The Installation Guide for the VM image of EstiNet 9.0 Network Simulator and Emulator

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Produced and maintained by EstiNet Technologies Inc.

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Revision History

Rev.	Date	Revision Description
1.0	July 20, 2016	Initial version
1.1	August 18, 2016	Add the information to connect EstiNet License Server on 2.2 Network Setting
1.2	September 22, 2016	Remove 2.5 close firewall because firewall had been closed from the VMImage 9.0.6.3744

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1 Install VMware Workstation Player

Because "EstiNet Network Simulator and Emulator" must be installed in Fedora 20(64bit) Operation System, we recommended that user installed Operation System and Simulator in "Virtual Machine" **VMware Workstation Player**. We introduced how to install VMware Player as below.

a. Please download VMware Player from website of VMware Inc. as below and select the type of Operation System which you have. We selected **VMWare Workstation Player for Windows** (as Figure 1). https://my.vmware.com/en/web/vmware/free#desktop_end_user_computing/vmware_workstation_player/12_0

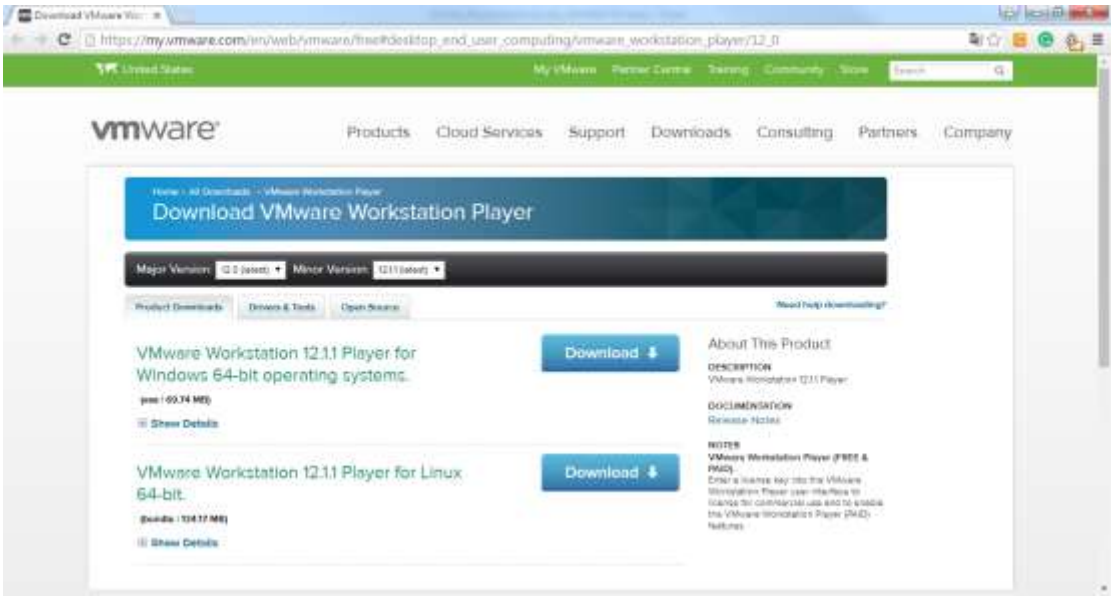

Figure 1 Download VMware Workstation Player

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b. Before download EstiNet VM Image, user must register as an EstiNet member. Please visit EstiNet Home Page: www.estinet.com/ns/ then click **Support → Free Trial** to process this**.** The registration email will receive two mails. The first one is ":::EstiNet Technologies::: Member Activation". Please click the member activation link from this email. Then user click the "Free Trial" button

to apply a free trial version license. After click "Free Trial" button, user will receive the second mail ":::EstiNet Technologies::: Free Trial" which include the EstiNet FTP download message and Free Trial license key (as Figure 2).

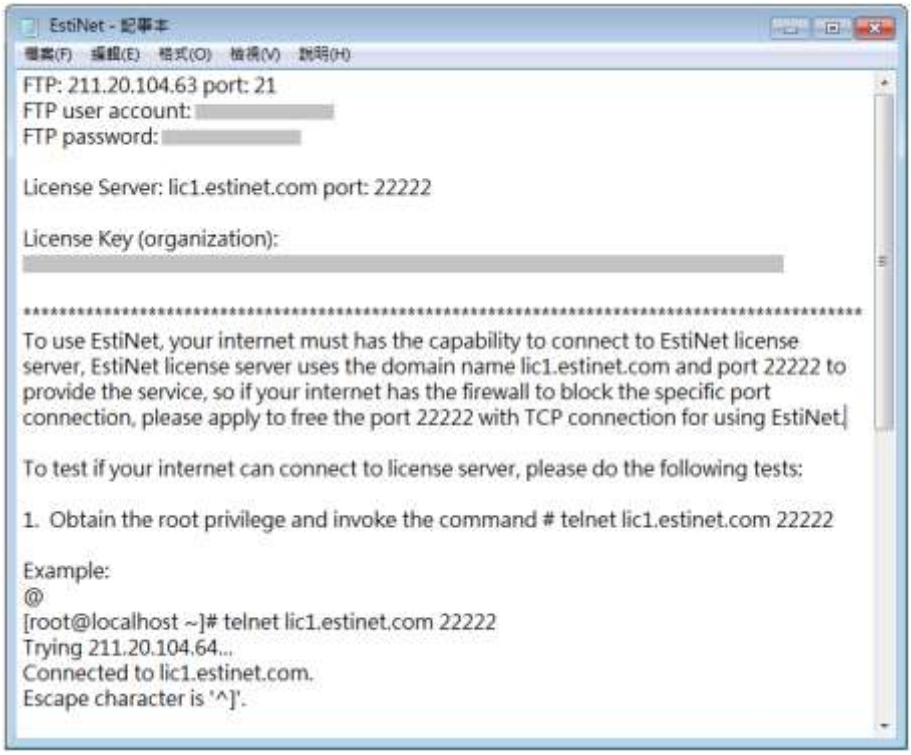

Figure 2 Download EstiNet image package from EstiNet FTP

c. Please login to EstiNet FTP server. Estinet recommends using FileZilla (The Free FTP solution https://filezilla-project.org/) to download EstiNet VM image such as EstiNet_9.0.6.3744VMImage.rar then unzip it.

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d. After install **VMWare Workstation Player** and unzip EstiNet VM Image, please click the icon "**Open a Virtual Machine**" (as Figure 3).

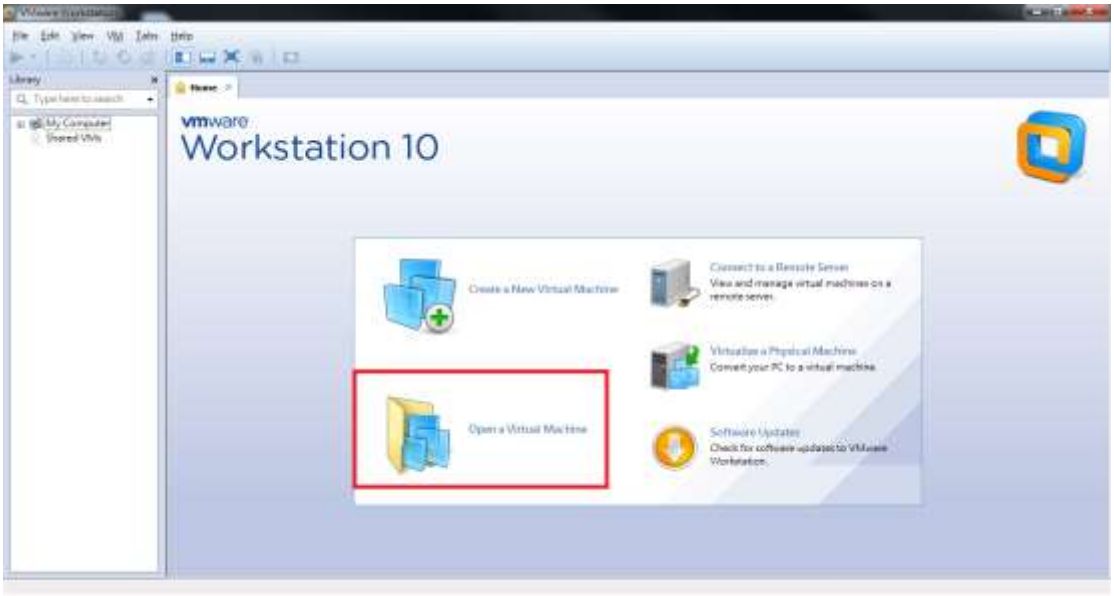

Figure 3 Click Open a Virtual Machine

e. Please select the path of VM image file then click file .vmx (as Figure 4).

Figure 4 Click file .vmx

f. When loading EstiNet VM Image, it will pop-up a dialogue box. Please select **I Copied It** (as Figure 5 Dialogue box).

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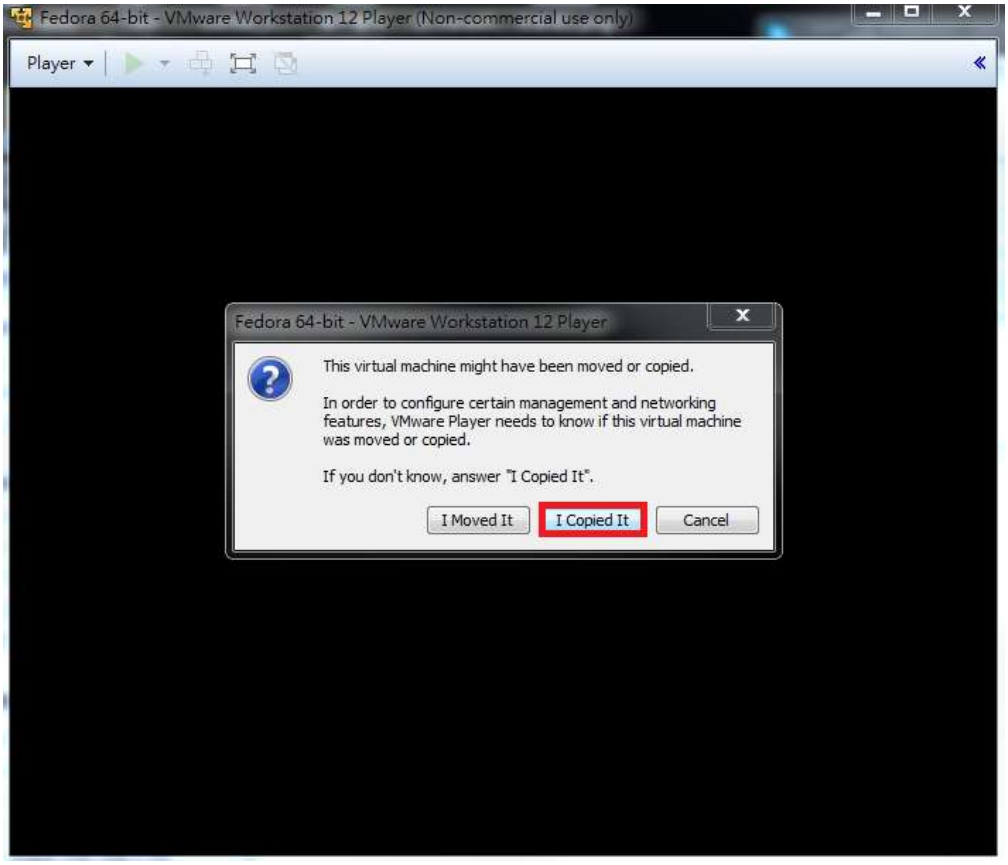

Figure 5 Dialogue box

g. After complete pre-steps, it will display the EstiNet Image file name that user loaded. Please click "**Power on this virtual machine**" to power on the Virtual machine (as Figure 6).

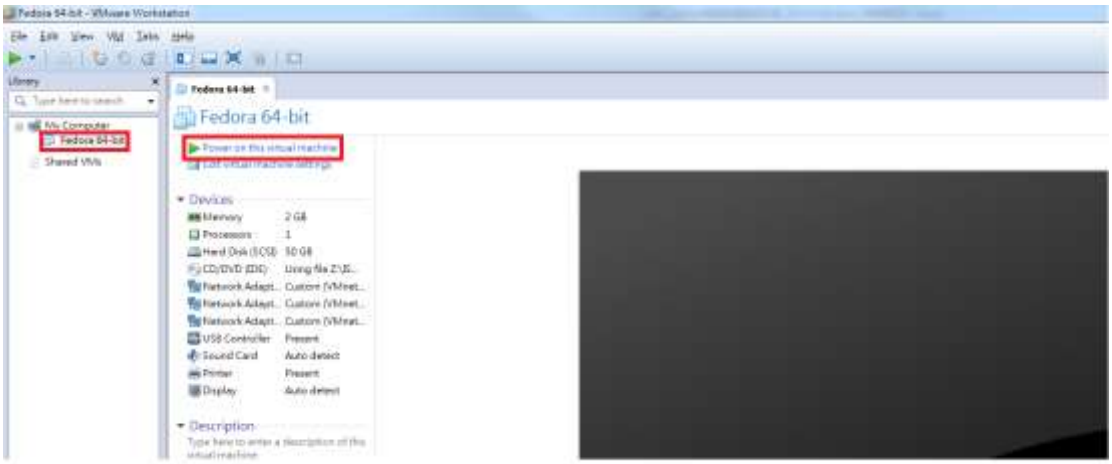

Figure 6 Power on virtual machine

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2 To start up the EstiNet Simulator

2.1 The Boot menu

a. Choose the EstiNet kernel such as "**Fedora (3.11.10.estubet20150430.fc20) 20 (Heisenbug)**" on the operation selection screen (as Figure 7 Choose the EstiNet kernel on the operation selection screen).

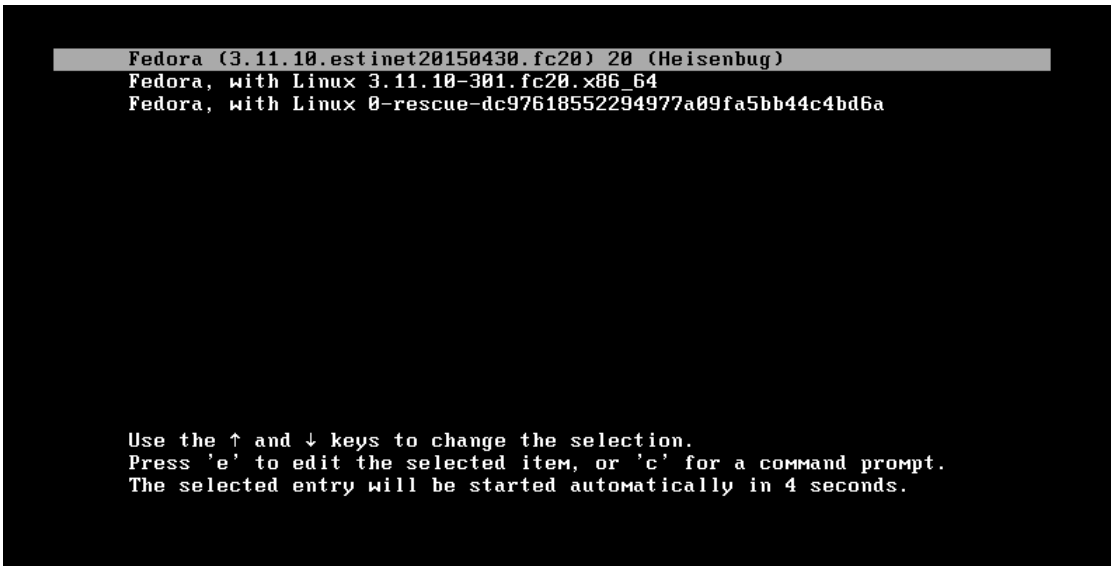

Figure 7 Choose the EstiNet kernel on the operation selection screen

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b. Login to Fedora20

Figure 8 Login to Fedora20

2.2 Network Setting

a. After login, please check the Network status is worked well or not (as Figure 9 Check network status).

Figure 9 Check network status

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b. If the network can’t work well, please click the power button on the upper right corner and choose the setting button (as Figure 10).

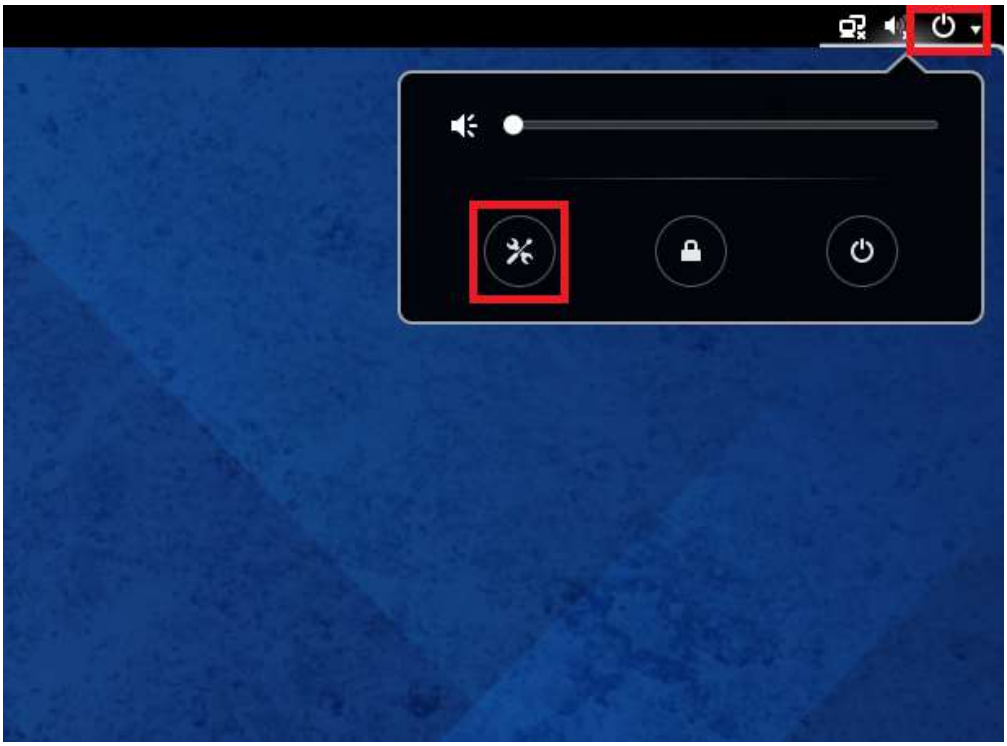

Figure 10 To choose the setting button

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c. Please click “Network” after entering setting windows.

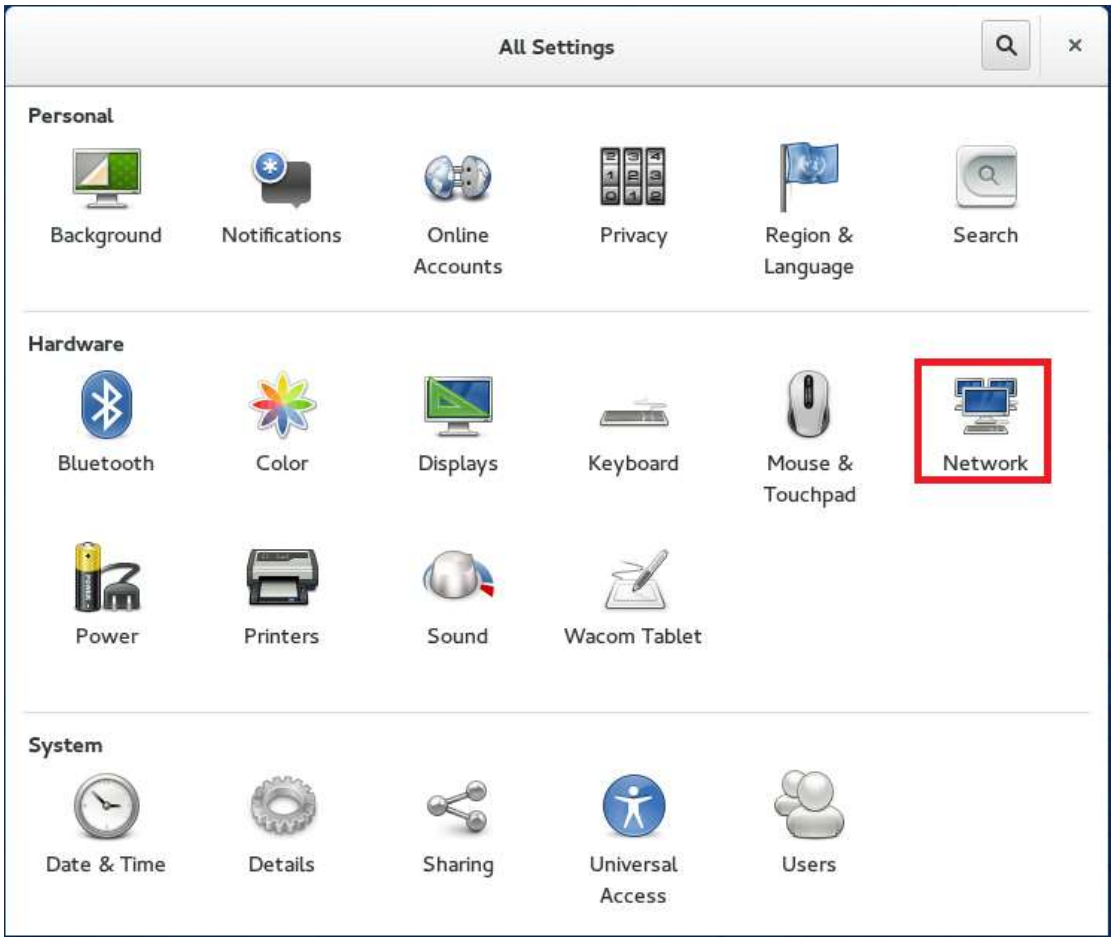

Figure 11 Click Network.

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d. Click “**Add Profile**” after entering Network setting.

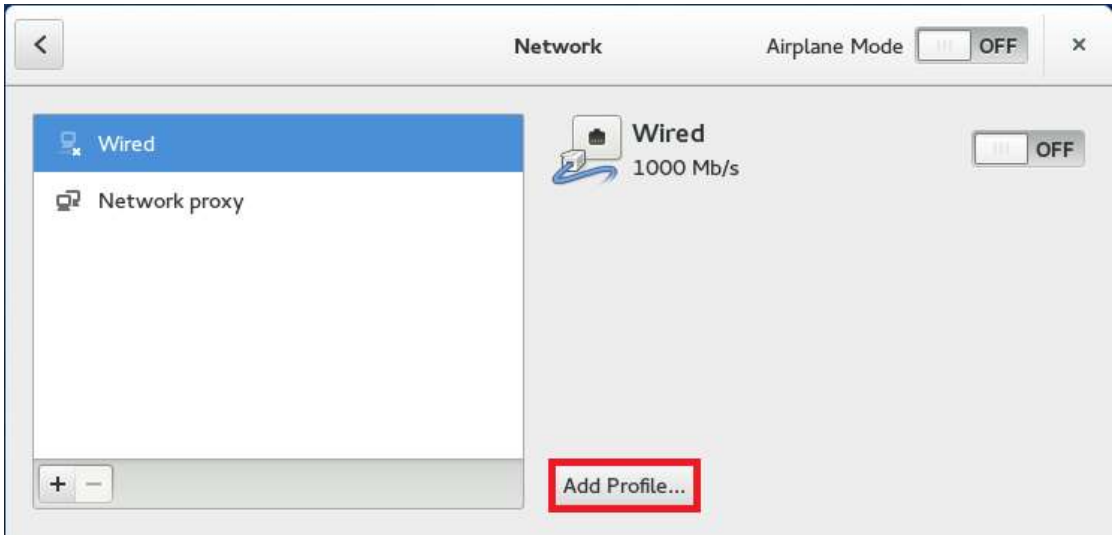

Figure 12 Click Add Profile

e. Click “Add“ after entering Profile setting. The network should be work well.

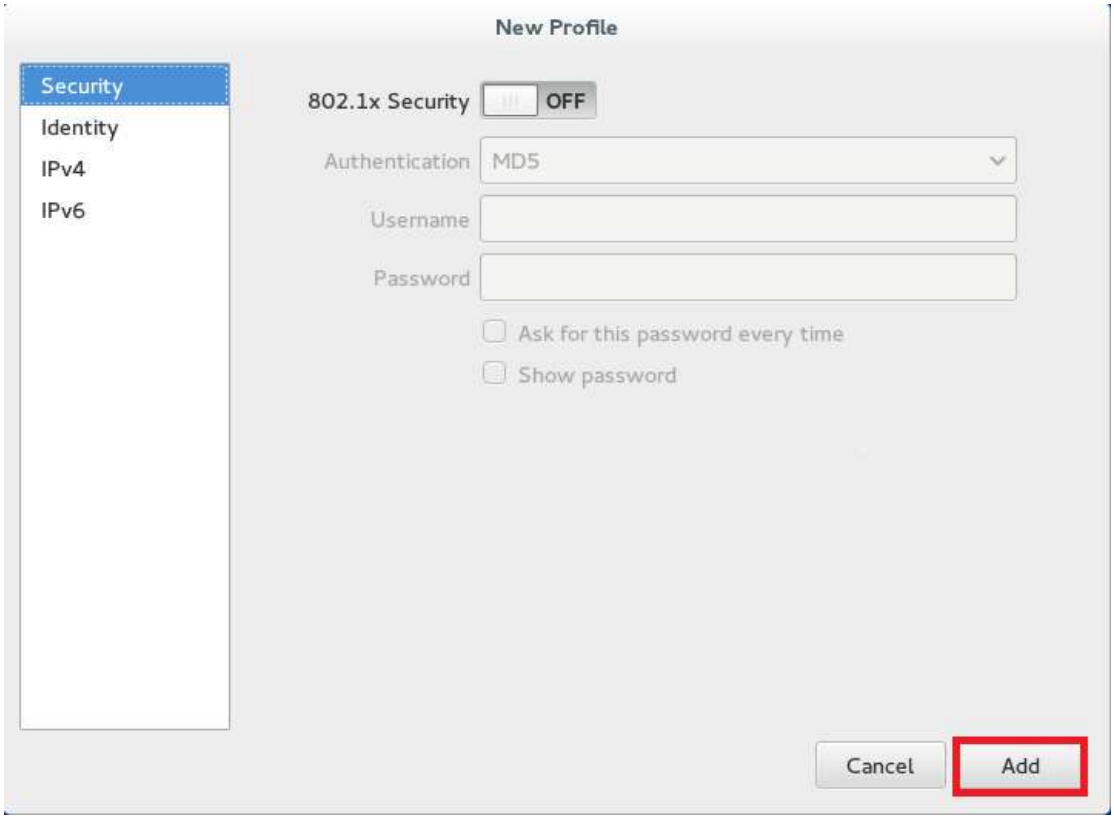

Figure 13 Click Add

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f. If the network can't work well after pre-steps, please click **Player→Manage→Virtual Machine Settings** on the upper left corner.

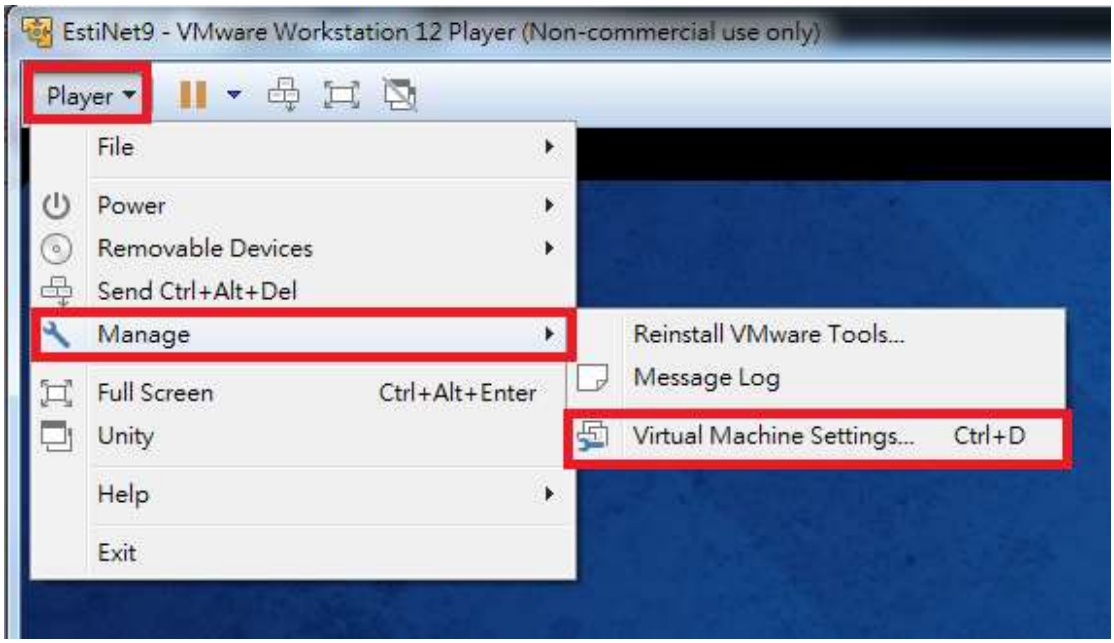

Figure 14 Click Player→Manage→Virtual Machine Settings

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g. Click "**Network Adapter**" on window Virtual Machine Settings.

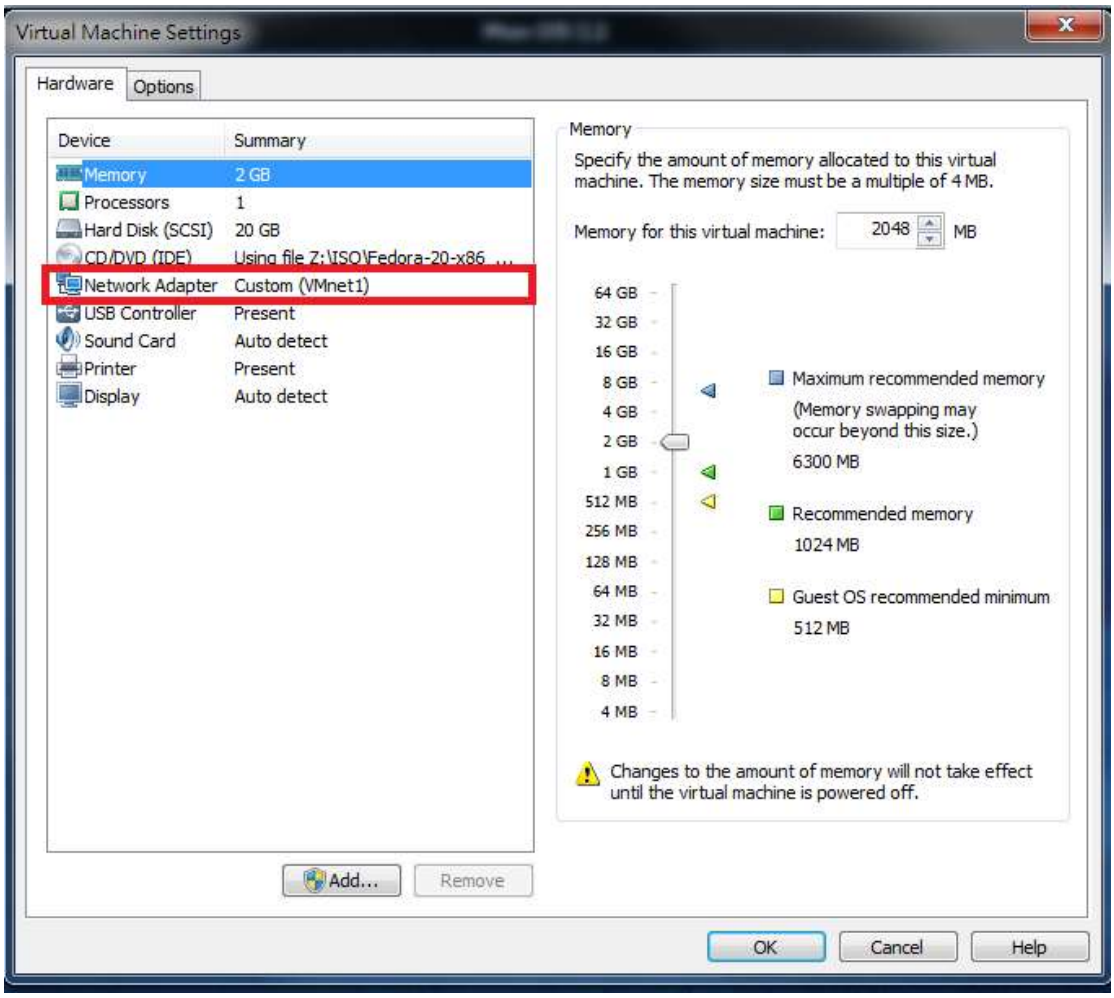

Figure 15 Click Network Adapter

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h. There are two ways for this setting. The one is click "N**AT: Used to share the host's IP address**" to replace "**Custom: Specific virtual network**" (as Figure 16). The other is select "**VMnet (NAT)**" to replace "**WMnet (Host-only)**" on "**Custom: Specific virtual network**"(as Figure 17).

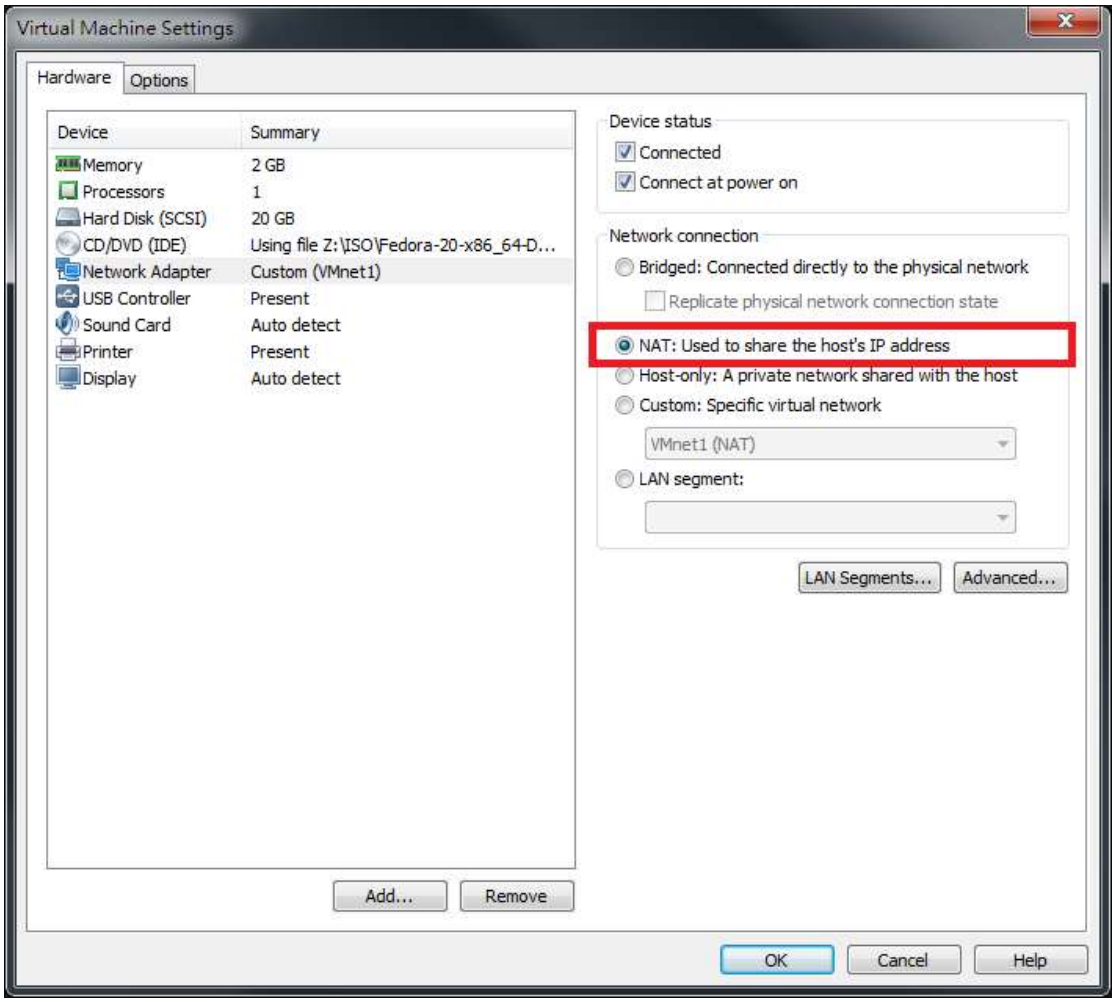

Figure 16 Choose NAT: Used to share the host's IP address

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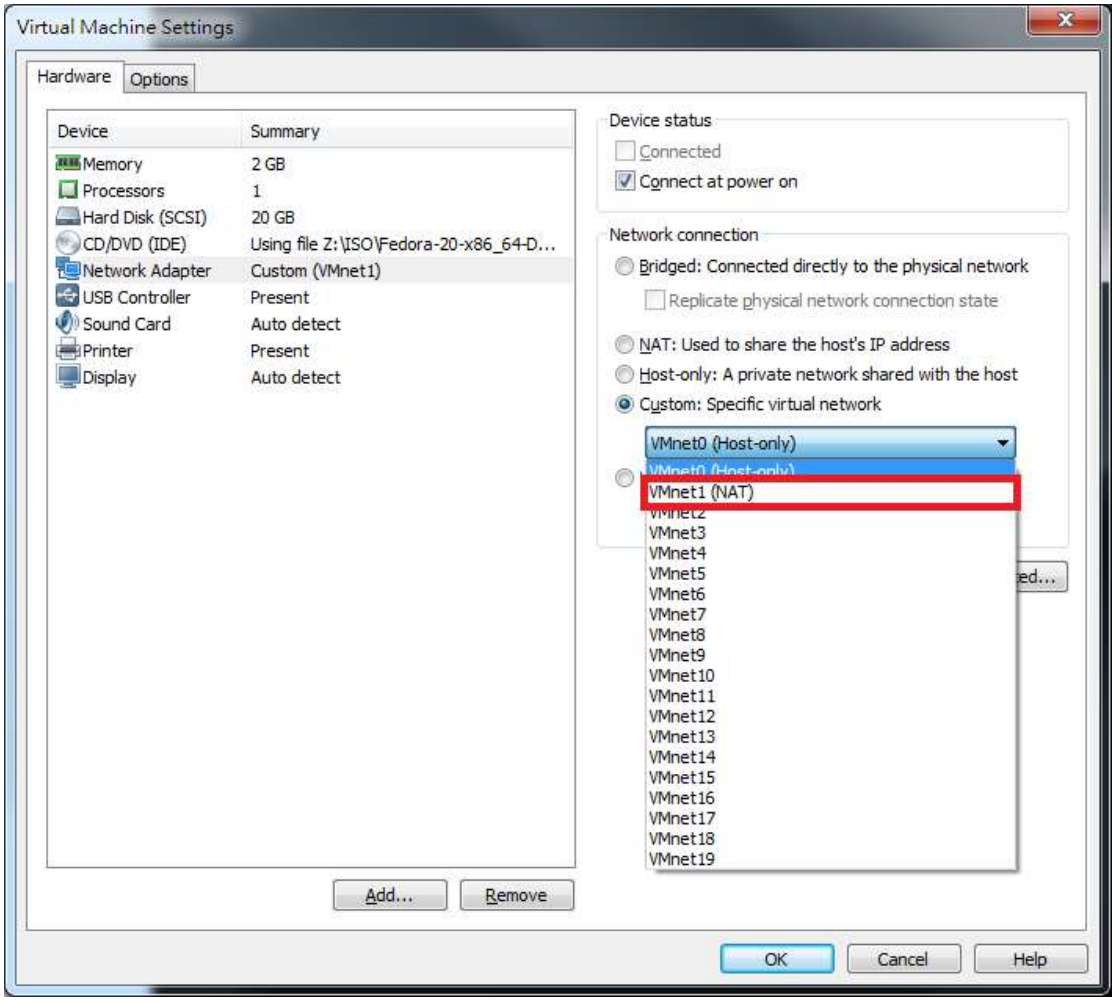

Figure 17 Choose VMnet (NAT) on Custom: Specific virtual network

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i. Execute **#ifconfig** to confirm the network device had got local IP after all settings. (as Figure 18 Ifconfig_getIP)

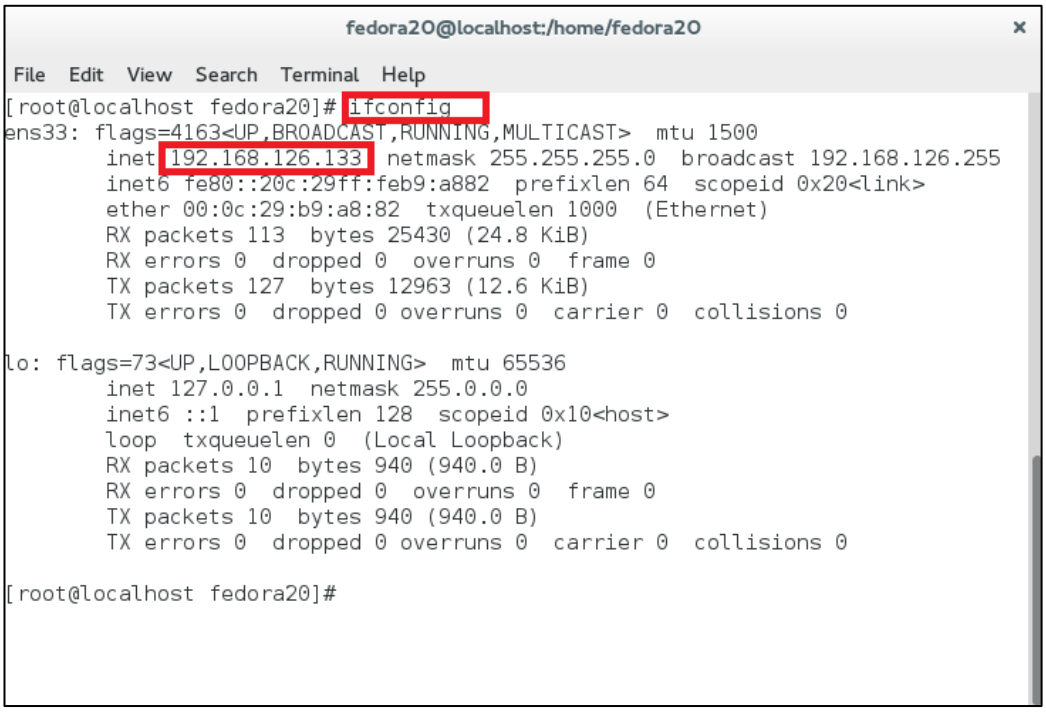

Figure 18 Ifconfig_getIP

j. To make sure that the network device can connect to Internet. For example: **#ping www.google.com** (as Figure 18 Ifconfig_getIP)

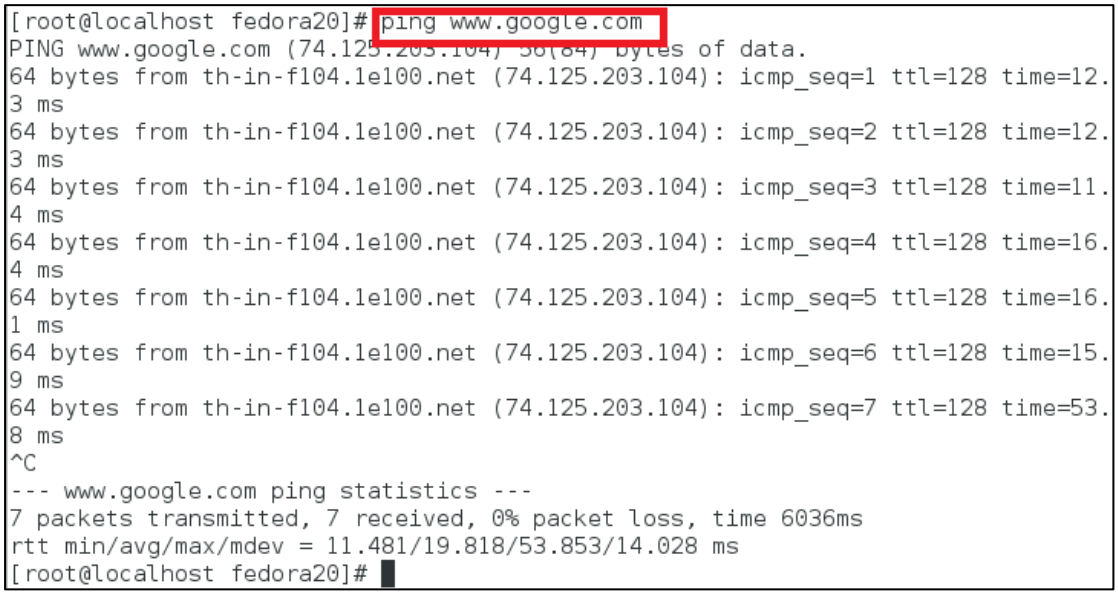

Figure 19 Ping www.google.com

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k. To make sure the network device can connect to EstiNet License Server

EstiNet license server using domain name : lic1.estinet.com、IP : 59.124.181.130 and Port : 22222 to provide license service. If your internet has the firewall to block the specific IP and port connection, Please provide this information (domain name, IP and Port number) to the "Computer and Information Networking Center" or MIS (Management Information System) in your site.

Test 1: Get root permission and execute # telnet lic1.estinet.com 22222 (as Figure 20 Excute # telnet lic1.estinet.com 22222). If the Network connection is successful, you could see this message.

```
[root@localhost ~]# telnet lic1.estinet.com 22222
Trying 59.124.181.130...
Connected to lic1.estinet.com.
Escape character is '^]'.
```

Figure 20 Excute # telnet lic1.estinet.com 22222

Test2: Get root permission and execute # nslookup lic1.estinet.com .(as Figure 211 Excute # nslookup lic1.estinet.com). If your DNS server could parsing the EstiNet license server IP address successfully, you should get the result as: license server IP address is 59.124.181.130 and domain name is lic1.estinet.com.

```
[root@localhost ~]# nslookup lic1.estinet.com
Server:         192.168.136.2
Address:        192.168.136.2#53

Non-authoritative answer:
Name:   lic1.estinet.com
Address: 59.124.181.130
```

Figure 211 Excute # nslookup lic1.estinet.com

If you can connect Internet successfully, but you can't find any message that I mentioned above, please **apply to free them with TCP connection** for using EstiNet (domain name : lic1.estinet.com、IP : 59.124.181.130, Port: 22222).

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2.3 First time to start up the EstiNet Simulator

a. After rebooting, you have to login and open a terminal to input command (as Figure 22). You have to use the command "`su -`" to obtain the root privilege (as Figure 23). If this is your first time to run EstiNet, you have to execute the program named "`inputkey`" to enter the license key which send to your e-mail by EstiNet. Next, you have to execute the program named "`reserve`" to obtain the permission from the license server to run EstiNet (as Figure 24).

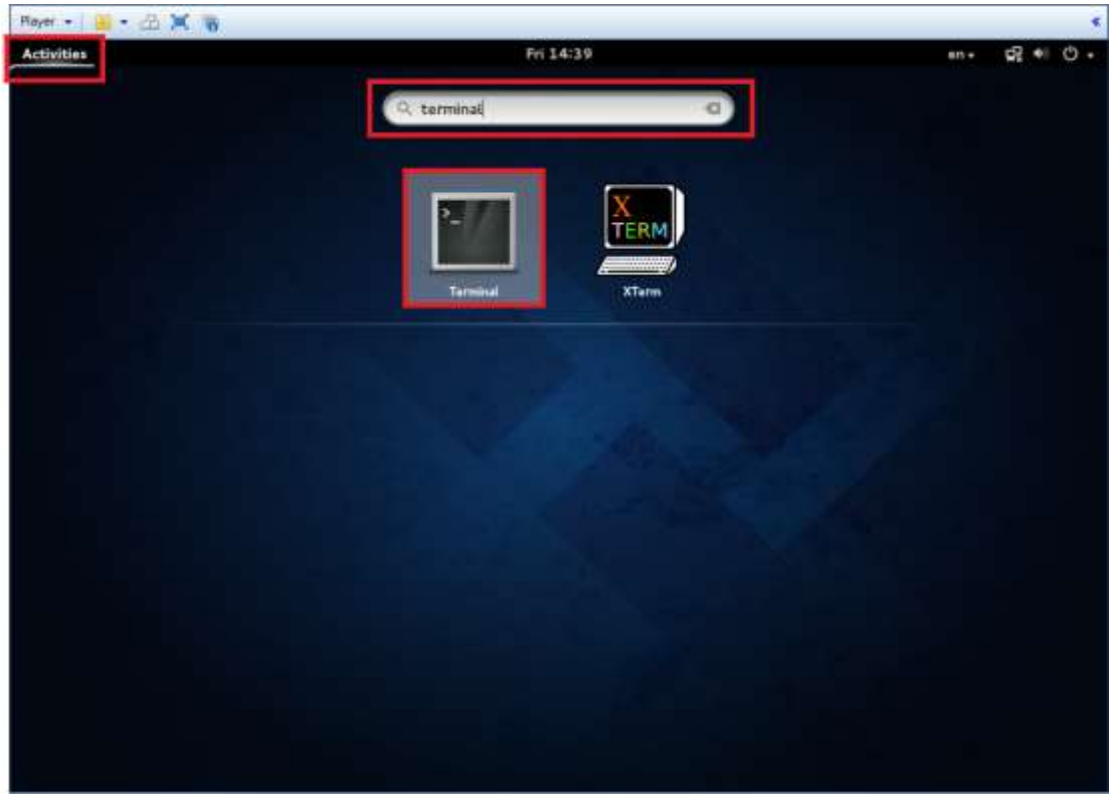

Figure 22 Open terminal

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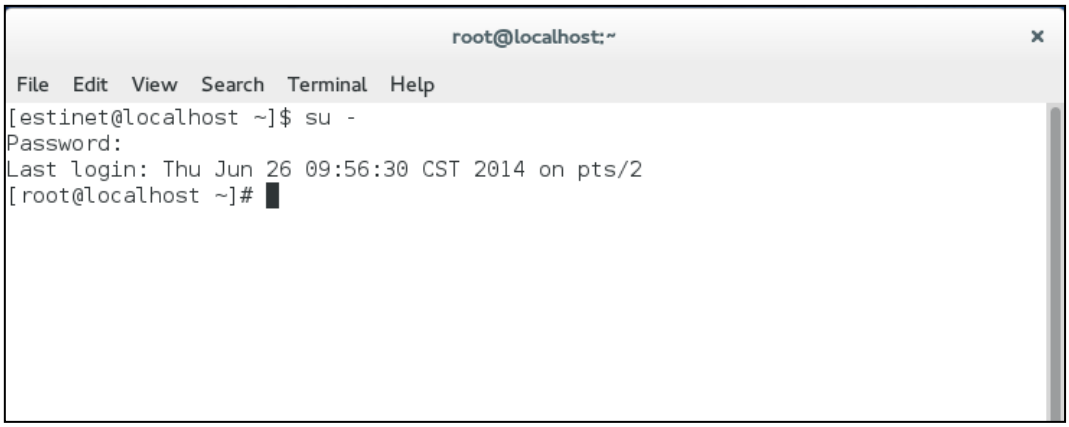

Figure 23 Get root privilege

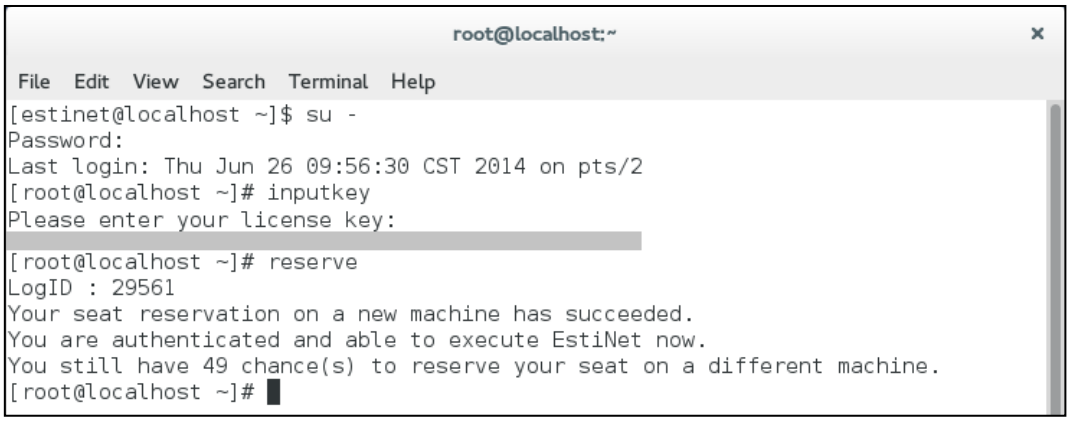

Figure 24 Obtain the permission from the license server to run EstiNet

2.4 General steps to star up the EstiNet Simulator

a. Open another terminal, execute the command "`su -`" to obtain the root privilege, and then execute the program "`dispatcher`" (as Figure 25).

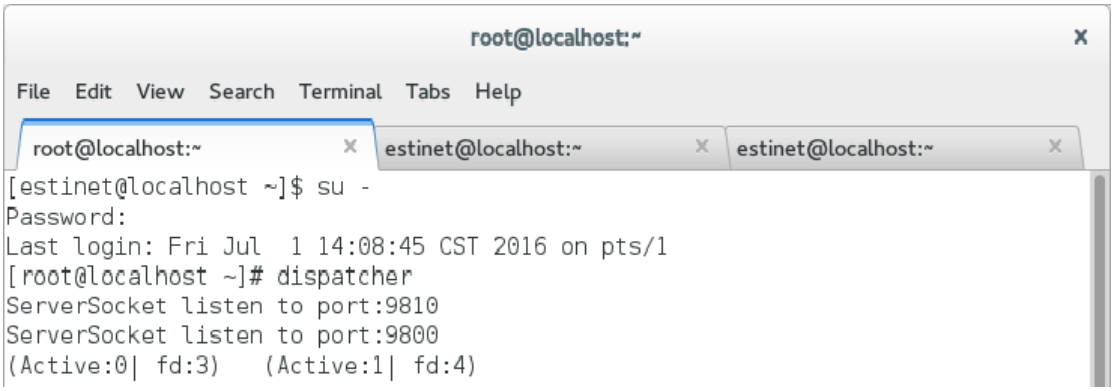

Figure 25 Execute the program dispatcher

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b. Open another terminal, execute the command "`su -`" to obtain the root privilege, and then execute the program "`coordinator`" (as Figure 26).

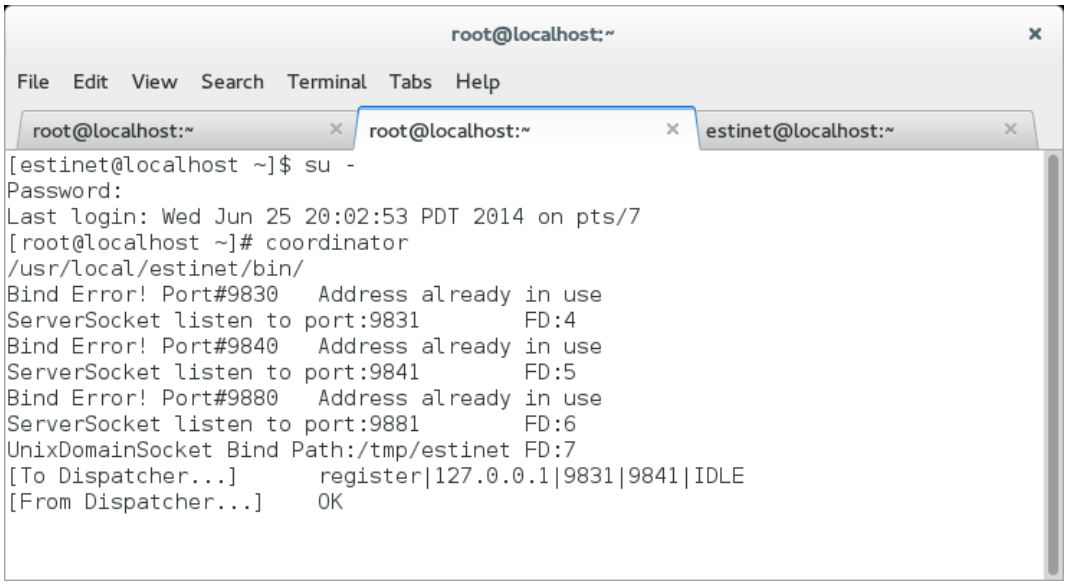

Figure 26 Execute the program coordinator

c. Open another terminal, execute the command "`su -`" to obtain the root privilege, and then execute the program "`estinetgui`". Now, you can start using EstiNet to conduct simulations and emulations.

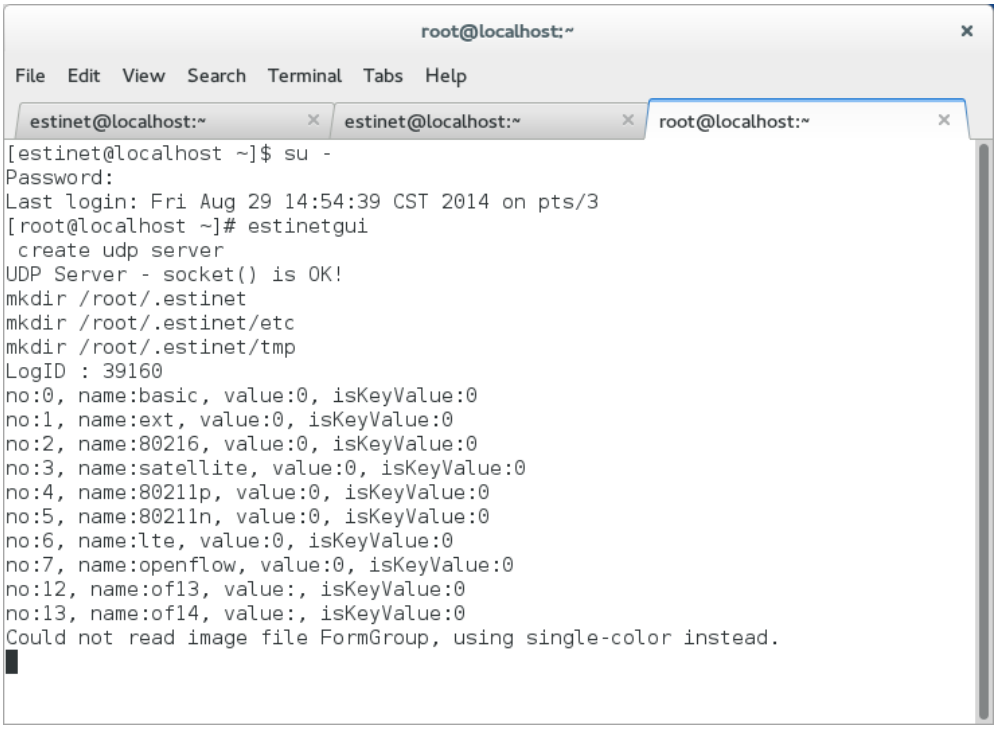

Figure 27 Execute the program estinetgui

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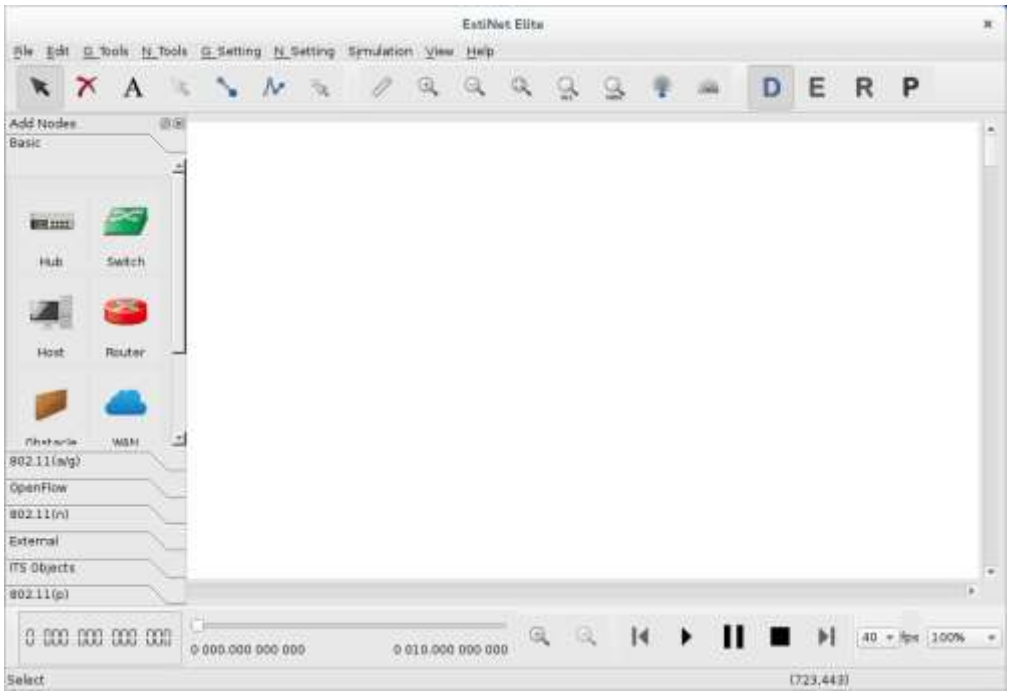

Figure 28 Start to use EstiNet Simulator

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Appendix

Video https://youtu.be/AGjSj4KSC2k (EstiNet9.0 VMImage Installation Guide)

Login information in VM Image

User name: estinet
Password: estinet
Root password: estinet

File directory in VM Image

Installation package path: /home/estinet/Documents/estinet-9.0.6.xxxx-1.fc20.x86_64.release

Topology:

Using the command tar to decompress the compressed file .tar.bz2 or .tar.gz
#tar xvf xxx.tar.bz2 (xxx is a file name)
#tar zxvf xxx.tar.gz (xxx is a file name)

Ethernet_Wi-Fi:

80211ag_adhoc: /home/estinet/EstiNet/Ethernet_Wi-Fi/80211ag_adhoc
80211n_adhoc: /home/estinet/EstiNet/Ethernet_Wi-Fi/80211n_adhoc
80211n_AODV: /home/estinet/EstiNet/Ethernet_Wi-Fi/80211n_AODV
80211n_Infra:/home/estinet/EstiNet/Ethernet_Wi-Fi/80211n_Infra
openflow_stp_of13_odl:
/home/estinet/EstiNet/Ethernet_Wi-Fi/ openflow_stp_of13_odl

SDN:

Openflow:
Opendaylight_SpanningTree:

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/home/estinet/EstiNet/SDN/OpenFlow/Opendaylight_SpanningTree

OpenFlow_Network:

/home/estinet/EstiNet/SDN/OpenFlow/OpenFlow_Network

Openflow_Server_Client:

/home/estinet/EstiNet/SDN/OpenFlow/OpenFlow_Server_Client

SDN_Wi-Fi_Ad-hoc:

Ad-hoc: /home/estinet/EstiNet/SDN/SDN_Wi-Fi_Ad-hoc/Ad-hoc

SDN_WiFi_AdHoc:

/home/estinet/EstiNet/SDN/SDN_Wi-Fi_Ad-hoc/SDN_WiFi_AdHoc

Ls

SDN_Wi-Fi_Infra:

SDN_Mobile_to_Mobile_Add_Delete:

/home/estinet/EstiNet/SDN/SDN_Wi-Fi_Infra/SDN_Mobile_to_Mobile_Add_Delete

Wi-Fi_Infra:

/home/estinet/EstiNet/SDN/SDN_Wi-Fi_Infra/Wi-Fi_Infra

VANET:

Application:

9.MultiInterfaceCar_20160419:

/home/estinet/EstiNet/Vanet/Application/9.MultiInterfaceCar_20160419

10.VanetRouting:

/home/estinet/EstiNet/Vanet/Application/10.VanetRouting

15.Jammer20160420:

/home/estinet/EstiNet/Vanet/Application/15.Jammer20160420

General:

1.VANETDEMO:

/home/estinet/EstiNet/Vanet/General/1.VANETDEMO

2.LaneChangingAndCarProfile:

/home/estinet/EstiNet/Vanet/General/2.LaneChangingAndCarProfile

3.RealWorldMapAndDeployCarAutomatically:

/home/estinet/EstiNet/Vanet/General/3.RealWorldMapAndDeployCarAutomatically

4.Landmark: /home/estinet/EstiNet/Vanet/General/4.Landmark

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IEEE802.11p 1609:

5.ProviderServiceAndUserService:

/home/estinet/EstiNet/Vanet/IEEE802.11p_1609/5.ProviderServiceAndUserService

6.ProviderServiceAndUserServiceCCH:

/home/estinet/EstiNet/Vanet/IEEE802.11p_1609/6.ProviderServiceAndUserServiceCCH

7.WSM_0129:

/home/estinet/EstiNet/Vanet/IEEE802.11p_1609/7.WSM_0129

8.WSM_Forwarding_0130:

/home/estinet/EstiNet/Vanet/IEEE802.11p_1609/8.WSM_Forwarding_0130

vanet350: /home/estinet/EstiNet/Vanet/vanet350

VANET1000: /home/estinet/EstiNet/Vanet/VANET1000

VehicularRouteAssignment:

/home/estinet/EstiNet/Vanet/VehicularRouteAssignment

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