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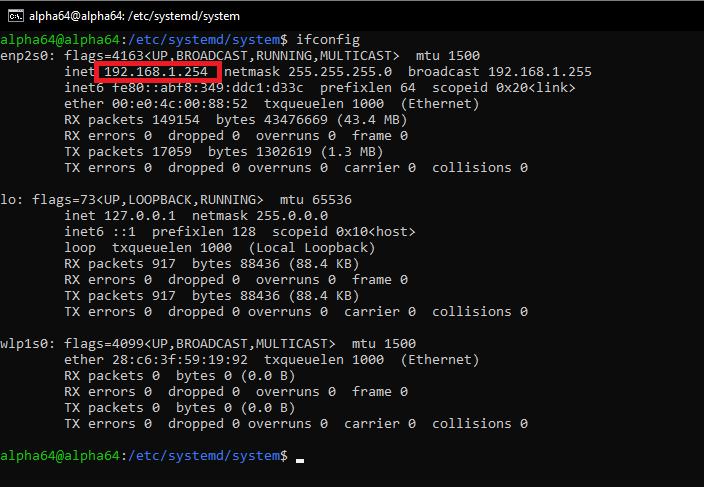
[*Some popular errors:* 23](#_Toc107754744)

# **1. First thing:**

* sudo apt-get update
* sudo apt-get upgrade

# **2. Check static IP:**

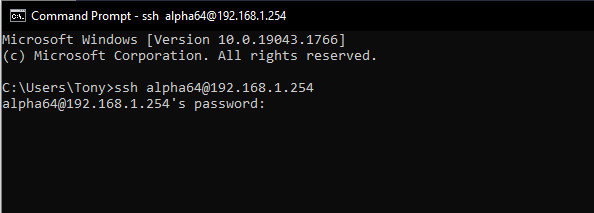
* sudo apt-get install net-tools
* ifconfig



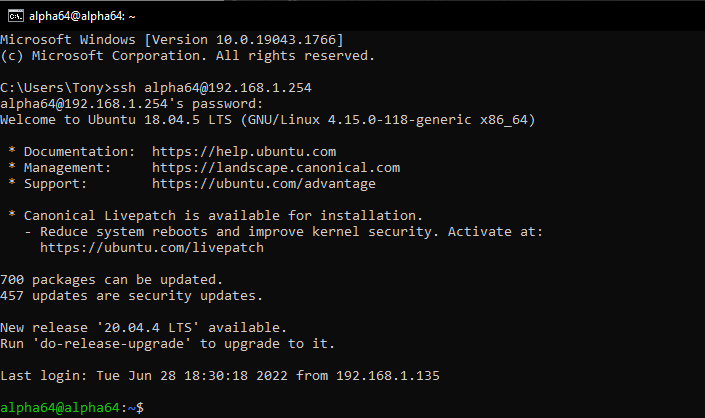
# **3. SSH to LattePanda**

From terminal ssh with command:

* ssh alpha64@192.168.1.254



*Enter password: alpha64*



*Success screen*

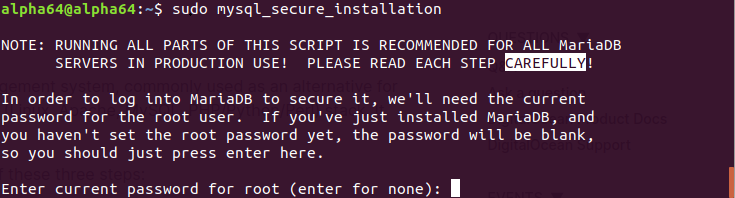
# **4. Install MariaDB on LattePanda**

***Source:***

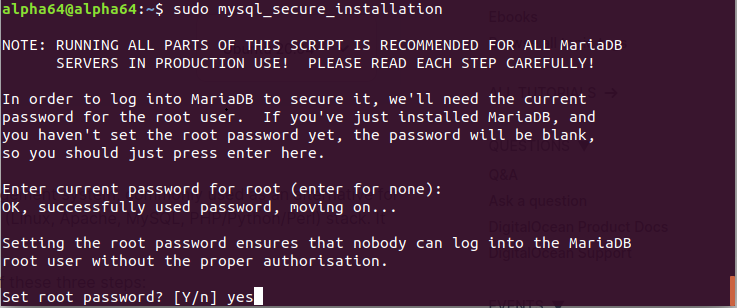
<https://www.digitalocean.com/community/tutorials/how-to-install-mariadb-on-ubuntu-20-04>

Installation packages pre-requisites

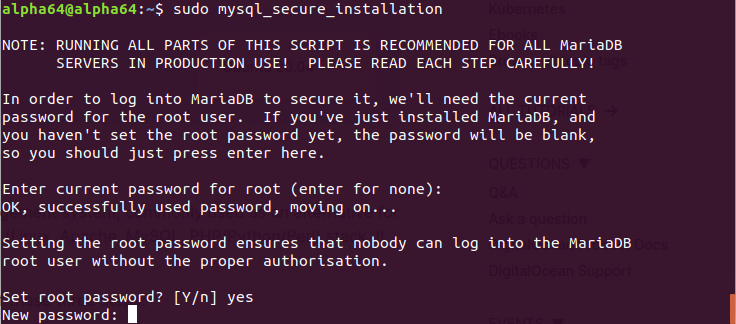
* sudo apt install mariadb-server
* sudo mysql\_secure\_installation



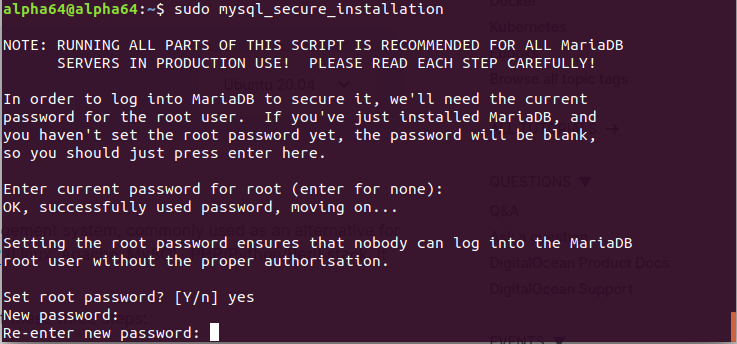
*Input password of current user: alpha64*



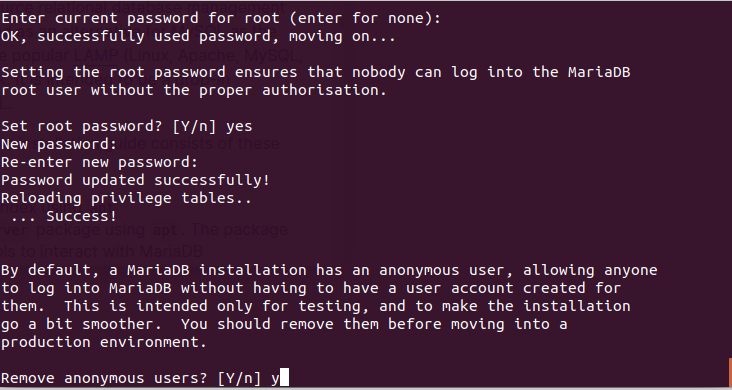
*Input Y or YES to set password for database*



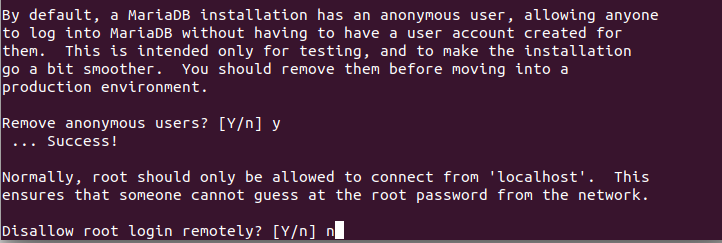
*Input password which will use for database: Rfid@2022*



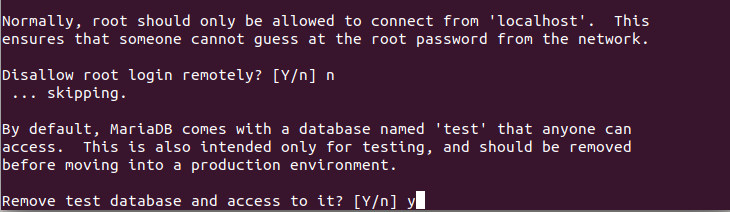
*Re-enter password of database: Rfid@2022*



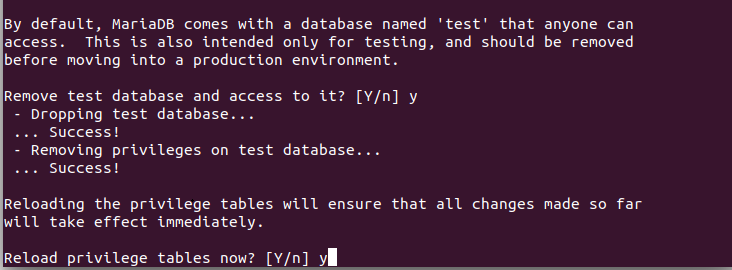
*Press Y for remove anonymous users for more secure*



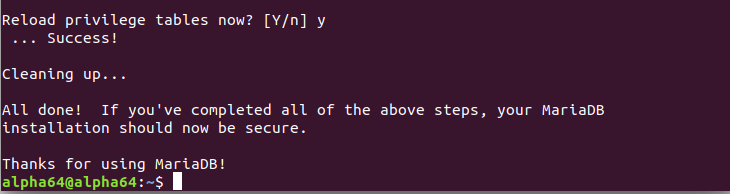
*Press N for database can connect from the network*



*Press Y to remove default database*



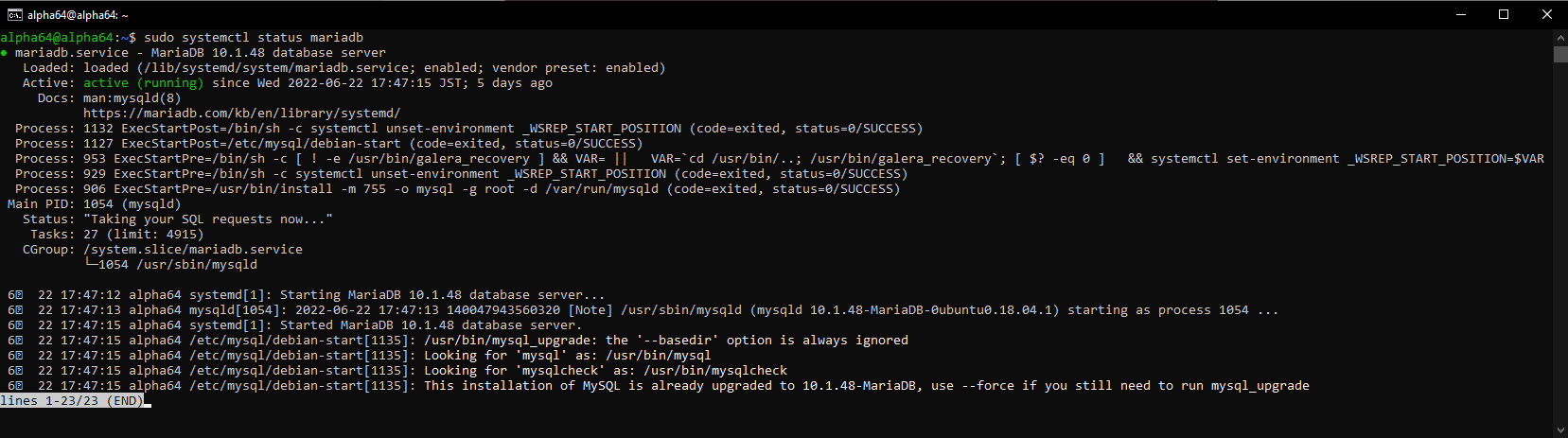
*Press Y to reload database*



*Finish install MariaDB when above image appears*

Check status MariaDB

* sudo systemctl status mariadb



*Success if tab “Active” is green*

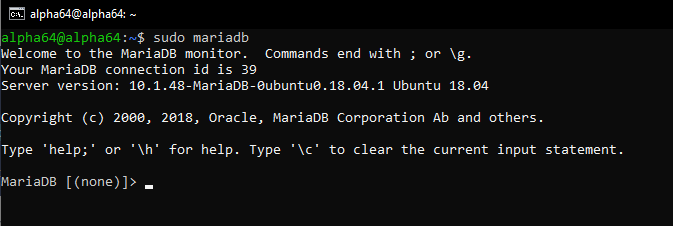
If MariaDB not isn’t running, start with:

* sudo systemctl start mariadb

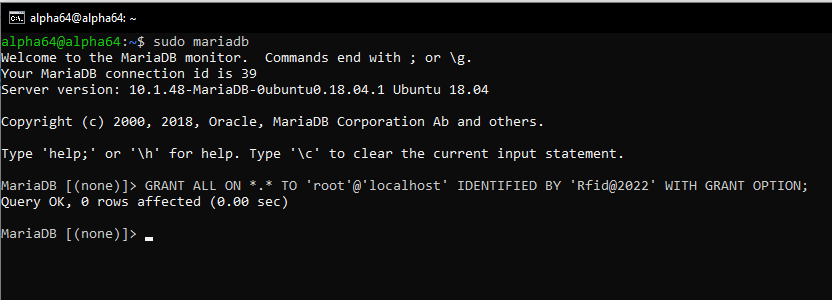
#### Step 1: Grant permission (important)

Set permission for user, another users can’t use database except root user if don’t do this part, do with these commands:

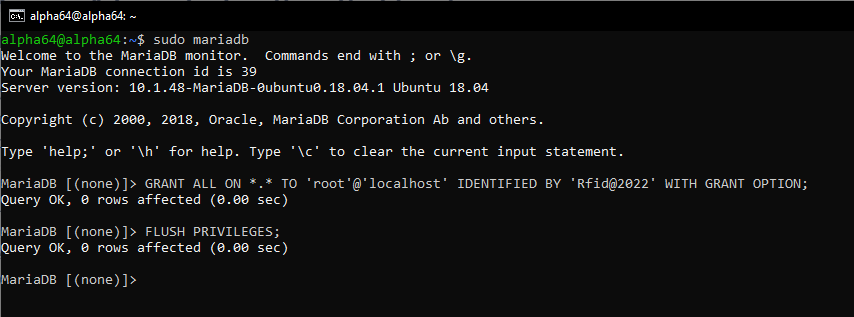
* sudo mariadb



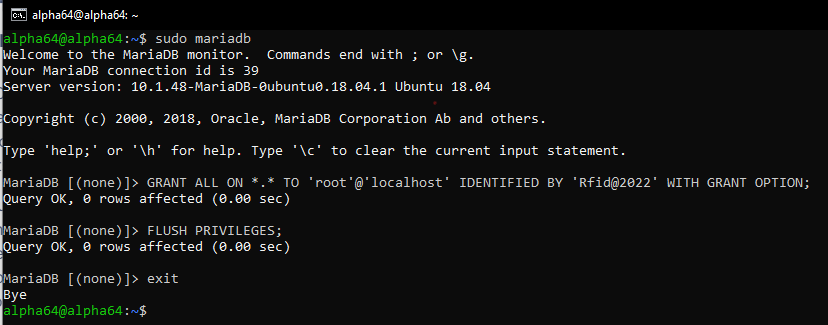
* GRANT ALL ON \*.\* TO 'root'@'%' IDENTIFIED BY 'Rfid@2022' WITH GRANT OPTION;



* FLUSH PRIVILEGES;

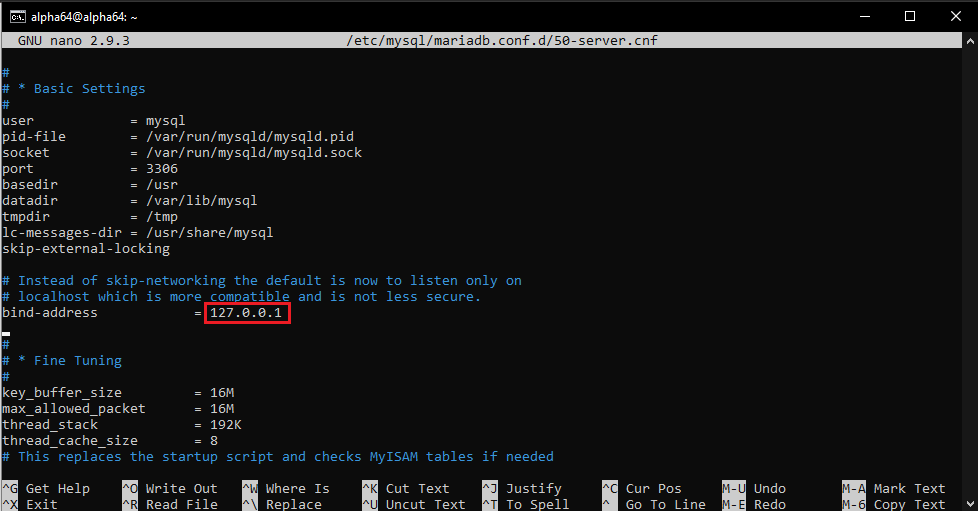


* exit

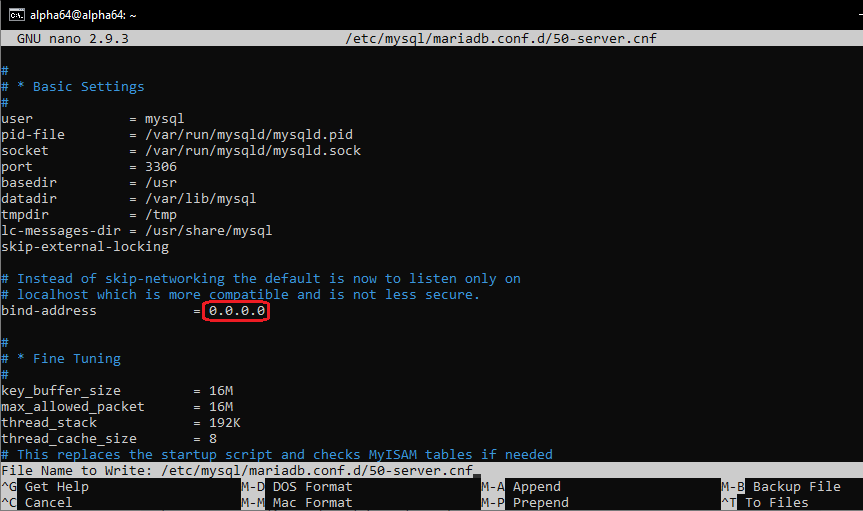


Change bind address to connect from external network:

* sudo nano /etc/mysql/mariadb.conf.d/50-server.cnf

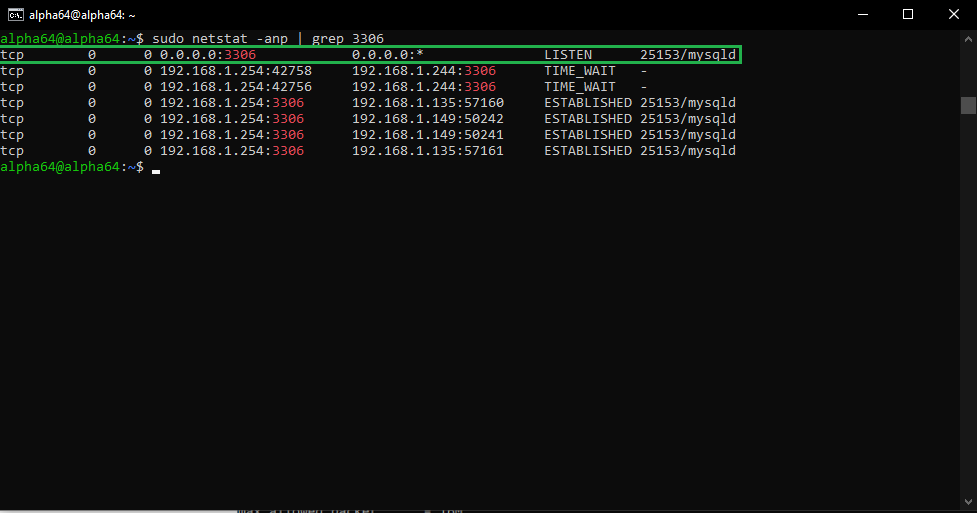


*Default value is 127.0.0.1, change this address to 0.0.0.0*



*Press Ctrl + X and enter to save*

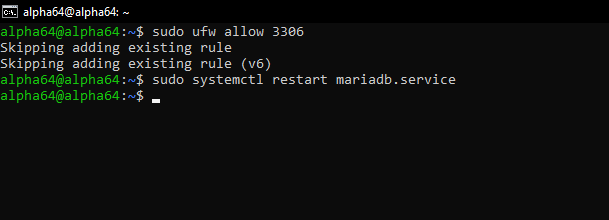
Check bind-address modified:



*Listen port will change if success*

For sure, please open firewall for database port with this command:

* sudo ufw allow 3306
* sudo systemctl restart mariadb.service

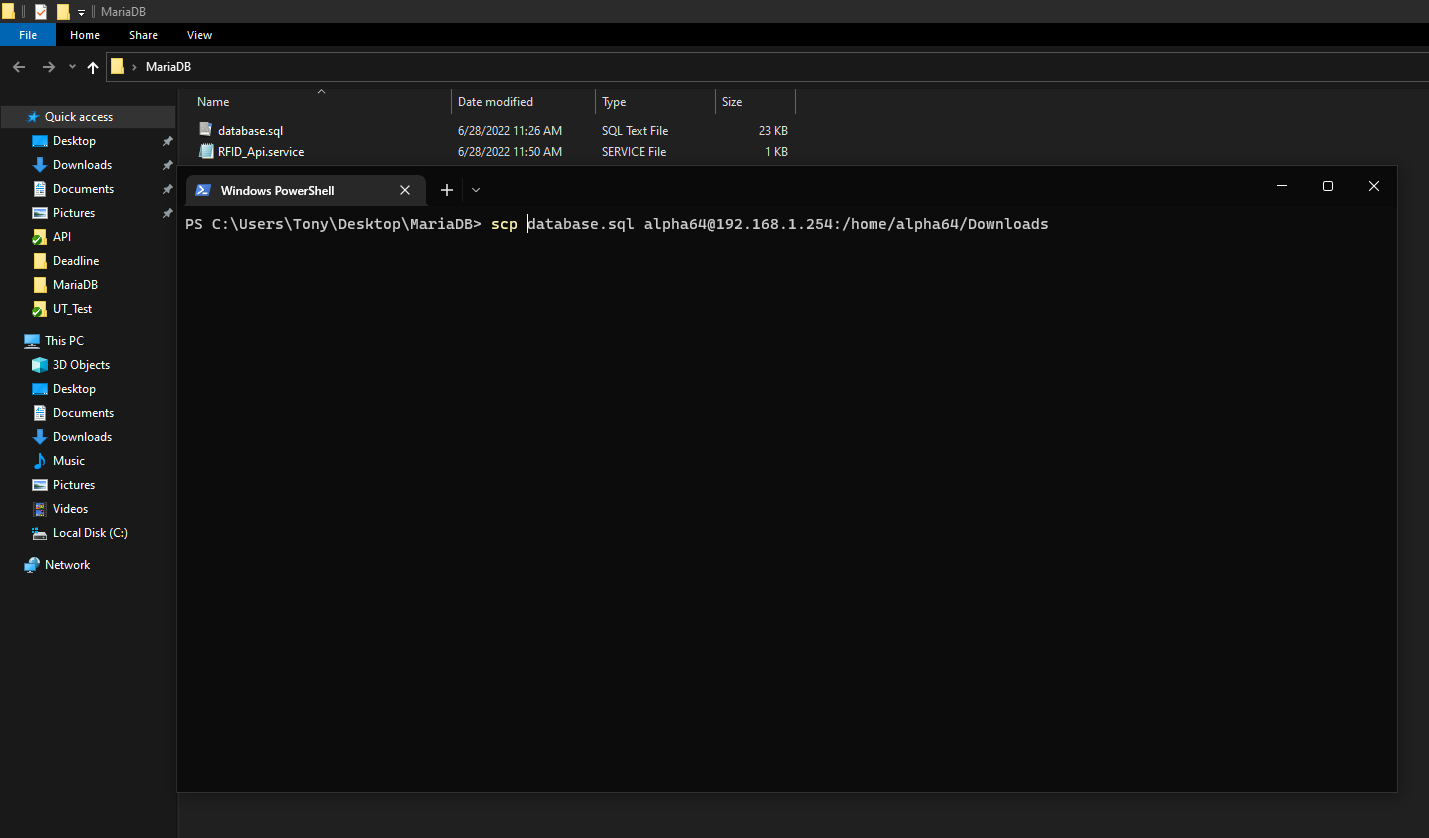


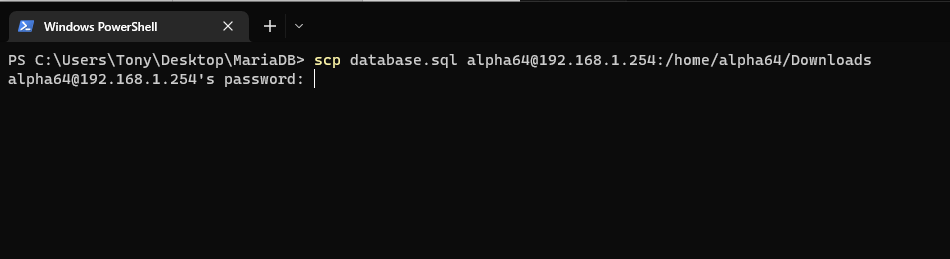
*Success screen*

#### Step 2: Transfer database.sql to LattePanda

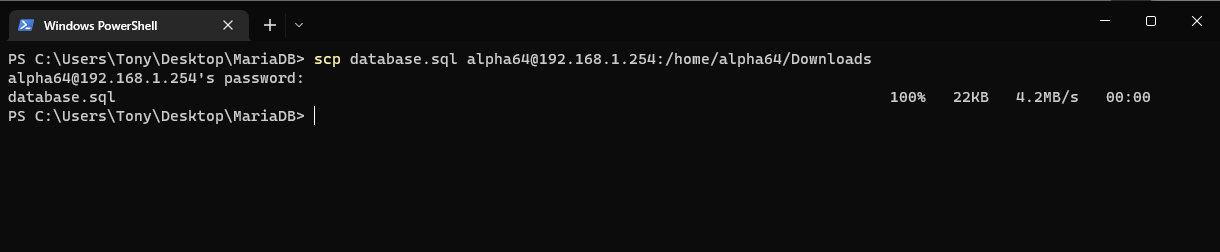
Go to folder store database.sql in PC to transfer file to LattePanda with Secure Copy

* scp database.sql alpha64@192.168.1.254:/home/alpha64/Downloads





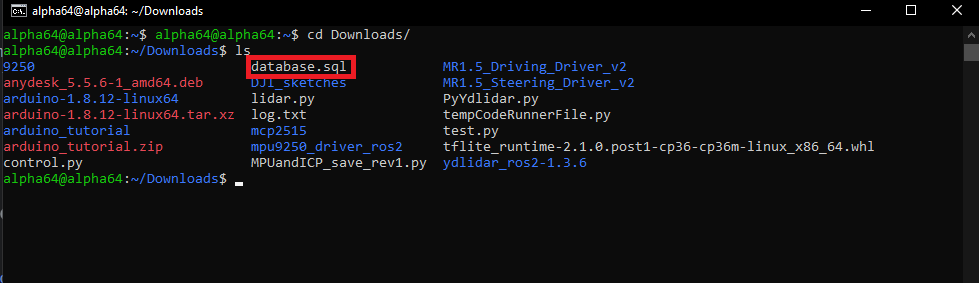
*Enter password: alpha64*



*Success screen*

Go to folder Downloads in LattePanda to check with commands

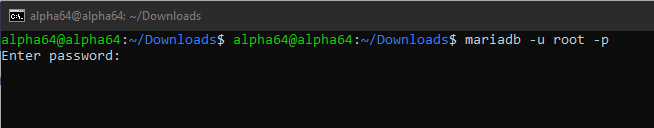
* cd ~/Downloads/
* ls



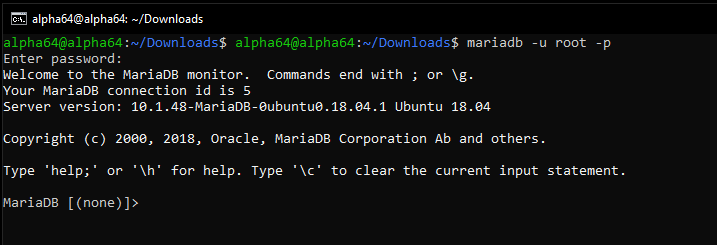
*If process is successful, “database.sql” will appear in folder Downloads*

#### Step 3: Create and import database

Start MariaDB with this command:



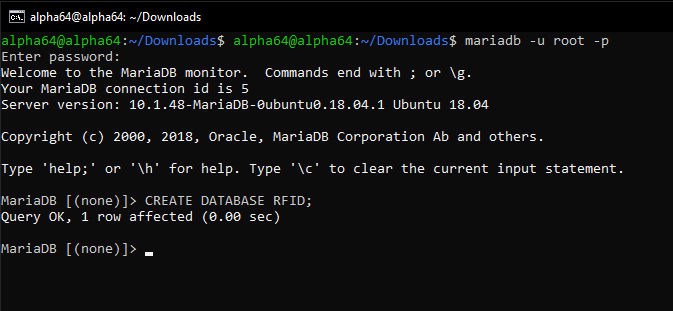
*Enter password: Rfid@2022*



*MariaDB monitor screen*

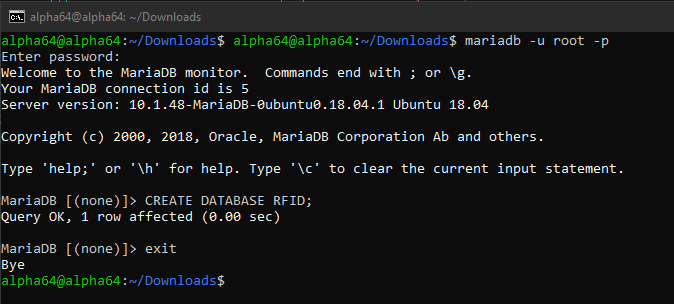
Continue create database name “RFID”

* CREATE DATABASE RFID;



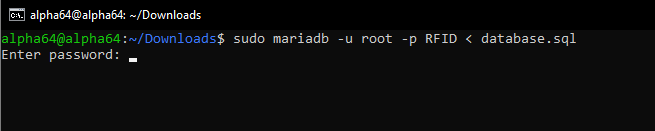
Exit MariaDB monitor

* exit



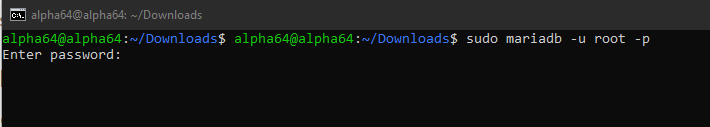
Import database to RFID

* sudo mariadb -u root -p RFID < database.sql

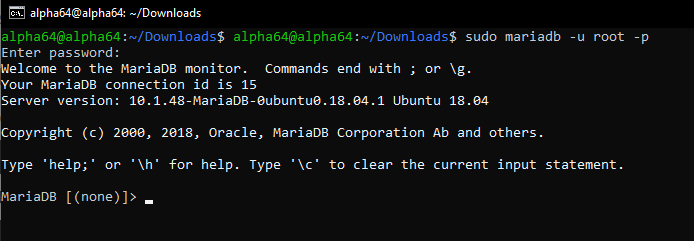


*Enter password: Rfid@2022*

Check if database imported:



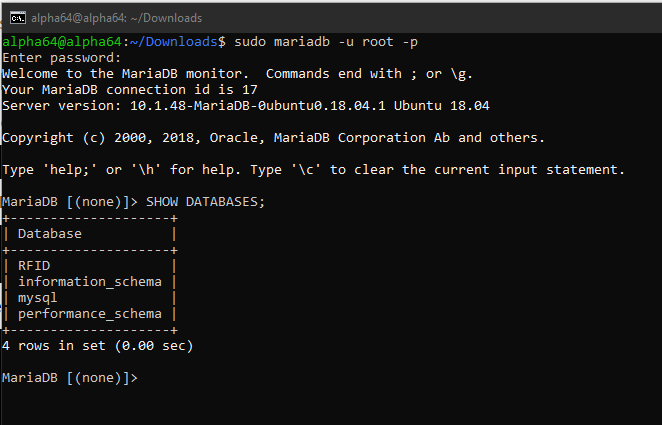
*Enter password: Rfid@2022*



*Success enter MariaDB monitor*

See all database exists in MariaDB with command:

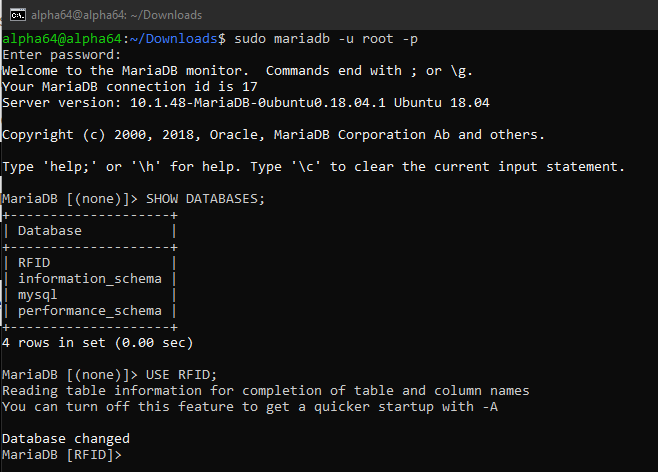
* SHOW DATABASES;



*RFID database will appear if import successfully*

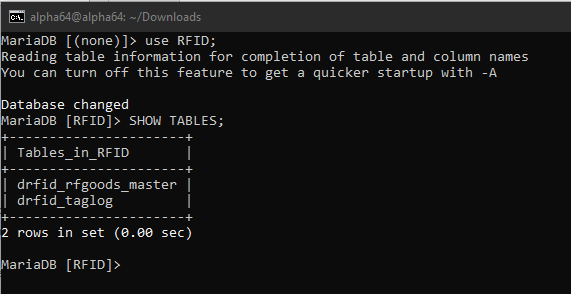
Use database with command in MariaDB with command:

* USE RFID;



Show all tables of database:

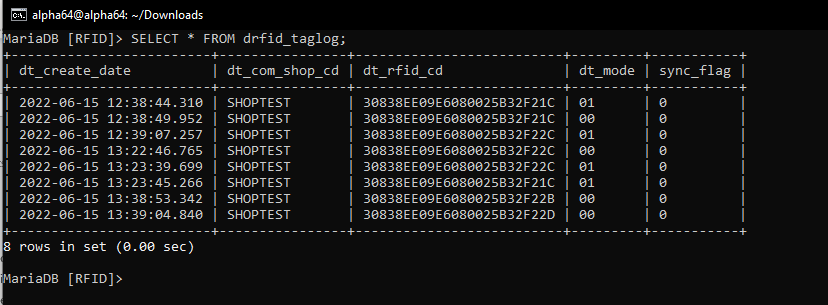
* SHOW TABLES;



*All tables of database RFID will appear*

Continue check data in any table with command:

* SELECT \* FROM drfid\_taglog;

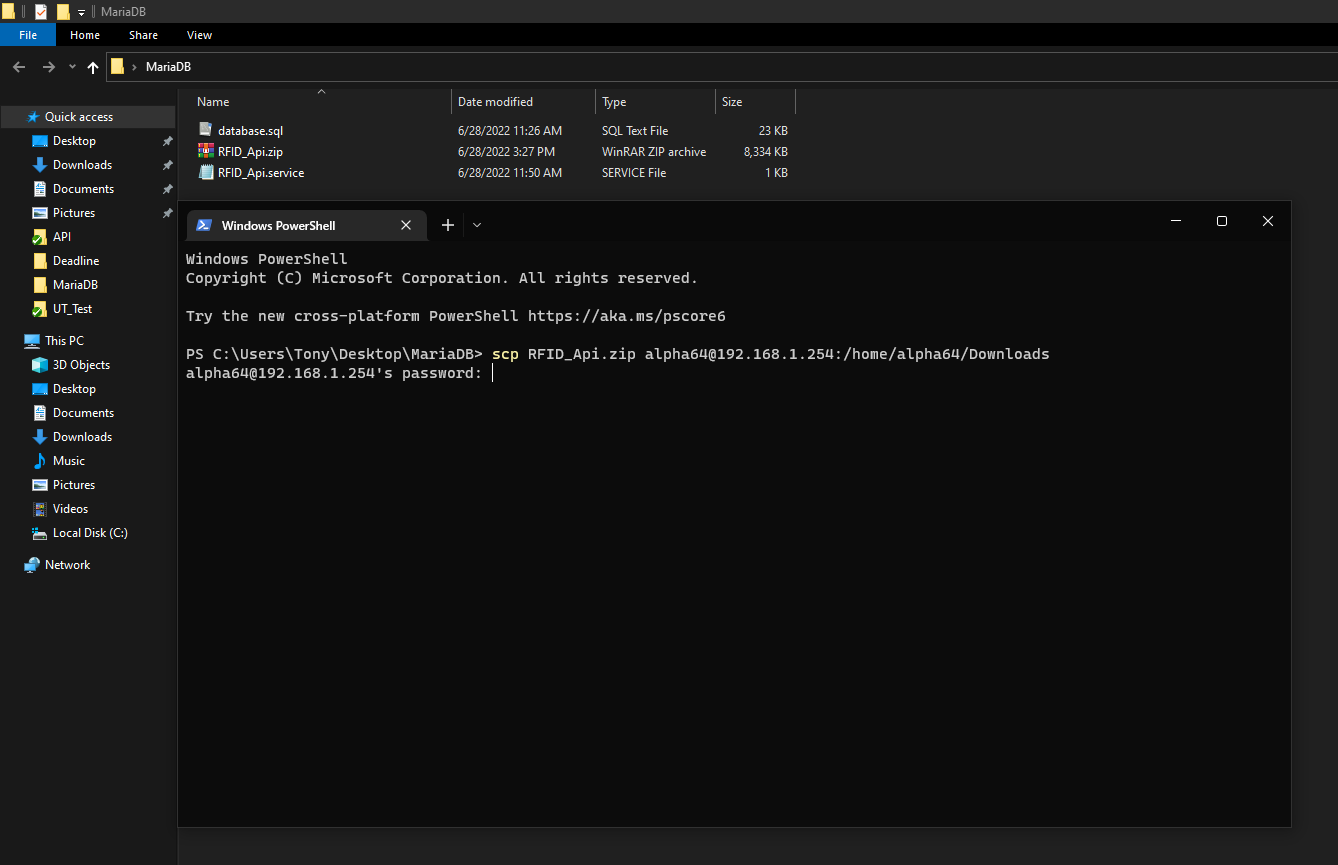


*Result of table drfid\_taglog will appear*

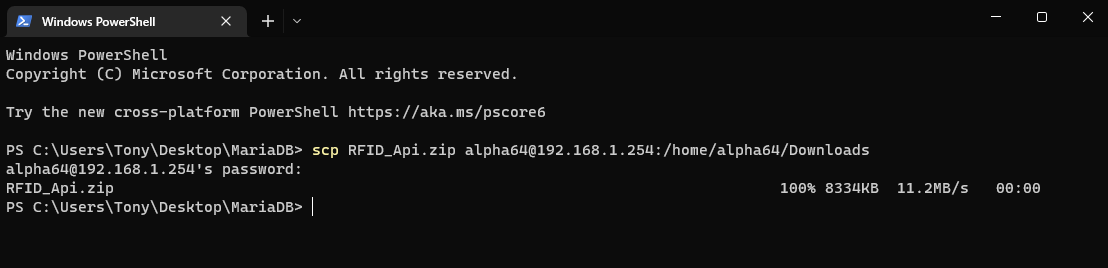
# **5. Deploy RFID\_Api**

#### Step 1: Transfer code from PC to LattePanda with command:

* scp RFID\_Api.zip alpha64@192.168.1.254:/home/alpha64/Downloads



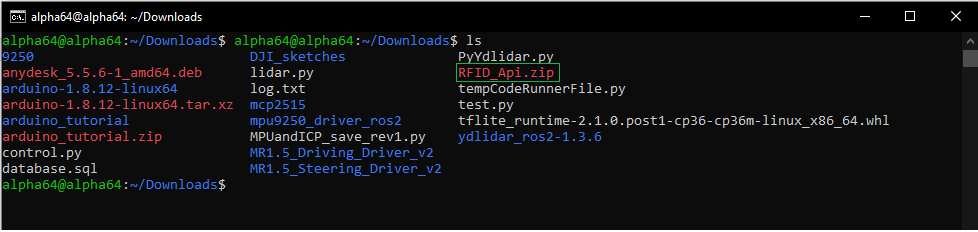
*Enter password: alpha64*



*Success screen*

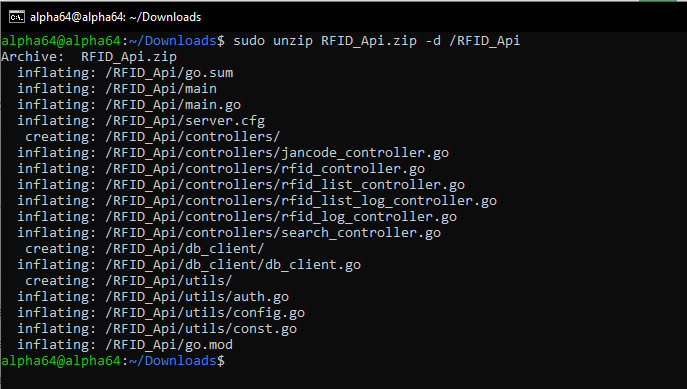
Go to folder /home/alpha64/Downloads and check with command:

* cd /home/alpha64/Downloads
* ls



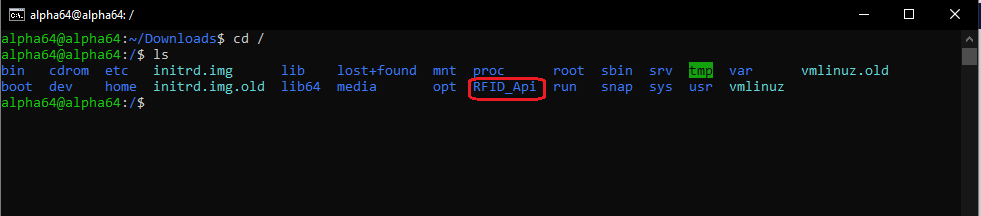
Decompress source with command:

* sudo unzip RFID\_Api.zip -d /RFID\_Api



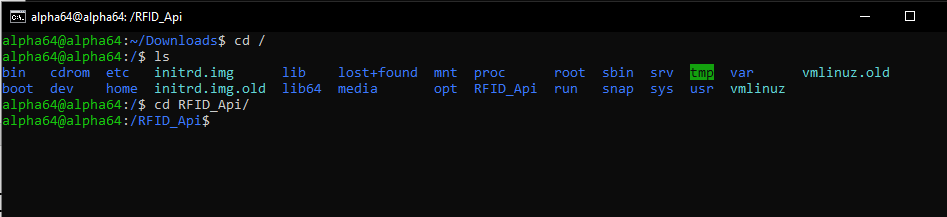
Go to “/” directory to check extracted source:

* cd /
* ls

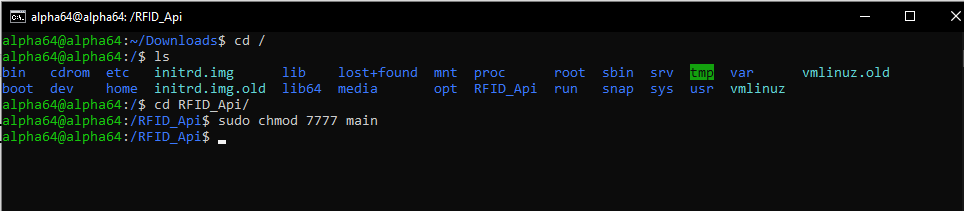


Continue grant permission to excute file “main”

* cd RFID\_Api/



* sudo chmod 7777 main

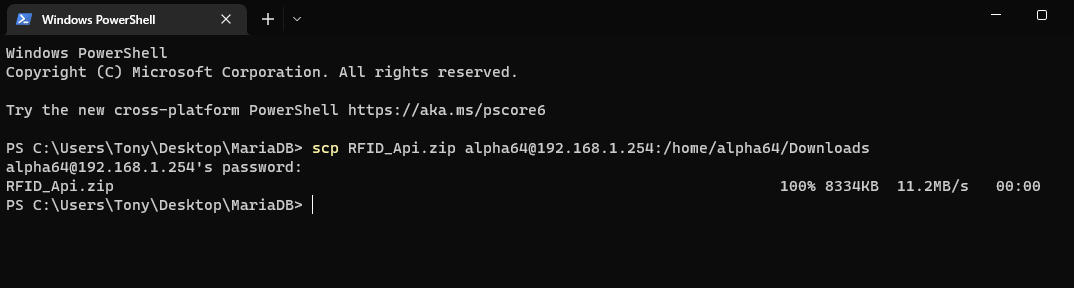


#### Step 2: Transfer file service to Latte Panda from PC with command:

* scp RFID\_Api.zip alpha64@192.168.1.254:/home/alpha64/Downloads



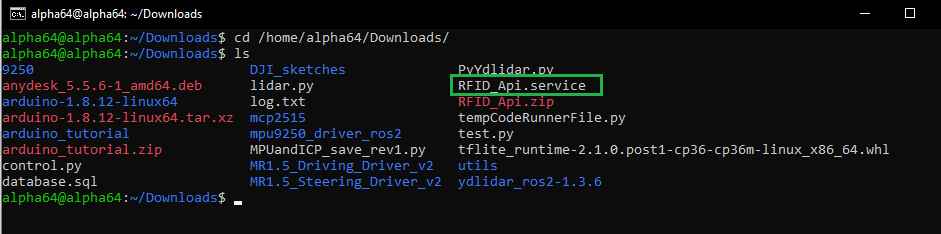
*Enter password: alpha64*



*Successful screen*

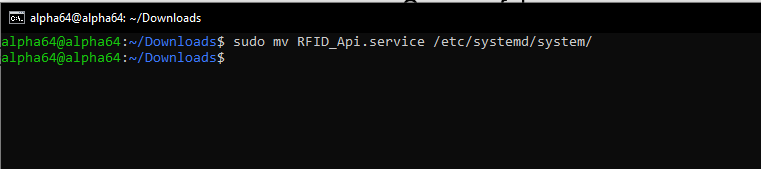
Go to folder /home/alpha64/Downloads and check with command:

* cd /home/alpha64/Downloads
* ls



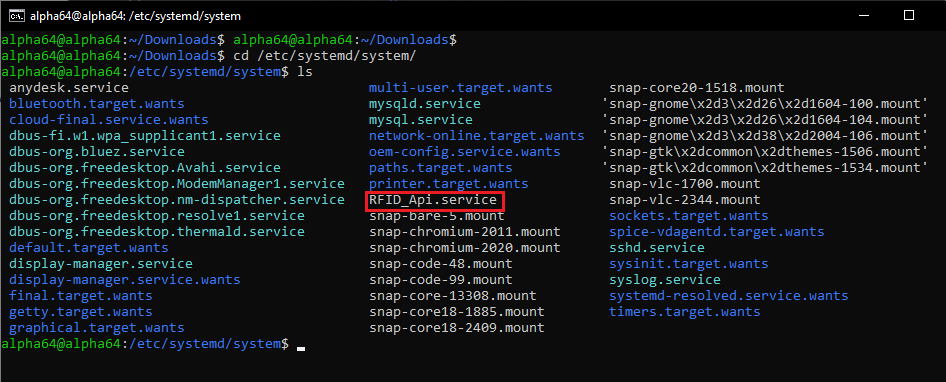
Move transferred file to directory /etc/systemd/system/ with command:

* sudo mv RFID\_Api.service /etc/systemd/system/



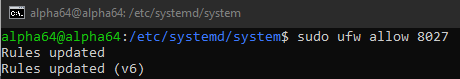
Check with commands:

* cd /etc/systemd/system/
* ls



#### Step 3: Open firewall and start service

* sudo ufw allow 8027

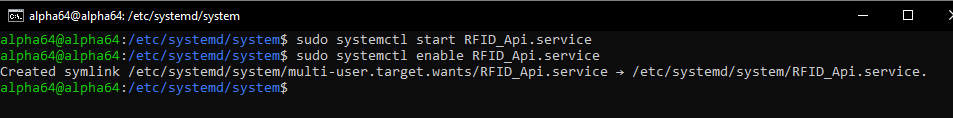


Continue use these command:

* sudo ufw reload
* firewall-cmd --add-port=8027/tcp
* firewall-cmd --permanent --add-port=8027/tcp

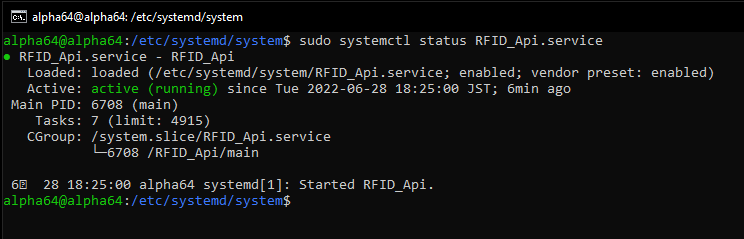
Start service with these commands:

* sudo systemctl start RFID\_Api.service
* sudo systemctl enable RFID\_Api.service



Check service with command:

* sudo systemctl status RFID\_Api.service



*Success Screen*

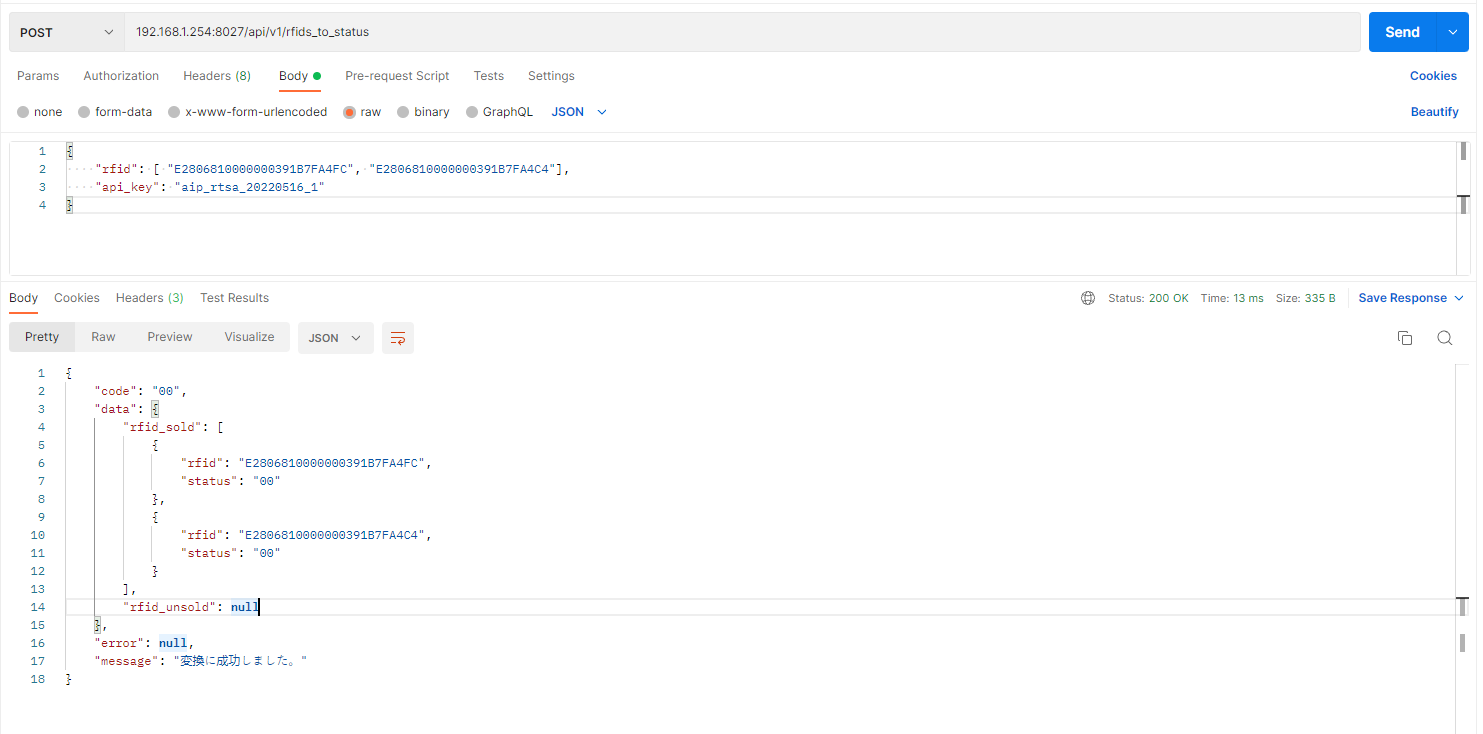
#### Step 4: Test from local network with postman

Method: Post

IP: 192.168.1.254

Port: 8027

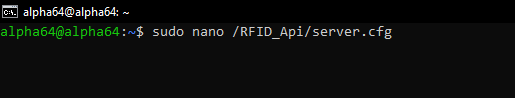
Address: /api/v1/…

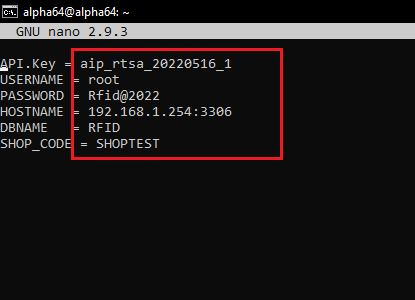


*Test screen*

#### Step 5: Check config file of API

* sudo nano /RFID\_Api/server.cfg

****

****

***These information can be changed to accordance with environment:***

+ API.key: password for user call api

+ USERNAME: username of database (MariaDB)

+ PASSWORD: password of database (MariaDB)

+ HOSTNAME: ip and port of database ([static ip of this device](#_2._Check_static) , default port is 3306)

+ DBNAME: name of database created and imported

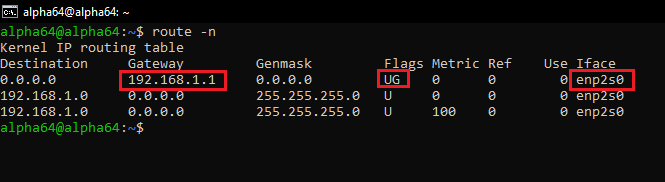
+ SHOP\_CODE: name of shop which is used to insert to drfid.taglog table

# **6. Optional and Error:**

#### *Setup new static IP*

Check network using:

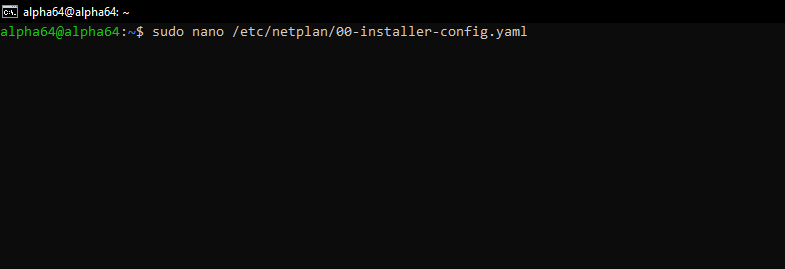
* route -n



*Note information of row have Flags “UG”*

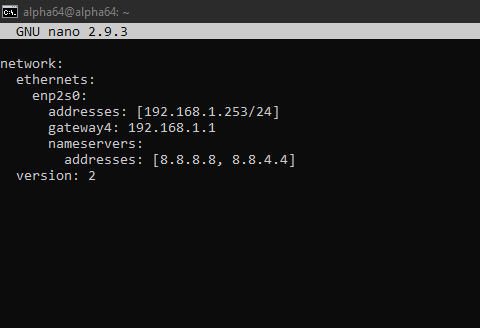
Edit network file with this command:

* sudo nano /etc/netplan/00-installer-config.yaml



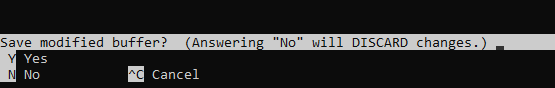
Copy this text into it, colored text can be customized to suit the requirements, information in red text need to be exactly with above image created by ***“route -n”*** command:

|  |
| --- |
| network:  ethernets:  enp2s0:  addresses: [192.168.1.253/24]  gateway4: 192.168.1.1  nameservers:  addresses: [8.8.8.8, 8.8.4.4]  version: 2 |

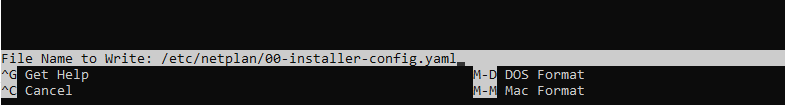


*Paste with right mouse*

Press Ctrl + X to save



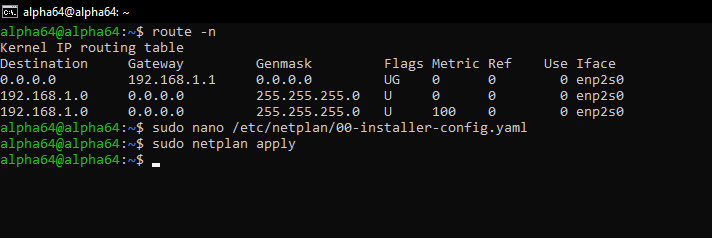
*Press Y to accept*



*Press enter to finish*

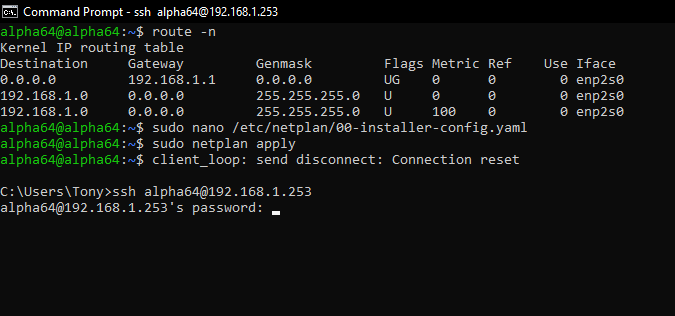
Continue to apply change with this command:

* sudo netplan apply

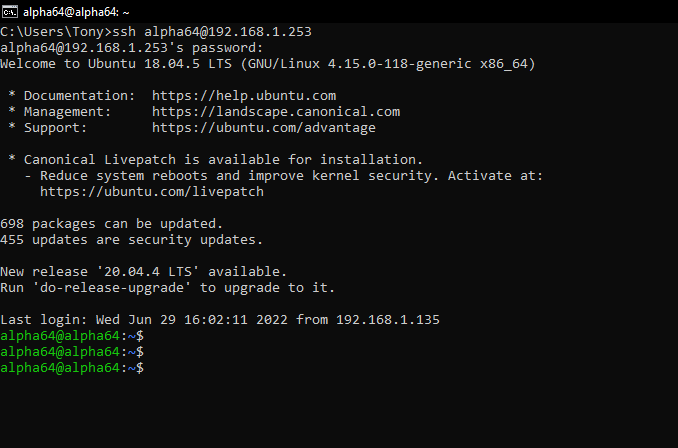


*Finish setup new IP*

Now IP changes, system will kick ssh out, try ssh again with new IP assigned. In this demo, IP is 192.168.1.253



*Enter password: alpha64*

**

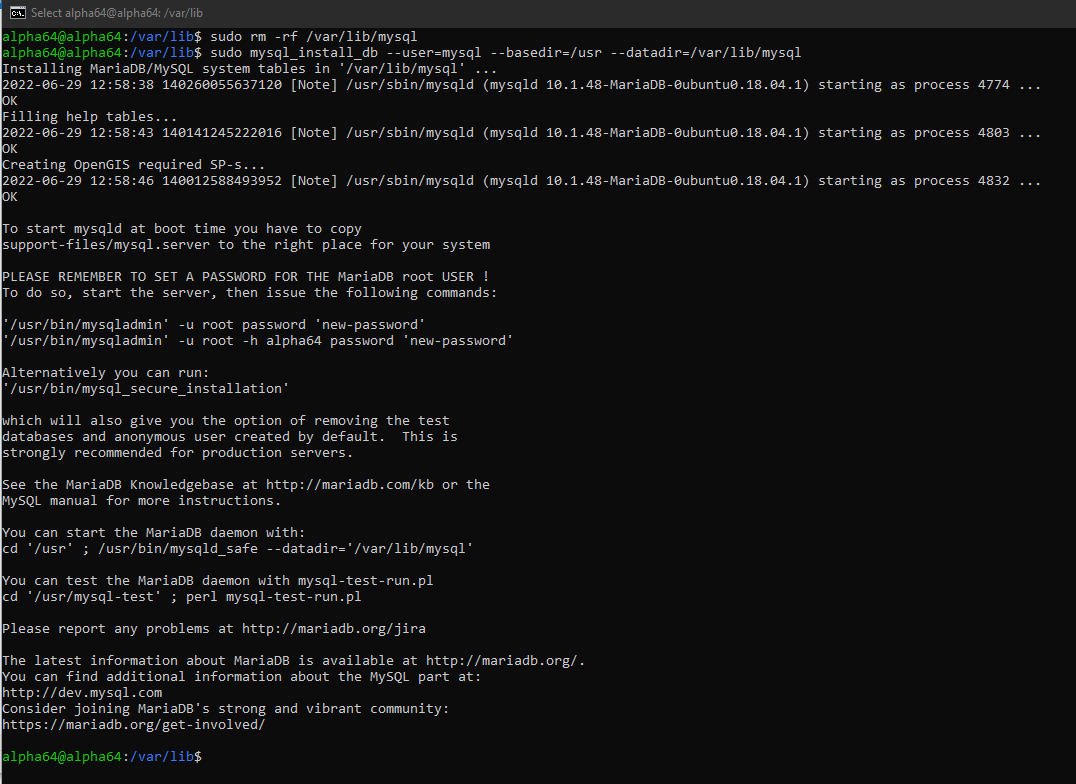
*Success screen*

#### *Some popular errors:*

***Status: "starting innodb crash recovery" in MariaDB***

***Database crash,*** [***GRANT PERMISSION***](#_Grant_permission_(important)) ***again &*** [***IMPORT DATABASE***](#_Importing_database_to) ***again after run these commands:***

* sudo rm -rf /var/lib/mysql
* sudo mysql\_install\_db --user=mysql --basedir=/usr --datadir=/var/lib/mysql



*Success screen, after this screen please grant permission and import database again*