Sock's guide to Hoshinova on a VPS

What does this guide make?

This guide is to set up hoshinova on a VPS and then transfer anything that has been downloaded to your local storage at a more convenient. In my case it was so that I could download all the streams to my local server overnight while I was sleeping so that my network wasn't affected with a potentially large amount of streams. Additionally, this VPS will also host a wireguard server for accessing the webUI of hoshinova. The wireguard server will not be limited to just this, and you can use it as a VPN for other devices as well.

Why is *something* done like this?

- This guide is more than likely not the best and most efficient way to do things. It works and I was requested to share the setup.
- I wanted to use a containerized setup because I can limit the resources it can consume
- I didn't want to modify the hoshinova code so that I don't have to worry about updates if/when some much brighter minds than myself release them.

Disclaimers:

1. This guide uses linux as the local machine. It should work perfectly fine in windows as rsync and ssh are on windows and are not exotic programs, but you will have to adapt them.
2. If you have better configs for any of the programs, use it. This is meant for starting from scratch.
3. I will use a local virtual machine for all of the OS config, simply because I don't want to risk my current setup or buy another service. This also means that for initial setups might not be exactly the same as mine.
4. Processing the videos (i.e. muxing) takes a LONG time. For the type of setup this guide is going for, it is not an issue, but if there are a few videos muxing and a crash occurs it is possible videos will process on youtube and hoshinova won't redownload it.
5. Your mileage may vary, especially when choosing hosting.

Who do I host with?

I personally use a 1GB ram dedicated kvm slice from buyvm/frantech (https://buyvm.net/kvm-dedicated-server-slices/) and added on a 256gb storage slab. The 512mb ram option should also work with this guide, but is currently either out of stock or no longer sold.

For the 1GB kvm slice, it is currently $3.50 USD/month as of 20/10/23. The block storage is priced at $5 USD/TB/month, but offer it in 256GB and 512GB. As I have 256GB, this costs me $1.25 USD/month.

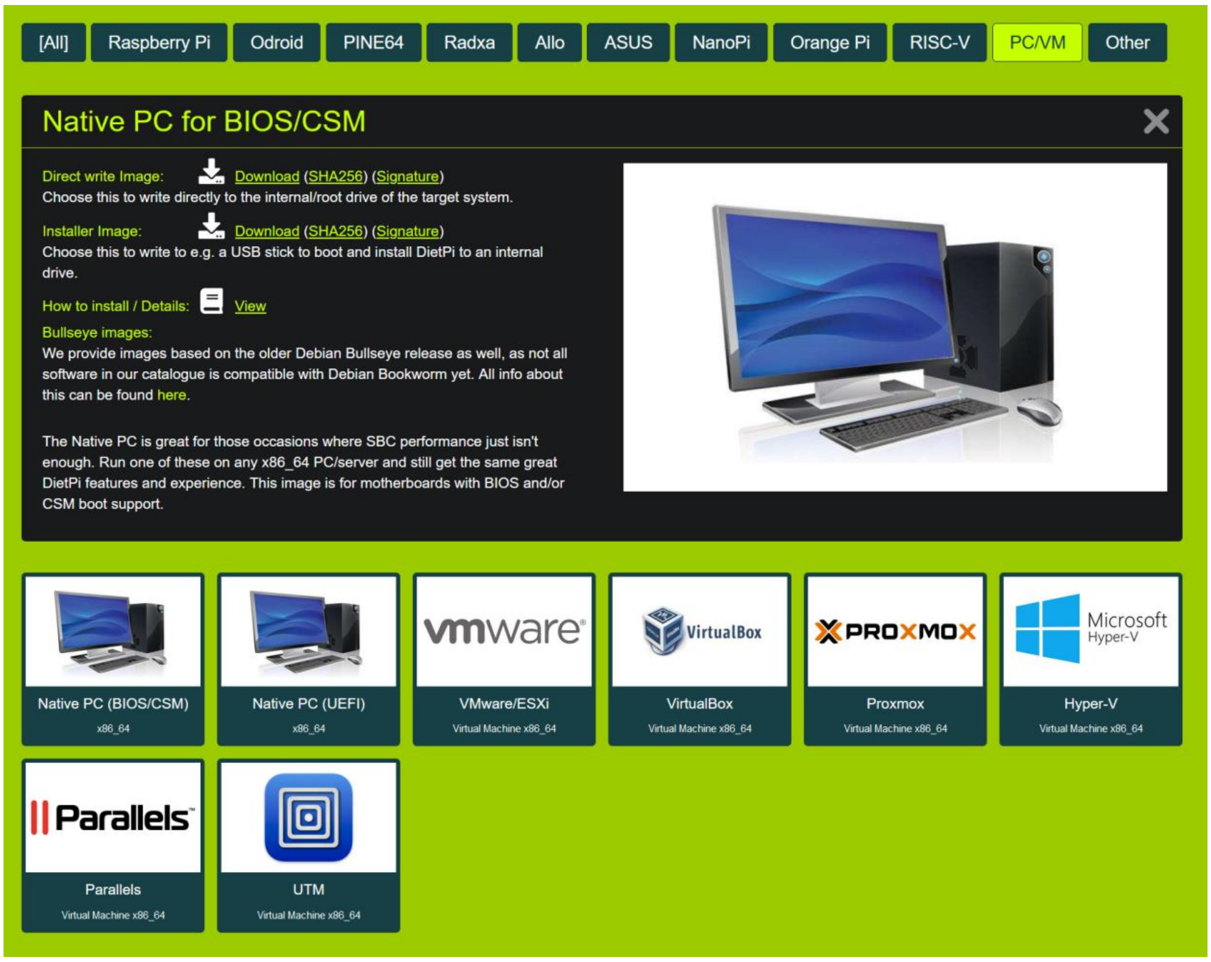
In total I pay $4.75 USD/month for the service, which I believe is a good price for unmetered network bandwidth at gigabit speeds and pretty good customer service. When I did initially purchase the slab, I got denied, but talking to customer service solved this very quickly.

You can choose whatever location works best for you, providing there is stock. You need to buy the KVM slice and the block storage separately, and make sure they are from the same location. If you have a domain, you have the option to add it to your kvm slice as well as other addon options. You don't need the automated backups if you don't want as you can keep up to 5 snapshots of your system at a time.

OS of choice

For the operating system I will be using DietPI (https://dietpi.com/). DietPi was made for SBCs running on your home network and is a very light distribution of Debian. It comes with many utilities that make it a lot easier to do some common things in linux and comes with a software installer with many config templates. There are some changes we will make to some configs later as this is a public facing VPS and not a local network raspberry pi.

For the VPS, we will download the native for PC Bios version.



Native PC for BIOS/CSM

Direct write Image: Download (SHA256) (Signature)
Choose this to write directly to the internal/root drive of the target system.

Installer Image: Download (SHA256) (Signature)
Choose this to write to e.g. a USB stick to boot and install DietPi to an internal drive.

How to install / Details: View

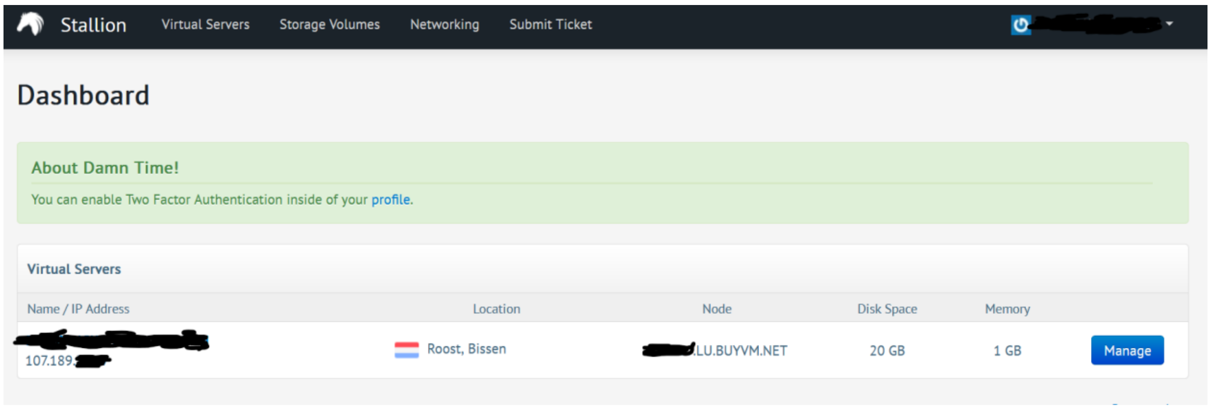
Bullseye images:
We provide images based on the older Debian Bullseye release as well, as not all software in our catalogue is compatible with Debian Bookworm yet. All info about this can be found here.

The Native PC is great for those occasions where SBC performance just isn't enough. Run one of these on any x86_64 PC/server and still get the same great DietPi features and experience. This image is for motherboards with BIOS and/or CSM boot support.

Native PC (BIOS/CSM) x86_64
Native PC (UEFI) x86_64
VMware/ESXi Virtual Machine x86_64
VirtualBox Virtual Machine x86_64
Proxmox Virtual Machine x86_64
Hyper-V Virtual Machine x86_64
Parallels Virtual Machine x86_64
UTM Virtual Machine x86_64

Setting up the VPS

After you have purchased your kvm slice and block storage, you can head over to the "Stallion" manager.



Dashboard

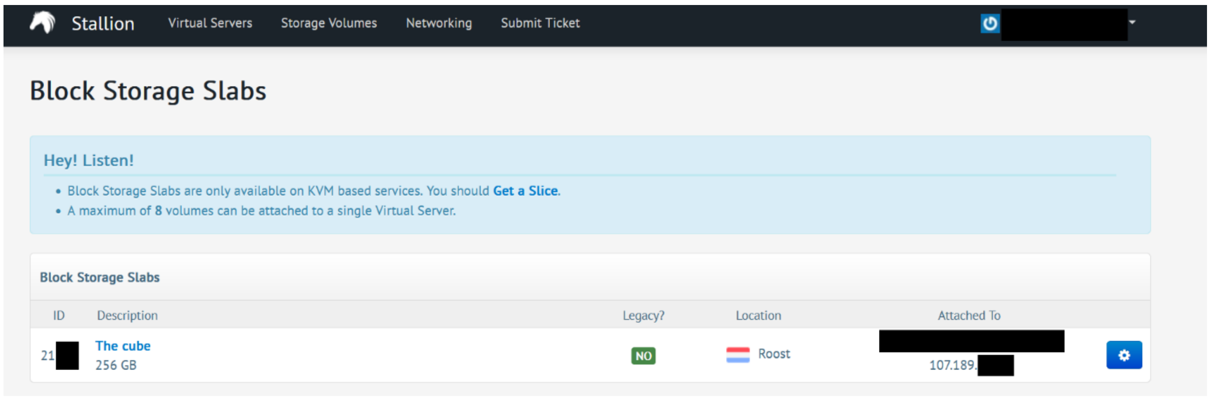
About Damn Time!

You can enable Two Factor Authentication inside of your profile.

Virtual Servers

Name / IP Address	Location	Node	Disk Space	Memory	
[redacted] 107.189.[redacted]	Roost, Bissen	[redacted]LU.BUYVM.NET	20 GB	1 GB	Manage

Head over to the "Storage Volumes" tab and click the cog. Select attach to virtual server and select the kvm slice you just purchased



Block Storage Slabs

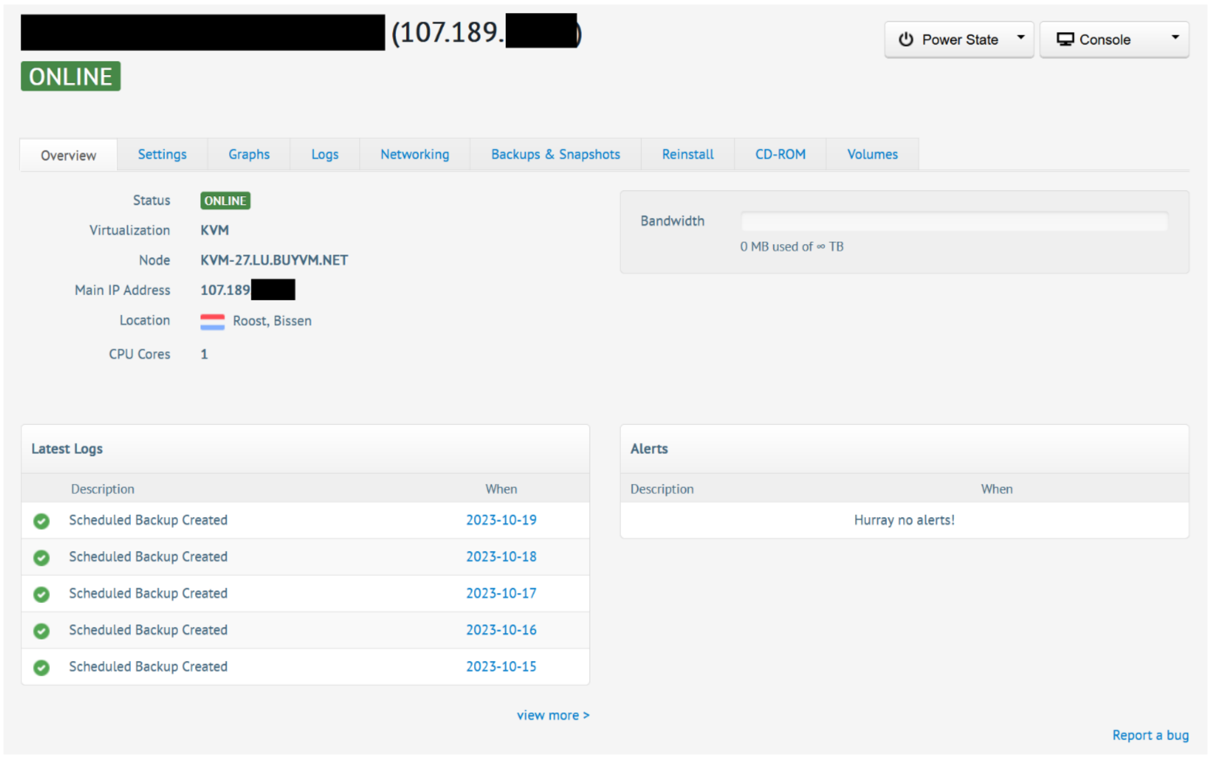
Hey! Listen!

- Block Storage Slabs are only available on KVM based services. You should **Get a Slice**.
- A maximum of **8** volumes can be attached to a single Virtual Server.

Block Storage Slabs

ID	Description	Legacy?	Location	Attached To	
21[redacted]	The cube 256 GB	NO	Roost	[redacted] 107.189.[redacted]	⚙

Go back to the virtual servers tab and click manage, you will be granted a similar screen



[redacted] (107.189.[redacted])

ONLINE

Status	ONLINE
Virtualization	KVM
Node	KVM-27.LU.BUYVM.NET
Main IP Address	107.189[redacted]
Location	Roost, Bissen
CPU Cores	1

Bandwidth

0 MB used of ∞ TB

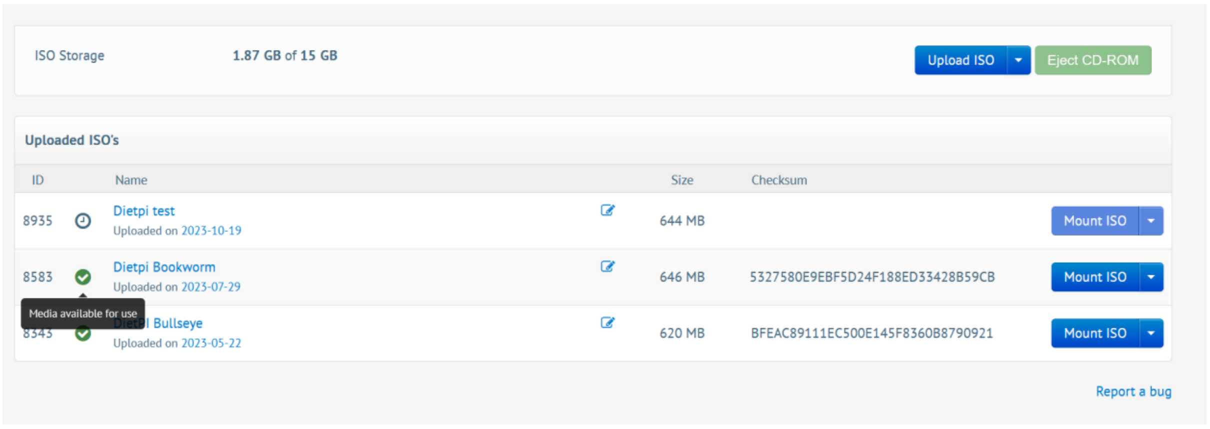
Latest Logs

Description	When
✓ Scheduled Backup Created	2023-10-19
✓ Scheduled Backup Created	2023-10-18
✓ Scheduled Backup Created	2023-10-17
✓ Scheduled Backup Created	2023-10-16
✓ Scheduled Backup Created	2023-10-15

Alerts

Description	When
Hurray no alerts!	

If you check the volumes tab you can see the attached storage volume. Go to the CD-ROM → Upload ISO. For the DietPi installer, we will need to extract the ISO file and upload it to somewhere where we can get a direct download link (i.e. the link ends in .iso). It can be a pain because redirects and non-direct links will not work, but only needs to be done once so expiring files are fine. I've had success using https://filelu.com and getting the link from the final download button after uploading.


ISO Storage 1.87 GB of 15 GB

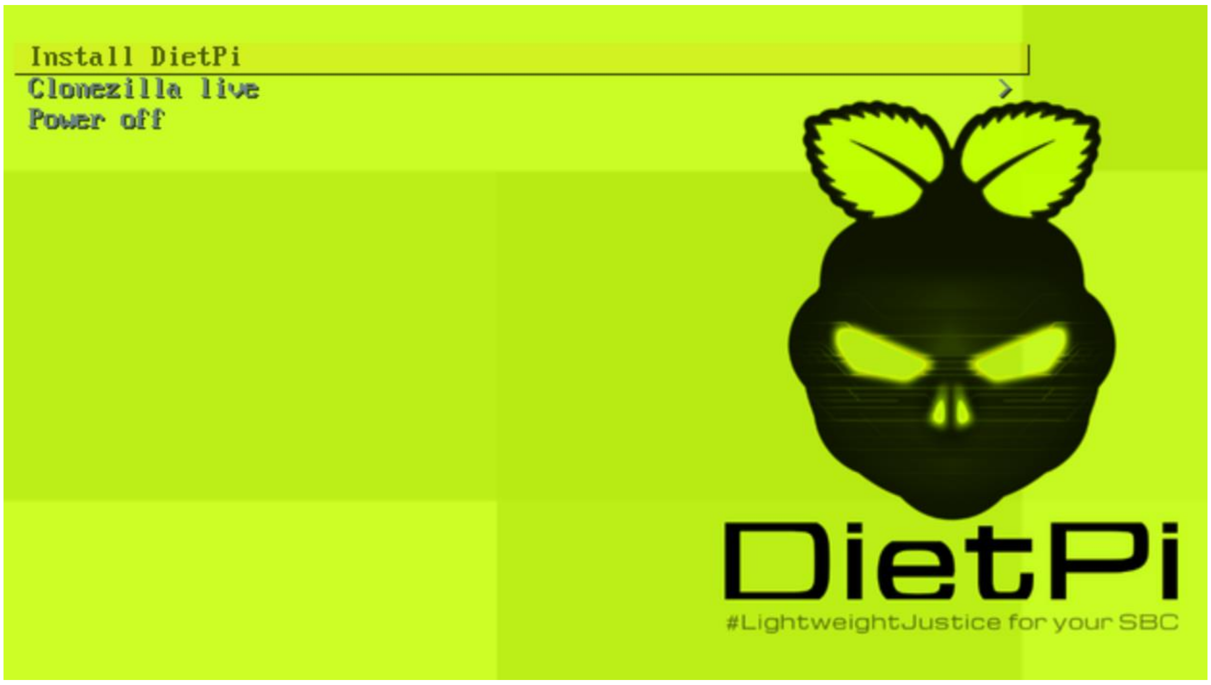
Uploaded ISO's

ID		Name	Size	Checksum	
8935		Dietpi test Uploaded on 2023-10-19	644 MB		Mount ISO
8583	✓	Dietpi Bookworm Uploaded on 2023-07-29	646 MB	5327580E9EBF5D24F188ED33428B59CB	Mount ISO
8343	✓	DietPI Bullseye Uploaded on 2023-05-22	620 MB	BFEAC89111EC500E145F8360B8790921	Mount ISO

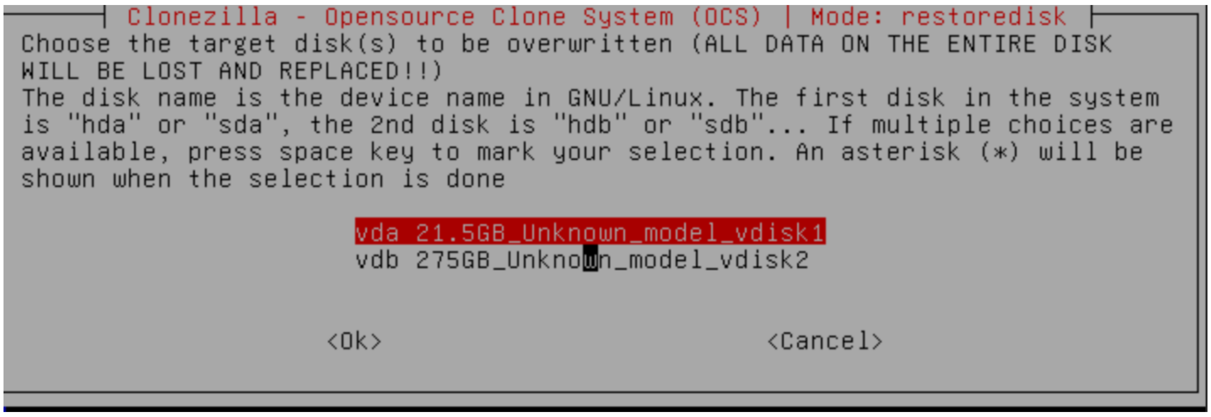
After it has finished uploading, you will want to go to Power State → Boot. Then go to Console → Web based console, to bring up a virtual console for the install process.

Installing DietPi

Installation is pretty simple, on the initial screen select install dietpi



Ensure, that you install DietPi on the kvm slice storage and not the block storage. Mine may be named differently to yours.



```
Clonezilla - Opensource Clone System (OCS) | Mode: restoredisk
Choose the target disk(s) to be overwritten (ALL DATA ON THE ENTIRE DISK
WILL BE LOST AND REPLACED!!)
The disk name is the device name in GNU/Linux. The first disk in the system
is "hda" or "sda", the 2nd disk is "hdb" or "sdb"... If multiple choices are
available, press space key to mark your selection. An asterisk (*) will be
shown when the selection is done

                    vda 21.5GB_Unknown_model_vdisk1
                    vdb 275GB_Unknown_model_vdisk2

             <Ok>                              <Cancel>
```

Let DietPi install and it will turn off the machine. After that happens, boot it again.

Setting up DietPi

Since it expects to be run on a local network, you will more than likely be able to ssh to the kvm slice immediately using the IP. If not, you will need to use the virtual console. Log in with the default username: root and default password: dietpi. Once logged in it will apply any updates that are available.

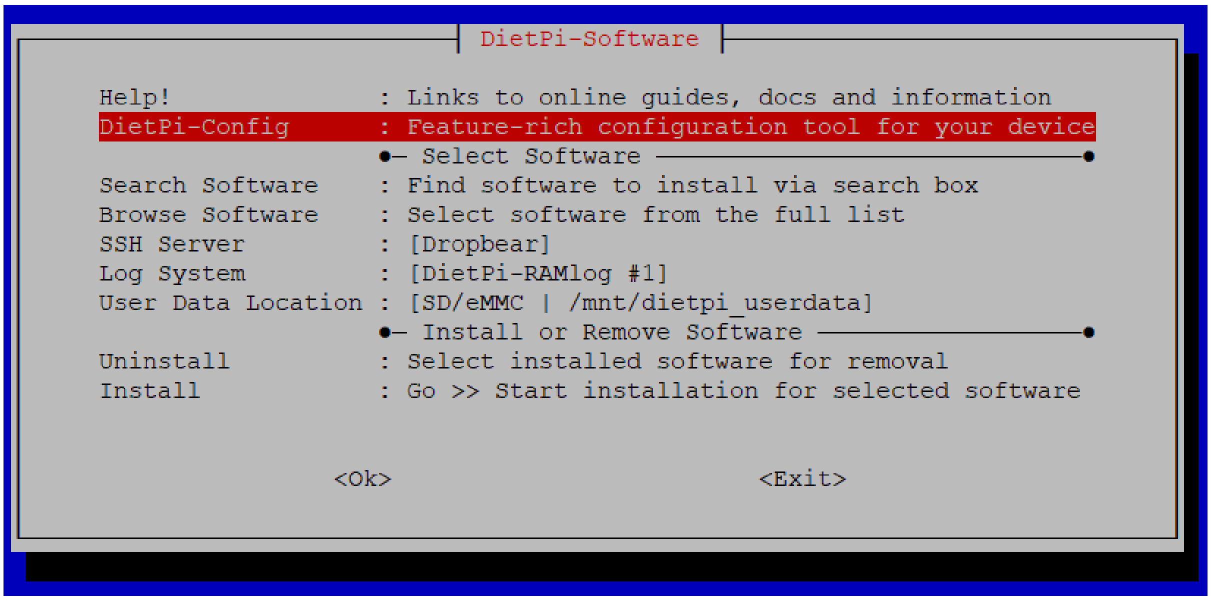
If you get an error message relating to updates/install, choose the subshell option.

Once that is complete, you will need to set a new password. If you are in the virtual console and not ssh, I HIGHLY recommend you set a temporary basic password, as the default keyboard will always be a UK layout.

Disable the serial/uart console since we won't need it.

DietPi Software

Once the DietPi-Software page appears, we will first want to go down and press enter on the DietPi-config

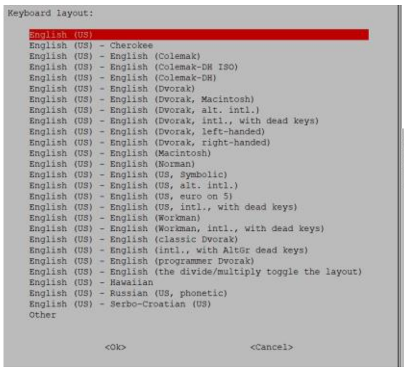


```
                          DietPi-Software

   Help!                : Links to online guides, docs and information
   DietPi-Config        : Feature-rich configuration tool for your device
                        ●─ Select Software ──────────────────────────────●
   Search Software      : Find software to install via search box
   Browse Software      : Select software from the full list
   SSH Server           : [Dropbear]
   Log System           : [DietPi-RAMlog #1]
   User Data Location   : [SD/eMMC | /mnt/dietpi_userdata]
                        ●─ Install or Remove Software ───────────────────●
   Uninstall            : Select installed software for removal
   Install              : Go >> Start installation for selected software

               <Ok>                              <Exit>
```

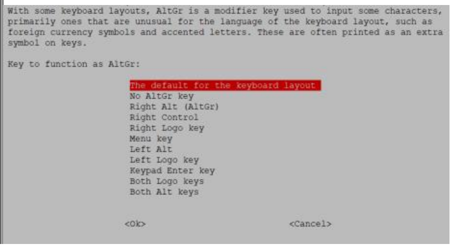
If you are accessing via virtual console and not ssh

It is important to set the keyboard layout to what you have, as it will sometimes change the characters you actually put in for the password. If you connect over SSH later, the SSH session will use YOUR keyboard layout, not the virtualized keyboard from the virtual console.

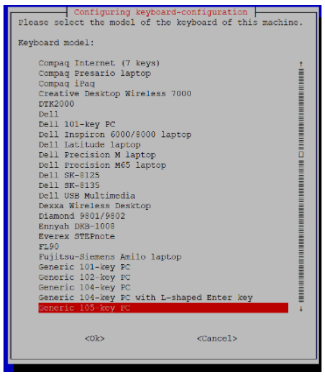
Go to language/regional options and press enter on the keyboard: [gb]. Select the same Generic 105-key pc, press enter on other, and choose English US. Go up to the one that just says English (US) with no extra options. If your keyboard layout is not US, choose the appropriate one.



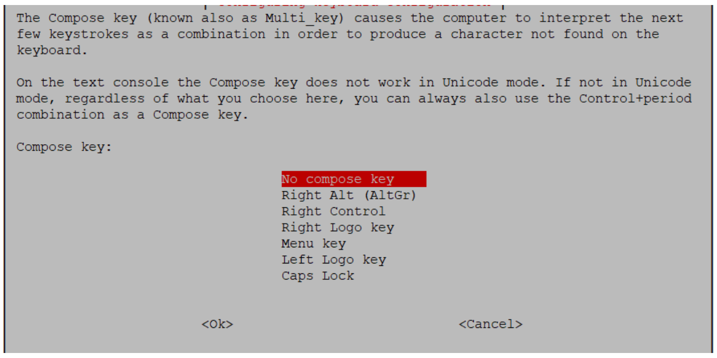
```
Keyboard layout:

    English (US)
    English (US) - Cherokee
    English (US) - English (Colemak)
    English (US) - English (Colemak-DH ISO)
    English (US) - English (Colemak-DH)
    English (US) - English (Dvorak)
    English (US) - English (Dvorak, Macintosh)
    English (US) - English (Dvorak, alt. intl.)
    English (US) - English (Dvorak, intl., with dead keys)
    English (US) - English (Dvorak, left-handed)
    English (US) - English (Dvorak, right-handed)
    English (US) - English (Macintosh)
    English (US) - English (Norman)
    English (US) - English (US, Symbolic)
    English (US) - English (US, alt. intl.)
    English (US) - English (US, euro on 5)
    English (US) - English (US, intl., with dead keys)
    English (US) - English (Workman)
    English (US) - English (Workman, intl., with dead keys)
    English (US) - English (classic Dvorak)
    English (US) - English (intl., with AltGr dead keys)
    English (US) - English (programmer Dvorak)
    English (US) - English (the divide/multiply toggle the layout)
    English (US) - Hawaiian
    English (US) - Russian (US, phonetic)
    English (US) - Serbo-Croatian (US)
    Other

              <Ok>                        <Cancel>
```



```
With some keyboard layouts, AltGr is a modifier key used to input some characters,
primarily ones that are unusual for the language of the keyboard layout, such as
foreign currency symbols and accented letters. These are often printed as an extra
symbol on keys.

Key to function as AltGr:

                       The default for the keyboard layout
                       No AltGr key
                       Right Alt (AltGr)
                       Right Control
                       Right Logo key
                       Menu key
                       Left Alt
                       Left Logo key
                       Keypad Enter key
                       Both Logo keys
                       Both Alt keys

                      <Ok>                            <Cancel>
```



```
             Configuring keyboard-configuration
 Please select the model of the keyboard of this machine.

 Keyboard model:

     Compaq Internet (7 keys)
     Compaq Presario laptop
     Compaq iPaq
     Creative Desktop Wireless 7000
     DTK2000
     Dell
     Dell 101-key PC
     Dell Inspiron 6000/8000 laptop
     Dell Latitude laptop
     Dell Precision M laptop
     Dell Precision M65 laptop
     Dell SK-8125
     Dell SK-8135
     Dell USB Multimedia
     Dexxa Wireless Desktop
     Diamond 9801/9802
     Ennyah DKB-1008
     Everex STEPnote
     FL90
     Fujitsu-Siemens Amilo laptop
     Generic 101-key PC
     Generic 102-key PC
     Generic 104-key PC
     Generic 104-key PC with L-shaped Enter key
     Generic 105-key PC

            <Ok>                 <Cancel>
```

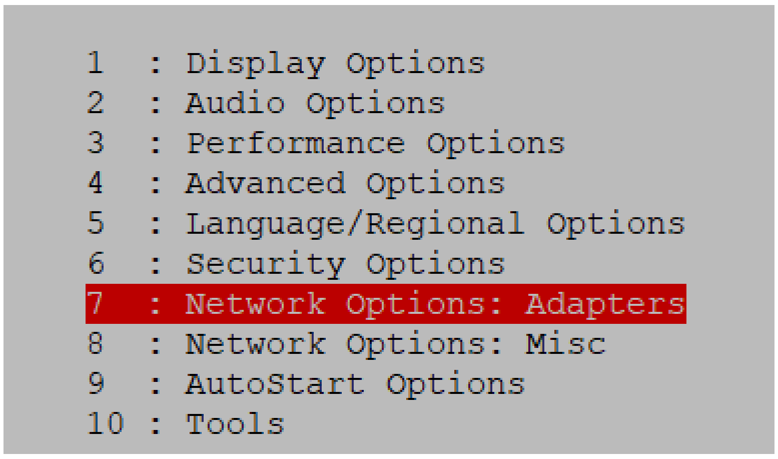


```
The Compose key (known also as Multi_key) causes the computer to interpret the next
few keystrokes as a combination in order to produce a character not found on the
keyboard.

On the text console the Compose key does not work in Unicode mode. If not in Unicode
mode, regardless of what you choose here, you can always also use the Control+period
combination as a Compose key.

Compose key:

                               No compose key
                               Right Alt (AltGr)
                               Right Control
                               Right Logo key
                               Menu key
                               Left Logo key
                               Caps Lock

                  <Ok>                                  <Cancel>
```

Then go to security options → passwords and go through the dialog options like the first time.

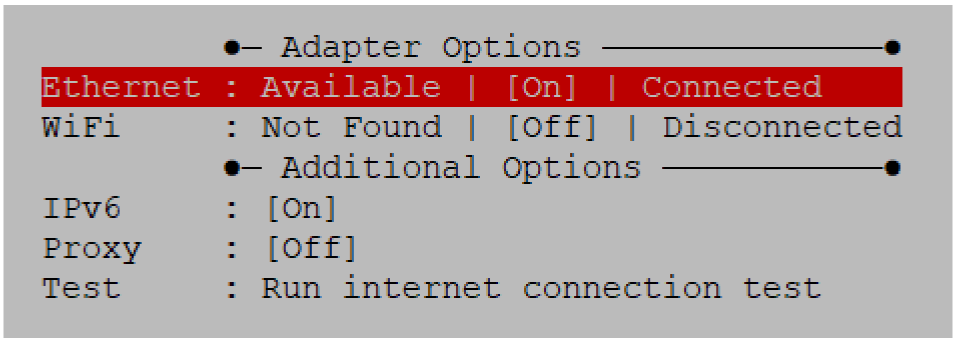
Back to everyone

Go to the network adapters menu

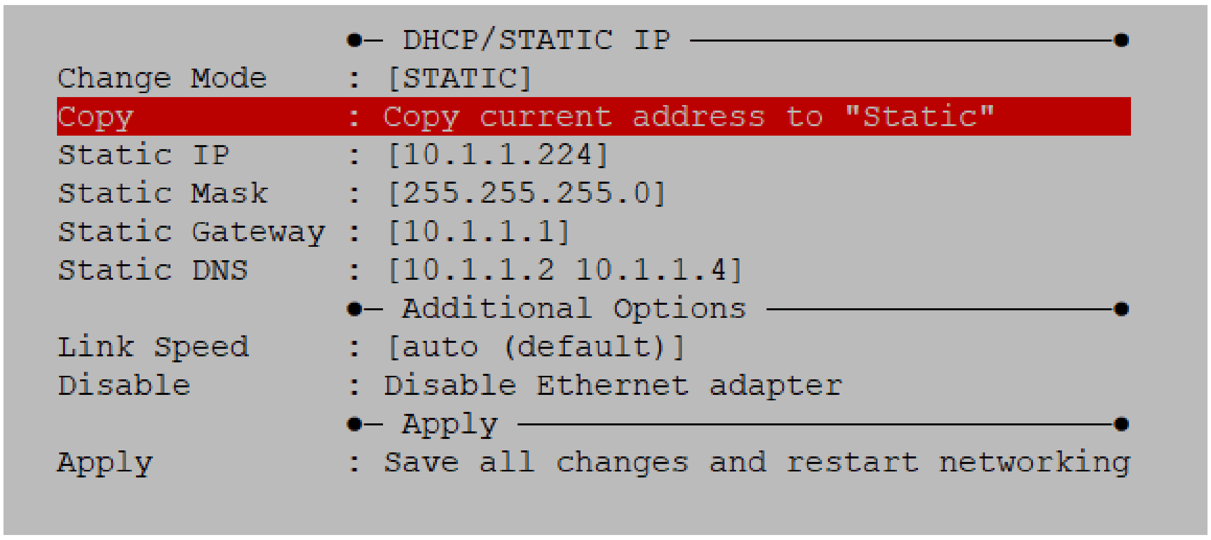


```
1  : Display Options
2  : Audio Options
3  : Performance Options
4  : Advanced Options
5  : Language/Regional Options
6  : Security Options
7  : Network Options: Adapters
8  : Network Options: Misc
9  : AutoStart Options
10 : Tools
```

Ethernet


```
               ●─ Adapter Options ──────────────●
Ethernet  : Available | [On] | Connected
WiFi      : Not Found | [Off] | Disconnected
               ●─ Additional Options ───────────●
IPv6      : [On]
Proxy     : [Off]
Test      : Run internet connection test
```

And press enter in change mode to set it to static. The buyvm VPSes have a static IP address. Then press enter on Copy Current address settings to static


```
                ●─ DHCP/STATIC IP ─────────────────────●
Change Mode    : [STATIC]
Copy           : Copy current address to "Static"
Static IP      : [10.1.1.224]
Static Mask    : [255.255.255.0]
Static Gateway : [10.1.1.1]
Static DNS     : [10.1.1.2 10.1.1.4]
                ●─ Additional Options ─────────────────●
Link Speed     : [auto (default)]
Disable        : Disable Ethernet adapter
                ●─ Apply ──────────────────────────────●
Apply          : Save all changes and restart networking
```

Change the DNS options as you choose.

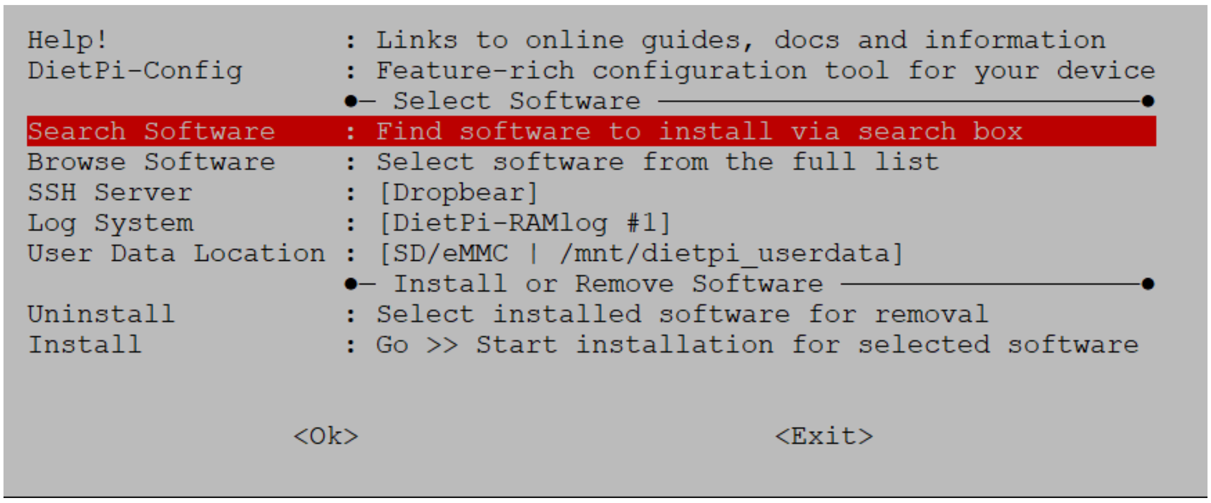
Press apply → yes → and OK on the purge WiFi related packages, as we don't need them

Press esc until you return to the DietPi-Software Menu.

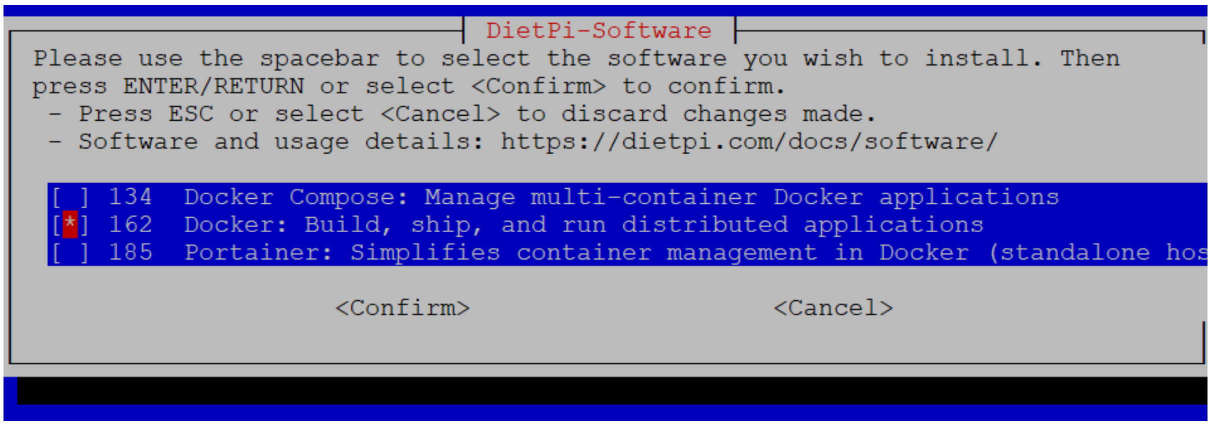
From here, we will be installing the following software:

- Docker
- Pi-Hole (optional)
- Unbound (optional)
- OpenSSH server

For docker you can wither go through the browse software list, or search for "docker". Press space with the docker (162) highlighted, and it will come up with a *, indicating it will install. If searched for, hit confirm to return to the menu. We will not need compose for this setup.



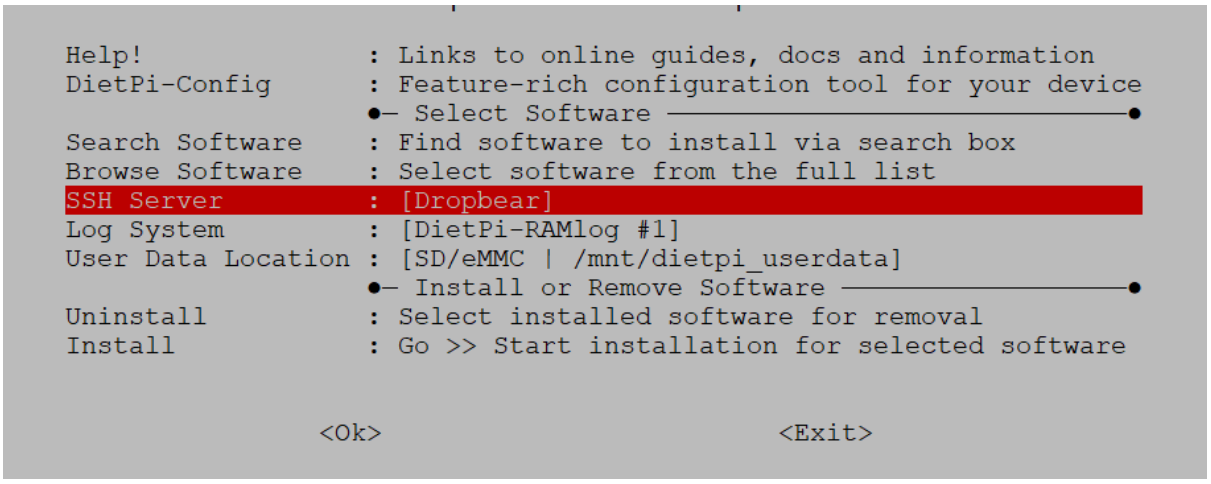
```
Help!                 : Links to online guides, docs and information
DietPi-Config         : Feature-rich configuration tool for your device
                      ●─ Select Software ─────────────────────────────●
Search Software       : Find software to install via search box
Browse Software       : Select software from the full list
SSH Server            : [Dropbear]
Log System            : [DietPi-RAMlog #1]
User Data Location    : [SD/eMMC | /mnt/dietpi_userdata]
                      ●─ Install or Remove Software ──────────────────●
Uninstall             : Select installed software for removal
Install               : Go >> Start installation for selected software

               <Ok>                         <Exit>
```



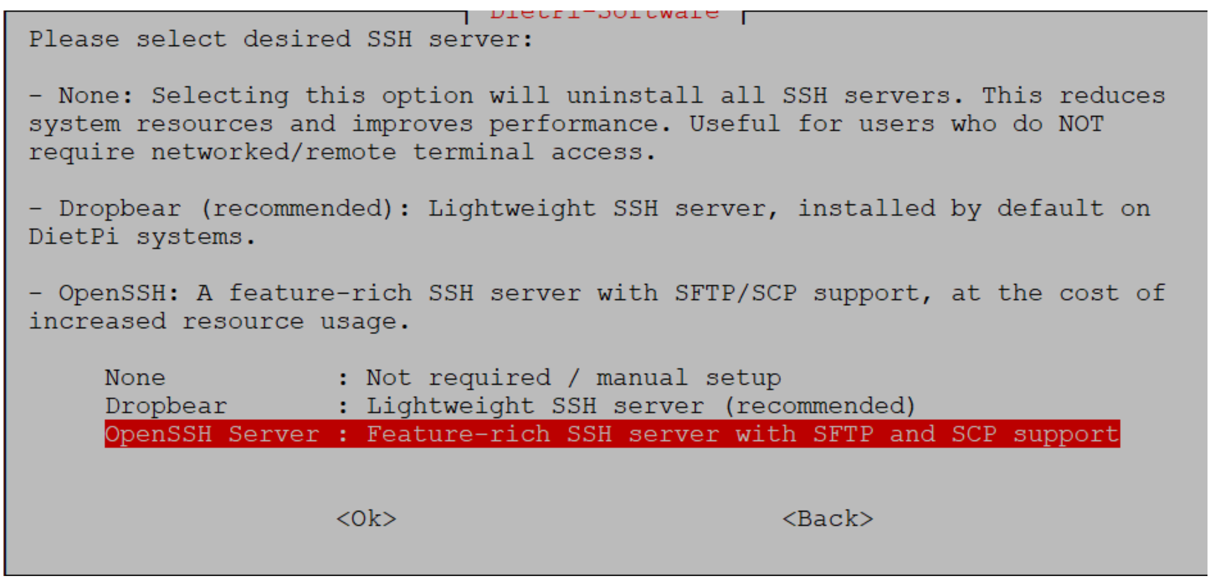
```
                         DietPi-Software
 Please use the spacebar to select the software you wish to install. Then
 press ENTER/RETURN or select <Confirm> to confirm.
  - Press ESC or select <Cancel> to discard changes made.
  - Software and usage details: https://dietpi.com/docs/software/

  [ ] 134  Docker Compose: Manage multi-container Docker applications
  [*] 162  Docker: Build, ship, and run distributed applications
  [ ] 185  Portainer: Simplifies container management in Docker (standalone hos

                <Confirm>                      <Cancel>
```

Next, find Pi-hole, press space to mark it and confirm. It will prompt you to also install unbound, press yes. Since we already set a static IP, we will hit skip on the prompt to set one.

Then go down to the SSH server, press enter and choose OpenSSH. We will use this for SFTP later when we set up rsync

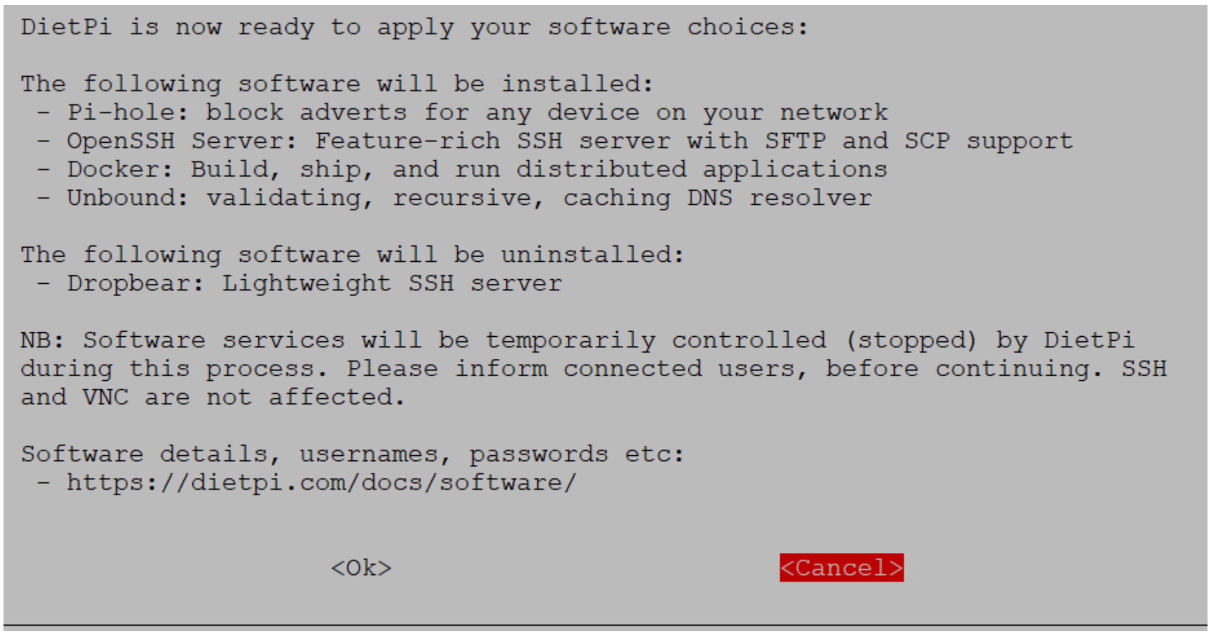


```
Help!                 : Links to online guides, docs and information
DietPi-Config         : Feature-rich configuration tool for your device
                      ●─ Select Software ─────────────────────────────●
Search Software       : Find software to install via search box
Browse Software       : Select software from the full list
SSH Server            : [Dropbear]
Log System            : [DietPi-RAMlog #1]
User Data Location    : [SD/eMMC | /mnt/dietpi_userdata]
                      ●─ Install or Remove Software ──────────────────●
Uninstall             : Select installed software for removal
Install               : Go >> Start installation for selected software

               <Ok>                         <Exit>
```



```
DietPi-Software
Please select desired SSH server:

- None: Selecting this option will uninstall all SSH servers. This reduces
system resources and improves performance. Useful for users who do NOT
require networked/remote terminal access.

- Dropbear (recommended): Lightweight SSH server, installed by default on
DietPi systems.

- OpenSSH: A feature-rich SSH server with SFTP/SCP support, at the cost of
increased resource usage.

     None           : Not required / manual setup
     Dropbear       : Lightweight SSH server (recommended)
     OpenSSH Server : Feature-rich SSH server with SFTP and SCP support


                <Ok>                        <Back>
```

Then scroll down to Install and hit enter. You should be presented with the following screen:



```
DietPi is now ready to apply your software choices:

The following software will be installed:
 - Pi-hole: block adverts for any device on your network
 - OpenSSH Server: Feature-rich SSH server with SFTP and SCP support
 - Docker: Build, ship, and run distributed applications
 - Unbound: validating, recursive, caching DNS resolver

The following software will be uninstalled:
 - Dropbear: Lightweight SSH server

NB: Software services will be temporarily controlled (stopped) by DietPi
during this process. Please inform connected users, before continuing. SSH
and VNC are not affected.

Software details, usernames, passwords etc:
 - https://dietpi.com/docs/software/


                <Ok>                        <Cancel>
```

Press ok if it looks similar the programs will install. It may prompt you for a webserver for Pi-Hole, so choose one that best suits your needs. Pi-Hole will need interaction for the initial install, please refer to the docs at https://pi-hole.net/ but the defaults should work fine for this.

When trying to set this up on my virtual machine at home (not the VPS) I sometimes had issues with grub not wanting to go onto the virtual disk. To fix this, you can install the Debian 12 template or install Debian with the available iso on Stallion then follow the guide here: https://dietpi.com/docs/hardware/#make-your-own-distribution

Setting up users and SSH keys

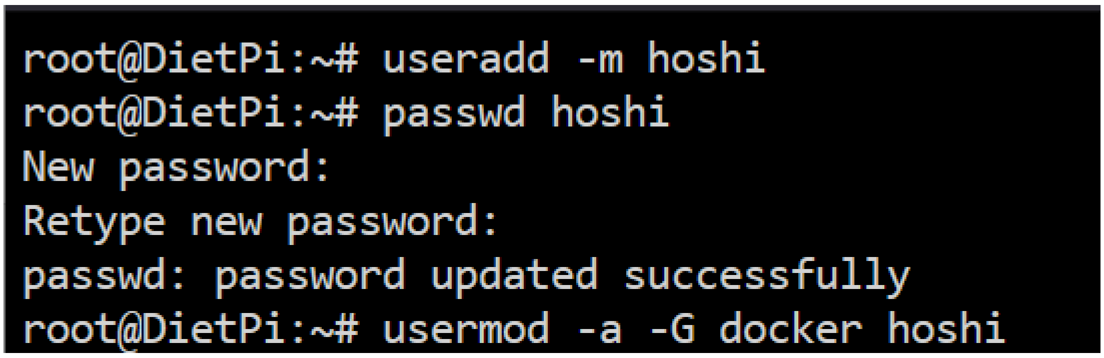
For something public facing, it is highly recommended to use SSH keys instead of a password, and then disabling passwords for SSH authentication. We will also be creating a user specifically for hoshinova, which we will use to connect to the server for rsync.

To create the user we will run: `useradd -m hoshi`

This will create a user and a home directory for it. We will need the home directory for the SSH keys.

Then we use passwd hoshi to set a password, make a decent password.

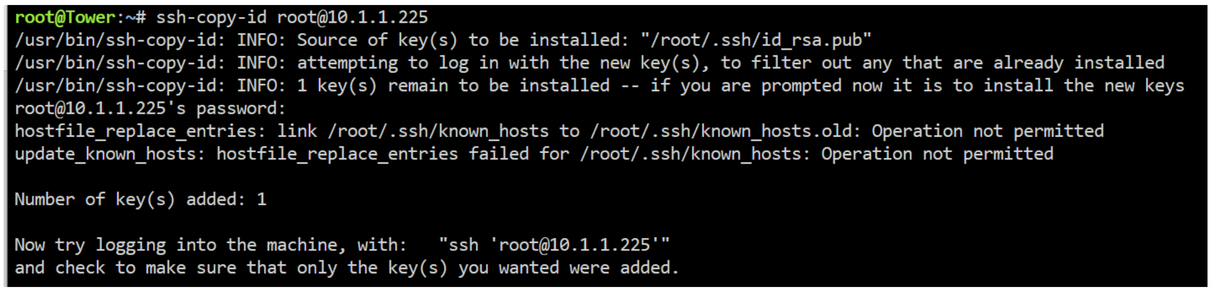
Finally, we add the hoshi user to the docker group so docker can have access to the folders.



```
root@DietPi:~# useradd -m hoshi
root@DietPi:~# passwd hoshi
New password:
Retype new password:
passwd: password updated successfully
root@DietPi:~# usermod -a -G docker hoshi
```

If you have open-SSH installed on your local machine, you will be able to user ssh-copy-id and it will easily copy over your SSH key to the VPS. For more information and options with ssh keys, go to https://www.ssh.com/academy/ssh/copy-id

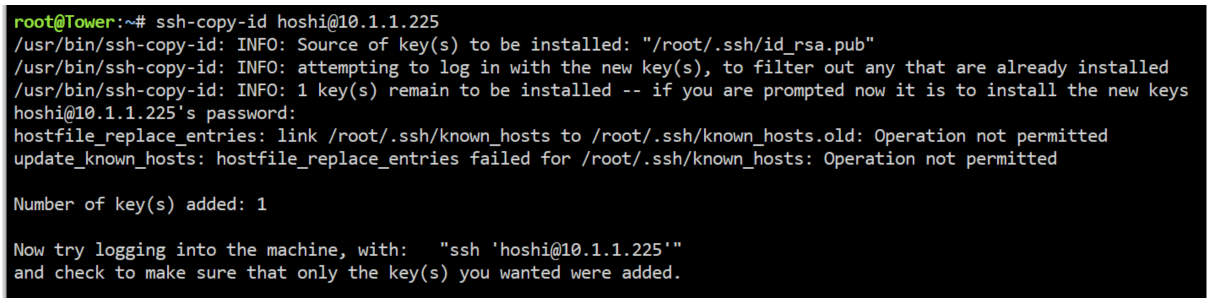
If you don't have ssh-copy-id or are on a windows machine this might help you: https://gist.github.com/andrezrv/8132876



```
root@Tower:~# ssh-copy-id root@10.1.1.225
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/root/.ssh/id_rsa.pub"
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
root@10.1.1.225's password:
hostfile_replace_entries: link /root/.ssh/known_hosts to /root/.ssh/known_hosts.old: Operation not permitted
update_known_hosts: hostfile_replace_entries failed for /root/.ssh/known_hosts: Operation not permitted

Number of key(s) added: 1

Now try logging into the machine, with:   "ssh 'root@10.1.1.225'"
and check to make sure that only the key(s) you wanted were added.
```

When we try to SSH into the server, we will not have to enter the password.

Logout and repeat for the hoshi user.

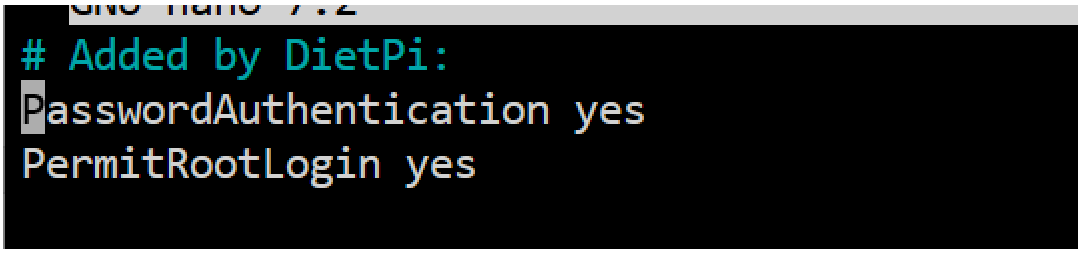


```
root@Tower:~# ssh-copy-id hoshi@10.1.1.225
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/root/.ssh/id_rsa.pub"
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
hoshi@10.1.1.225's password:
hostfile_replace_entries: link /root/.ssh/known_hosts to /root/.ssh/known_hosts.old: Operation not permitted
update_known_hosts: hostfile_replace_entries failed for /root/.ssh/known_hosts: Operation not permitted

Number of key(s) added: 1

Now try logging into the machine, with:   "ssh 'hoshi@10.1.1.225'"
and check to make sure that only the key(s) you wanted were added.
```

Once again, check you can log in without being prompted for a password.

After we confirm we can log into both accounts without a password, we will change some setting for SSH to disable password login. Log back into the root account.

First we will edit the dietpi custom configuration to disable its changes with nano `/etc/ssh/sshd_config.d/dietpi.conf`. Use crtl+x, then y then enter to save.



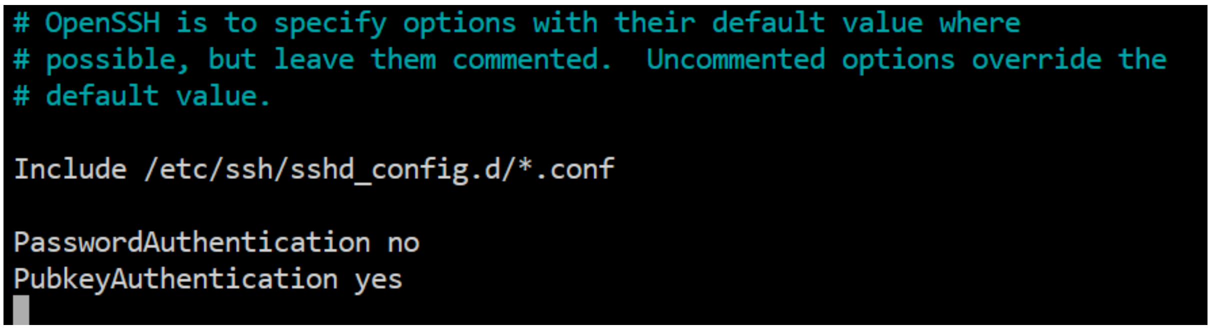
```
GNU nano 7.2
# Added by DietPi:
PasswordAuthentication yes
PermitRootLogin yes
```

Put a hash at the beginning of each line to disable the options

Now we will edit the default settings with `nano /etc/ssh/sshd_config`

We will add two lines near the top of the file:

```
PasswordAuthentication no

PubkeyAuthentication yes
```



```
# OpenSSH is to specify options with their default value where
# possible, but leave them commented.  Uncommented options override the
# default value.

Include /etc/ssh/sshd_config.d/*.conf

PasswordAuthentication no
PubkeyAuthentication yes
```

PubkeyAuthentication is set to yes by default, but we will make sure it is explicitly set just in case.

Finally, we will run `systemctl restart ssh sshd` to restart the SSH service. I haven't had it stop my current session before, but it may for you.

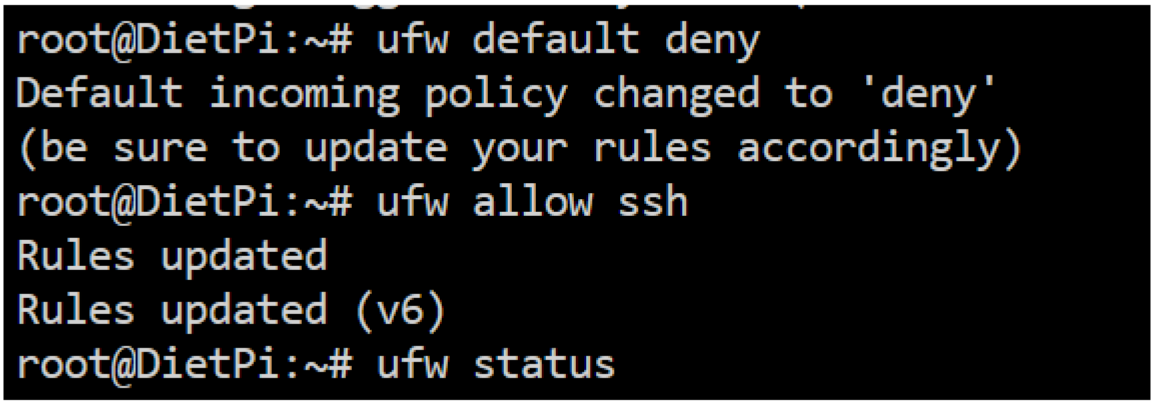
Installing wireguard and a firewall

Installing UFW

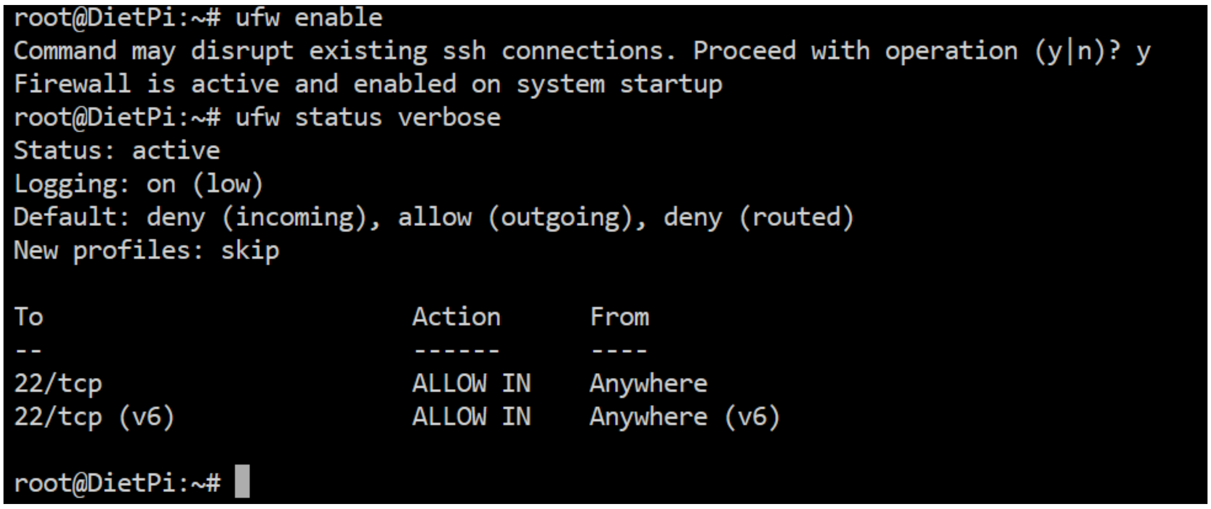
First we will install UFW, a firewall for linux to make sure we don't accidentally expose our hoshinova port or any other service we may run on the VPS in the future.

Simply run `apt update && apt install ufw`

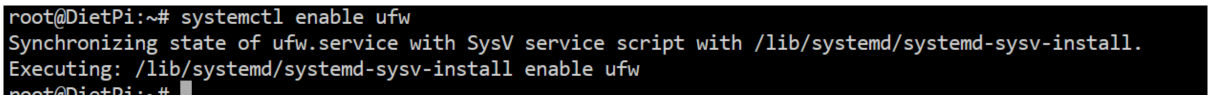
Now we will set two rules initially. First run ufw default deny to deny any incoming connection except ones allowed. Then allow ssh using `ufw allow ssh` OR `ufw allow 22`. If you use a custom port for SSH, use your SSH port.


```
root@DietPi:~# ufw default deny
Default incoming policy changed to 'deny'
(be sure to update your rules accordingly)
root@DietPi:~# ufw allow ssh
Rules updated
Rules updated (v6)
root@DietPi:~# ufw status
```

We will now start the firewall with `ufw enable`. We can check the status with `ufw status verbose`


```
root@DietPi:~# ufw enable
Command may disrupt existing ssh connections. Proceed with operation (y|n)? y
Firewall is active and enabled on system startup
root@DietPi:~# ufw status verbose
Status: active
Logging: on (low)
Default: deny (incoming), allow (outgoing), deny (routed)
New profiles: skip

To                         Action      From
--                         ------      ----
22/tcp                     ALLOW IN    Anywhere
22/tcp (v6)                ALLOW IN    Anywhere (v6)

root@DietPi:~#
```

Despite it saying it is enabled on startup, I've found it not necessarily the case, so enable the service with `systemctl enable ufw`


```
root@DietPi:~# systemctl enable ufw
Synchronizing state of ufw.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable ufw
```

Installing wireguard

We will use wireguard as a secure tunnel to view the web ui of hoshinova as it is unwise to expose that to the public. You can also use OpenVPN or ipsec if you choose, but you will have to set them up yourself. It also makes use of the VPS connection so you can use it as a VPN for anything use you want. We will use PiVPN as it acts as a very basic manager for our VPN.

To install PiVPN, use the install script from their website: `curl -L https://install.pivpn.io | bash`

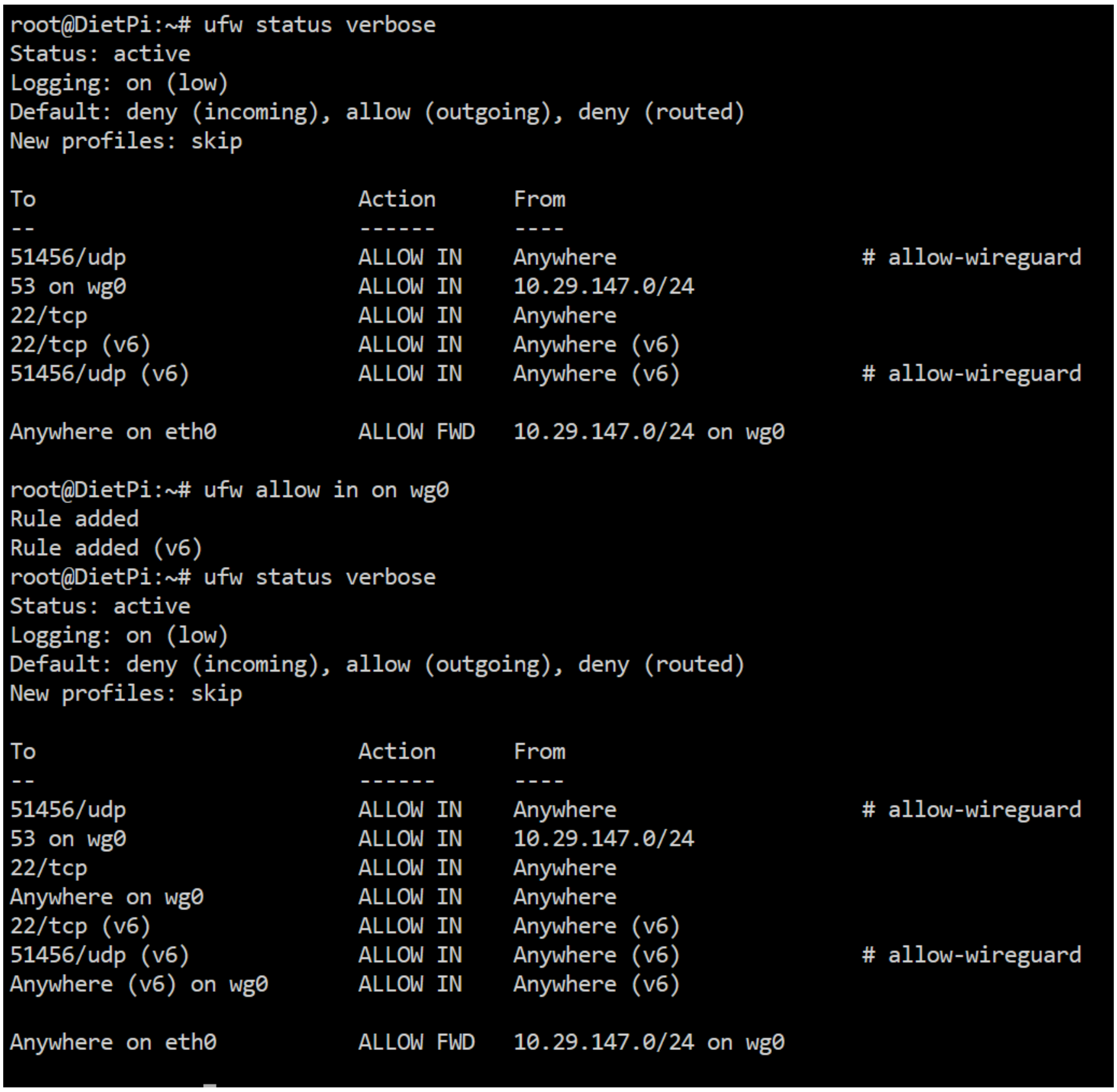
Some of you may have notices PiVPN is also included in the dietPi software list. We won't be using that as it resists using UFW. Since there is very little changes the PiVPN template from dietPi affects, we will just use the proper installer.

Allow the installer to run the interactive installer, set your setting as you desire. It will ask you for a user to install OpenVPN configs, just choose any, but choose wireguard on the next step if you intend to stick to the guide.

If you installed pihole earlier, it will detect the installation. Press yes if you have.

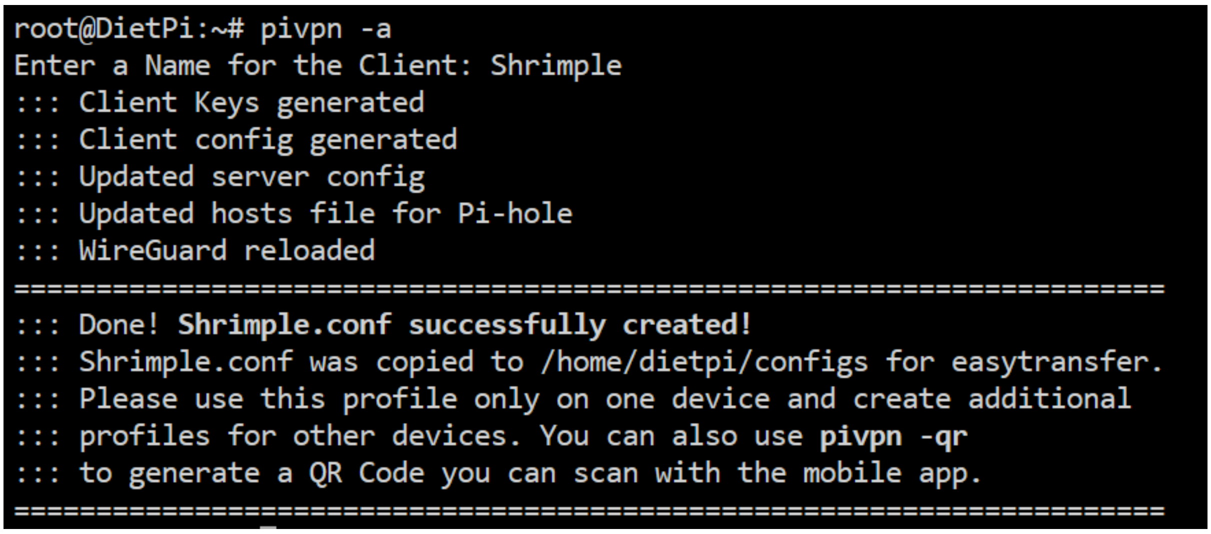
Continue going through the steps. The prompts explain what each of the options are pretty well, so use your judgement for what works best for you. When it asks if you want to reboot, select yes and re-login once the VPS has rebooted.

I found that the default ufw rules don't properly allow machines connected to wireguard to properly access the hoshinova web-ui. I ended up setting a rule to allow all on the wireguard interface (wg0) since I'd be using the connection for more than just hoshinova. I used `ufw allow in on wg0` to do this. If you only want hoshinova, it may be best just to allow the port 1104.



```
root@DietPi:~# ufw status verbose
Status: active
Logging: on (low)
Default: deny (incoming), allow (outgoing), deny (routed)
New profiles: skip

To                         Action      From
--                         ------      ----
51456/udp                  ALLOW IN    Anywhere                   # allow-wireguard
53 on wg0                  ALLOW IN    10.29.147.0/24
22/tcp                     ALLOW IN    Anywhere
22/tcp (v6)                ALLOW IN    Anywhere (v6)
51456/udp (v6)             ALLOW IN    Anywhere (v6)              # allow-wireguard

Anywhere on eth0           ALLOW FWD   10.29.147.0/24 on wg0

root@DietPi:~# ufw allow in on wg0
Rule added
Rule added (v6)
root@DietPi:~# ufw status verbose
Status: active
Logging: on (low)
Default: deny (incoming), allow (outgoing), deny (routed)
New profiles: skip

To                         Action      From
--                         ------      ----
51456/udp                  ALLOW IN    Anywhere                   # allow-wireguard
53 on wg0                  ALLOW IN    10.29.147.0/24
22/tcp                     ALLOW IN    Anywhere
Anywhere on wg0            ALLOW IN    Anywhere
22/tcp (v6)                ALLOW IN    Anywhere (v6)
51456/udp (v6)             ALLOW IN    Anywhere (v6)              # allow-wireguard
Anywhere (v6) on wg0       ALLOW IN    Anywhere (v6)

Anywhere on eth0           ALLOW FWD   10.29.147.0/24 on wg0
```

To add a client to PiVPN, simply use pivpn -a



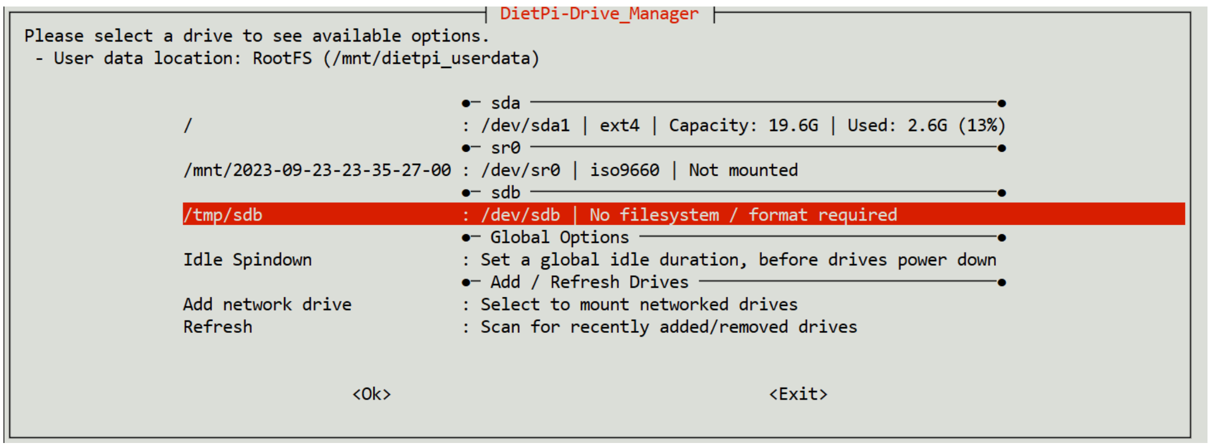
```
root@DietPi:~# pivpn -a
Enter a Name for the Client: Shrimple
::: Client Keys generated
::: Client config generated
::: Updated server config
::: Updated hosts file for Pi-hole
::: WireGuard reloaded
======================================================================
::: Done! Shrimple.conf successfully created!
::: Shrimple.conf was copied to /home/dietpi/configs for easytransfer.
::: Please use this profile only on one device and create additional
::: profiles for other devices. You can also use pivpn -qr
::: to generate a QR Code you can scan with the mobile app.
======================================================================
```

The configs will be stored in the directory it displays and in /etc/wireguard/configs

Setting up the block storage

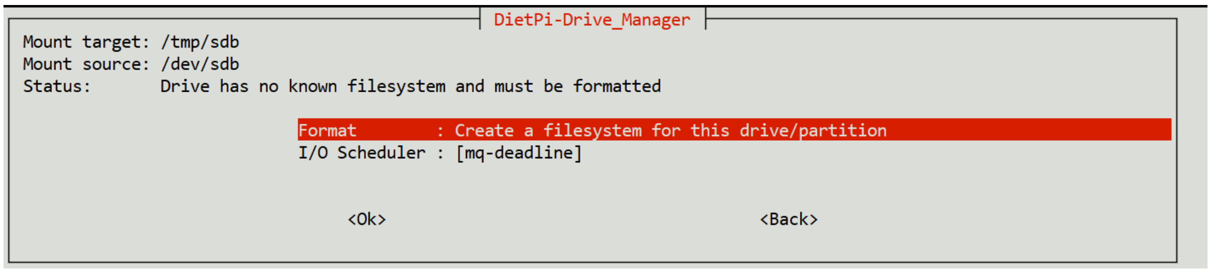
Up until now, everything has been running and installing onto the SSD storage the buyvm VPS has, which for these services is the best option. Now that we are setting up the storage for hoshinova, we will need to mount the block storage.

In the console, type `dietpi-drive_manager`. This will pull up the drives manager utility that comes with dietpi.



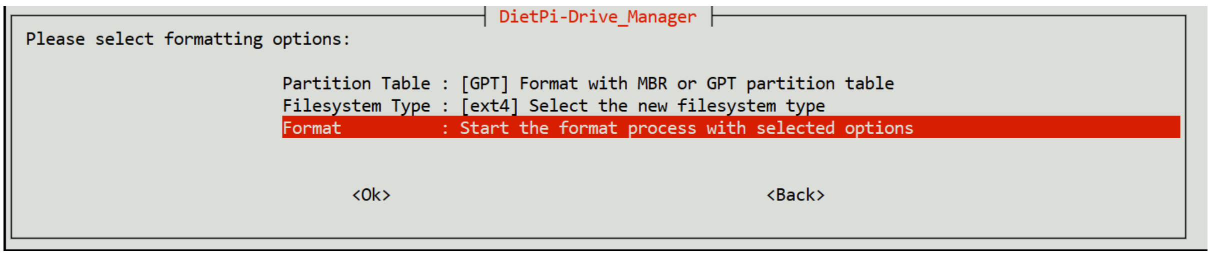
```
                                  DietPi-Drive_Manager
 Please select a drive to see available options.
  - User data location: RootFS (/mnt/dietpi_userdata)

                                         ●─ sda ────────────────────────────────────●
                /                        : /dev/sda1 | ext4 | Capacity: 19.6G | Used: 2.6G (13%)
                                         ●─ sr0 ────────────────────────────────────●
                /mnt/2023-09-23-23-35-27-00 : /dev/sr0 | iso9660 | Not mounted
                                         ●─ sdb ────────────────────────────────────●
                /tmp/sdb                 : /dev/sdb | No filesystem / format required
                                         ●─ Global Options ─────────────────────────●
                Idle Spindown            : Set a global idle duration, before drives power down
                                         ●─ Add / Refresh Drives ───────────────────●
                Add network drive        : Select to mount networked drives
                Refresh                  : Scan for recently added/removed drives


                       <Ok>                                   <Exit>
```

Here we can see our block storage drive. It may be different for you. If you didn't unmount the iso file, it will also be visible. Hit enter with the block storage device selected.



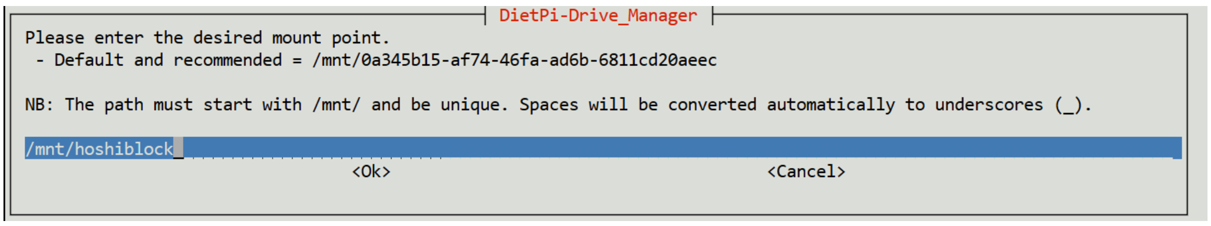
```
                                  DietPi-Drive_Manager
 Mount target: /tmp/sdb
 Mount source: /dev/sdb
 Status:       Drive has no known filesystem and must be formatted

                          Format       : Create a filesystem for this drive/partition
                          I/O Scheduler : [mq-deadline]


                       <Ok>                                   <Back>
```

We will format the block storage device. Set the partition table and format to what works best for you. The default options will work fine for this setup.



```
DietPi-Drive_Manager
Please select formatting options:

                          Partition Table : [GPT] Format with MBR or GPT partition table
                          Filesystem Type : [ext4] Select the new filesystem type
                          Format          : Start the format process with selected options

                  <Ok>                                      <Back>
```

Give it a name that you'll remember.



```
DietPi-Drive_Manager
Please enter the desired mount point.
 - Default and recommended = /mnt/0a345b15-af74-46fa-ad6b-6811cd20aeec

NB: The path must start with /mnt/ and be unique. Spaces will be converted automatically to underscores (_).

/mnt/hoshiblock_
                  <Ok>                                      <Cancel>
```

Now we will create a couple of folders for the hoshinova container to use.

We will run:

```
mkdir -p /mnt/hoshiblock/hoshinova/temp

mkdir -p /mnt/hoshiblock/hoshinova/config

mkdir -p /mnt/hoshiblock/hoshinova/Done

mkdir -p /mnt/hoshiblock/hoshinova/scripts
```

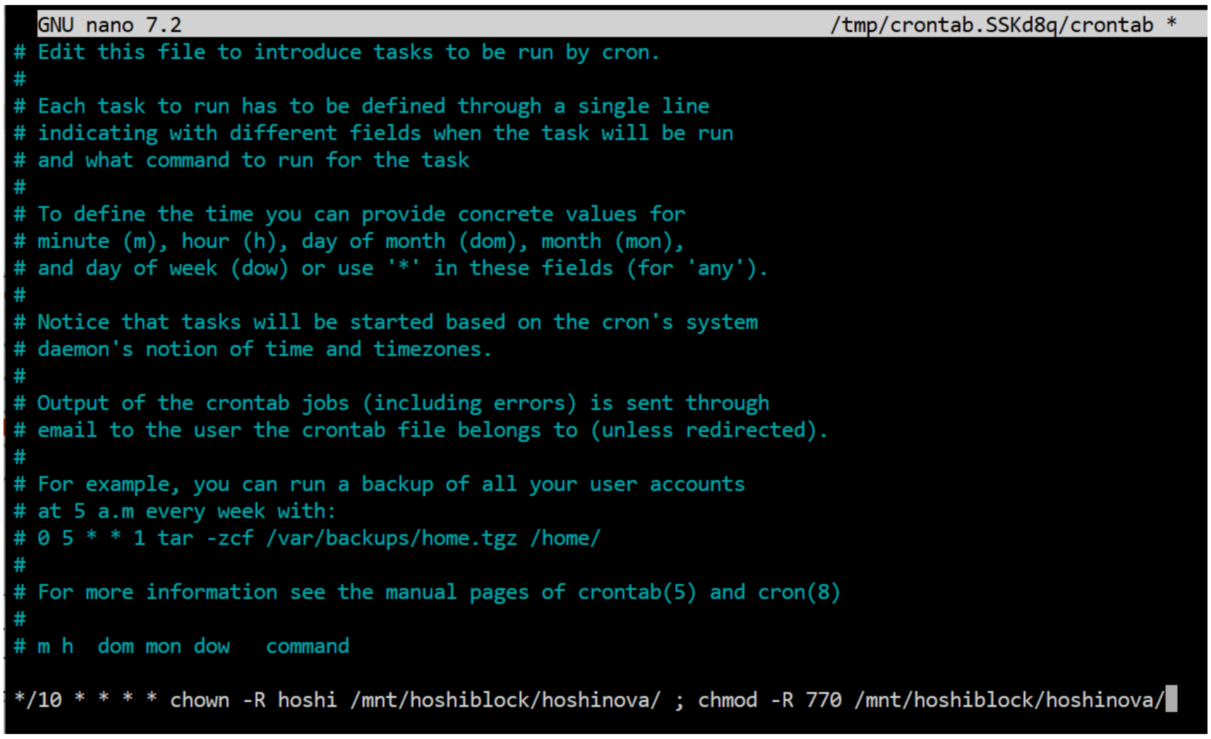
We will need to change the owner of these folders and set the required permissions.

To set the owner run: `chown -R hoshi /mnt/hoshiblock/hoshinova/`

To set the permissions run: `chmod -R 770 /mnt/hoshiblock/hoshinova/`

The permissions allow the owner and group, i.e. the hoshi user and the docker group, full access to the files and folders in the directory.

I've had issues in the past with docker creating files not respecting the owner or group, which make them unable to be accessed by docker or for the user to use. To solve this problem, I run a cronjob regularly as root to ensure the permissions are always set every 10 minutes. It simply runs the two commands above. Run the cronjob editor with `crontab -e`.


```
GNU nano 7.2                                              /tmp/crontab.SSKd8q/crontab *
# Edit this file to introduce tasks to be run by cron.
#
# Each task to run has to be defined through a single line
# indicating with different fields when the task will be run
# and what command to run for the task
#
# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# and day of week (dow) or use '*' in these fields (for 'any').
#
# Notice that tasks will be started based on the cron's system
# daemon's notion of time and timezones.
#
# Output of the crontab jobs (including errors) is sent through
# email to the user the crontab file belongs to (unless redirected).
#
# For example, you can run a backup of all your user accounts
# at 5 a.m every week with:
# 0 5 * * 1 tar -zcf /var/backups/home.tgz /home/
#
# For more information see the manual pages of crontab(5) and cron(8)
#
# m h  dom mon dow   command

*/10 * * * * chown -R hoshi /mnt/hoshiblock/hoshinova/ ; chmod -R 770 /mnt/hoshiblock/hoshinova/
```

Save the cronjob. In regards to permissions, we will assume that this script will take care of them for the scripts going forward. If you move through quickly, simply re-run the commands where you have issues.

Setting up the docker container

Switch to the hoshi user with `su hoshi`.

We will need to create a config file for hoshinova, as the mapping we use later will create a folder if the file does not exist. Create a file with `nano /mnt/hoshiblock/hoshinova/config/config.toml` and import a config file. You can use my config at https://github.com/CanOfSocks/hoshinova-vps-guide/blob/main/example-config-vps.toml to get all holo en. You can use my pervious config at home at https://github.com/CanOfSocks/hoshinova-vps-guide/blob/main/example-config-home.toml for examples of how to use description filters too. Save the config.

The docker command also includes a cookies file. Similarly, create it with `nano /mnt/hoshiblock/hoshinova/config/cookies.txt` and paste in your cookies.txt file.

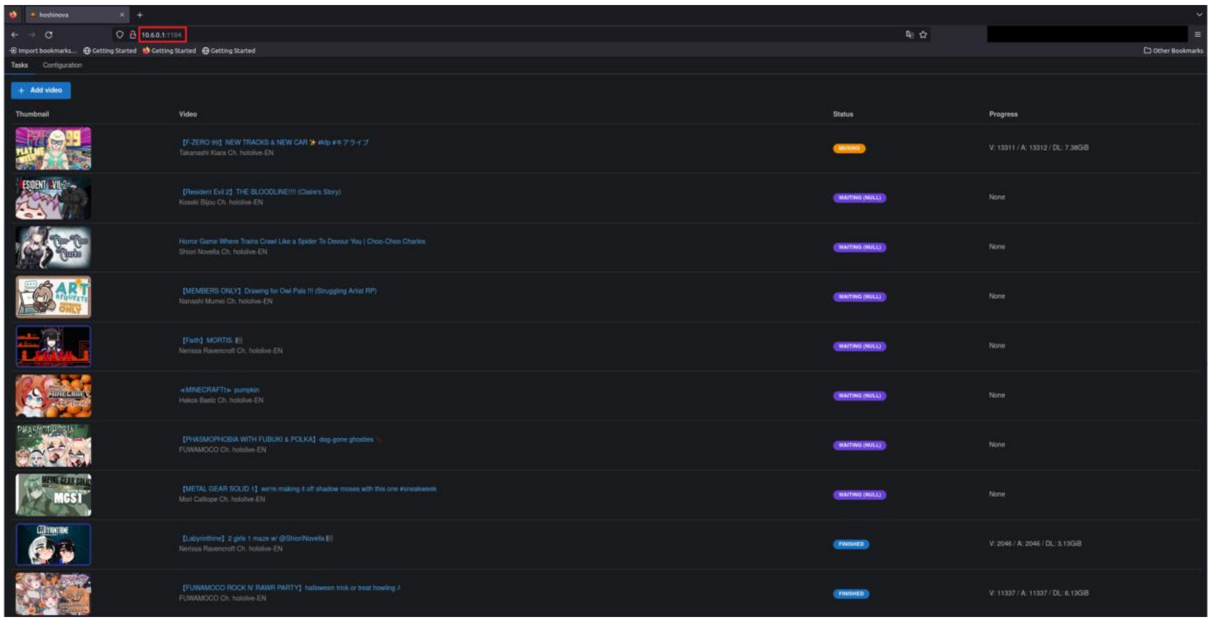
Then run the docker command:

```
docker run -d --name='Hoshinova' --net='host' --cpus=".75" -e
TZ="Australia/Sydney" -e HOST_CONTAINERNAME="Hoshinova" -v
'/mnt/hoshiblock/hoshinova/config/config.toml':'/app/config.toml':'r
w' -v '/mnt/hoshiblock/hoshinova/temp/':'/app/temp':'rw' -v
'/mnt/hoshiblock/hoshinova/Done/':'/app/videos':'rw' -v
'/mnt/hoshiblock/hoshinova/config/cookies.txt':'/app/cookies.txt':'r
w' --restart always 'ghcr.io/holoarchivists/hoshinova:main'
```

We set the network to “host” because docker has a nasty habit of bypassing UFW as it uses iptables, where the rules for docker proceed the ufw rules. The simplest way is to use the host system settings and ufw then works fine.

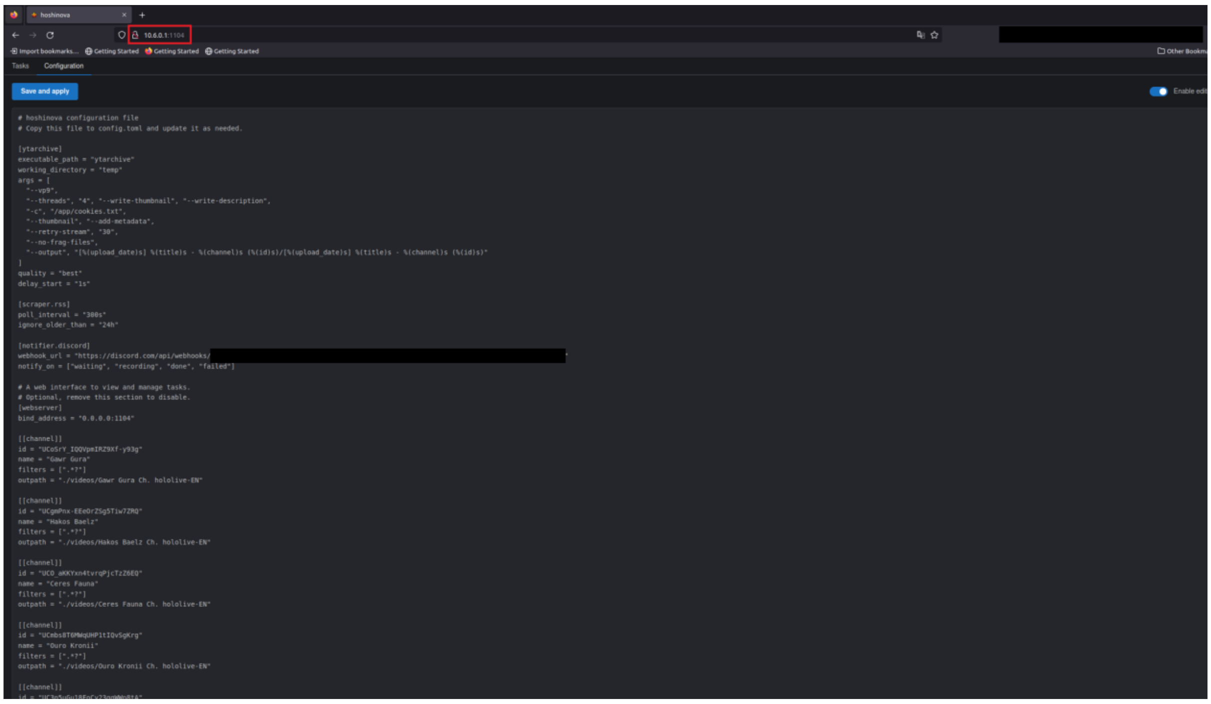
The cpu usage is also limited to 75% so that the system does not get bogged down when hoshinova muxes streams. This won’t greatly affect the performance of hoshinova with the whole system’s limits. Remember, this is about getting it done *eventually,* not quickly.

At this point, you should be able to connect to the server with a wireguard client. Once there, enter the IP address of the gateway for the wireguard server in your browser at port 1104. Below is mu current instance.



[redacted]

Thumbnail	Video	Status	Progress
	【F-ZERO 99】NEW TRACKS & NEW CAR ✨ #kfp #キアライブ Takanashi Kiara Ch. hololive-EN	MUXING	V: 13311 / A: 13312 / DL: 7.38GiB
	【Resident Evil 2】THE BLOODLINE!!!! (Claire's Story) Koseki Bijou Ch. hololive-EN	WAITING (NULL)	None
	Horror Game Where Trains Crawl Like a Spider To Devour You | Choo-Choo Charles Shiori Novella Ch. hololive-EN	WAITING (NULL)	None
	【MEMBERS ONLY】Drawing for Owl Pals !!! (Struggling Artist RP) Nanashi Mumei Ch. hololive-EN	WAITING (NULL)	None
	【Faith】MORTIS Nerissa Ravencroft Ch. hololive-EN	WAITING (NULL)	None
	≪MINECRAFT≫ pumpkin Hakos Baelz Ch. hololive-EN	WAITING (NULL)	None
	【PHASMOPHOBIA WITH FUBUKI & POLKA】dog-gone ghosties FUWAMOCO Ch. hololive-EN	WAITING (NULL)	None
	【METAL GEAR SOLID 1】we're making it off shadow moses with this one #sneakweek Mori Calliope Ch. hololive-EN	WAITING (NULL)	None
	【Labyrinthine】2 girls 1 maze w/ @ShioriNovella Nerissa Ravencroft Ch. hololive-EN	FINISHED	V: 2046 / A: 2046 / DL: 3.13GiB
	【FUWAMOCO ROCK N' RAWR PARTY】halloween trick or treat howling ♪ FUWAMOCO Ch. hololive-EN	FINISHED	V: 11337 / A: 11337 / DL: 6.13GiB



[redacted]

```
# hoshinova configuration file
# Copy this file to config.toml and update it as needed.

[ytarchive]
executable_path = "ytarchive"
working_directory = "temp"
args = [
  "--vp9",
  "--threads", "4", "--write-thumbnail", "--write-description",
  "-c", "/app/cookies.txt",
  "--thumbnail", "--add-metadata",
  "--retry-stream", "30",
  "--no-frag-files",
  "--output", "[%(upload_date)s] %(title)s - %(channel)s (%(id)s)/[%(upload_date)s] %(title)s - %(channel)s (%(id)s)"
]
quality = "best"
delay_start = "1s"

[scraper.rss]
poll_interval = "300s"
ignore_older_than = "24h"

[notifier.discord]
webhook_url = "https://discord.com/api/webhooks/[redacted]"
notify_on = ["waiting", "recording", "done", "failed"]

# A web interface to view and manage tasks.
# Optional, remove this section to disable.
[webserver]
bind_address = "0.0.0.0:1104"

[[channel]]
id = "UCoSrY_IQQVpmIRZ9Xf-y93g"
name = "Gawr Gura"
filters = [".*?"]
outpath = "./videos/Gawr Gura Ch. hololive-EN"

[[channel]]
id = "UCgmPnx-EEeOrZSg5Tiw7ZRQ"
name = "Hakos Baelz"
filters = [".*?"]
outpath = "./videos/Hakos Baelz Ch. hololive-EN"

[[channel]]
id = "UCO_aKKYxn4tvrqPjcTzZ6EQ"
name = "Ceres Fauna"
filters = [".*?"]
outpath = "./videos/Ceres Fauna Ch. hololive-EN"

[[channel]]
id = "UCmbs8T6MWqUHP1tIQvSgKrg"
name = "Ouro Kronii"
filters = [".*?"]
outpath = "./videos/Ouro Kronii Ch. hololive-EN"

[[channel]]
id = "UC3n5uGu18FoCy23ggWWp8tA"
```

Setting up the folder mover

For the mover we will use a filesystem monitor to monitor when files enter our done directory, specifically inotify-tools' inofitywait.

We first install inotify tools with: `apt update && apt install inotify-tools`.

The script

As you may have noticed, we did not include the scripts folder in the hoshinova docker mappings. This is because we will use this folder to store our scripts for monitoring the output folder for finished files, then moving across the thumbnail file and description file that hoshinova does not move across natively.

Switch to the root user with `su root` and enter the password for your root user. Now we will use `nano /mnt/hoshiblock/hoshinova/scripts/moveFolder.sh`.

Enter the script below and save:

```
#!/bin/bash

inotifywait --recursive --monitor --format "%w%f" --includei
'.*\.mp4$' --includei '.*\.mp4$' \

--event modify,moved_to,create,move_self
/mnt/hoshiblock/hoshinova/Done  \

| while read changed; do

    echo "File ${changed} moved to Done directory"

    folder="${changed%.*}"

    name=$(basename "${folder}")

    echo "Moving ${name} to ${folder}"

    mv "/mnt/hoshiblock/hoshinova/temp/${name}" "${folder}" && \

    mv "${changed}" "${folder}"

done
```

This script will detect when a mp4 file has been moved to or created/copied to the done folder that hoshinova points to, and moves the folder of the same name into the done directory, then move the mp4 into that. Thankfully, hoshinova gets rid of all the temp files before moving the final file, so it is pretty clean. However, it is likely that if failures occur the old temp files from previous attempts may be brought across to the final folder.

You could add `--includei '.*\.mkv$'` to the inotifywait command and it should detect mkv files as well (I only tried this when writing the guide and am waiting for results).

Make the script executable with `chmod +x /mnt/hoshiblock/hoshinova/scripts/moveFolder.sh`.

Running as a service

Now we will setup a service to run our mover script on startup and to restart the script if it ever fails/finishes for some reason.

Create a file with `nano /mnt/hoshiblock/hoshinova/scripts/moveFolder.service`

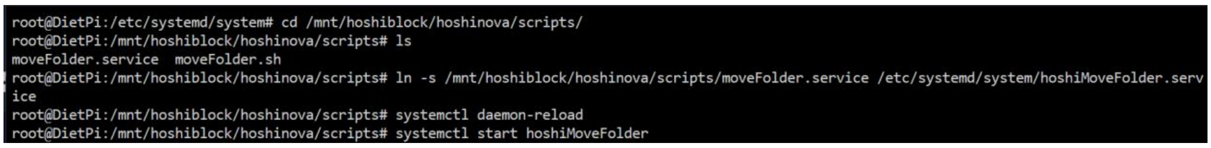
And enter:

```
[Unit]

Description=Hoshinova Folder Mover

After=docker.service

StartLimitIntervalSec=0

[Service]

Type=simple

Restart=always

RestartSec=1

User=hoshi

ExecStart=/mnt/hoshiblock/hoshinova/scripts/moveFolder.sh


[Install]

WantedBy=multi-user.target
```

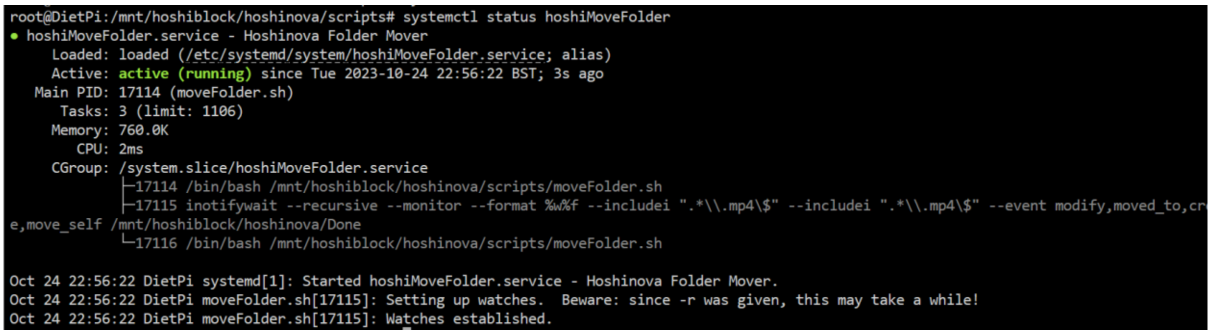
This will run the script after the docker service starts and will restart the script if it fails.

Make the service executable with `chmod +x /mnt/hoshiblock/hoshinova/scripts/moveFolder.service`

Now we will make a soft-link into the services folder with `ln -s /mnt/hoshiblock/hoshinova/scripts/moveFolder.service /etc/systemd/system/hoshiMoveFolder.service`.



```
root@DietPi:/etc/systemd/system# cd /mnt/hoshiblock/hoshinova/scripts/
root@DietPi:/mnt/hoshiblock/hoshinova/scripts# ls
moveFolder.service  moveFolder.sh
root@DietPi:/mnt/hoshiblock/hoshinova/scripts# ln -s /mnt/hoshiblock/hoshinova/scripts/moveFolder.service /etc/systemd/system/hoshiMoveFolder.serv
ice
root@DietPi:/mnt/hoshiblock/hoshinova/scripts# systemctl daemon-reload
root@DietPi:/mnt/hoshiblock/hoshinova/scripts# systemctl start hoshiMoveFolder
```



```
root@DietPi:/mnt/hoshiblock/hoshinova/scripts# systemctl status hoshiMoveFolder
● hoshiMoveFolder.service - Hoshinova Folder Mover
     Loaded: loaded (/etc/systemd/system/hoshiMoveFolder.service; alias)
     Active: active (running) since Tue 2023-10-24 22:56:22 BST; 3s ago
   Main PID: 17114 (moveFolder.sh)
      Tasks: 3 (limit: 1106)
     Memory: 760.0K
        CPU: 2ms
     CGroup: /system.slice/hoshiMoveFolder.service
             ├─17114 /bin/bash /mnt/hoshiblock/hoshinova/scripts/moveFolder.sh
             ├─17115 inotifywait --recursive --monitor --format %w%f --includei ".*\\.mp4\$" --includei ".*\\.mp4\$" --event modify,moved_to,cr
e,move_self /mnt/hoshiblock/hoshinova/Done
             └─17116 /bin/bash /mnt/hoshiblock/hoshinova/scripts/moveFolder.sh

Oct 24 22:56:22 DietPi systemd[1]: Started hoshiMoveFolder.service - Hoshinova Folder Mover.
Oct 24 22:56:22 DietPi moveFolder.sh[17115]: Setting up watches.  Beware: since -r was given, this may take a while!
Oct 24 22:56:22 DietPi moveFolder.sh[17115]: Watches established.
```

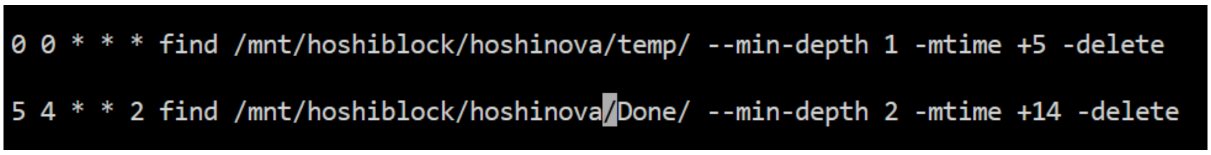
Setting up clean ups

Sometimes things go wrong and the stream records can have an error. This means that the final file doesn’t get created and moved across, leaving orphaned files in the temp directory.

Switch to the hoshi user with `su hoshi` and edit the cronjobs with `crontab -e`. Add the following two commands to the crontab:

```
0 0 * * * find /mnt/hoshiblock/hoshinova/temp/ --min-depth 1 -mtime
+5 -delete


5 4 * * 2 find /mnt/hoshiblock/hoshinova/Done/ --min-depth 2 -mtime
+14 -delete
```

These commands will find any files or folders that have not been modified in 5 days for the temp folder, and 14 days for the Done folder. You can change these values as you like, but anything sitting in either folder for that long is almost certainly not going to move to where it needs to.

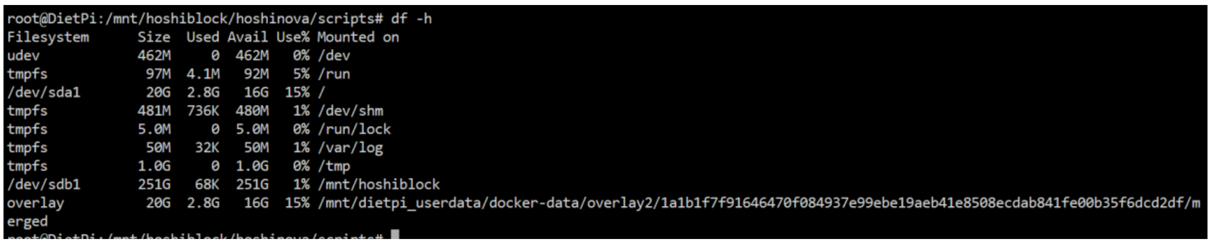


```
0 0 * * * find /mnt/hoshiblock/hoshinova/temp/ --min-depth 1 -mtime +5 -delete

5 4 * * 2 find /mnt/hoshiblock/hoshinova/Done/ --min-depth 2 -mtime +14 -delete
```

Adding a swap file for dietPi

We will want to add a swap file for some extra ram capacity for when we have many streams muxing at once. We want to use the SSD storage on the boot disk on the VPS.

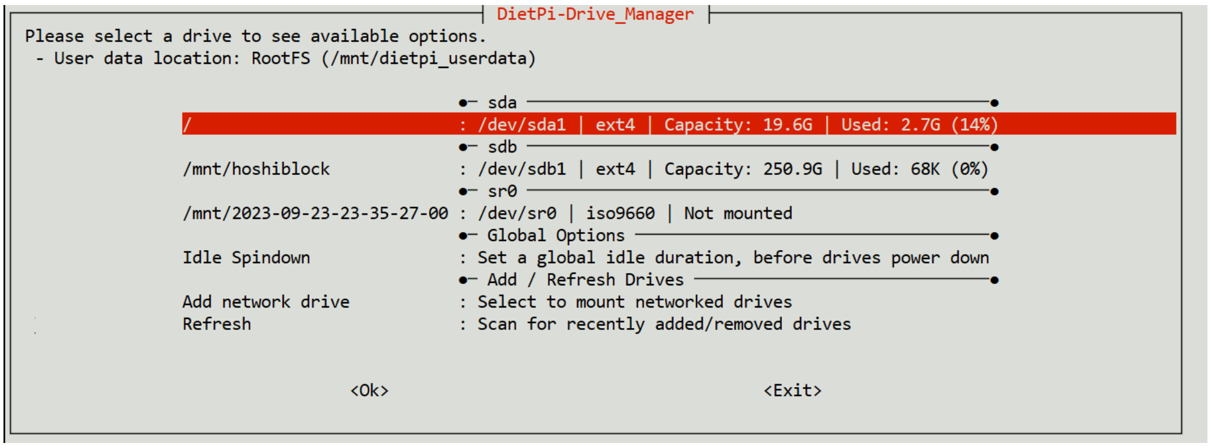
We will check the current disk usage with `df -h`:



```
root@DietPi:/mnt/hoshiblock/hoshinova/scripts# df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            462M     0  462M   0% /dev
tmpfs            97M  4.1M   92M   5% /run
/dev/sda1        20G  2.8G   16G  15% /
tmpfs           481M  736K  480M   1% /dev/shm
tmpfs           5.0M     0  5.0M   0% /run/lock
tmpfs            50M   32K   50M   1% /var/log
tmpfs           1.0G     0  1.0G   0% /tmp
/dev/sdb1       251G   68K  251G   1% /mnt/hoshiblock
overlay          20G  2.8G   16G  15% /mnt/dietpi_userdata/docker-data/overlay2/1a1b1f7f91646470f084937e99ebe19aeb41e8508ecdab841fe00b35f6dcd2df/m
erged
root@DietPi:/mnt/hoshiblock/hoshinova/scripts#
```

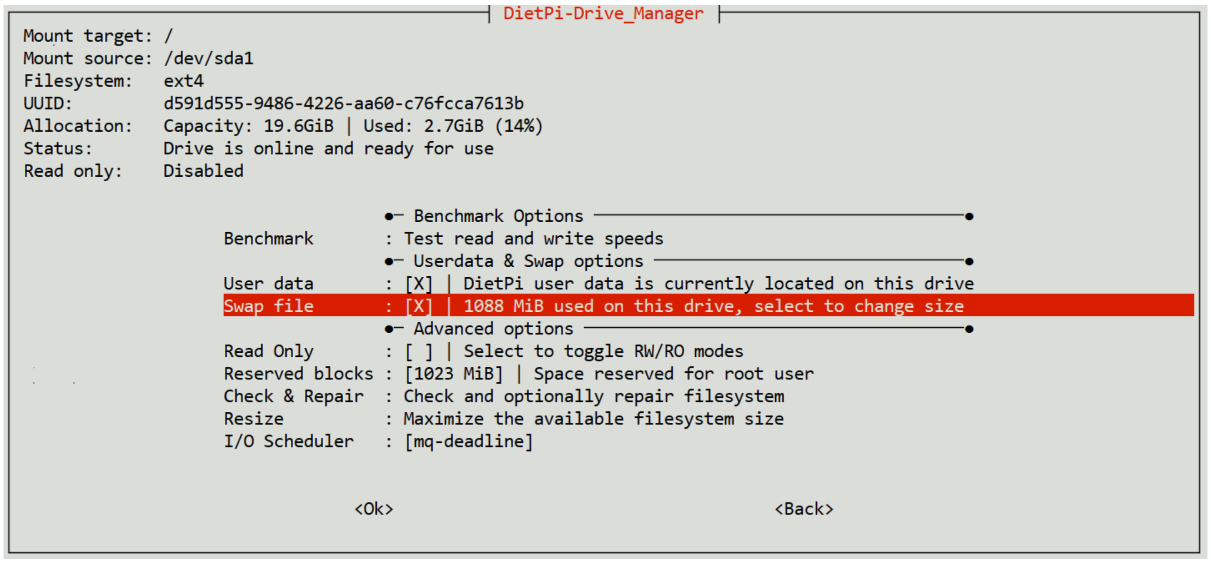
Here we can see we have about 16GB available on the boot disk, in my case /dev/sda. On my VPS I have a 4GB swap file setup, but you could double that if you want.

When logged into the root account, go to `dietpi-drive_manager`.



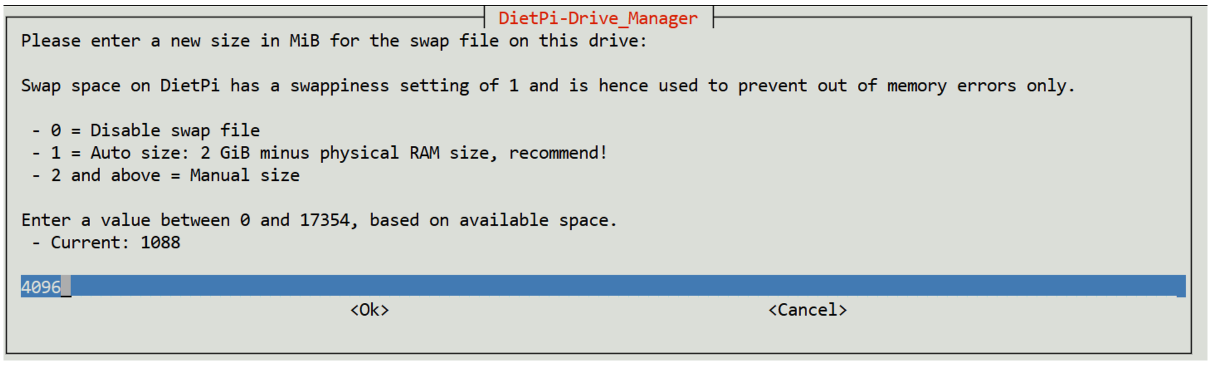
```
┤ DietPi-Drive_Manager ├
Please select a drive to see available options.
 - User data location: RootFS (/mnt/dietpi_userdata)

                           ●─ sda ──────────────────────────────────────────●
/                          : /dev/sda1 | ext4 | Capacity: 19.6G | Used: 2.7G (14%)
                           ●─ sdb ──────────────────────────────────────────●
/mnt/hoshiblock            : /dev/sdb1 | ext4 | Capacity: 250.9G | Used: 68K (0%)
                           ●─ sr0 ──────────────────────────────────────────●
/mnt/2023-09-23-23-35-27-00 : /dev/sr0 | iso9660 | Not mounted
                           ●─ Global Options ───────────────────────────────●
Idle Spindown              : Set a global idle duration, before drives power down
                           ●─ Add / Refresh Drives ─────────────────────────●
Add network drive          : Select to mount networked drives
Refresh                    : Scan for recently added/removed drives


                <Ok>                                  <Exit>
```

Go into the settings of the boot disk and edit the swap file. There should already be a swap file if you have less than 2GB of ram in your VPS



```
                                    ┤ DietPi-Drive_Manager ├
Mount target: /
Mount source: /dev/sda1
Filesystem:   ext4
UUID:         d591d555-9486-4226-aa60-c76fcca7613b
Allocation:   Capacity: 19.6GiB | Used: 2.7GiB (14%)
Status:       Drive is online and ready for use
Read only:    Disabled

                    ●─ Benchmark Options ─────────────────────●
    Benchmark       : Test read and write speeds
                    ●─ Userdata & Swap options ───────────────●
    User data       : [X] | DietPi user data is currently located on this drive
    Swap file       : [X] | 1088 MiB used on this drive, select to change size
                    ●─ Advanced options ──────────────────────●
    Read Only       : [ ] | Select to toggle RW/RO modes
    Reserved blocks : [1023 MiB] | Space reserved for root user
    Check & Repair  : Check and optionally repair filesystem
    Resize          : Maximize the available filesystem size
    I/O Scheduler   : [mq-deadline]

                 <Ok>                                    <Back>
```

Change the value to 4096



```
                                    ┤ DietPi-Drive_Manager ├
Please enter a new size in MiB for the swap file on this drive:

Swap space on DietPi has a swappiness setting of 1 and is hence used to prevent out of memory errors only.

 - 0 = Disable swap file
 - 1 = Auto size: 2 GiB minus physical RAM size, recommend!
 - 2 and above = Manual size

Enter a value between 0 and 17354, based on available space.
 - Current: 1088

4096_
                 <Ok>                                    <Cancel>
```

Let the manager reconfigure things.

Setting up rsync

We will use rsync to pull the files when our local storage server is ready to do so. I have set up rsync to run each hour between midnight and 6am as everyone in my house is usually asleep, you can set the schedule to what you like, but I would recommend at least once a day. Since we are using sftp as our transfer protocol, we can make use of the SSH keys we made earlier

Since this is your own server, I won’t dictate where you put your scripts. Since I personally use unraid for storage, I’ll be using the userscripts plugin.

The script is as follows:

```
#!/bin/bash

if pidof -x -o $$ $0 > /dev/null

then

    exit

fi
```

```
rsync -arv --partial --delay-updates --remove-source-files
hoshi@10.1.1.225:/mnt/hoshiblock/hoshinova/scripts/Done/*
/mnt/user/HoloArchive

chown -R archive /mnt/user/HoloArchive
```

As I run this multiple times a night, the if statement at the start checks if the script is already running, and will exit if it is.

I won't explain what each flag does, but essentially, all the folders in the Done directory of the hoshinova docker are copied from the VPS to the local storage, and deleted once they have been copied. I haven't had the script fail to work correctly yet, so it should work for you, substituting the IP address and destination folder for those used in your setup.

Finally, I used a chown command to make sure everything in the folder has the right owner.

Roll archive script (optional)

Since my storage is finite and I'm not interested in keeping a full archive of everyone I have in my hoshinova config forever, I setup a couple of scripts to check the availability of my archived videos and delete them if they are publicly available. I made sure to filter our member videos. It does require that you name the folders with a specific pattern, with mine focusing on the video ID at the end of the file name surrounded by curved brackets (). If you want things from harbour, be careful.

The script also comes with filters and description filters, like in hoshinova, to keep videos that you want regardless of availability.

The checking availability plugin is:

```
#!/bin/bash

file="${1}"

vidTrim="${file##*(}"

vidID="${vidTrim%)*}"


echo "Checking status of ${vidID}"


response=$(curl -s -I -o /dev/null -w "%{http_code}"
"https://www.youtube.com/oembed?format=json&url=https://www.youtube.
com/watch?v=${vidID}")


publicCode="200"


memberFlag="Members Only"

titleFilters="${memberFlag}|asmr|unarchive|karaoke|unarchived|no
archive|WATCH-A-LONG|WATCHALONG|watch-along|birthday|offcollab|off-
collab|off collab|SINGING|Gawr Gura Ch. hololive-EN"
```

```
descriptionFilters="gura|UCoSrY_IQQVpmIRZ9Xf-y93g"


if [ "$response" = "$publicCode" ]; then
      descriptionFile="${file%.*}.description"
      if ! basename "${file}" | grep -Eiq "${titleFilters}" && ( ! [ -f "${descriptionFile}" ] || ! grep -Eiq "${descriptionFilters}" "${descriptionFile}" ); then
            #Ensure no previous output can poison checks
            rm -f /tmp/archiveCheck
            curl -s -o /tmp/archiveCheck "https://www.youtube.com/watch?v=${vidID}"


            if ! grep -Eiq "${memberFlag}" /tmp/archiveCheck; then


                  echo "Video with ID ${vidID} is public and doesn't match filters, removing..."
                  rm -f "$file"
            else
                  echo "Video with ID ${vidID} is a membership stream, keeping..."
            fi
            rm -f /tmp/archiveCheck
      else
            echo "Video with ID ${vidID} is public, but matches filters, keeping..."
      fi
else
    echo "Video with ID ${vidID} is not publicly accessible (Code: ${response}) or matches filters, keeping..."
fi


sleep 5
```

Additionally, I set this to only run on files modified between 30 and 60 days old, which I ran with a find script that also deletes any empty folders.

```
#!/bin/bash
```

```
find /mnt/user/HoloArchive/ -mindepth 1 -type f -not -path '*/.*' -
mtime +30 -mtime -60 -exec
/mnt/user/appdata/HoloArchive/Scripts/checkPublic.sh "{}" \;
```

```
find /mnt/user/HoloArchive/ -mindepth 2 -empty -type d -delete
```

Switch out the locations and times as you desire for your setup. I have set this to run weekly, but it has not run through full testing due to how recently this setup has been in action.