

SWG:PE BAREMETAL ALMALINUX 8.6

& SWG SERVER SETUP GUIDE

In this guide we will install a AlmaLinix 8.6 OS and compile a SWG server using the methods from other guides.

**DO OR
DO NOT.
THERE IS
NO TRY.**

Yoda.



Disclaimer:

I DO NOT CLAIM ANY OF THE CONTENT IN THIS GUIDE !

That right belongs to the original content creators.

I only rewrote it from my perspective.

All credits are mentioned on Page #1 of the enclosed guide.

Guide Reimagined By
SWG:PE Dev.ForsakenReaper

This guide came from learning how to setup baremetal machine based on the guide from Tekohswg that was modified by RezecNoble (source:<https://github.com/SWGEvolve/swg-prepare>). Some information in this guide came from this original document. All credits go to them for the information i've used to make this guide. I'm only translating this into a new indepth guide for the almalinux 8.6 machine setup part of that guide from start to finish.

TY to Tekohswg & RezecNoble along with the SWGSource community (<https://discord.gg/YyqABFJYnR>) for all your knowledge that goes into this guide.

Preperation: For Baremetal Install.

- I am assuming you have your machine ready to install a Linux OS (Operating System) .
- Assembly of the preperation for this server was done from Windows 11 Home 64bit to a HP DL360p gen8
- Rackmount.

(1) Download AlmaLinux 8.6 from https://mirrors.almalinux.org/isos/x86_64/8.6.html

- Choose a mirror then select (AlmaLinux-8.6-x86_64-dvd.iso) link.
- You will begin to download AlmaLinux-8.6-x86_64-dvd.iso to where ever you set your browser to download files to.

(2) Download Rufus 3.21 from <https://rufus.ie/en/> (I Highly Recommend)

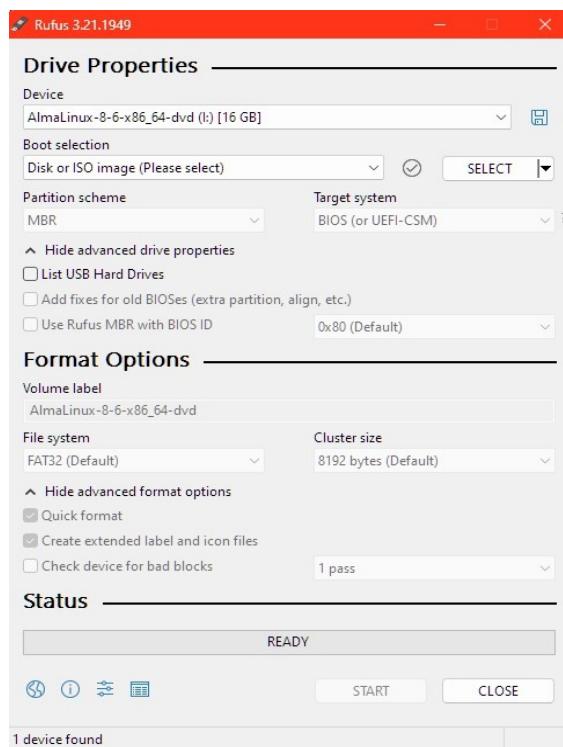
- This is the tool I use to make a bootable/mountable usbdrive to install OS's.
- You may replace this step with your tool of choice but due to the Vastness of tools used to burn iso's
- I will only be covering Rufus (<https://rufus.ie/en/>) in this tutorial.
- You will begin to download rufus-3.21.exe to where ever you set your browser to download files to.

(3) Insert A USB Drive of no less than 16GB.

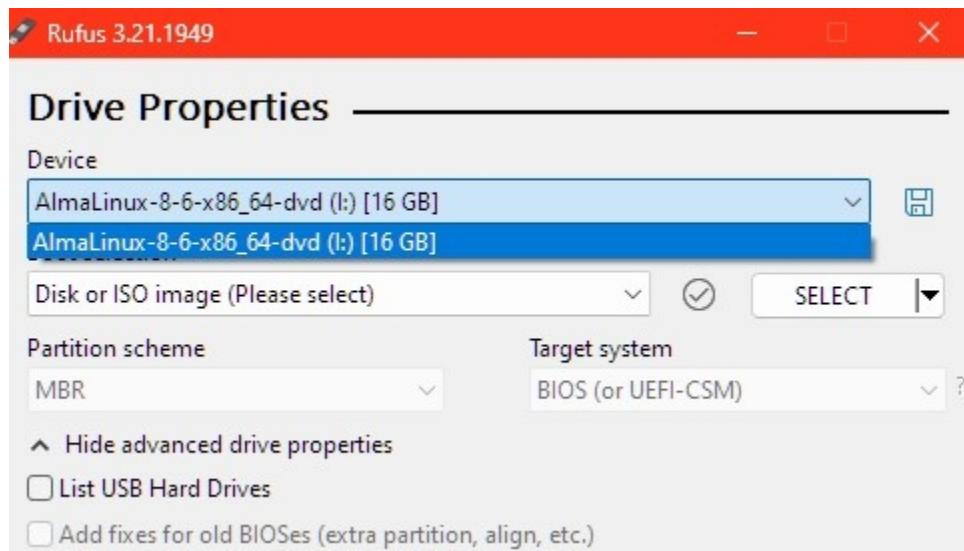
Installing Rufus:

(4) Right Click on the rufus-3.21.exe and Run As Administrator.

- A UAC (User Account Control) window will pop up and ask Do you want to allow this app to make changes to your device ?
- Choose yes and now rufus will open up.

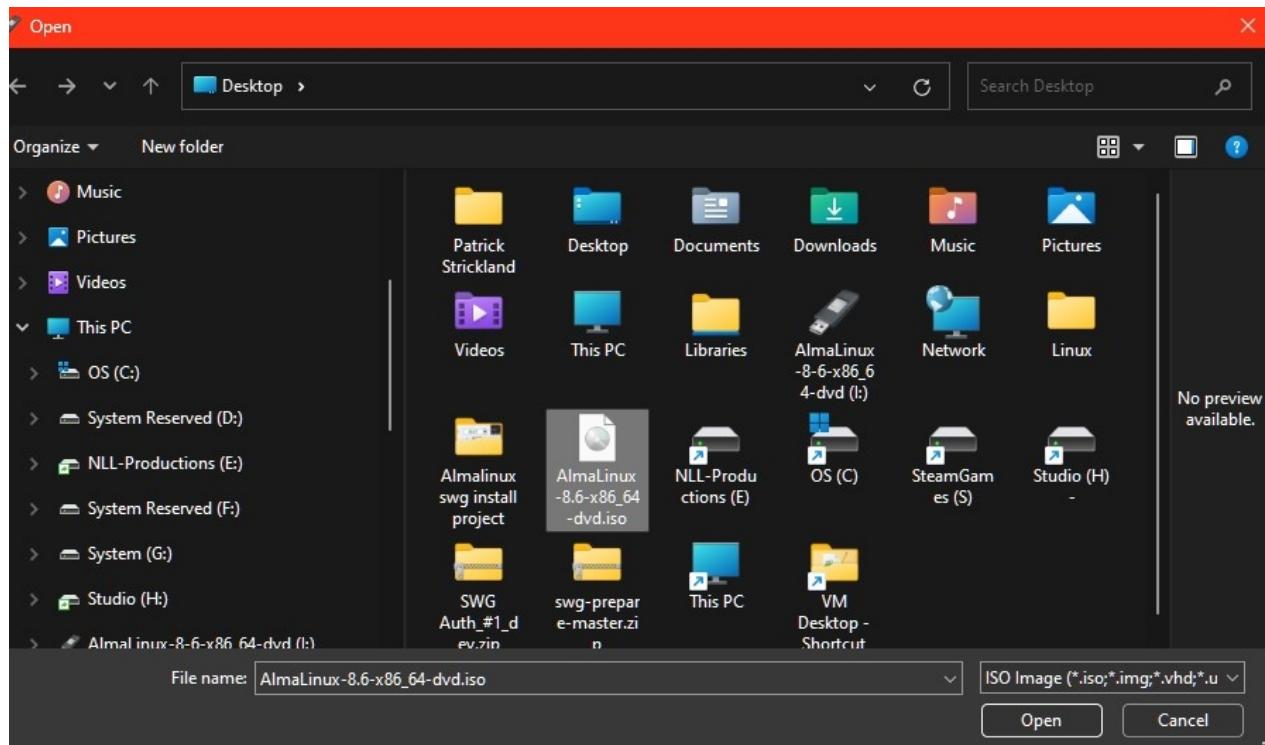
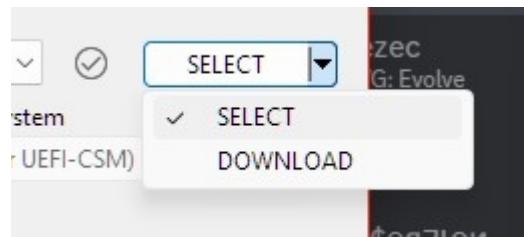


(5) Make sure you have your USB drive selected in drop down menu under DEVICE.

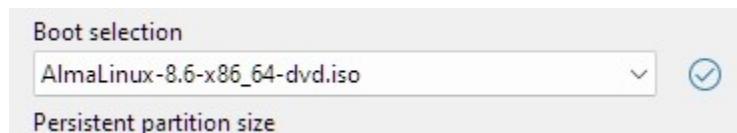


(6) Under (Boot selection) make sure you have (Disk or ISO image) selected.

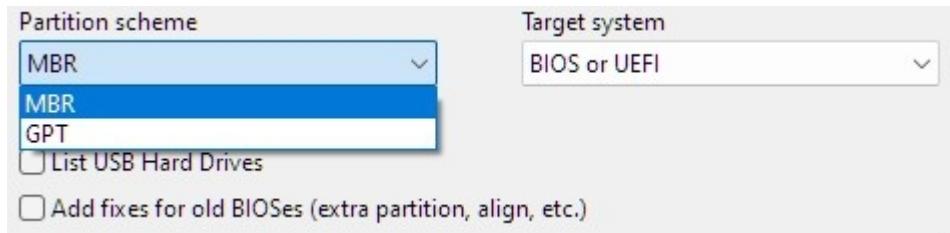
(7) Next click on the (SELECT) box and navigate to you Almalinux Iso(AlmaLinux-8.6-x86_64-dvd.iso) you downloaded earlier.



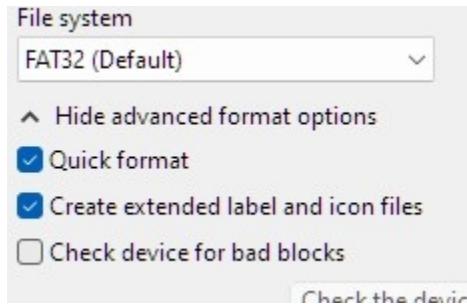
(8) You should now see AlmaLinux-8.6-x86_64-dvd.iso in the (Boot selection) window.



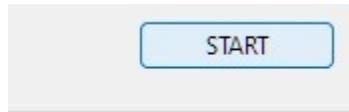
(9) We now want to look under (Partition scheme) and set the partition to (MBR) and (Target system) to (BIOS or UEFI).



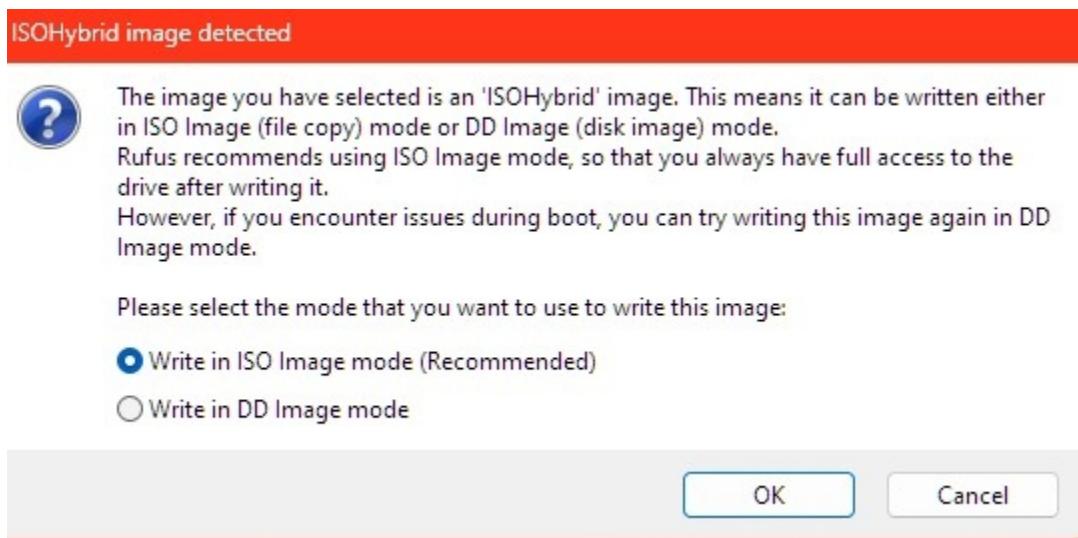
(10) Under (Format Options) Section we want to change (File system) to (FAT32) and make sure (Quick format) checkbox is selected, and the (Create extended label and icon files) checkbox is selected.



(11) Next click on (START) at the bottom.



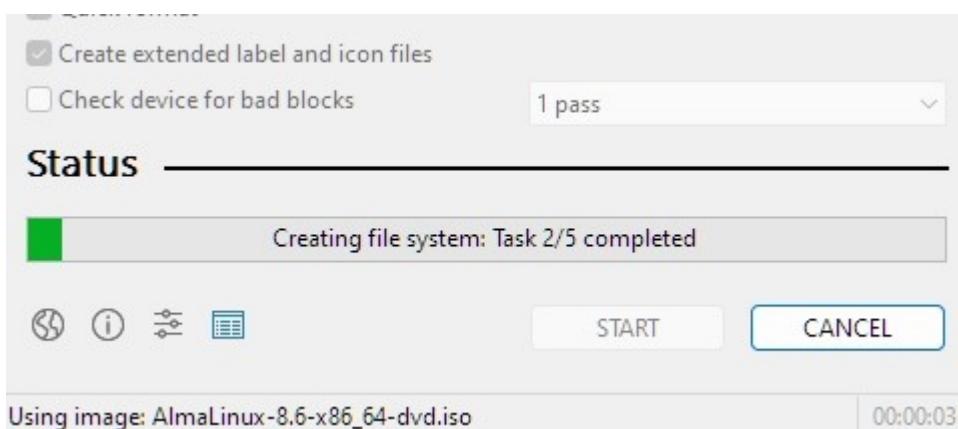
(12) A window will pop up asking which mode you want to use to write the image. Select (Write in ISO Image mode), and click (OK) .



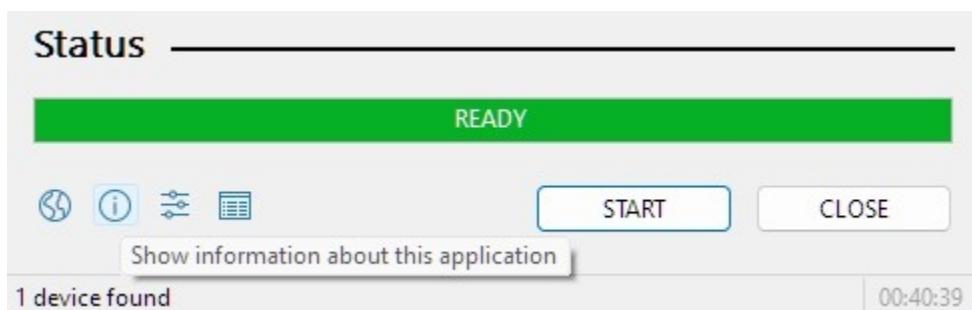
(13) Another window will pop up asking if you want to erase all data on the usb drive click (OK).



(14) Rufus will now start copying your AlmaLinux OS onto the USB Drive. This process take a while to complete and is very slow so be patient... mine takes around 30 mins on a 10th gen intel with 48GB ram to give you any idea.



(15) When its finished ... it will say (READY) in the green bar at the bottom of Rufus.



(16) We are now ready to start our install of AlmaLinux 8.6 onto our hHP DL360p GEN 8. If you know how to install linux you may skip this part just make sure you install with user (swg) and any password you choose make it secure !

- We will meet you at Step (35). Most builds are similar except the rackmount part but for the purpose of this guide we will be showing our build on our rackmount.

(17) Take Out USB stick and place into you Host Machine in which you will install the OS with the machine off.
Turn on your machine and acces the boot menu for your type of machine to manaully boot from the USB drive ...

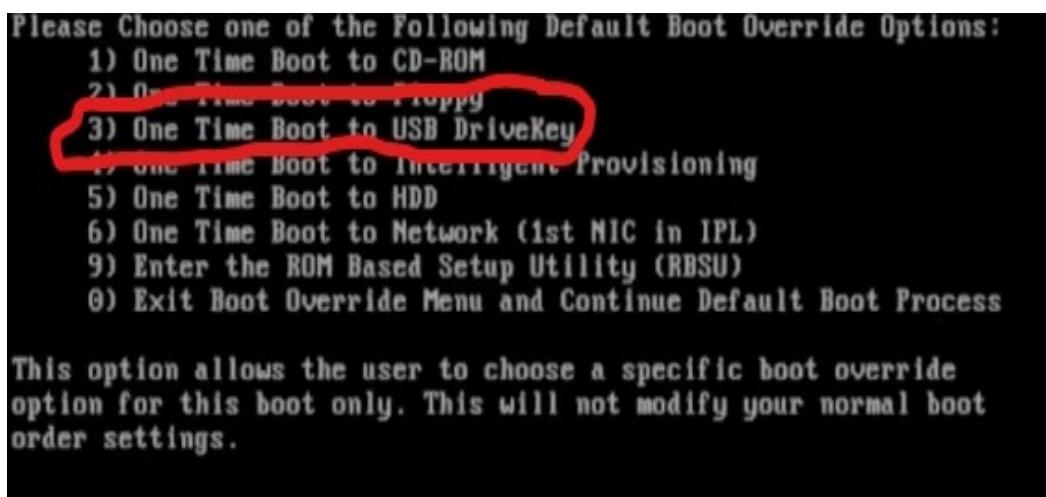
Note: Some machines automatically boot from a usb drive .If you know yours does this automatically then you don't have to Manually use the boot menu.

INSTALLING ALMALINUX 8.6 ON YOUR HOST MACHINE :

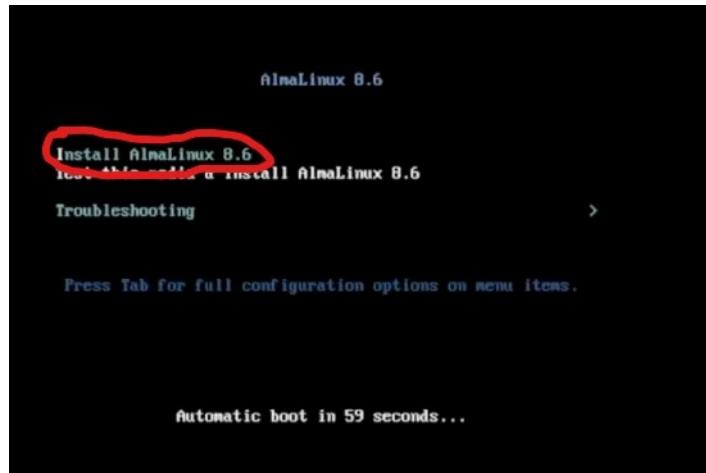
(18) After you power on your machine.You will need to grab the boot menu option if you have one and boot your USB drive.



(19) Select your boot device.for me it was num 3.

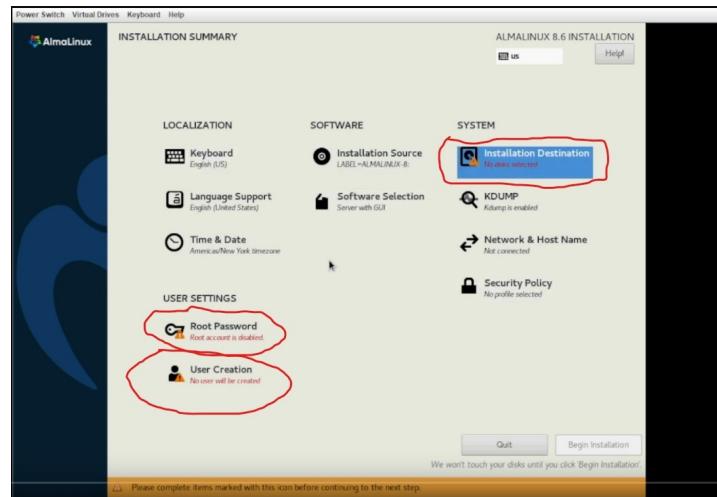


(20) Next Alma Linux will boot to the install selection screen. Be sure to select install almalinux – you may test and install if you are not sure if linux will run on your system.



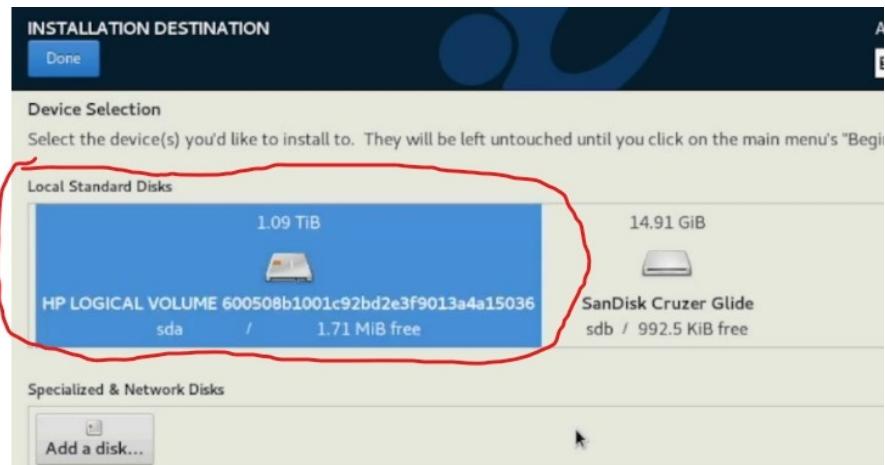
(21) AlmaLinux will now install the installation setup. When its finished it will open up the install screen.

-From here we want to edit 3 things(**Installation Destination, Root Password, and User Creation**) circled in red.

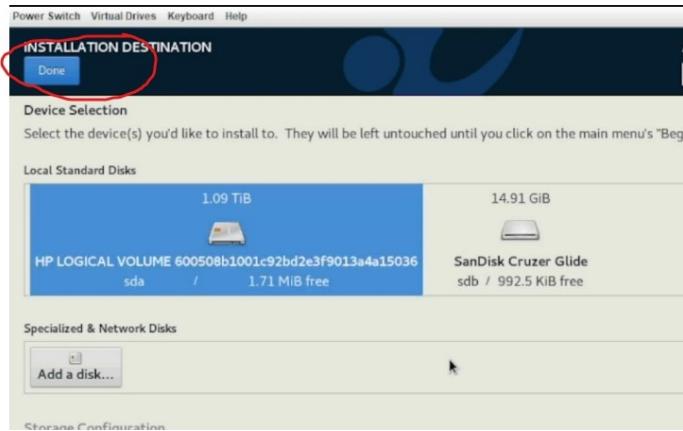


(22) For the first thing (**Installation Destination**) we want to wipe our harddrives and install a new OS.

- To accomplish this we must click on (Installation Destination)
- Select the (Disk) we want to clean and install the (OS) on.

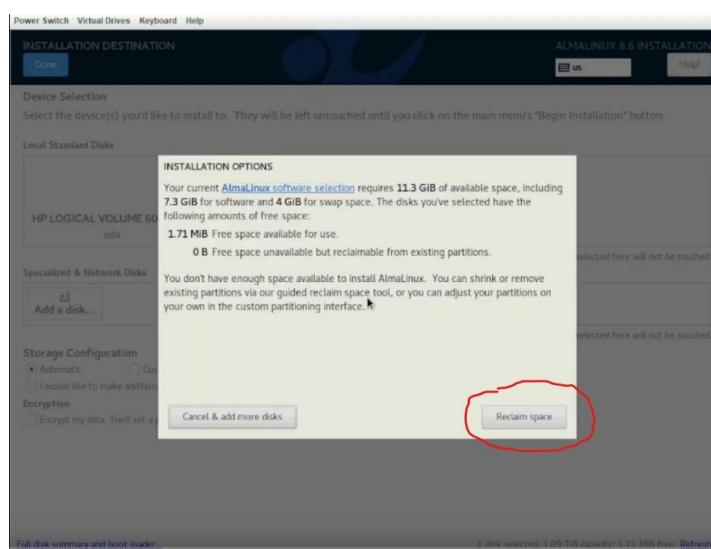


(23) Click (Done) at the top left of your screen.



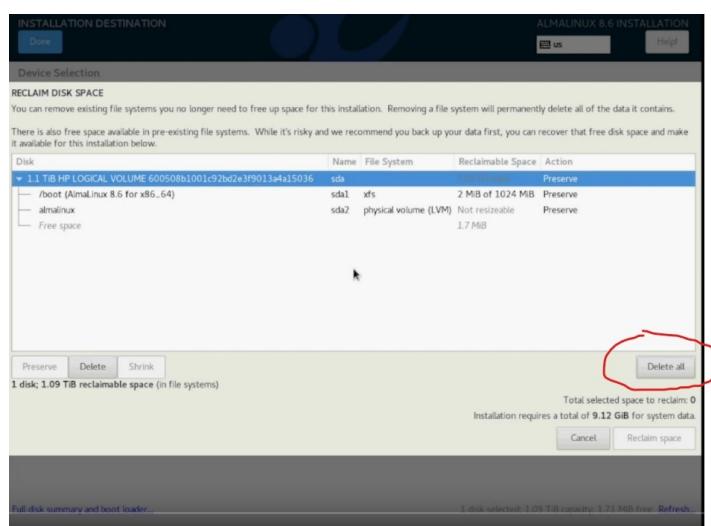
(24) Next a (Installation Options) window will pop up requesting your permission to reclaim space.

- Click on (Reclaim Space) to continue.

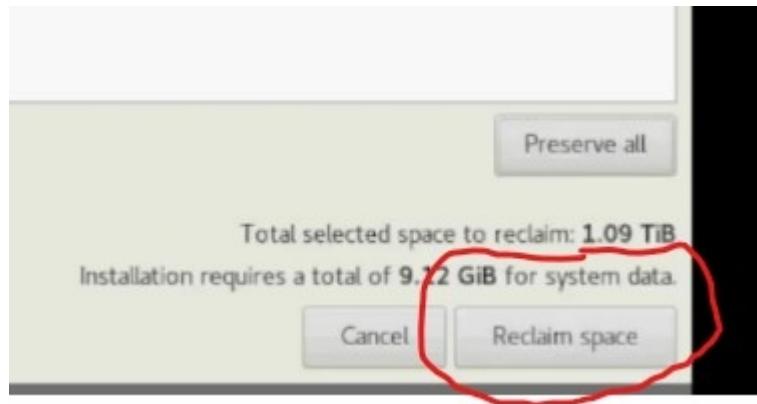


(25) The window now switches to the (RECLAIM DISK SPACE) window.

- Select (Delete All)

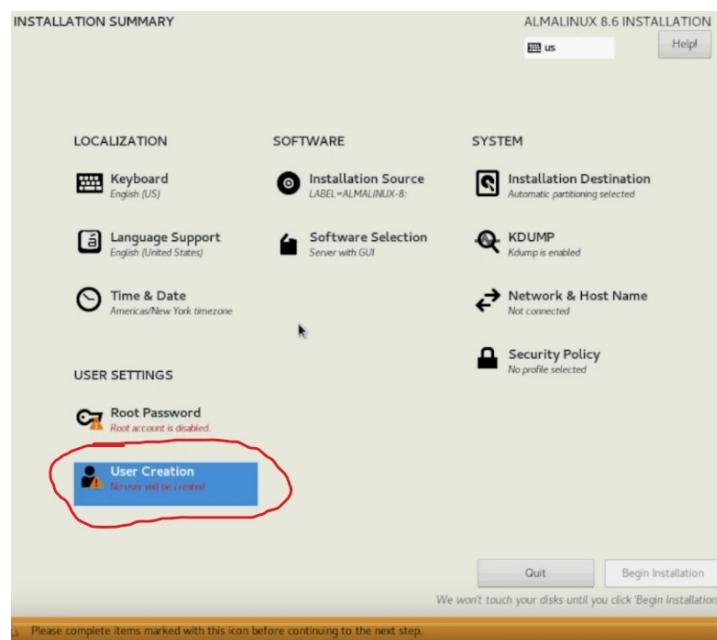


(26) The option to (Reclaim Space) will now be selectable. Click on that.



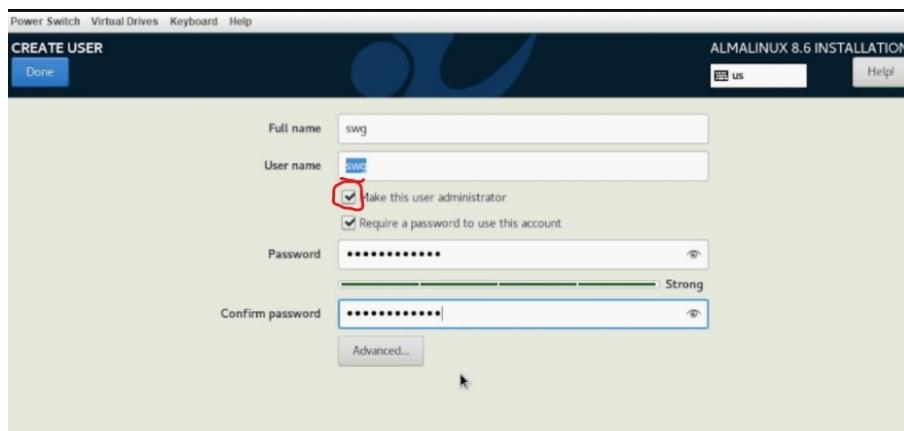
(27) This will bring us back to the (Installation Summary) screen.

-Next we will move to the (User Creation) Click on that.

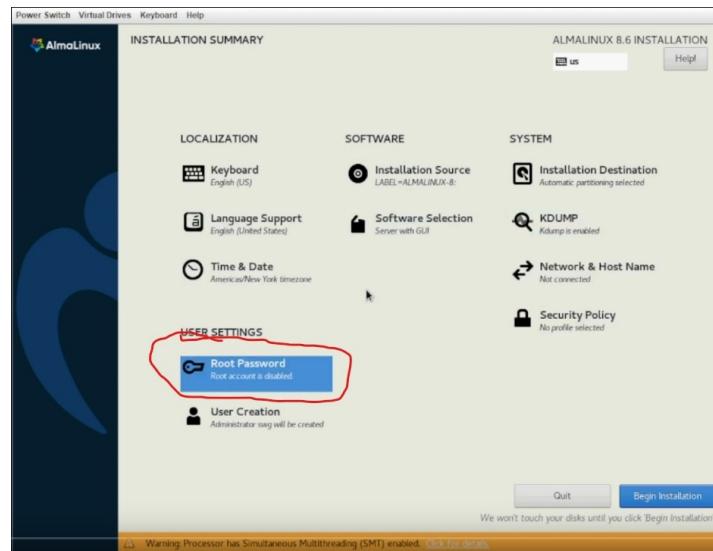


(28) Now that were on the (Create User) screen lets fill in our credentials and make sure the checkbox (Make this user administrator) is checked.

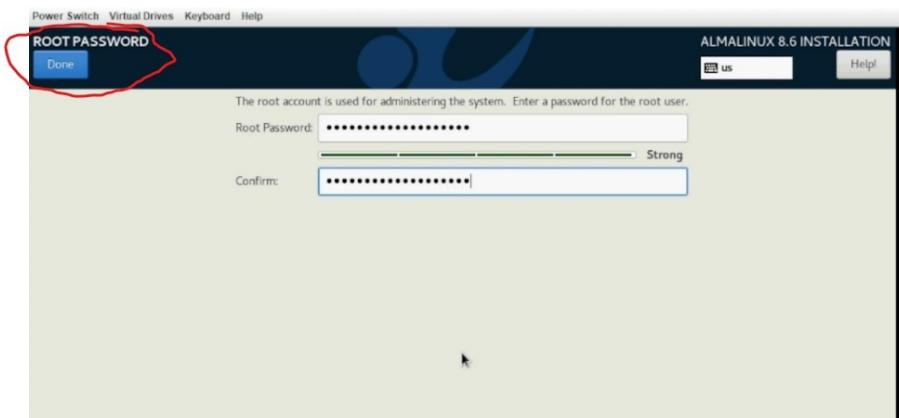
- For (**Full name**) we will use (**swg**), and for (**User name**) we will use (**swg**).
- For (Password) **NOTE:** Use whatever you like make it secure by using a mix of symbols letters and numbers.
- When you are finished Click (DONE).



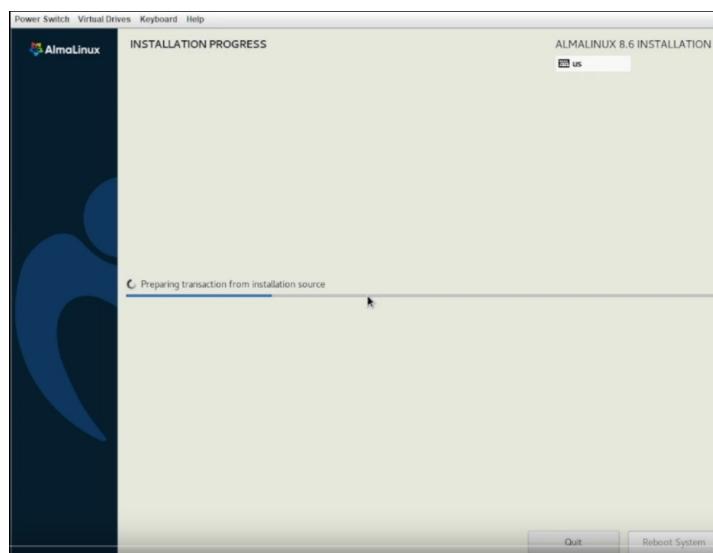
(29) Now we will be back on the (Installation summary) screen. We will now want to setup our root password so select the (Root Password) Option under (User Settings).



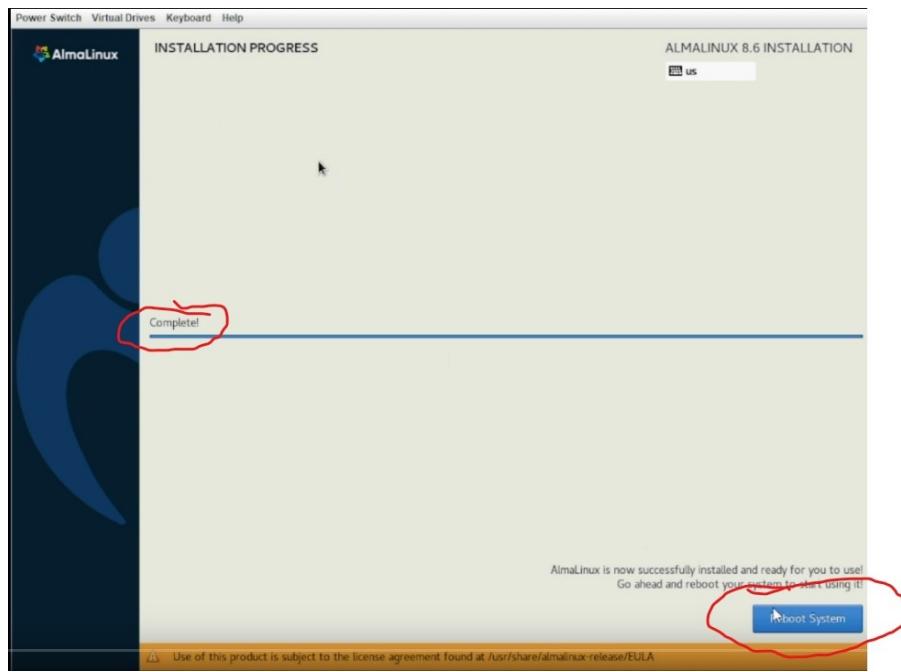
(30) This brings us to the (Root Password) screen. Fill out the root password with something strong and click (Done).



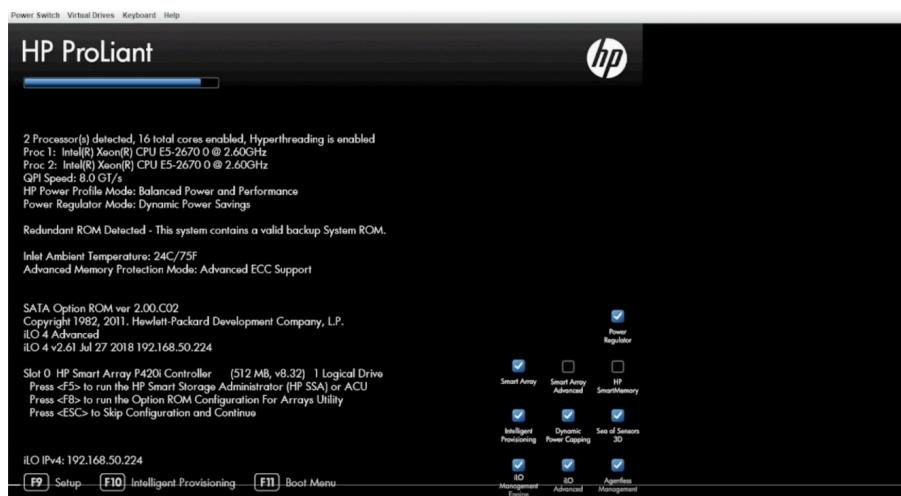
(31) Now we are cooking and the installation process will begin. **Note:** This may take a little bit.



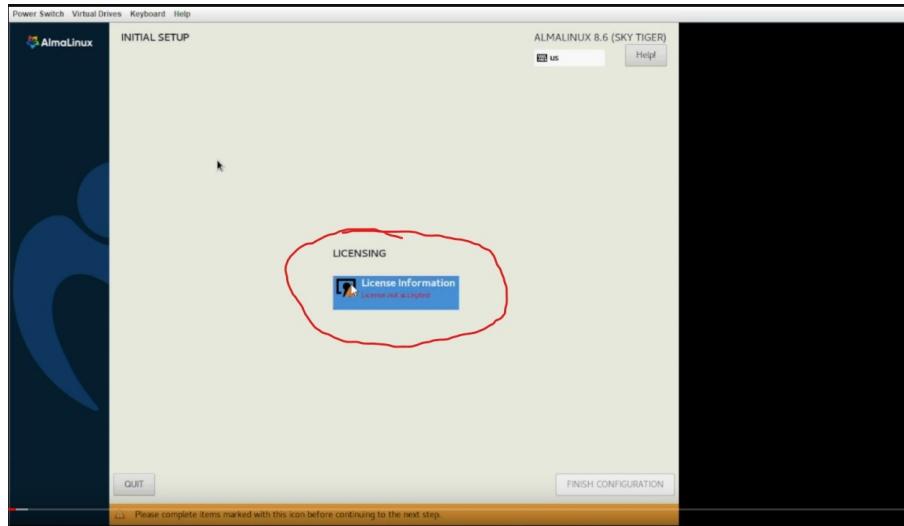
(33) As the installation comes to a complete Click the (Reboot Server) button and reboot.



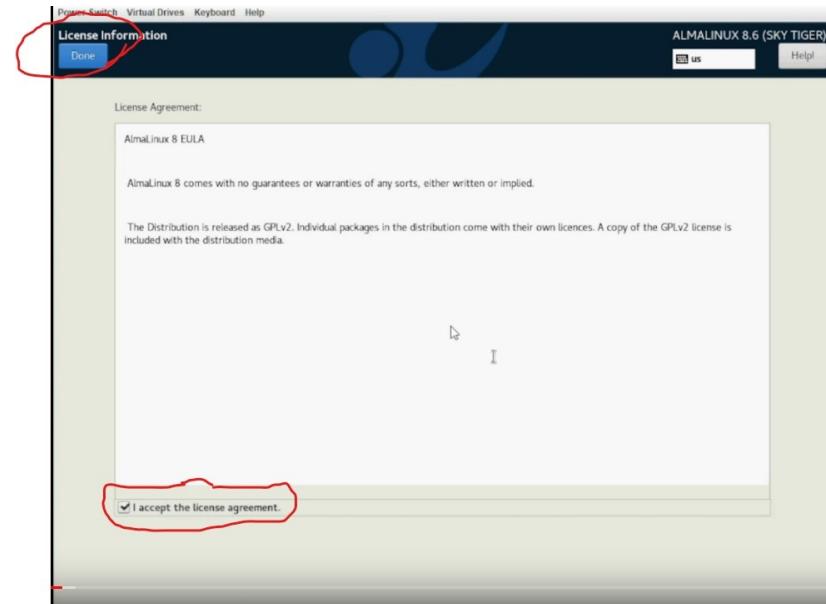
(34) Upon reboot during the post remove the USB Drive and Let Linux boot.



(35) Once AlmaLinux loads you will be prompted with a (EULA) button. Select That and you will move to the (EULA) screen.



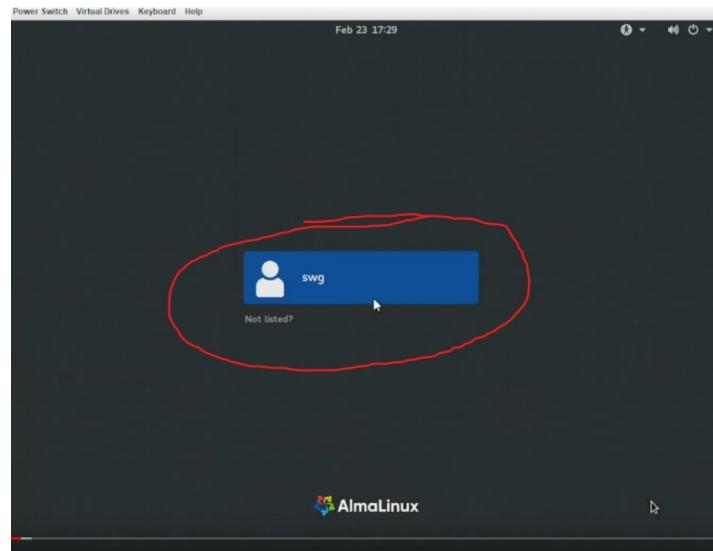
(36) In the (EULA) screen select the (I accept the liscese agreement) checkbox and click (Done) at the top left.



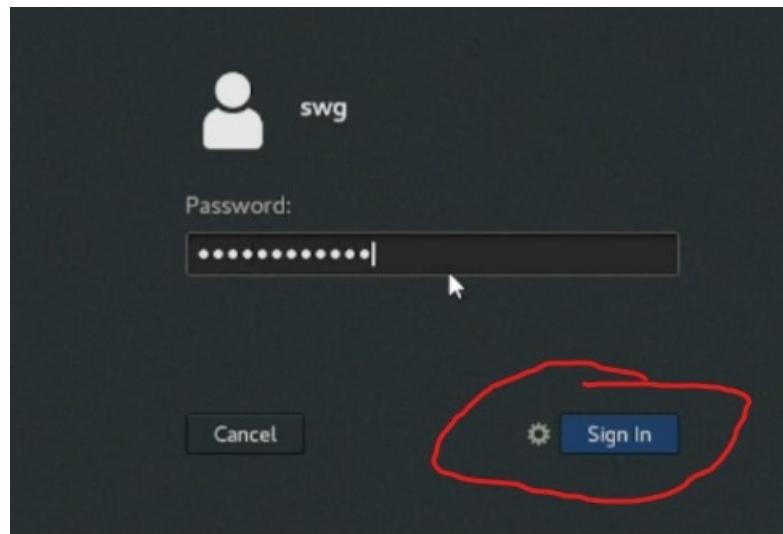
(37) Now were back on the (Initial Setup) screen with our liscense excepted Click (Finish configuration).



(38) Now we're on the (Login Screen). Select your User Name and hit enter.

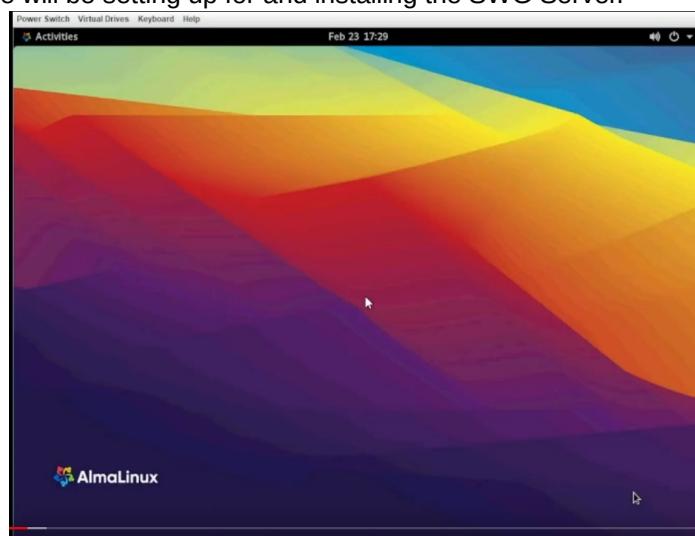


(39) Now you will be prompted for your User Account password (Not your root password). Type it in and click (Sign In).



(40) Congratulations! If everything was successful you should now be on the desktop of your new AlmaLinux 8.6 OS.

- The next steps in the guide will be setting up for and installing the SWG Server.



(Optional) Remote Desktop Connection:

You may skip this step if you don't need RDP to step ()

(41) For this tutorial we're going to install a remote desktop service that you can access from anywhere including an app.

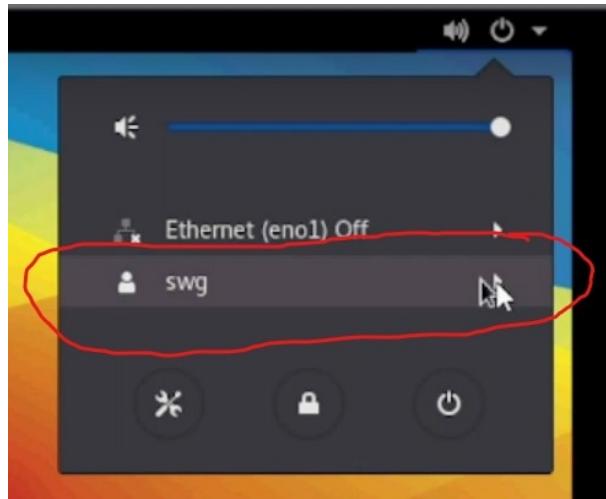
(42) Before we begin we need to do 3 things..

- 1- (Make sure the swg user account can login automatically so rdp can start.)
- 2- (Make sure our connection is set to automatically connect)
- 3- (Make sure swg user has root access to install files)

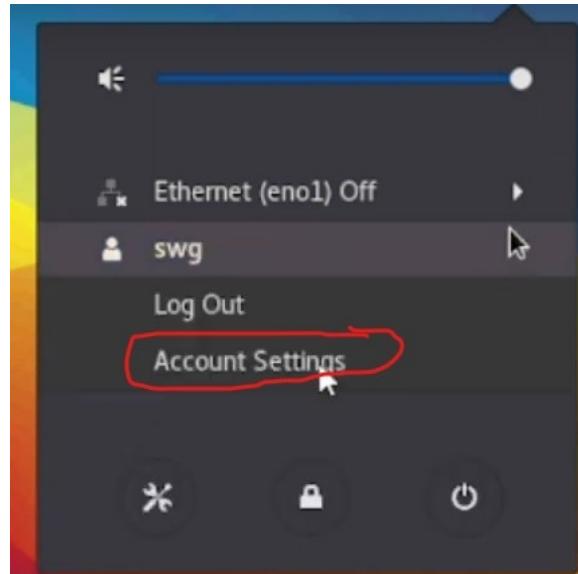
(43) To make sure our User (swg) automatically connects we need to do the following.

(44) On your desktop click the dropdown arrow beside the power switch

(45) When the window drops down you will see swg user click that.



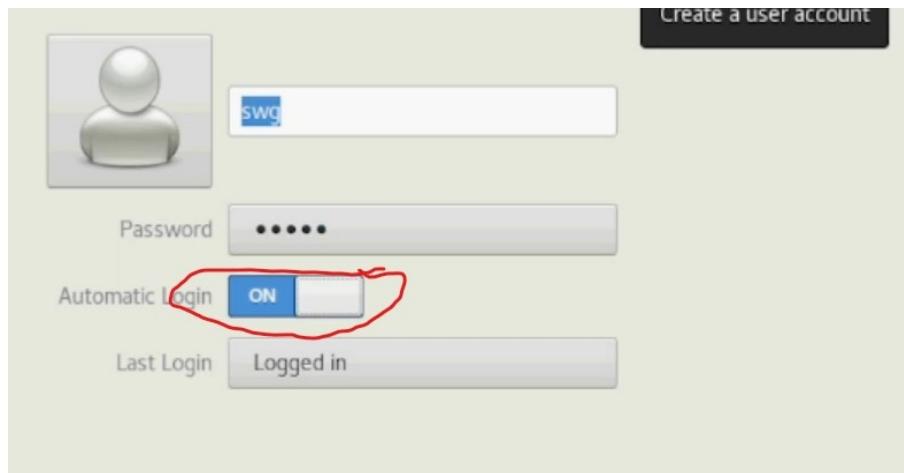
(46) More options will drop down click on (Account Settings)



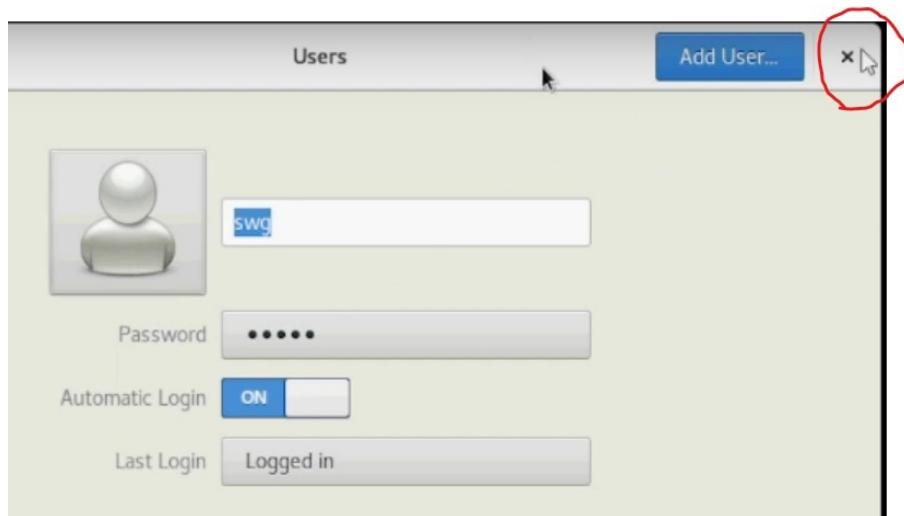
(47) This will open up a (Users) window click unlock in the top right to unlock the settings for this user.



(48) Now that the user is unlocked we want to make sure that (Automatic Login) button is on.



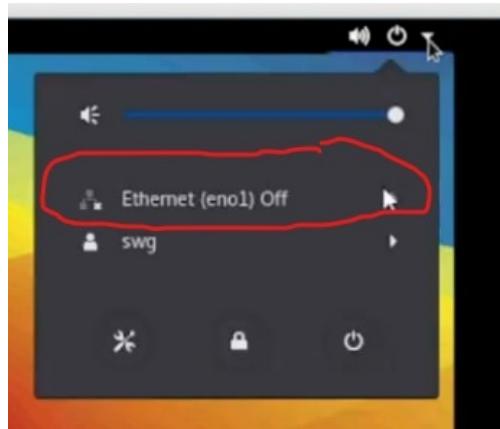
(49) Once your done with that click the (X) at the top right to close and save. Your user will now automatically login at startup. This is usefull for rdp login when its all you have.



(50) Now we move on to the next step (making sure you internet connection automatically connects at startup).

(51) Next we will setup the internet connection to automatically login at desktop startup.

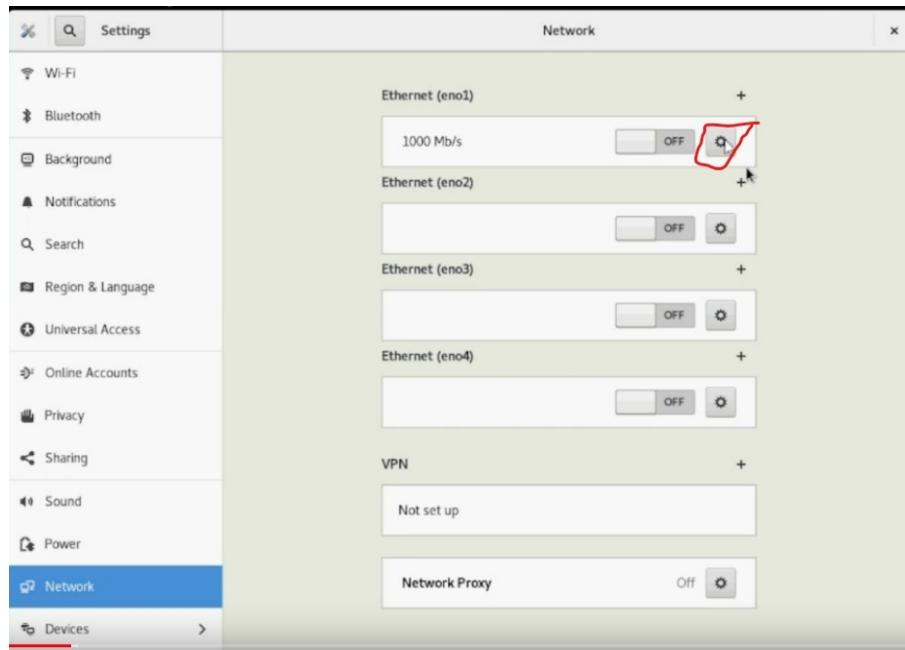
(52) First we need to click on the dropdown menu again beside the power off icon. Select your (Internet Adapter).



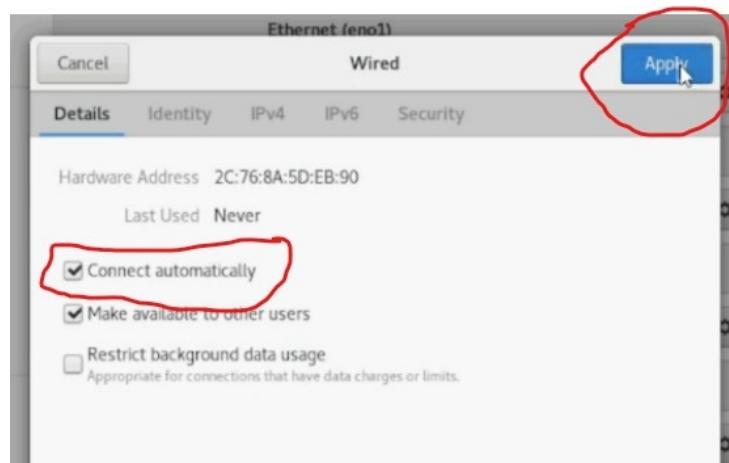
(53) This will bring up more options. Select (Wired Settings).



(54) This will bring up a (Network) Menu select the cog wheel next to the off/on switch for your ethernet adapter.



(55) You will now have the (Wired) options screen for the adapter you have chosen. We must now click on the (Connect automatically) check box and make sure its enabled then click (Apply) at the top left.

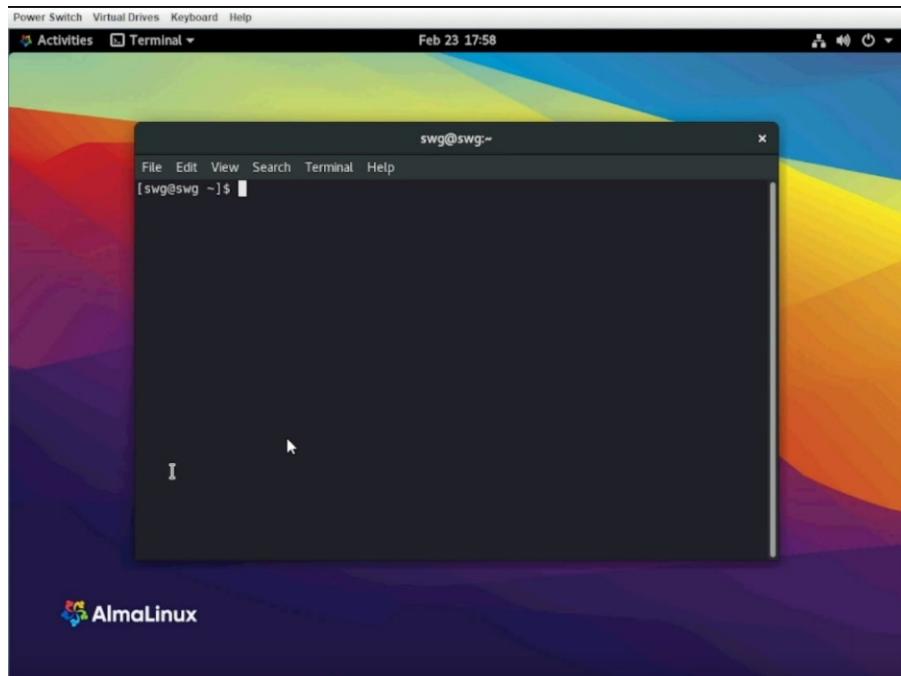


(56) After we click apply it will take us back to the (Network) screen click the (X) at the top left to close the window.



(57) Now we have the user set to auto login and the network to auto login. This is nessicary for the RDP to auto login. The last thing left for this part of the tutorial is to set sudo perms to user (swg) so we can download and install Dwservice.

(58) Bring up terminal and move to step (59)



(59) in the terminal type the following in order.

Type: su root
(enter your swg user password and hit enter)

Type: cd

Type: dnf install nano

```
[swg@swg ~]$ su root
Password:
[root@swg swg]# cd
[root@swg ~]# dnf install nano
AlmaLinux 8 - BaseOS           1.3 MB/s | 5.1 MB   00:04
AlmaLinux 8 - AppStream         1.7 MB/s | 11 MB    00:06
AlmaLinux 8 - Extras            25 kB/s | 19 kB    00:00
Last metadata expiration check: 0:00:01 ago on Thu 23 Feb 2023 05:38:11 PM EST.
Package nano-2.9.8-1.el8.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@swg ~]#
```

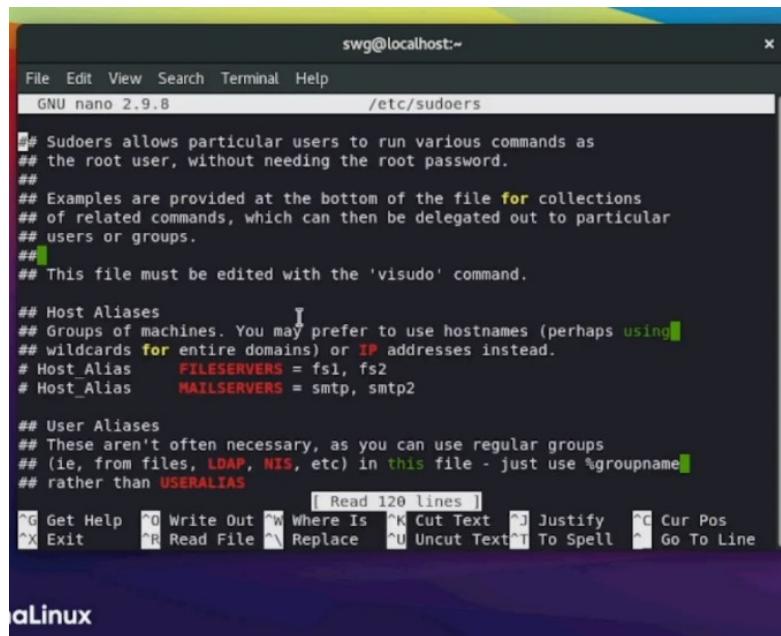
(60) This installs nano so we can edit the sudoers file. Wait till it says complete and move to the next step.

(61) Now we want to edit the sudoers file. So in terminal Type the following

Type: nano /etc/sudoers

```
Package nano-2.9.8-1.el8.x86_64 is al
Dependencies resolved.
Nothing to do.
Complete!
[root@swg ~]# nano /etc/sudoers
```

(62) This will open up the sudoers file.



(63) find the lines with

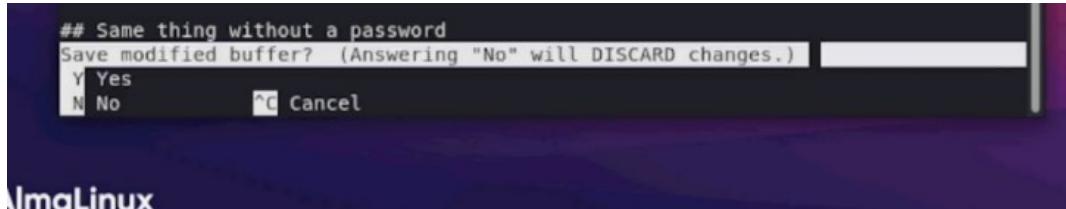
```
## Allow root to run any commands anywhere  
root ALL=(ALL) ALL
```

```
## Allow root to run any commands anywhere  
root ALL=(ALL) ALL
```

(64) right after `root ALL=(ALL) ALL` add `swg ALL=(ALL) ALL` like the image below to add your (swg) user to the sudo group.

```
## which machines (the sudoers file can be shared between multiple  
## systems).  
## Syntax:  
##  
##      user      MACHINE=COMMANDS  
##  
## The COMMANDS section may have other options added to it.  
##  
## Allow root to run any commands anywhere  
root    ALL=(ALL)      ALL  
swg     ALL=(ALL)      ALL  
## Allows members of the 'sys' group to run networking, software,  
## service management apps and more.  
# %sys  ALL = NETWORKING, SOFTWARE, SERVICES, STORAGE, DELEGATING, PROCESSES, LO$  
## Allows people in group wheel to run all commands
```

(65) Now we want to save the file by pressing (Ctrl+X, Y), and hit the (Enter) key.



(66) Next we will do another step to make sure our swg user has sudo. Type the following in terminal.

Type: su
(enter your swg user password and hit enter)

Type: cd
Type: usermod -aG wheel swg



(67) With all these steps completed our user (swg) now has sudo access. Now we can move on to the install of the Dwservice.

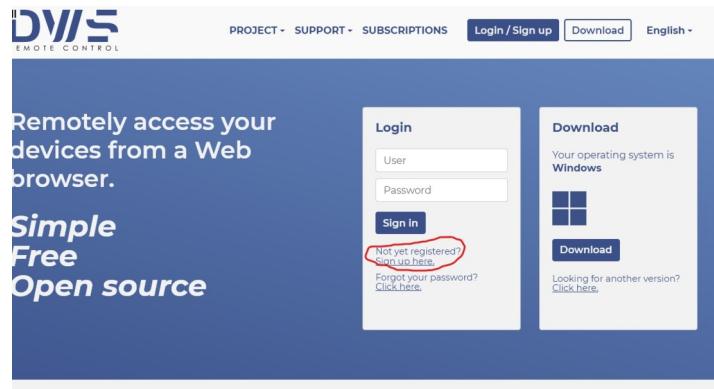
- If you're having issues with this part reference the guide below.
<https://www.how2shout.com/linux/add-user-to-sudoers-or-sudo-group-in-almalinux-8/>

(68) Restart Your Machine.

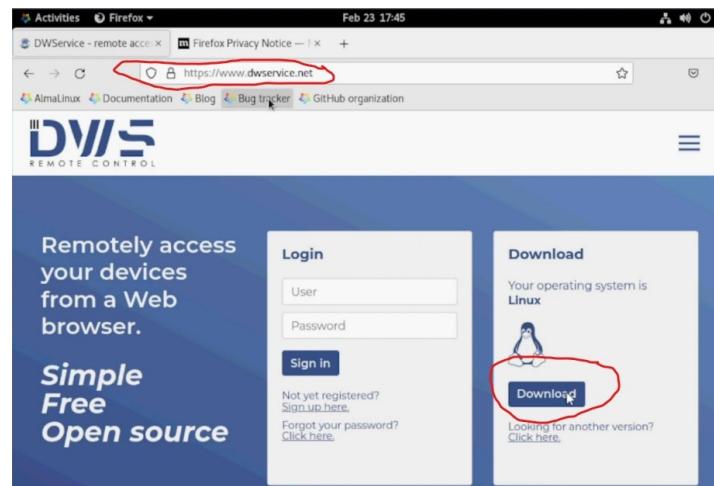
(69) Once you're back on the desktop we now need to download the dwagent.sh to install DWService.

(70) Open the browser on your AlmaLinux Machine to <https://www.dbservice.net/>.

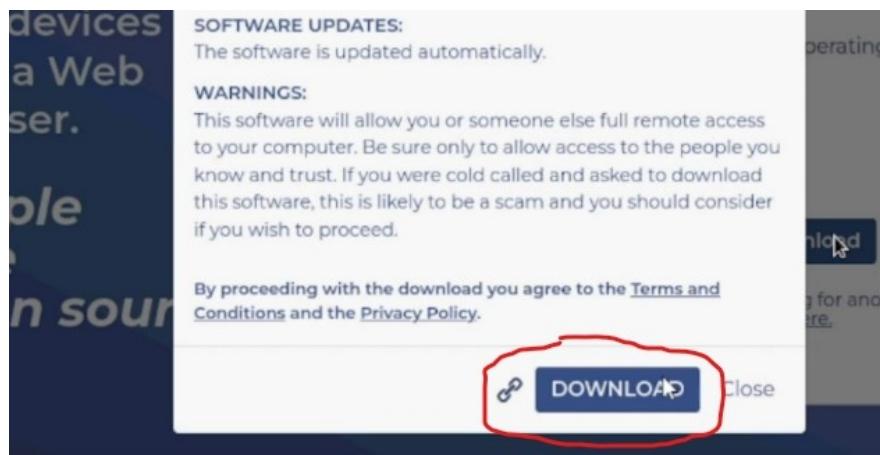
(71) Click (Sign up here) and register an account.



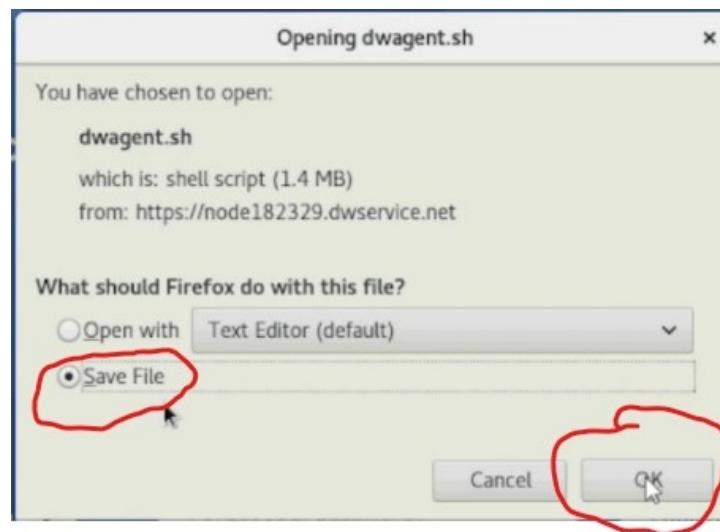
(72) Once you've activated your account. You can go back to the main screen and select the (Download) button.



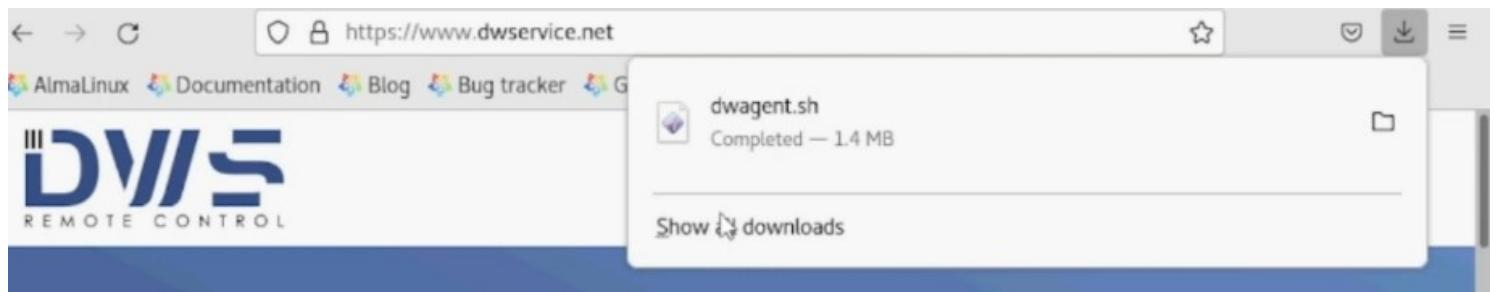
(73) A popup window will warn you about the risks of rdp read and Click (Download).



(74) This will open another popup window from firefox asking how you want to open dwagent.sh. We do not want to open it. We want to save it so we can install via terminal. So select the (Save File) option and click (OK).

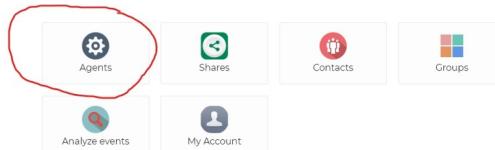


(75) The download overlay will show the download has completed.

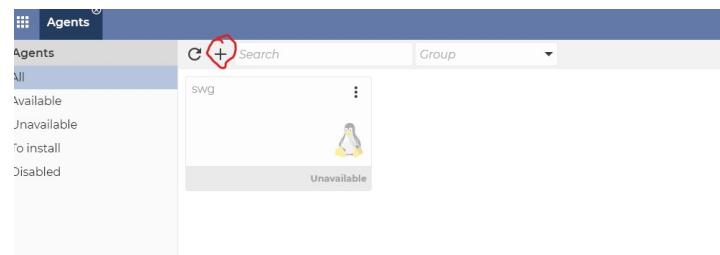


(76) Next login to your DWS account you setup earlier.

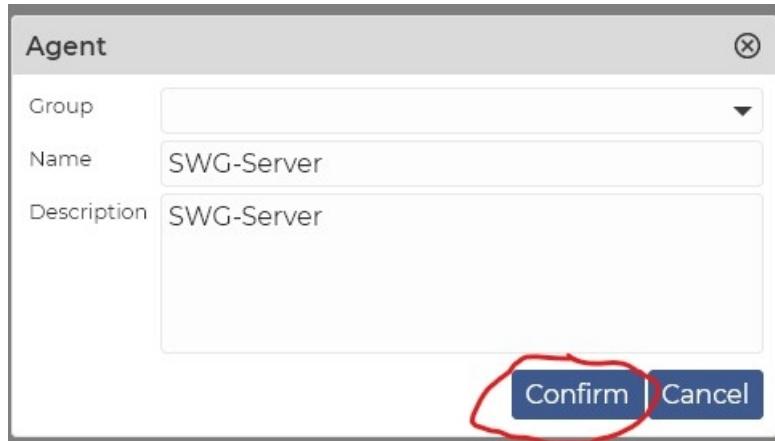
(77) After you login Select Agents.



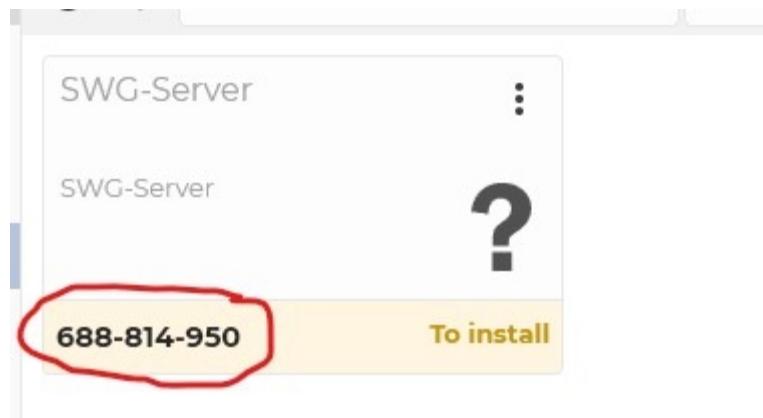
(78) Then select the (+) sign to add a server.



(79) A popup (Agent) window will appear. Type whatever you want to call your server in the (Name), and (Description Fields). Then click (Confirm).



(80) This will return us to the previous menu with our server RDP now ready to receive the connection from the server.
- **NOTE:** We need the code listed in this screen to install the dwagent.sh in the next steps so have it readily available.



(81) Next we want to proceed to install the dwagent.sh via terminal. So lets open up our terminal again, and Type the following to install the agent.

Type: cd Downloads
Type: chmod +x dwagent.sh
Type sudo ./dwagent.sh

- Select 1. Install when prompted.
- Accept default for Path.
- Select 1. Yes for the "Do you want to install..." question.
- Select 1. Entering the installation code.
- Enter the install code for the agent you created for this Raspberry Pi in the Create Agents section of this document.
- The script should finish the installation and start the DWAgent. Close the Terminal window and close the Chromium browser window.
- Follow the prompts to complete the installation.

(82) Restart the machine and login to your DWS account @ <http://www.dbservice.net>.
NOTE: it will take a minute to show online.

(83) Should you have any issues refer to the guide @ <https://github.com/AG7GN/dbservice>.

(84) If all went well you should now have access to your AlmaLinux Machine Via <http://dbservice.net>. Just login here anytime your machine is online and you can rdp from anywhere in the world . They also have an app for smartphones.

(Optional) No-IP DDNS SERVICE:

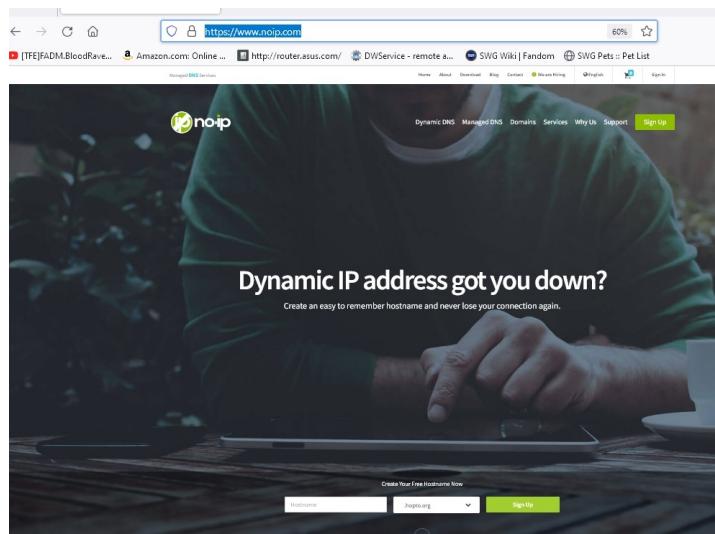
You may skip this step if you don't need a DDNS service Skip to step ()

(85) No-IP offers a free ddns program that you can install if you have a dynamic ip address. This is useful for...

- Not having to deal with constantly changing your ip address if your setup to do external access.
- Protecting your ip address from outside users by not having your ip in the login.cfg of your distributed client.
- With a ddns address. Your clients connects to the ddns server. Then the ddns server checks with your pc's noip client to get the ip, and send back the connection through them so they can't see your ip address.

Register with no-ip:

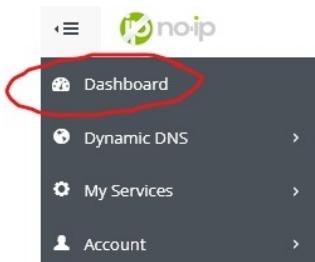
(86) open your browser and navigate to <https://www.noip.com/>.



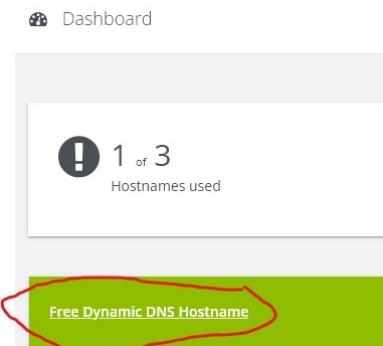
(87) Sign up, and create a free account. You may have to verify email address.

A screenshot of the "Create Your No-IP Account" form. The form includes fields for "Email" (with a red asterisk indicating it's required), "Password" (with a red asterisk), and "Hostname" (with a dropdown menu showing ".nopto.org"). A note says "Choose a hostname for your account. You can change your hostname or add more later." Below the form is a section titled "Why not upgrade?" comparing Enhanced DNS and Free DNS plans. Enhanced DNS costs \$1.99/mo and includes features like 80+ hostnames, no ads, 30-day confirmation, phone support, and SSL certificates. Free DNS costs \$0 and includes 1 hostname, ads, and no support. At the bottom, there are terms and conditions checkboxes, an "Email Opt-In" checkbox, and two buttons: "Get Enhanced" and "Free Sign Up".

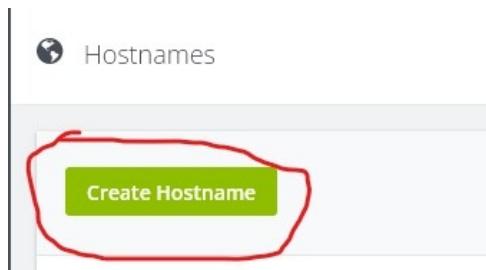
(88) Login to your No-ip account. Click (Dashboard).



(89) On the dashboard screen click (Free Dynamic DNS Hostname).

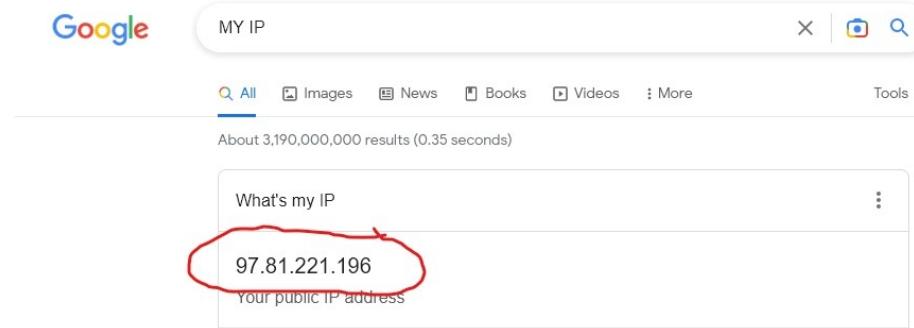


(90) On the (Hostnames) screen click the option to (Create Hostname).



(91) This will now put us on the (Create A Hostname) screen pause here and do the next step in a new browser window.

(92) Open up a google search with the current no-ip window open and type (MY IP) in the search box. Copy your ip address you will need it for the next step (93).



(93) Now we will fill in our (Hostname), (IPv4-Address), and make sure our (Record Type) is set to (DNS Host (A)).

- Note: Paste in your wan ip address you got from google in IPv4 Address.
- Click on (Create Hostname) to continue.

Create a Hostname

Hostname Domain

Record Type DNS Host (A) AAAA (IPv6) DNS Alias (CNAME) Web Redirect

IPv4-Address

Wildcard
Manage your Round Robin, TXT, SRV and DKIM records.

MX Records

(94) Now you will see your new ddns server name under (Hostnames). Copy this link and set it to the side you will need it later when we setup the swg server.



(94) Now we're finished with the account setup. We now need to install the service on our desktop and link them up.

(95) Next we open up terminal and proceed the commands to install as below.

Type: su root
(Enter your password)

Type: cd /usr/local/src

Type: wget <http://www.no-ip.com/client/linux/noip-duc-linux.tar.gz>

Type: tar xzf noip-duc-linux.tar.gz

Type: cd noip-2.1.9-1

Type:make

Note: If you get "make not found" or "missing gcc" then you do not have the gcc compiler tools on your machine. You will need to install these in order to proceed.

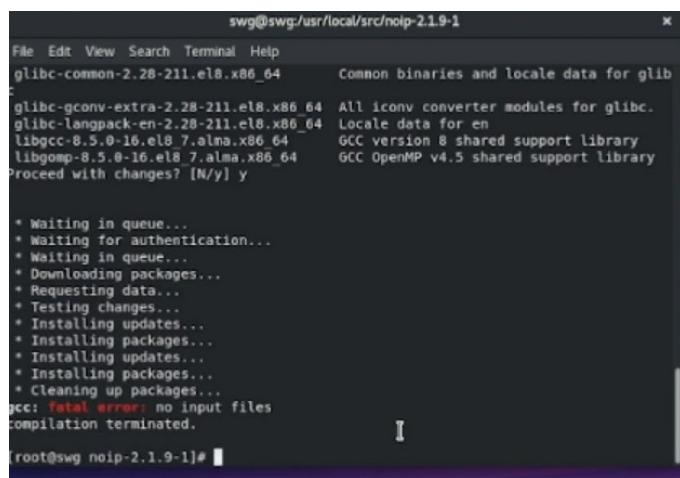
```
swg@swg:/usr/local/src/noip-2.1.9-1
File Edit View Search Terminal Help
[root@swg noip-2.1.9-1]# make
bash: make: command not found...
Install package 'make' to provide command 'make'? [N/y] y

* Waiting in queue...
The following packages have to be installed:
make-1:4.2.1-11.el8.x86_64  A GNU tool which simplifies the build process fo
r users
Proceed with changes? [N/y] y

* Waiting in queue...
* Waiting for authentication...
* Waiting in queue...
* Downloading packages...
* Requesting data...
* Testing changes...
* Installing packages...
gcc -Wall -g -Dlinux -DPREFIX=/usr/local/ noip2.c -o noip2
make: gcc: Command not found
make: *** [Makefile:25: noip2] Error 127

[root@swg noip-2.1.9-1]#
```

(96) If you get the make gcc command not found then type **gcc** and hit enter to install gcc. Make sure to type y to all the prompts to install. Once your through those it will intsall.

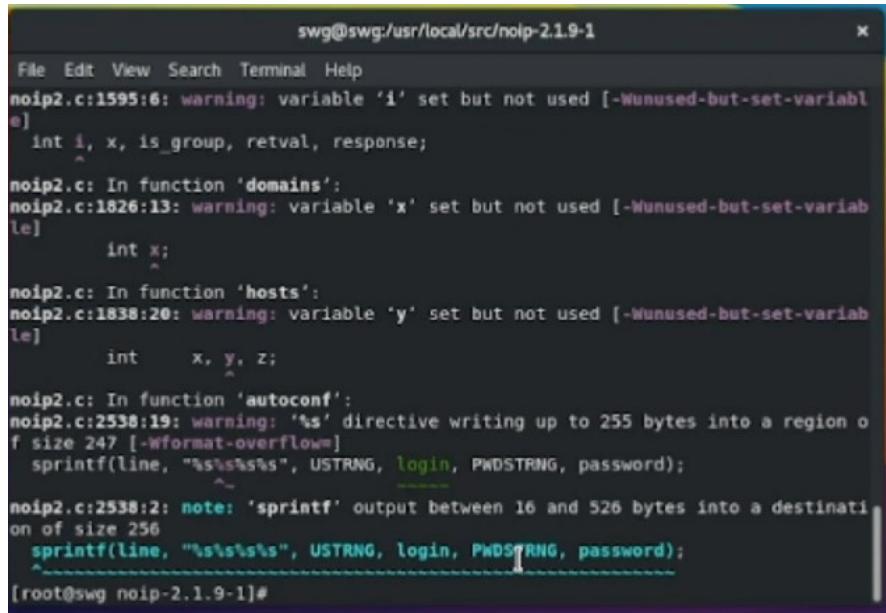


```
File Edit View Search Terminal Help
glibc-common-2.28-211.el8.x86_64      Common binaries and locale data for glibc
glibc-conv-extra-2.28-211.el8.x86_64   All iconv converter modules for glibc.
glibc-langpack-en-2.28-211.el8.x86_64 Locale data for en
libgcc-8.5.0-16.el8.7.alma.x86_64     GCC version 8 shared support library
libgccomp-8.5.0-16.el8.7.alma.x86_64   GCC OpenMP v4.5 shared support library
Proceed with changes? [N/y] y

* Waiting in queue...
* Waiting for authentication...
* Waiting in queue...
* Downloading packages...
* Requesting data...
* Testing changes...
* Installing updates...
* Installing packages...
* Installing packages...
* Cleaning up packages...
gcc: fatal error: no input files
compilation terminated.

[root@swg noip-2.1.9-1]#
```

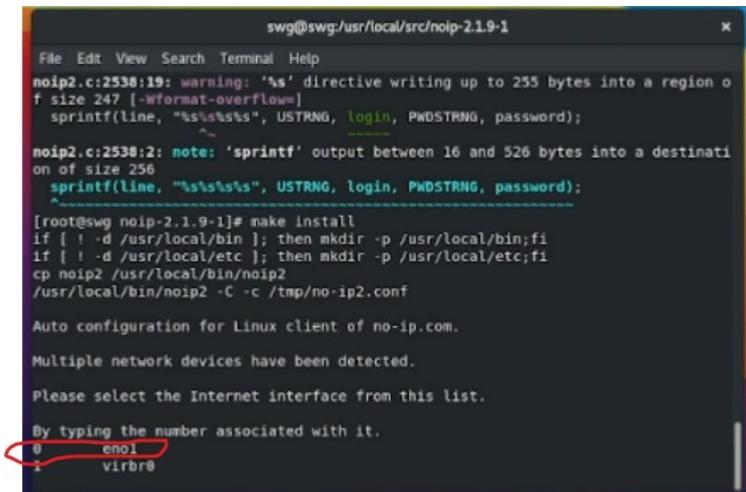
(97) Next after that is done we will type **make** and it will proceed to compile the code.



```
File Edit View Search Terminal Help
noip2.c:1595:6: warning: variable 'i' set but not used [-Wunused-but-set-variable]
  int i, x, is_group, retval, response;
noip2.c: In function 'domains':
noip2.c:1826:13: warning: variable 'x' set but not used [-Wunused-but-set-variable]
  int x;
noip2.c: In function 'hosts':
noip2.c:1838:20: warning: variable 'y' set but not used [-Wunused-but-set-variable]
  int x, y, z;
noip2.c: In function 'autoconf':
noip2.c:2538:19: warning: '%s' directive writing up to 255 bytes into a region of size 247 [-Wformat-overflow=]
  sprintf(line, "%s%s%s", USTRNG, login, PWDSTRING, password);
noip2.c:2538:2: note: 'sprintf' output between 16 and 526 bytes into a destination of size 256
  sprintf(line, "%s%s%s", USTRNG, login, PWDSTRING, password);

[root@swg noip-2.1.9-1]#
```

(98) After this we type **make install**.



```
File Edit View Search Terminal Help
noip2.c:2538:19: warning: '%s' directive writing up to 255 bytes into a region of size 247 [-Wformat-overflow=]
  sprintf(line, "%s%s%s", USTRNG, login, PWDSTRING, password);
noip2.c:2538:2: note: 'sprintf' output between 16 and 526 bytes into a destination of size 256
  sprintf(line, "%s%s%s", USTRNG, login, PWDSTRING, password);

[root@swg noip-2.1.9-1]# make install
if [ ! -d /usr/local/bin ]; then mkdir -p /usr/local/bin;fi
if [ ! -d /usr/local/etc ]; then mkdir -p /usr/local/etc;fi
cp noip2 /usr/local/bin/noip2
/usr/local/bin/noip2 -C -c /tmp/no-ip2.conf

Auto configuration for Linux client of no-ip.com.

Multiple network devices have been detected.

Please select the Internet interface from this list.

By typing the number associated with it.

0  eno1
1  virbr0
```

(99) After the make install command. It will ask you to select a connection device by putting in the number associated with it for me it was 0. If your not sure open your network connections and see what connection is active.

```
By typing the number associated with it.  
0 en0  
1 virbr0  
2 virbr1  
Please enter the login/email string for no-ip.com
```

(100) Next enter your login and password you registered with no-ip.

```
Please enter the login/email string for no-ip.com  
Please enter the password for user
```

(101) Next it will ask you to enter a update interval. Its set to default just hit enter.
- Next it will ask if you want to run something at successful update select (n)

```
Please enter an update interval:[30]  
Do you wish to run something at successful update?[N] (y/N) n  
New configuration file '/tmp/no-ip2.conf' created.  
mv /tmp/no-ip2.conf /usr/local/etc/no-ip2.conf  
(root@swg noip-2.1.9-1)#[
```

(102) Thats it for that. So lets Restart the machine and proceed to installing SWG Server files Section next in this guide.

- Preparation: For Installing SWG Server files

- **NOTICE:** This part of the Installation is pulled directly from a guide originally by Tekohswg and modified by RezecNoble,
 - then reworked by ForsakenReaper with new images. All credits to the guides go to them.
 - Source of this installation guide can be found here. (<https://github.com/SWGEvolve/swg-prepare>).
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(41)

To Be Continued

This guide is still being developed and added to.

Guide is unfinished till this page is gone.