Wherever you are, you need to be connected to the network when you install the aerosol software.

If the site is not using DHCP networking, go to upper right corner and click on the up/down arrow icon.

→Choose 'edit connections'.

→Highlight the appropriate connection (ethernet or wifi) and choose edit.

→Choose the tab to edit IPv4 settings.

→Change the method from 'automatic (DHCP)' to 'manual'

→Click on the add button near the address table. This will bring up a text box.

→Add the appropriate IP address, netmask and gateway info (use tab to switch between regions in text box)

→In the DNS servers field below enter the appropriate DNS server values.

→save and close

III) Aerosol software installation and setup

Open a terminal window by clicking on 'terminal' in the upper left pulldown menu. The following stages require networking and downloading ~300 MB of software, so they should wait until you have high speed connectivity.

Type the following to install DAOS (aerosol software) on the blank Linux install:

```
wget -O - ftp://aftp.cmdl.noaa.gov/aerosol/software/daos/bootstrap.sh | sh -
```

Note that the preceding line must be typed *exactly* as written above. There are 3 hyphens in this line. The first hyphen has a space before it and is followed by the letter 'O'. The second hyphen has a space before and after it. The final hyphen, at the end of the line, has a space in front of it but no space behind it.

You will be prompted for the password set during the installation process (cNc ...). The DAOS install takes ~30 min on an older computer. When it's done you will have a desktop with the NOAA logo. Reboot the computer now.

Station specific set-up and replacing a computer for an existing station

First, you need to tell the software to actually be the station. In the terminal window type:

```
sudo mousepad /etc/default/cpd3-acquisition
```

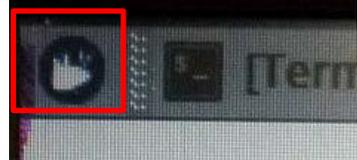
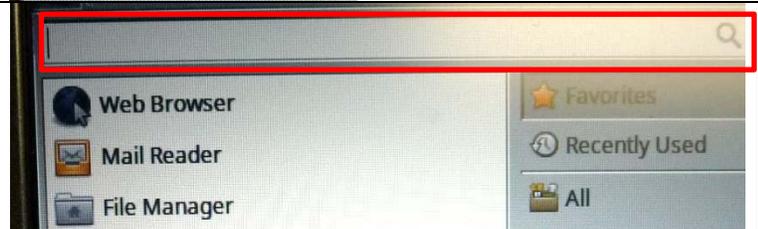
This opens a window with two lines in it. Change the station ID in the second line from NIL to XXX where XXX is the station ID (like AMY for Anmyeon-do).

Reboot using the reboot icon in the pulldown menu in the upper left or by typing:

```
sudo reboot.
```

Next you need to run the cpd3 setup process which is described below. This cpd3 setup process downloads the latest configuration we've received for your existing station, rather than the one that was present when the initial configuration was created. The latest configuration received will have any changes made since the station was created, while the old one will not.

- i) Click on the computer menu icon in the upper left corner of the desktop (Figure 1).
- ii) Type cpd in the search bar (Figure 2) and this will bring up several options. Choose the option cpd3 setup
- iii) Cpd3 setup will ask you for your station ID – type in the three letter id for your station (e.g., AMY for Anmyeon-do)
- iv) Continue through a couple other screens – no need to change them and choose 'finish' on the last screen.
- v) Reboot the computer again for the changes to take effect.

	<p>Figure 1 - computer menu icon in the upper left of the desktop</p>
	<p>Figure 2 – search bar, this is where you would type in cpd and it will bring up the option cpd3 setup.</p>

Note: alternatively you can run cpd3.setup on the command line. You would open a terminal window and type: `cpd3 . setup --mode=acquisition <enter>` (note that's two dashes in front of the word mode
 And then answer the prompts (it will ask for station name and some other stuff).