

The objective was to add the background image into the grub menu. First we type this command `sudo nano /etc/default/grub`. The `sudo` is the root privilege. Nano is the text editor to directly modify that file that was written afterwards.

```
[05/29/23] seed@VM:~$ export PS1="EricKim05-29-23:"  
EricKim05-29-23:sudo nano /etc/default/grub
```

Observation: There the grub is within the default, and the default is within the etc directory.

Afterwards, now we can directly modify the settings. We put the Grub Timeout to zero. Then we also add the Grub background of the location of the file that we have downloaded. Make sure to press `ctrl + x` to save the changes and `Y` to confirm the changes.

```
GNU nano 4.8 /etc/default/grub Modified  
# If you change this file, run 'update-grub' afterwards to update  
# /boot/grub/grub.cfg.  
# For full documentation of the options in this file, see:  
#   info -f grub -n 'Simple configuration'  
erickim05-29-23  
GRUB_DEFAULT=0  
GRUB_TIMEOUT_STYLE=hidden  
GRUB_TIMEOUT=0  
GRUB_DISTRIBUTOR=`lsb_release -i -s 2> /dev/null || echo Debian`  
GRUB_CMDLINE_LINUX_DEFAULT="quiet splash"  
GRUB_CMDLINE_LINUX=""  
GRUB_BACKGROUND="/home/seed/Pictures/images.jpeg"  
# Uncomment to enable BadRAM filtering, modify to suit your needs  
# This works with Linux (no patch required) and with any kernel that obtains  
# the memory map information from GRUB (GNU Mach, kernel of FreeBSD ...)  
#GRUB_BADRAM="0x01234567,0xfefefefefe,0x89abcdef,0xefefefef"  
  
# Uncomment to disable graphical terminal (grub-pc only)  
#GRUB_TERMINAL=console  
  
[ Read 33 lines ]
```

Observation: Setting 0 to the Timeout means that the boot will go to the default entry. Also, when setting up the grub background, it is best to pick the darker background since the font colors are bright. Make sure to get all of the writing correctly as well as that will result in the background not changing.

Now, I'll be setting up the password and the username. Firstly, we want to create a password and see the hash of the password because we will be storing it in the grub custom file.

```
Eric_Kim05-29-23@vm:grub-mkpasswd-pbkdf2
Enter password:
Reenter password:
PBKDF2 hash of your password is grub.pbkdf2.sha512.10000.E6E61546994D694ECD41136
383CE837F50C956BFDE43379F9120BB1BD5271EB2883F38A9C603A9C287FE0E9AA886A80305B7618
2ACE0CFE962A1AFA72F98F7BA.FBB32CCC8BF51ECD132B28D722EC6E957F7A40D45537A5219B3853
D8E0883B842A24A04DEFC6B34CF63AFD17BBF869C632C0403056D2609DE25FD29C238C7D74
Eric_Kim05-29-23@vm:
```

Observation: the password is saved in the sha512 algorithm. Make sure to copy the hashed password after the word is.

Then I access the grub file by typing `sudo nano /etc/grub.d/40_custom` command. Also, we add the user name to super and we copy the password to the hashed password on the next line. Then, we add the `sudo update-grub` to confirm all the changes.

```
GNU nano 4.8 /etc/grub.d/40_custom Modified
#!/bin/sh
exec tail -n +3 $0
# This file provides an easy way to add custom menu entries.  Simply type the
# menu entries you want to add after this comment.  Be careful not to change
# the 'exec tail' line above.
set superusers="super"
password_pbkdf2 super grub.pbkdf2.sha512.10000.72672EC4DC30C000A5DCEAFC70AE170A
```

```
Eric_Kim05-29-23@vm:sudo nano /etc/grub.d/40_custom
Eric_Kim05-29-23@vm:
Eric_Kim05-29-23@vm:sudo update-grub
Sourcing file `/etc/default/grub'
Sourcing file `/etc/default/grub.d/init-select.cfg'
Generating grub configuration file ...
Found background: /home/seed/Pictures/images.jpeg
Found background image: /home/seed/Pictures/images.jpeg
Found linux image: /boot/vmlinuz-5.4.0-54-generic
Found initrd image: /boot/initrd.img-5.4.0-54-generic
Found linux image: /boot/vmlinuz-5.4.0-42-generic
Found initrd image: /boot/initrd.img-5.4.0-42-generic
Found memtest86+ image: /boot/memtest86+.elf
Found memtest86+ image: /boot/memtest86+.bin
done
```

Observation: Make sure that the hashed password is in the same line. After completing, make sure to save by pressing `ctrl-x` and `y` to confirm.

This is the sudo update-grub command. It will update everything that you have made changes to. This is it! We can now type sudo reboot and log in based on the information we have typed.

```
EricKim05-29-23:sudo update-grub
Sourcing file `/etc/default/grub'
Sourcing file `/etc/default/grub.d/init-select.cfg'
Generating grub configuration file ...
Found background: /home/seed/Pictures/images.jpeg
Found background image: /home/seed/Pictures/images.jpeg
Found linux image: /boot/vmlinuz-5.4.0-54-generic
Found initrd image: /boot/initrd.img-5.4.0-54-generic
Found linux image: /boot/vmlinuz-5.4.0-42-generic
Found initrd image: /boot/initrd.img-5.4.0-42-generic
Found memtest86+ image: /boot/memtest86+.elf
Found memtest86+ image: /boot/memtest86+.bin
done
EricKim05-29-23:█
```

Observation: We can see that the background image was found. I personally have used the darker background picture which was a black background with a light in the middle because the fonts are white.

Adding User account to log in. The first step is to also make a hashed password to store it just like we have done before. Use the grub-mkpasswd-pbkdf2 command to generate a new password. This time the password we input for user is “secure”.

```
Eric_Kim05-29-23@vm:grub-mkpasswd-pbkdf2
Enter password:
Reenter password:
PBKDF2 hash of your password is grub.pbkdf2.sha512.10000.E6E61546994D694ECD41136
383CE837F50C956BFDE43379F9120BB1BD5271EB2883F38A9C603A9C287FE0E9AA886A80305B7618
2ACE0CFE962A1AFA72F98F7BA.FBB32CCC8BF51ECD132B28D722EC6E957F7A40D45537A5219B3853
D8E0883B842A24A04DEFC6B34CF63AFD17BBF869C632C0403056D2609DE25FD29C238C7D74
Eric_Kim05-29-23@vm:█
```

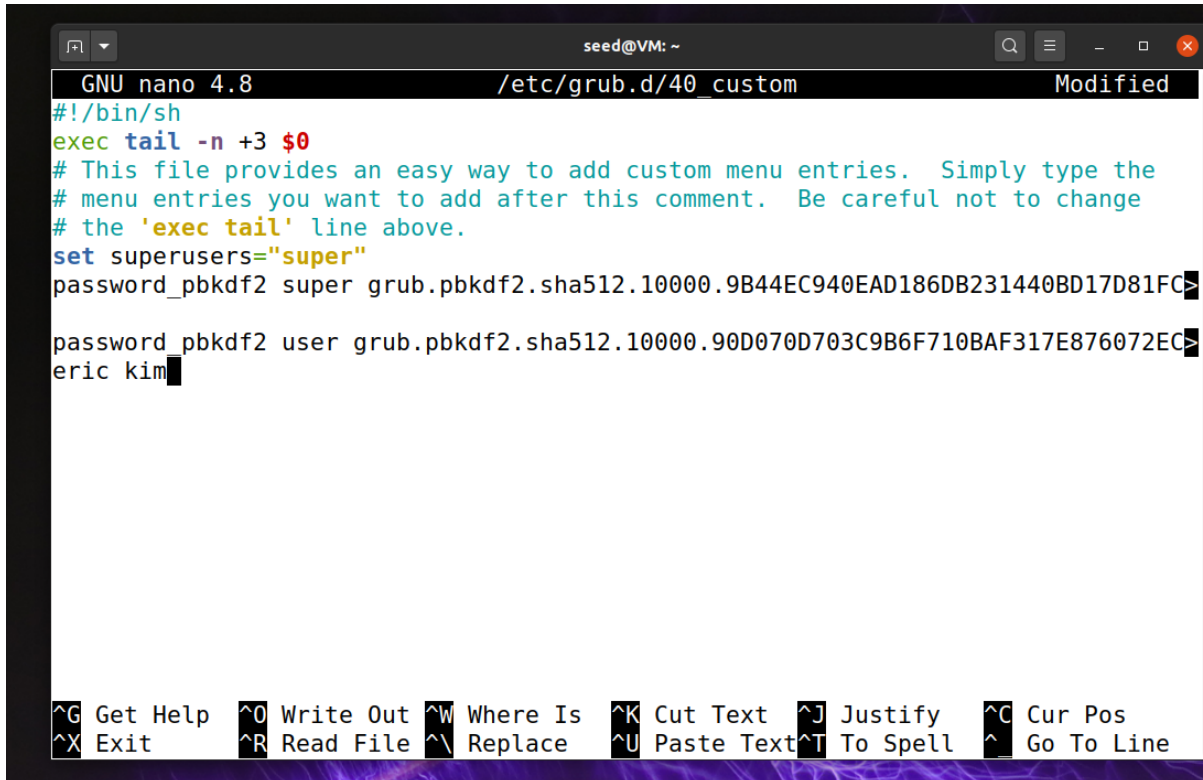
Observation: The hashed will be different every time you make a password even if it is the same characters because it goes through a complex algorithm.

Since, this is not the super user, the user part is a little bit different. Same as before though, we will input the password in the custom file. Using sudo nano /etc/grub.d/40_custom command.

```
|Eric_Kim05-29-23@vm:sudo nano /etc/grub.d/40_custom
```

Observation: Nothing is different here, it was the same commands just like adding for super user.

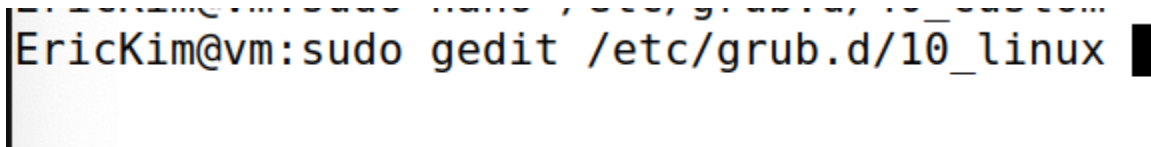
Now, we add the new password but set it to the user. We do not set user = "user" like the superuser but we will add the user settings differently. After you have copied and pasted the password after the user make sure to press ctrl-x and y to save.



```
seed@VM: ~  
GNU nano 4.8 /etc/grub.d/40_custom Modified  
#!/bin/sh  
exec tail -n +3 $0  
# This file provides an easy way to add custom menu entries.  Simply type the  
# menu entries you want to add after this comment.  Be careful not to change  
# the 'exec tail' line above.  
set superusers="super"  
password_pbkdf2 super grub.pbkdf2.sha512.10000.9B44EC940EAD186DB231440BD17D81FC  
password_pbkdf2 user grub.pbkdf2.sha512.10000.90D070D703C9B6F710BAF317E876072EC  
eric kim  
  
^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text  ^J Justify  ^C Cur Pos  
^X Exit      ^R Read File  ^\ Replace   ^U Paste Text ^T To Spell  ^_ Go To Line
```

Observation: The super user is directly modified here but the user is not.

Adding the username. We will access the text editor using the `sudo gedit /etc/grub.d/10_linux` file. In here, we will modify it so we can add the regular user into the log in.



```
EricKim@vm:sudo gedit /etc/grub.d/10_linux
```

Observation: gedit is a GUI application and nano command is editing it directly through the terminal.

We will go to between 191 and 193 line and add the `--users user` line after `id'` and before `(" | sed` for both lines 191 and 193. Make sure to press the save button from the GUI application before exiting it out.

```

190     fi eric kim
191     echo "menuentry '$(echo "$title" | grub_quote)' ${CLASS} \${menuentry_id_option
'gnulinux-$version-$type-$boot_device_id' --users user {" | sed "s/^/$submenu_indentation/"
192     else
193     echo "menuentry '$(echo "$os" | grub_quote)' ${CLASS} \${menuentry_id_option 'gnulinux-
simple-$boot_device_id' --users user {" | sed "s/^/$submenu_indentation/"

```

Observation: This is where we modify to add the user name onto the grub menu.

We will use the `sudo update-grub` command to update the changes. Finally, we can reboot the system and use the user as the username and secure for the password.

```

EricKim@vm:sudo update-grub
Sourcing file `/etc/default/grub'
Sourcing file `/etc/default/grub.d/init-select.cfg'
Generating grub configuration file ...
Found background: /home/seed/Pictures/images.jpeg
Found background image: /home/seed/Pictures/images.jpeg
Found linux image: /boot/vmlinuz-5.4.0-54-generic
Found initrd image: /boot/initrd.img-5.4.0-54-generic
Found linux image: /boot/vmlinuz-5.4.0-42-generic
Found initrd image: /boot/initrd.img-5.4.0-42-generic
Found memtest86+ image: /boot/memtest86+.elf
Found memtest86+ image: /boot/memtest86+.bin
done
EricKim@vm:sudo reboot

```

Observation: We have updated first before rebooting the system to make sure that there are changes completed.