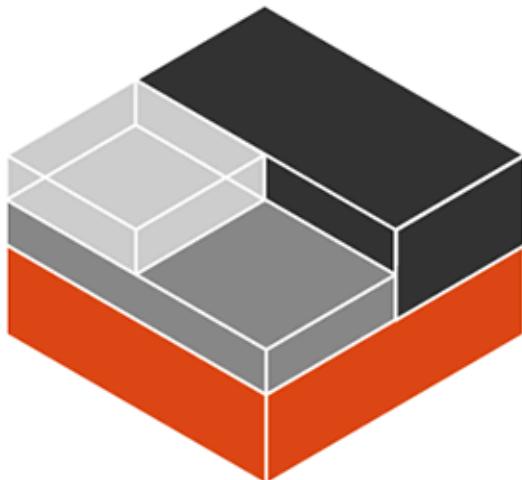




in an



LXC

container on

PROXMOX

V0.1 Mark Phillips, NI2O 20240507

V0.2 Mark Phillips, NI2O 20240508

V0.3 Mark Phillips, NI2O 20240510

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Abstract

This document aims to instruct the reader on how to install and operate the WeeWX weather software package within an LXC container running in the Proxmox Virtual Environment.

Requirements

A pre-installed machine running ProxmoxVE with sufficient resources to add another container.

Assumptions

Available system resources per the WeeWX documentation. Familiarity with Proxmox and LXC containers.

Procedure

Install the LXC container

Create a nesting, unprivileged Debian (preferably) LXM container with 1 core, 512MB of RAM, 8GB HDD, network interface (dedicated or bridged). Add your public SSH key to allow secure remote access. Ensure to check the "start at boot" option if you want the container to automatically start.

Update the LXC container

Once the container is running log in from the proxmox web GUI using the root account. Update the distro with “apt update && apt upgrade -y”. Other distro’s will have different commands. Use the distro-appropriate commands to update them.

Test remote SSH access. SSH to the container’s IP address. Your SSH keys should automatically log you in.

Install all your favorite OS tools.

Install the following applications/tools;

Apache web server	apt install apache2 -y
Python => 3.6	apt install python3 -y

NTP or some other sort of time syncing application is required to ensure accurate time stamping of data. However, since LXC containers share the same kernel as the node or host they run on, they read the kernel’s value when calling gettimeofday(), so an NTP client is not required in the container. Ensure the host has either NTPD or Chrony installed and can communicate with its upstream peers.

Refer to <https://weewx.com/docs/5.0/usersguide/introduction/> for updated system requirements and install them if necessary.

Install WeeWX

Our container should now be behaving like an actual physical machine. From this point forward we can follow the excellent WeeWX installation documentation for our chosen distro (remember we recommended Debian?) Refer to <https://weewx.com/docs/5.0/quickstarts/debian/> for installation instructions.

Add your weather station hardware

Connect your weather station to the Proxmox server (usually by USB cable). By default LXC containers do not have access to hardware such as USB ports. In the Proxmox console, discover the name of the USB device you just added eg /dev/ttyUSB0 or /dev/ttyACM0 etc. ‘lsusb’ will display all the attached USB devices.

Edit /etc/pve/lxc/XXX.conf (where XXX is the number of your container) and add the following line to the bottom of the file

```
lxc.mount.entry: /dev/ttyUSB0 dev/vp2 none bind,optional,create=file
```

Where ttyUSB0 is the name of your actual USB port and /dev/vp2 is the name you want the port to be called in the container.

WEEWX in an LXC container on Proxmox

Restart the container and then look for the existence of /dev/vp2 (or whatever you called it).

Add weewx user to ‘dialout’ group

Add the weewx user to the dialout group in the container’s command line. This will assign the correct rights to the weewx user so that it can use the weather station.

```
“useradd -aG dialout weewx”
```

Survive a reboot

Proxmox servers are strange in that not only do the servers themselves reboot but the various virtual machines and containers also reboot. They all require to be started either manually or automatically.

Ensure that the “Start at boot” option is set to “yes” under the Options tab for your WeeWX container.

Configure WeeWX

Follow the WeeWX excellent documentation for instructions on how to configure and operate WeeWX.