Operating Systems

Lab Report #4

Network configuration

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OBJECTIVES

1. Teach the basic network configuration methods under Linux
2. Master the TCP/IP configuration files under Linux
3. Configure IP address, subnet mask, default gateway, and DNS server
4. Master the use of ping, traceroute, netstat, nslookup, and arp.

CODE AND EXECUTION

Assignment 1: Linux internet configure

(1). If you do not have install net-tools, you should firstly install net-tools by
" sudo apt install net-tools" command

```
jerry@jerry-virtual-machine:~$ sudo apt install net-tools
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  net-tools
0 upgraded, 1 newly installed, 0 to remove and 154 not upgraded.
Need to get 204 kB of archives.
After this operation, 819 kB of additional disk space will be used.
Get:1 http://cn.archive.ubuntu.com/ubuntu jammy/main amd64 net-tools amd64 1.60+git20181103.0eebece-1ubuntu5 [204
kB]
Fetched 204 kB in 6s (33.7 kB/s)
Selecting previously unselected package net-tools.
(Reading database ... 170321 files and directories currently installed.)
Preparing to unpack .../net-tools_1.60+git20181103.0eebece-1ubuntu5_amd64.deb ..
.
Unpacking net-tools (1.60+git20181103.0eebece-1ubuntu5) ...
Setting up net-tools (1.60+git20181103.0eebece-1ubuntu5) ...
Processing triggers for man-db (2.10.2-1) ...
```

(2) . Use "ifconfig" command to check the network card name

```
jerry@jerry-virtual-machine:~$ ifconfig
ens33: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
       inet 192.168.8.129  netmask 255.255.255.0  broadcast 192.168.8.255
       inet6 fe80::bbbf:cfcd:922f:f5c  prefixlen 64  scopeid 0x20<link>
       ether 00:0c:29:76:ba:de  txqueuelen 1000  (Ethernet)
       RX packets 7713  bytes 9848646 (9.8 MB)
       RX errors 0  dropped 0  overruns 0  frame 0
       TX packets 2919  bytes 229697 (229.6 KB)
       TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
       inet 127.0.0.1  netmask 255.0.0.0
       inet6 ::1  prefixlen 128  scopeid 0x10<host>
       loop  txqueuelen 1000  (Local Loopback)
       RX packets 1086  bytes 90785 (90.7 KB)
       RX errors 0  dropped 0  overruns 0  frame 0
       TX packets 1086  bytes 90785 (90.7 KB)
       TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

Help

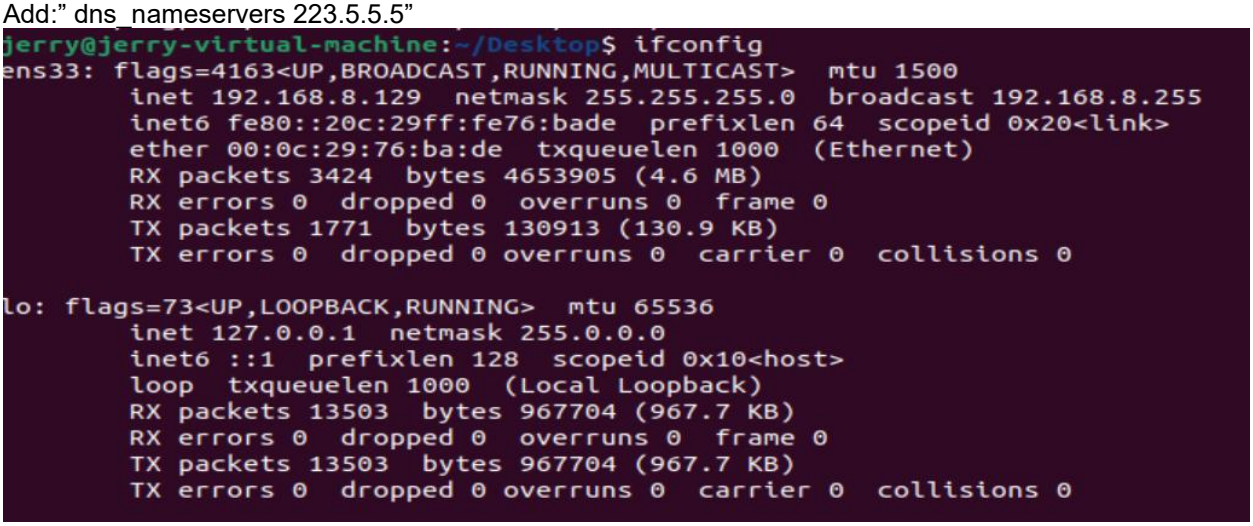
Assignment 2:Configure Network File

The file to configure ubuntu `s network is in /etc/network/interfaces

Enter this command to edit network file:
Different version of uduntu has different command, my version is 22.04,the command is :
Sudo vi /etc/netplan/00-installer-config.yaml”

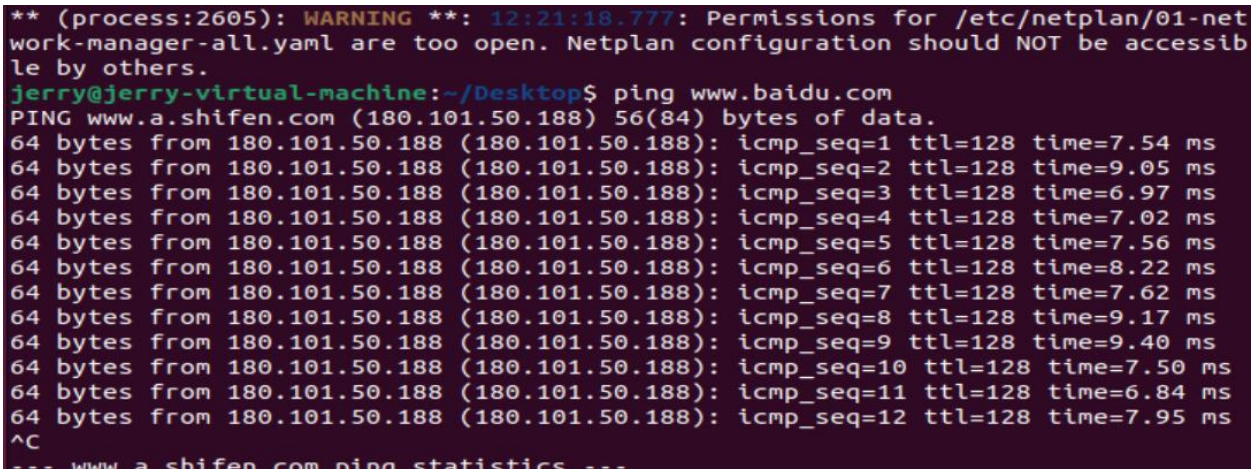
Use staticconfigure method to get ip configuration
Auto ens33(network name)
Iface ens33 inet dhcp
Address 192.168.0.2
Netmask 255.255.255.0
Gateway 192.168.0.2

Edit DNS address
Though /etc/netplan/00-installer-config.yaml
Add:” dns_nameservers 223.5.5.5”



Test Ping

Use the fully command:
Ping www.baidu.com



if

ANALYSIS

Analyze the behavior of each program. Explain the observed outputs, discuss any challenges encountered, and how they were resolved.

CONCLUSION

Summarize your findings and experiences from this lab assignment.

REFERENCES

List any references or resources you used to complete this lab assignment, if any.