FIRST TERM ASSESSABLE ACTIVITY

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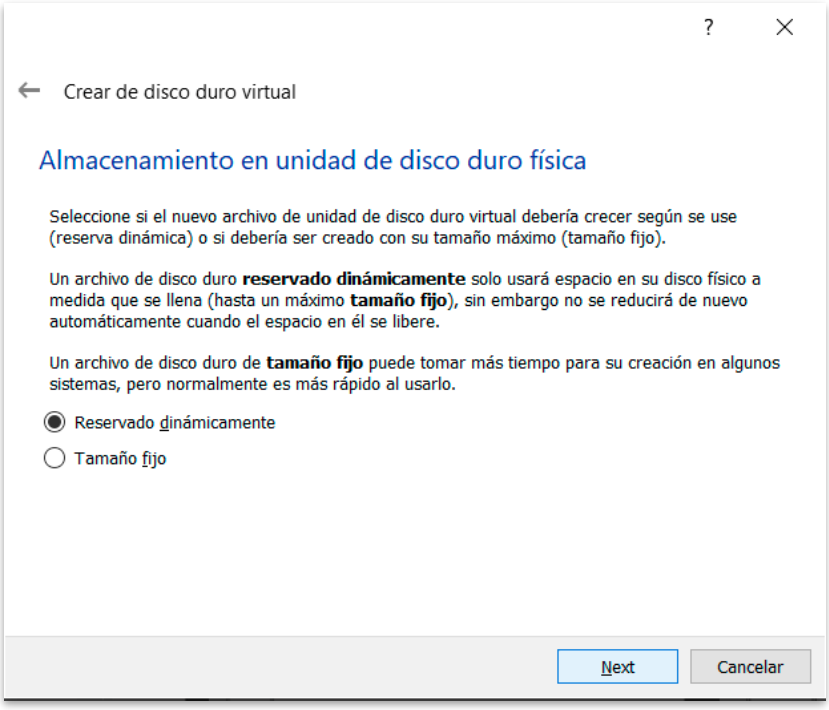
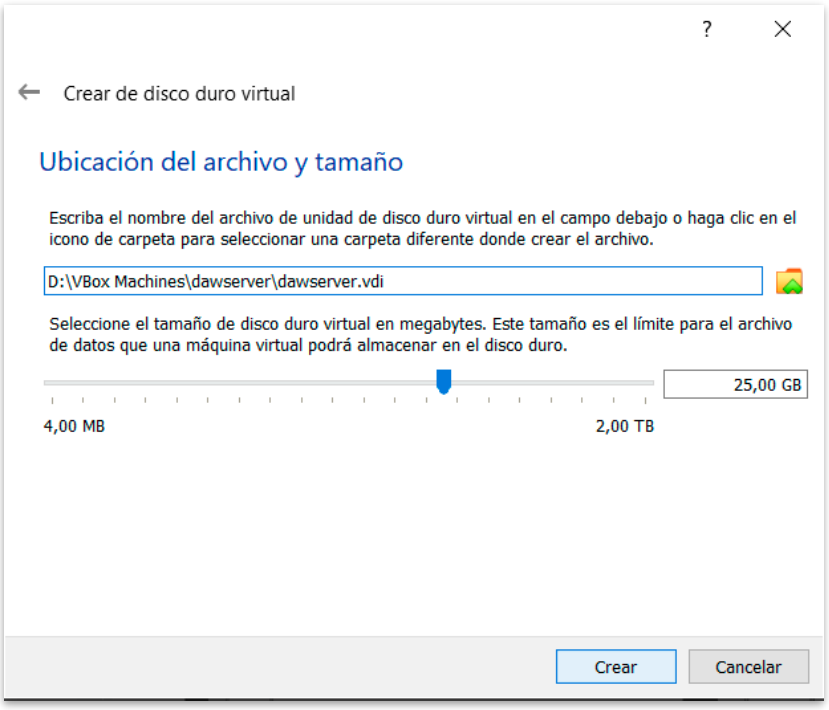
1. New Linux virtual machine with a 25GB hard drive (dynamically allocated), hostname dawserver, user admin20, password #Daw2020 and Webmin installed.

First of all, I'm going to create the virtual machine. I select the amount of memory RAM (2gb) and create the VDI with dynamically allocated hard disk file.

Finally, I will choose the location of hard disk and its size (25Gb). In this way, the virtual machine will use the minimal necessary space, with maximum of 25GB.





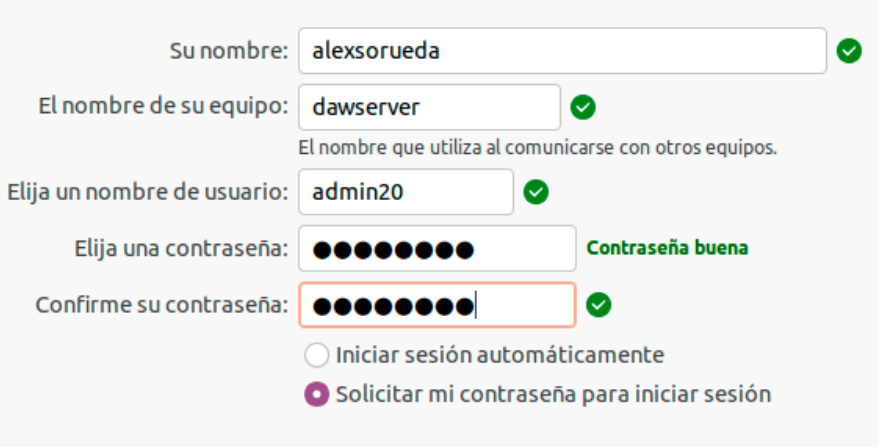
Now the virtual machine is created, so i choose the OS iso file and the installation will start. I'm going to use ubuntu desktop 20.04 LTS.

During the installation, the system requires the username, nameserver and password. I´m going to set:

user: admin20

Server's name: dawserver (it can be changed later in /etc/hostname directory file, using command *sudo nano*)

Password: #Daw2020

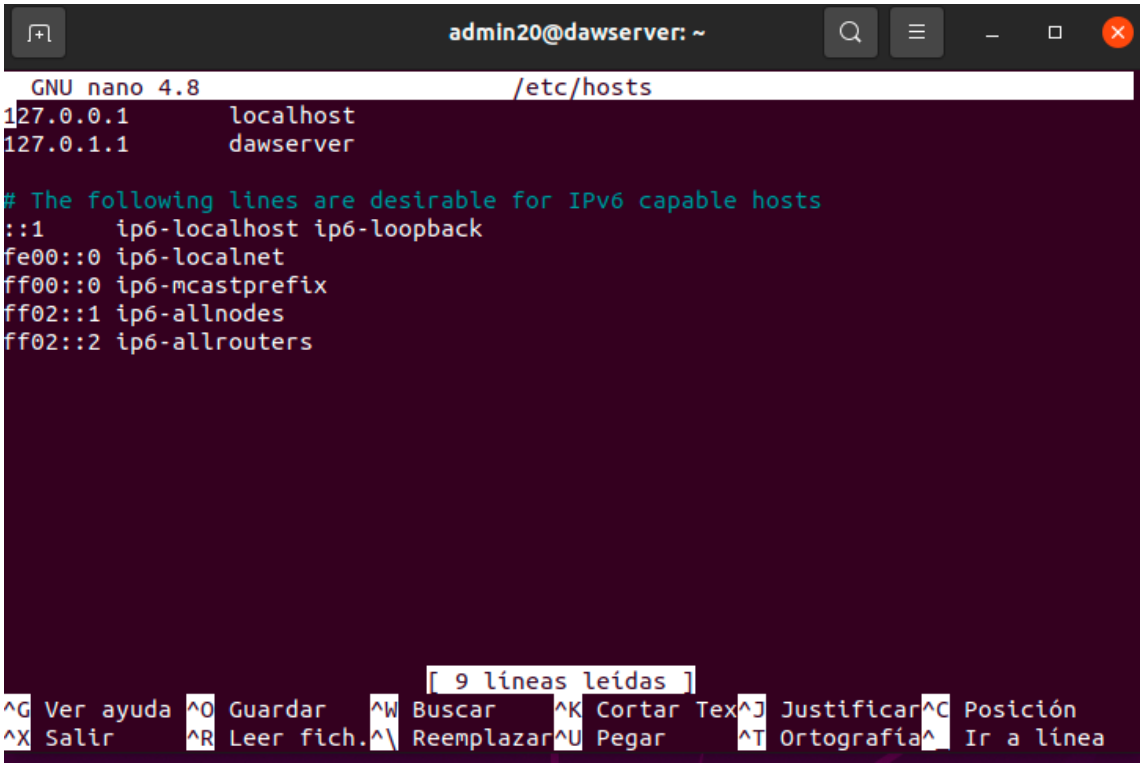


Once installed, update repositories and upgrade.

So let's open terminal and write *sudo apt-get update* and *sudo apt-get upgrade*

Checking the hostname is dawserver with *sudo nano /etc/hostname* to see it's right.

And the hosts list with *sudo nano /etc/hosts.*



Now, to Install Webmin I write in terminal:

wget http://prdownloads.sourceforge.net/webadmin/webmin_1.881_all.deb

and then *sudo dpkg --install webmin_1.881_all.deb*

I need install the dependencies with *sudo apt-get install perl libnet-ssleay-perl openssl libauthen-pam-perl libpam-runtime libio-ptyperl apt-show-versions python*

I have had problems with the installation, so i have to run *sudo apt-get -f install*

One installed, I run firefox browser and write the direction https://dawserver:10000/

Log in with user: admin20, and password: #Daw2020

Later I update webmin to latest version and install package updates.

Now webmin is finally installed.

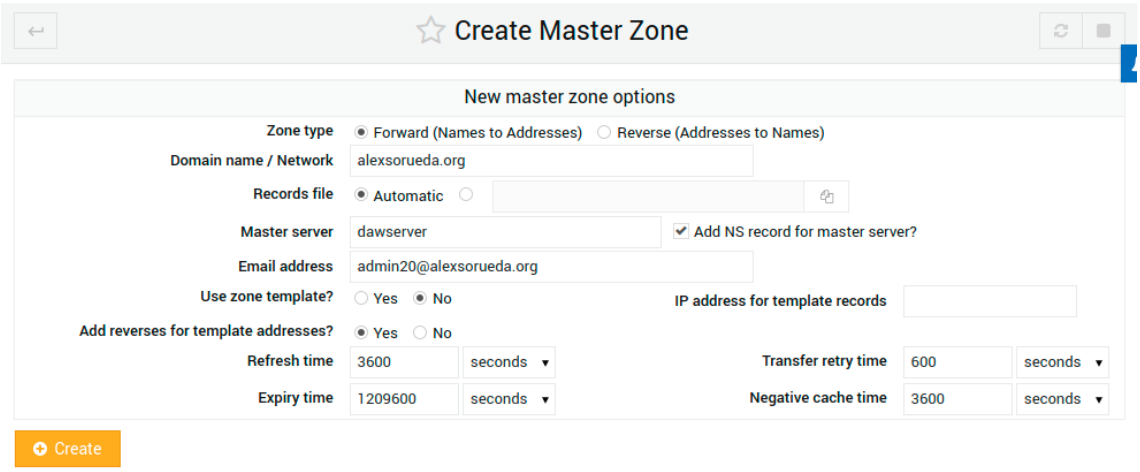
2. DNS server configured to manage a domain with same name as your mail plus ".org" (for example, pauminyana.org, use the mail name included in moodle, exclude punctuation marks or simbols); from now we will call it "mailname". Add also subdomains server.mailname.org (dawserver machine) and client.mailname.org (client machine). Use as client the Linux client used in previous activities or your physical machine to test that the DNS server works properly.

First of all I'm going to install BIND DNS Server from Un-used Modules in webmin panel.

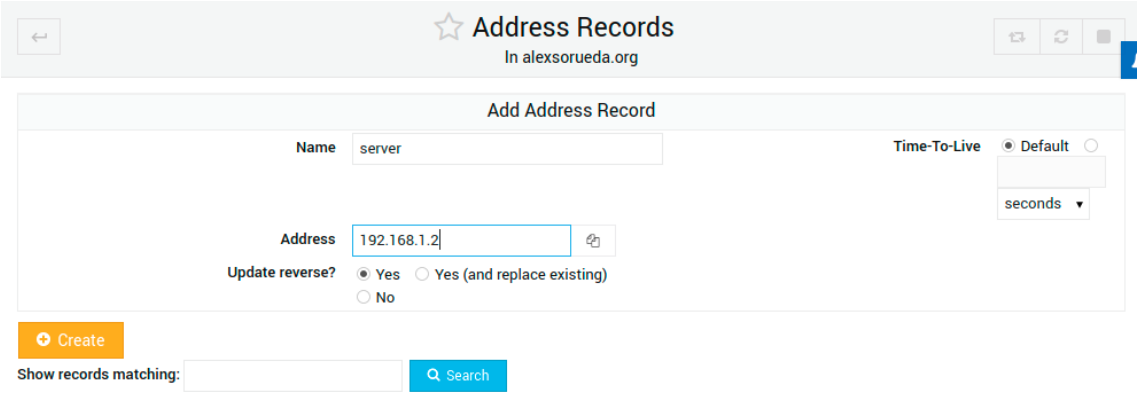
Once installed, refresh modules to see the module installed in the panel.

Configurar DNS en configuración -> red -> ajustes -> IPv4

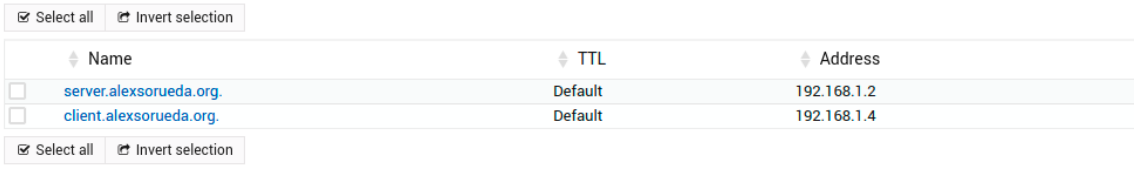
I do click on BIND DNS Server and create a master zone in Existing DNS zones.



Now I create subdomains server and client with assigned IP for each domain.

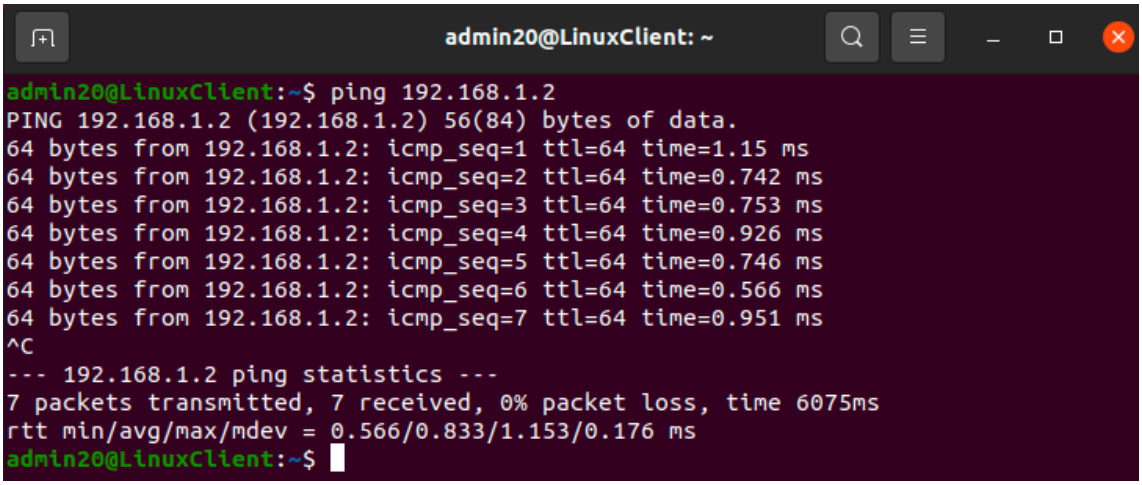


Y hacemos lo mismo para el cliente, por lo tanto tendremos:



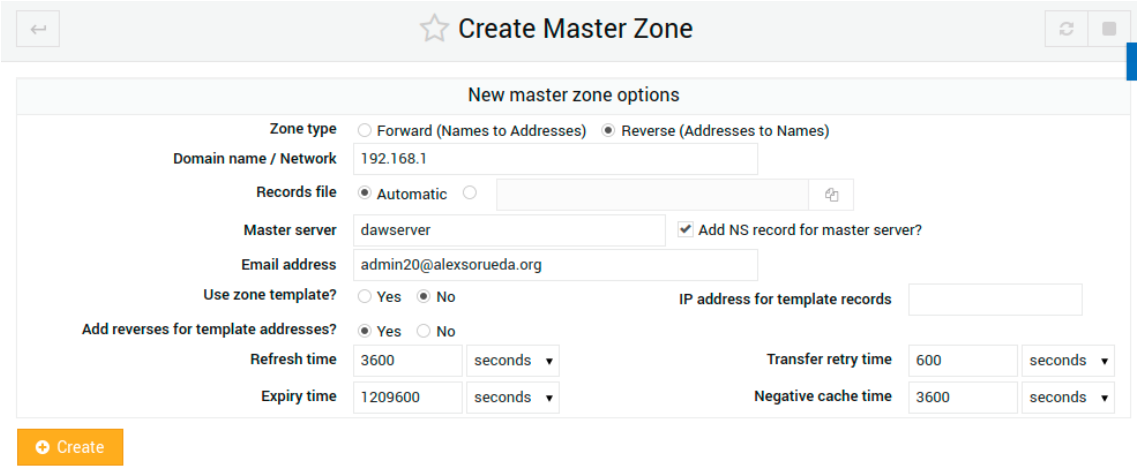
Now i click on apply configuration to save changes.

Cheking configuration from LinuxClient:

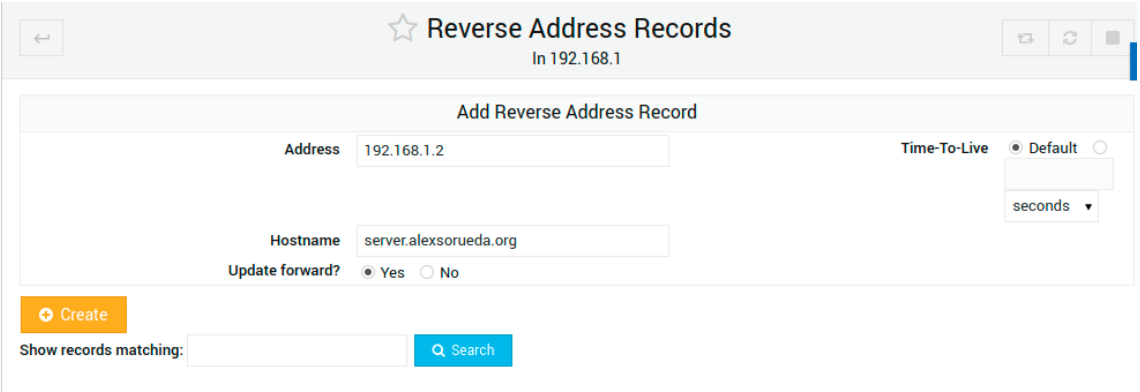


It Works.

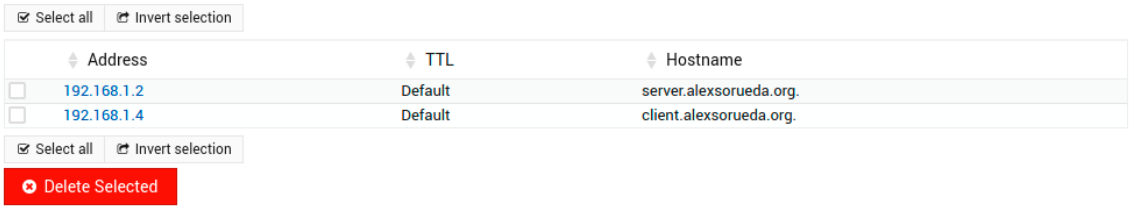
Now I'm going to create the reserve zone.



And the reverse address for each virtual machine.

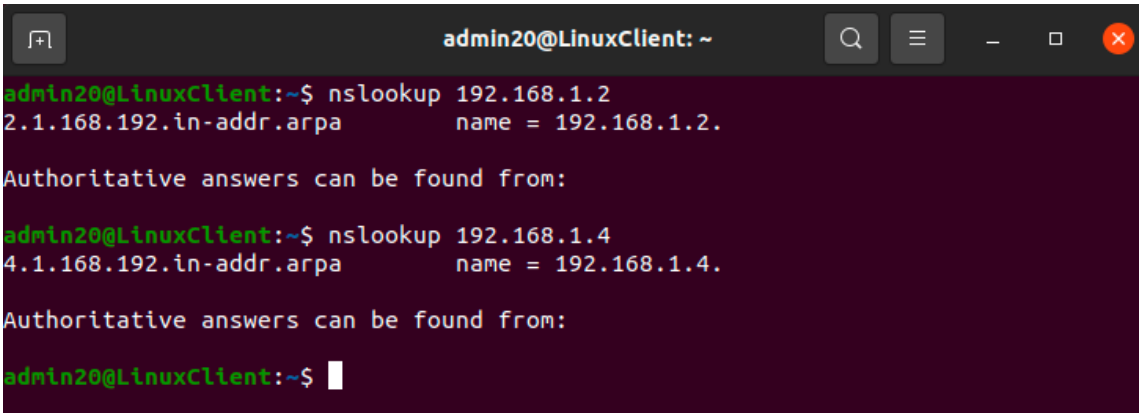


It has to seems like that:



Apply configuration again.

And we can check the domains with nslookup command in terminal.



They are successfully created.

3. FTP server configured to allow connections using the server's user and password configured this way.

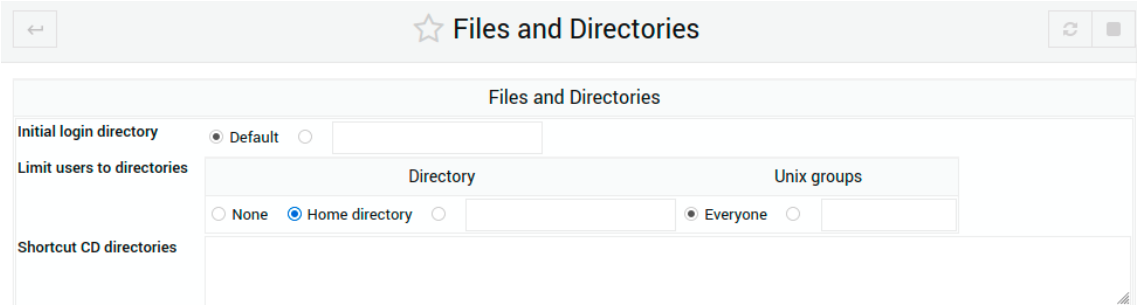
First I'm going to install ProFTP Server from Un-used Modules.

Once installed click on refresh modules.

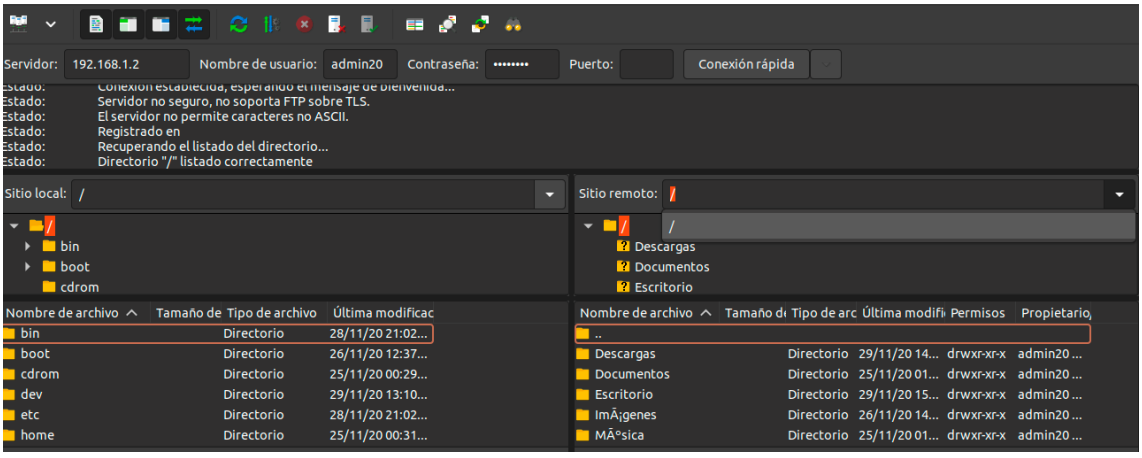
3.1 User must be jailed in his own user directory, can't access further information.

In proFTP Server, I go to Files and Directories and select option "Limit users to directories" to Home directory.

In this way, users can only navigate in their own users directories.



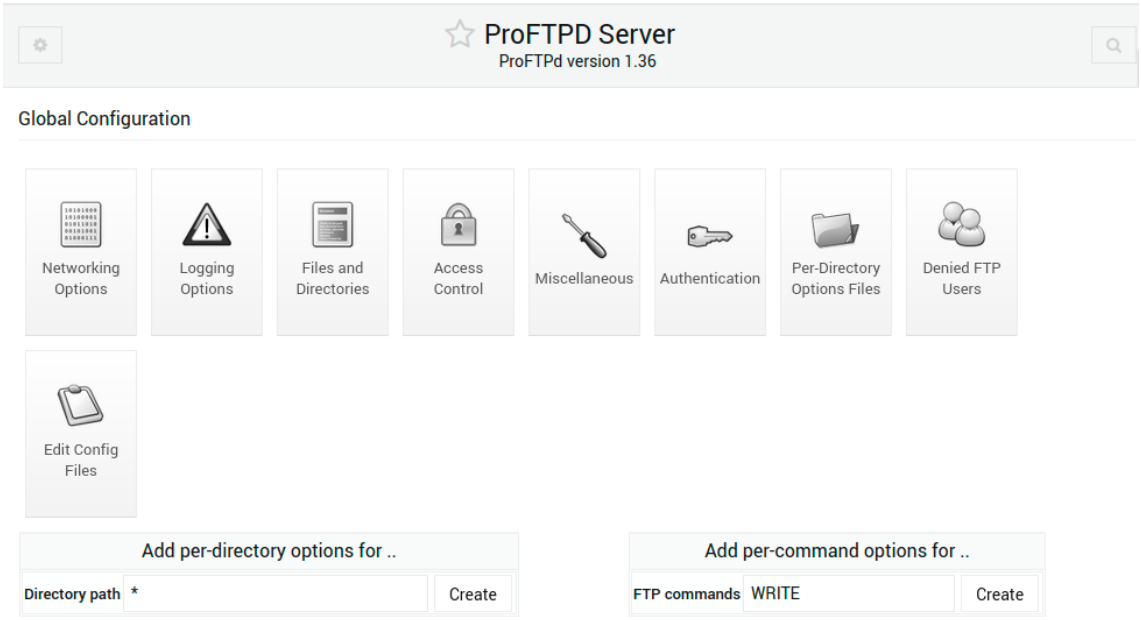
Let's check it in Fillezilla from LinuxClient, log in with user: admin20.



As we can see, the user only can see files in their own directory.

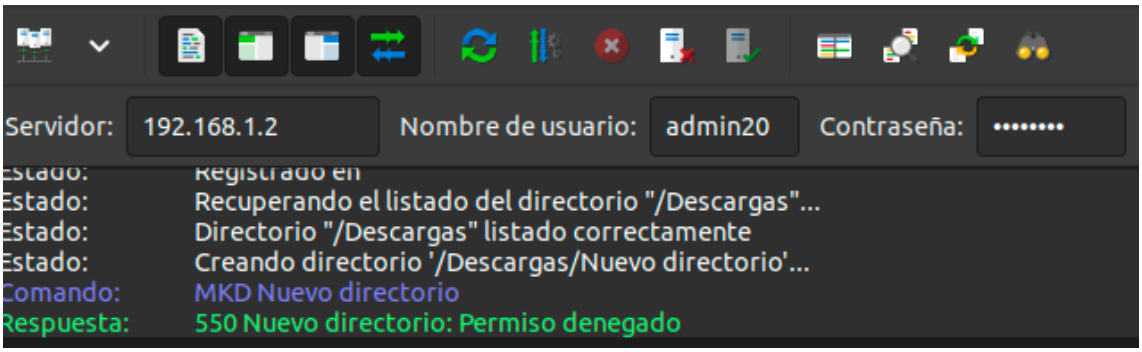
3.2 User won't have WRITE permissions.

Now I'm going to configure WRITE permissions for all directories (*) in Add per-directory options for…



And in access control, I select Deny and All for actions.

Now I check in LinuxClient with FileZilla that the server denies the user to create a new directory.



Now users are jailed in their own directories.

4. Web server with the default virtual host server.mailname.org configured this way:

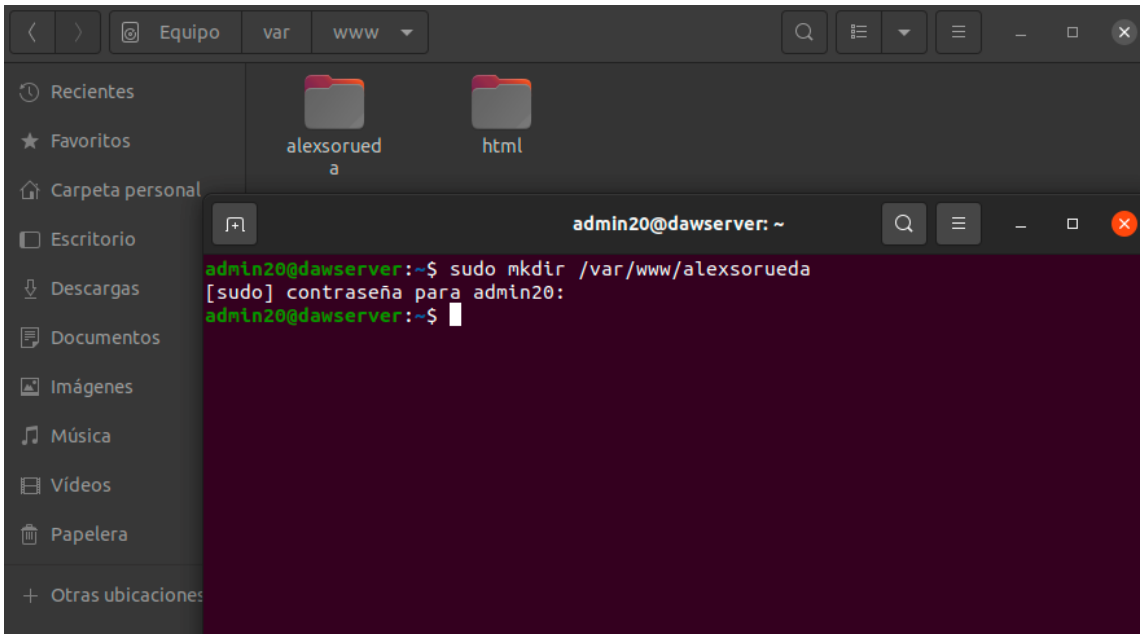
4.1 The following folder structure. Remember to change “mailname” to the designed name.

First, I’m going to install Apache.

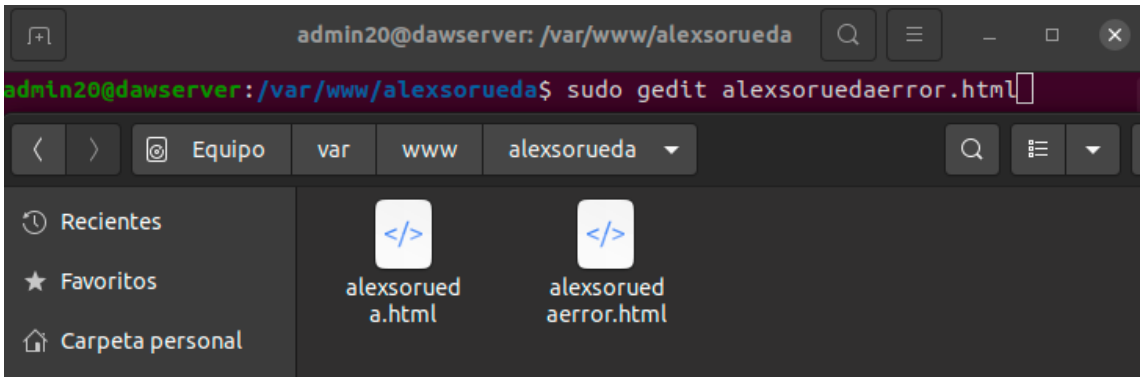
First let’s update Ubuntu repositories with *sudo apt-get update*.

To install apache, I write in the terminal: *sudo apt-get install apache2*

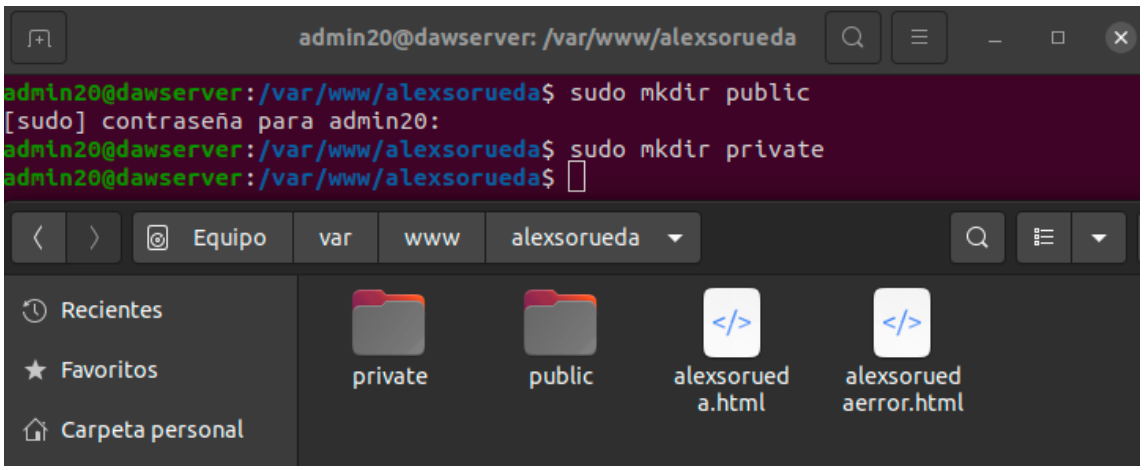
Once installed, I’m going to write in terminal *sudo mkdir /var/www/alexsorueda* to create a new directory.



To create new files, I'm going to write *sudo gedit filename* in …/alexsorueda/ directory.



Now, I create public and private files and directories.

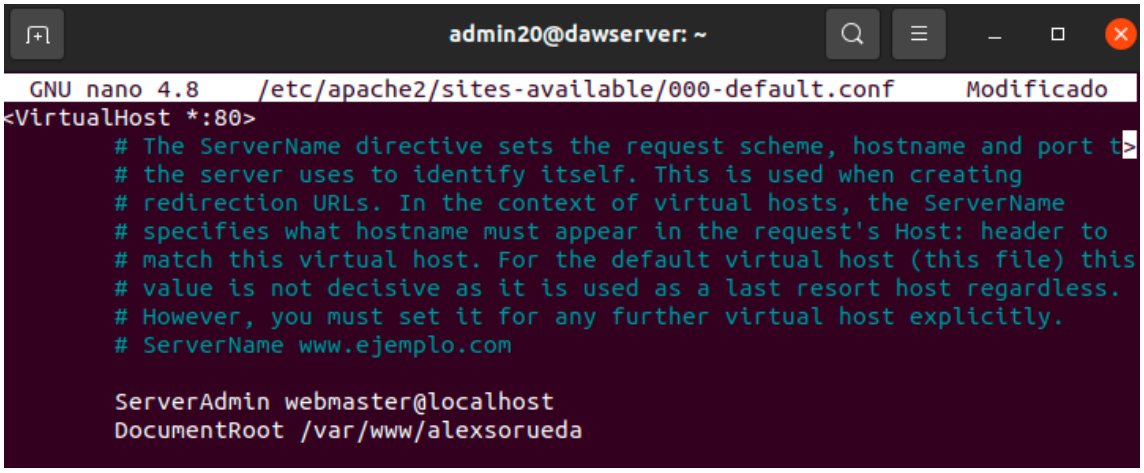


The same for private folder.

4.2 The root directory will be ".../mailname/"

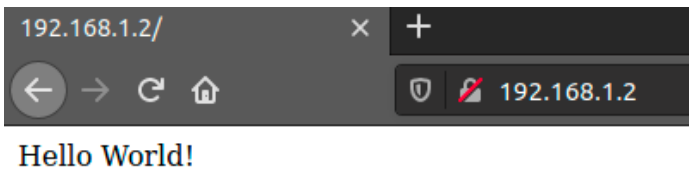
First, I'm going to write in the terminal *sudo nano /etc/apache2/sites-available/000-default.conf*

And then I modify the line DocumentRoot to …/alexsorueda



Now *sudo /etc/init.d/apache2 restart* to restart apache and apply the changes.

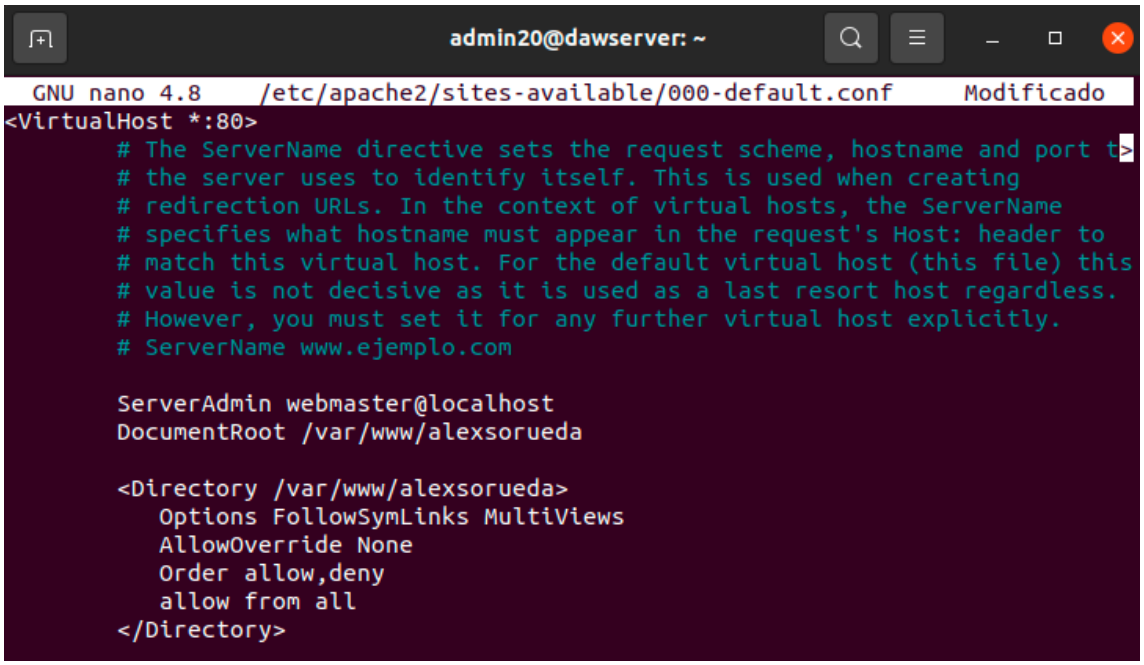
Check in LinuxClient:



(alexsorueda.html file has written <html> Hello World! </html>)

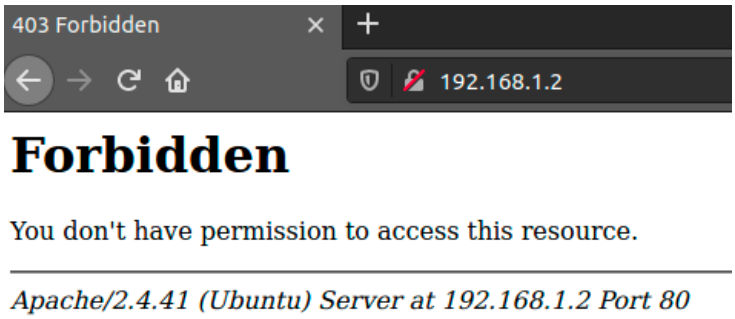
4.3 Folder contents will NOT be indexed (shown) by default.

I have to remove the line “Options Indexes”. if it is disabled the server sends a forbidden message.



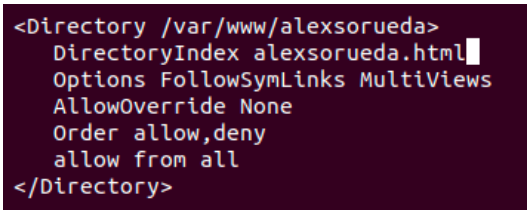
Now restart Apache with *sudo /etc/init.d/apache2 restart*

Now check from LinuxClient:



4.4 A request to server. Mailname.org will load mailname.html.

I’m going to add “DirectoryIndex alexsorueda.html” to set this page as default one.

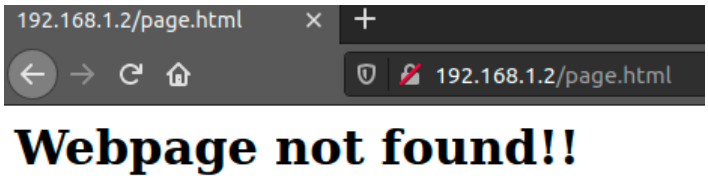


4.5 In case of error the web server will load mailnameerror.html.

```
ErrorLog ${APACHE_LOG_DIR}/error.log
CustomLog ${APACHE_LOG_DIR}/access.log combined

ErrorDocument 404 /alexsoruedaerror.html
```

We can check it:



4.6 Folder contents in /public/ will be indexed (shown).

I'm going to add <directory></directory> options to public directory. Now Index option is enabled.

```
<Directory /var/www/alexsorueda/public>
   Options Indexes FollowSymLinks MultiViews
   AllowOverride None
   Order allow,deny
   allow from all
</Directory>
```

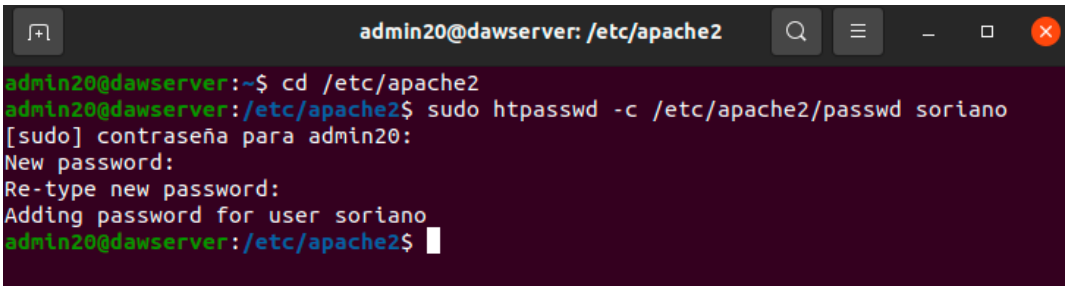
As we can see in LinuxClient:

4.7 server.mailname.org/private/ will only be accessed by the client IP (linux or main machine, it doesn't matter) and user yoursurname (for example, minyana) using HTTP Basic authentication.

First, I'm going to add <directory></directory> options to private directory, and only allow IP 192.168.1.4 (LinuxClient) to access.

```
<Directory /var/www/alexsorueda/private>
   Options Indexes FollowSymLinks MultiViews
   AllowOverride None
   Order allow,deny
   allow from 192.168.1.4
</Directory>
```

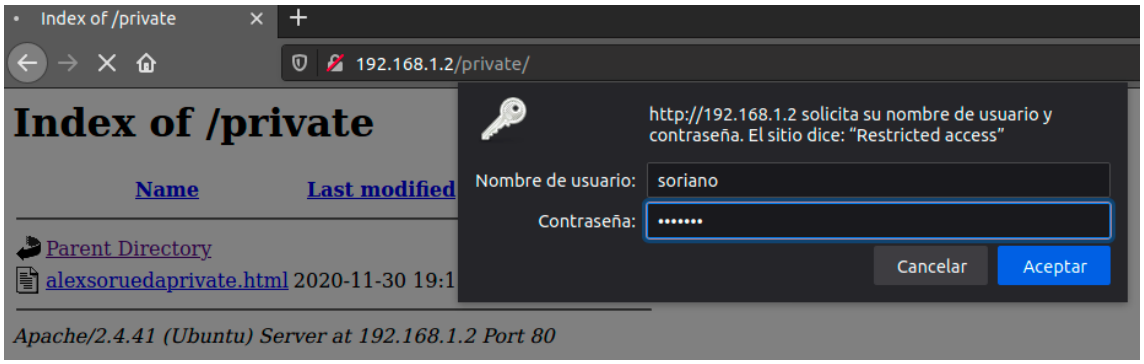
Then I create the user and password with *sudo htpasswd -c /etc/apache2/passwd soriano*



Now I'm going to add these lines to allow user "soriano" access.

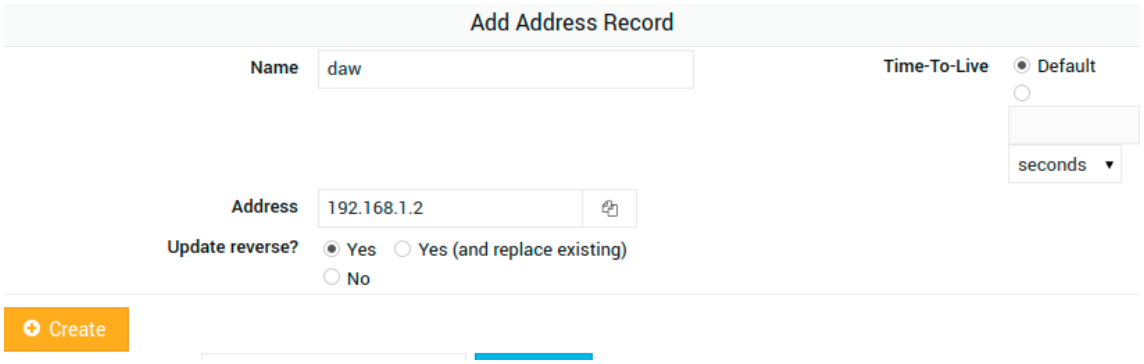
```
<Directory /var/www/alexsorueda/private>
   Options Indexes FollowSymLinks MultiViews
   AllowOverride None
   Order allow,deny
   allow from 192.168.1.4
   AuthType Basic
   AuthName "Restricted access"
   AuthUserFile /etc/apache2/passwd
   Require user soriano
</Directory>
```

Finally let's check in LinuxClient:



5. Add a second virtual host daw.mailname.org that will only be accessed by user daw using HTTP Digest authentication. It will only contain a web page called index.html

Let's go Webmin and click on BIND DNS Servers -> alexsorueda.org and I create the subdomain daw.alexsorueda.org



And apply configuration.

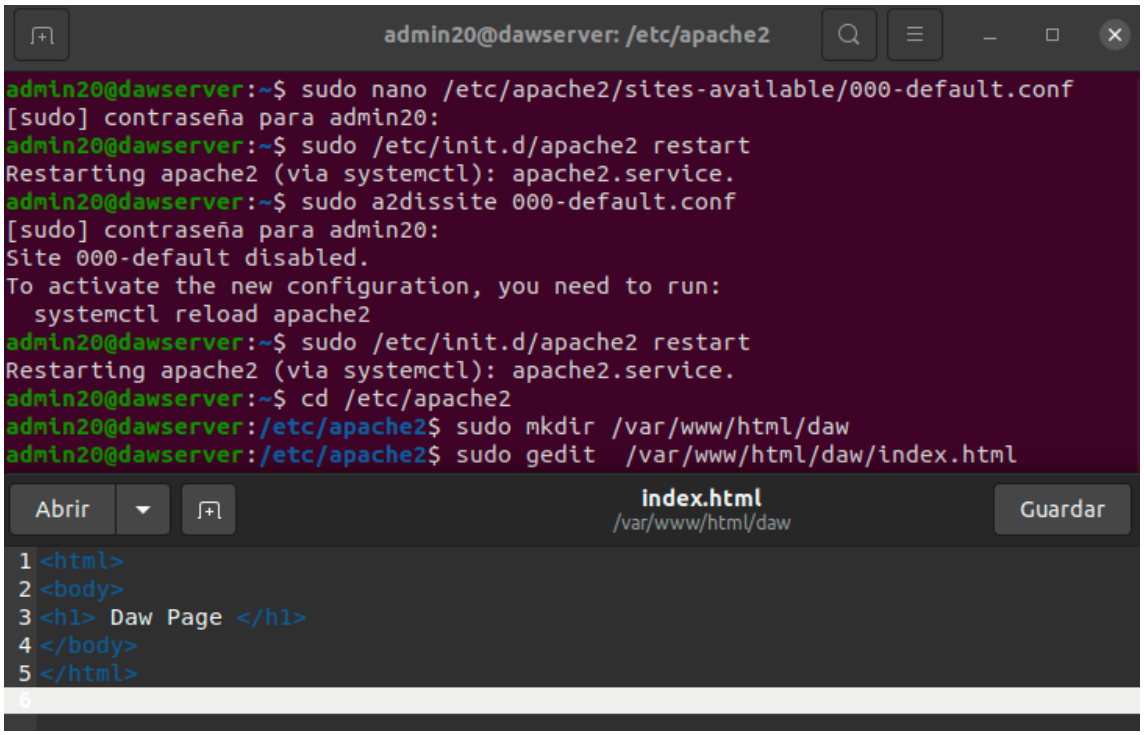
Once modify the configuration of the DNS server, we are going to configure Apache to have the two virtual hosts.

I disable the default virtual host and write *sudo a2dissite 000-default.conf* and restart the server.

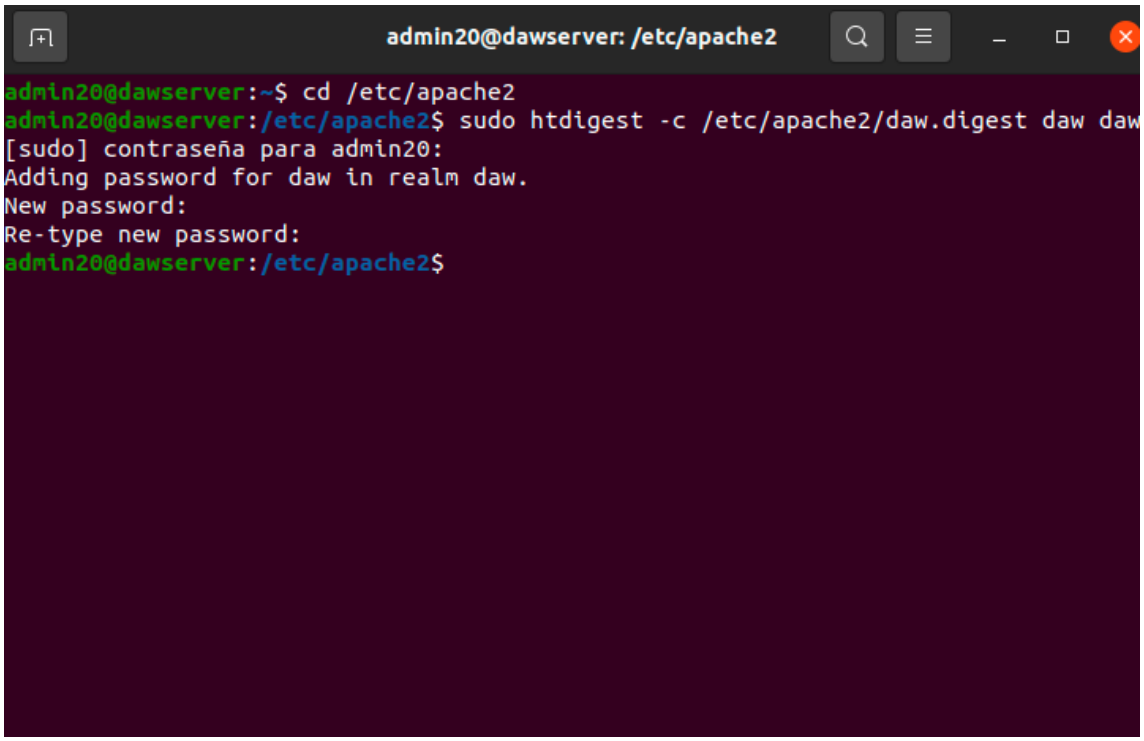
Now, I'm going to disable the default site to add the new virtual host.

Restart Apache.

And now I'm going to create directories and files with mkdir and gedit commands.



Now i create the file daw.conf:



Now let's modify the file with same content as *000-default.conf* file.

```
ServerAdmin webmaster@localhost
DocumentRoot /var/www/html/daw

<Directory /var/www/html/daw>
   DirectoryIndex index.html
   Options FollowSymLinks MultiViews
   AllowOverride None
   Order allow,deny
   allow from 192.168.1.4
   AuthType Digest
   AuthName "daw"
   AuthDigestProvider file
   AuthUserFile "/etc/apache2/daw.digest"
   Require user daw

</Directory>
```

sudo a2ensite software.conf and restart the server.

and lets check if its enabled with ls -l sites-enabled.

```
admin20@dawserver:~$ cd /etc/apache2
admin20@dawserver:/etc/apache2$ ls -l sites-enabled
total 0
lrwxrwxrwx 1 root root 27 nov 30 21:23 daw.conf -> ../sites-available/daw.conf
admin20@dawserver:/etc/apache2$
```

6. A third virtual host ssl.mailname.org configured to work with HTTPS connections only, with a selfsigned certification. It will only contain a web page called index.html