

# Networking Assignment 2

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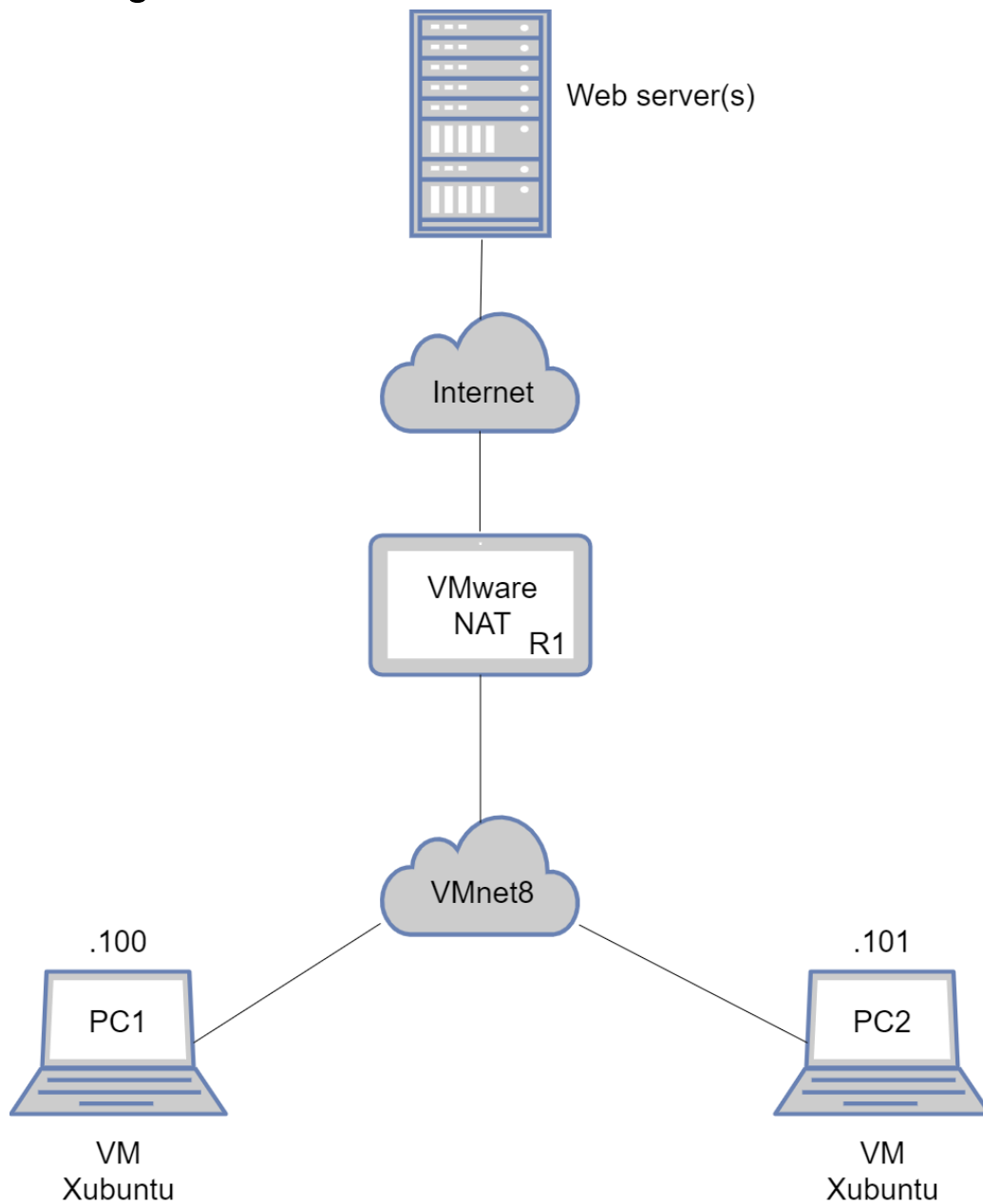
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## Introduction

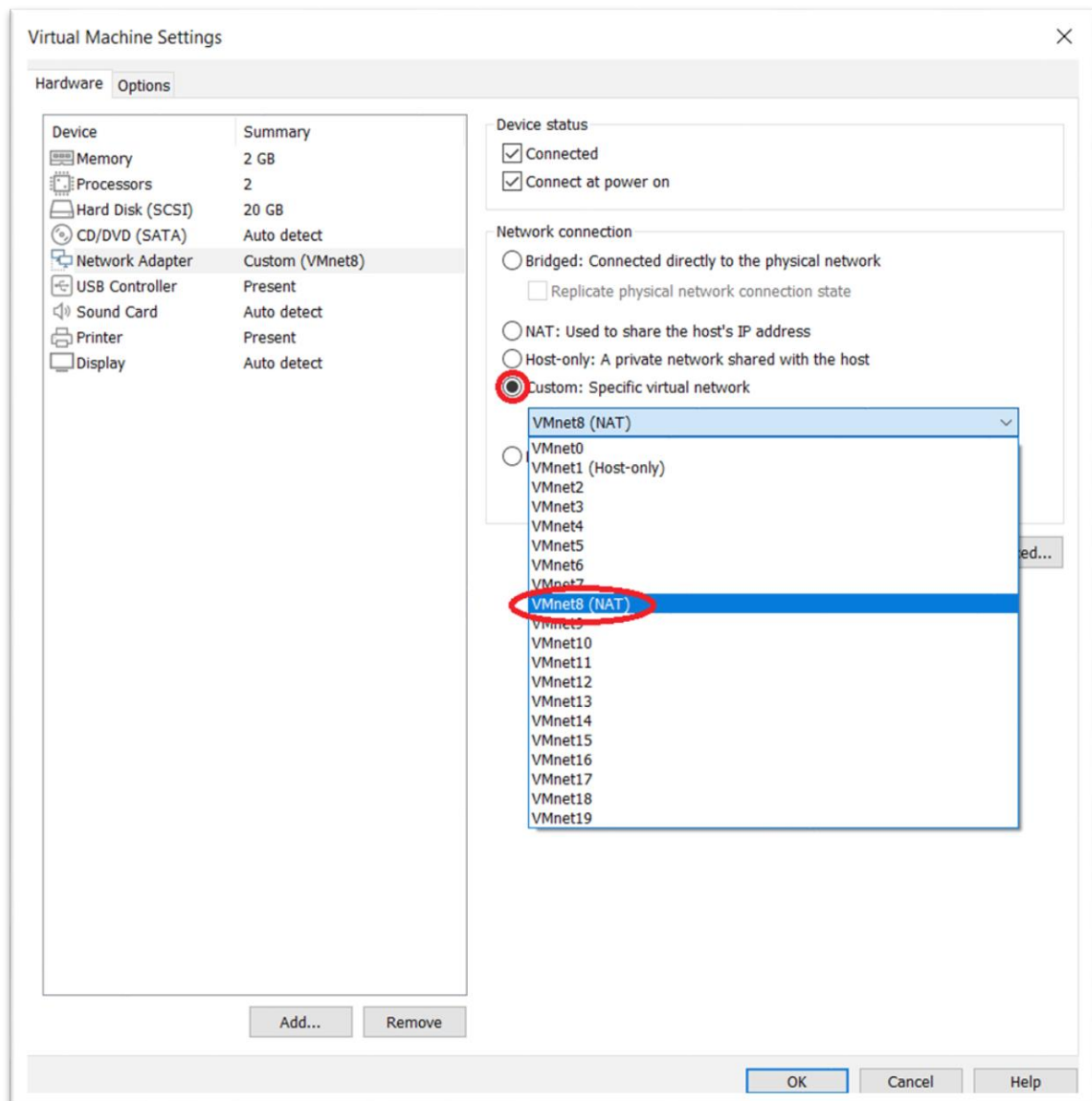
In this assignment I will show how to set static IP address in Linux, use Ping to check connectivity between two hosts and how to monitor traffic using Wireshark, also explaining what a networking interface is.

## Network Diagram

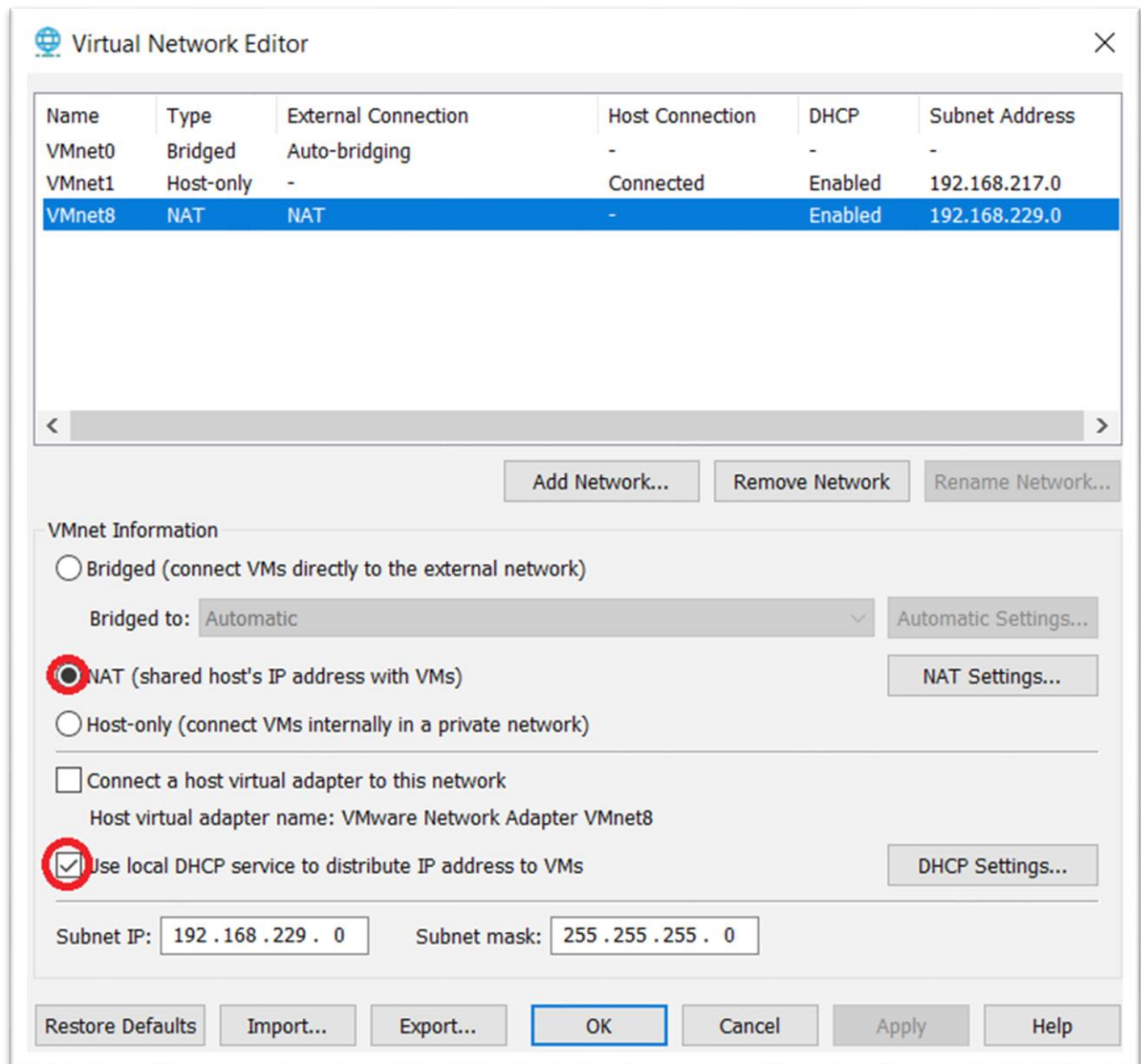


## How to set up VMnet8 in the Virtual Network editor

In order to set up VMnet8 on our virtual machine first right click to our machine listed in the left bar and choose settings. Here you should select network adapter on the left side of the window, then choose the 'Custom: Specific virtual network' dot so you can select 'VMnet8 (NAT)' from the list. After doing so just press OK.



Now, look at the top left corner of the VMware workstation window and select 'Virtual Network Editor' under the Edit drop down menu. Here we first click on the 'Change Settings' button in the bottom left corner so we can edit the content of this page. Choose VMnet8 from the list and make sure the same checkboxes are selected as in the picture below.



To be sure it worked open a web browser and see if there is internet connection.

## Updating and cloning our Virtual Machine

First, we need to update our Linux machine and install a few software that will help in our task. Open the terminal and write: “sudo apt update”

This will show if there is an available update. If there is, type: “sudo apt upgrade”

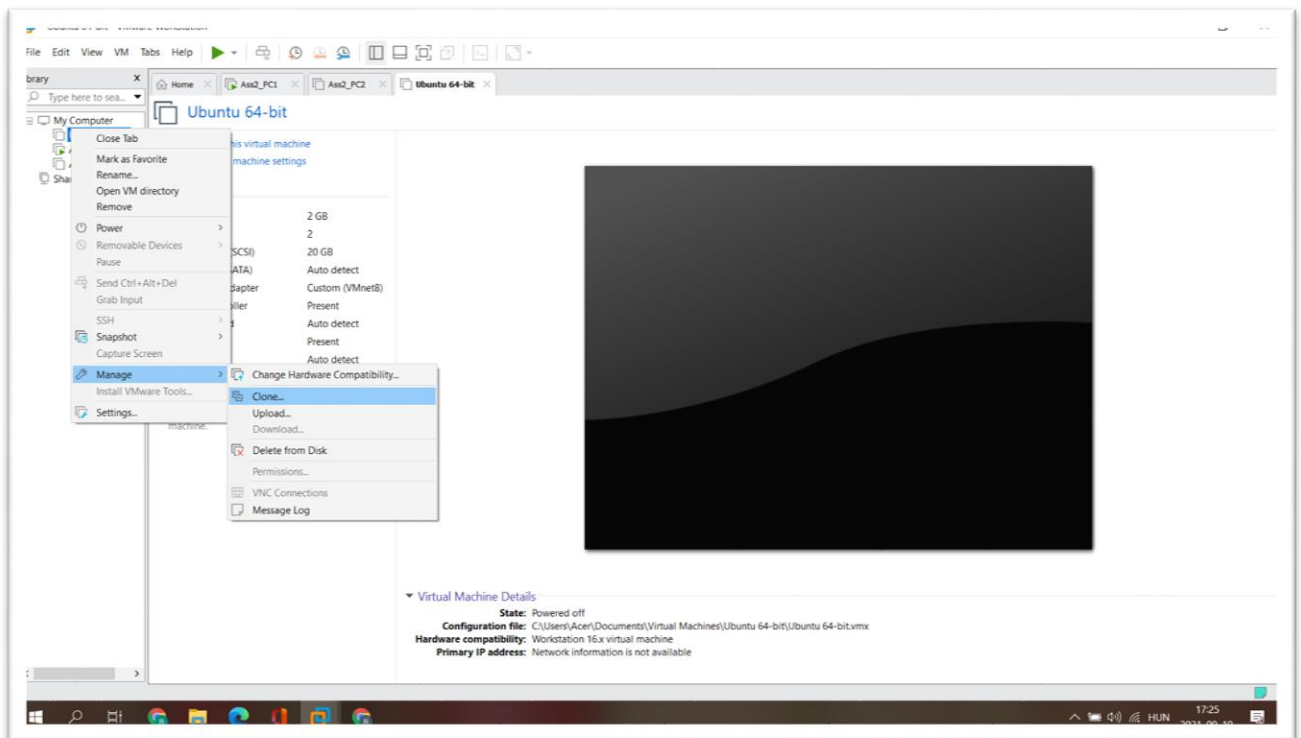
When done it is time to install the applications we need. To install them write in the terminal: “sudo apt install ...”

Where the three dot is write the name of the software which are the following:

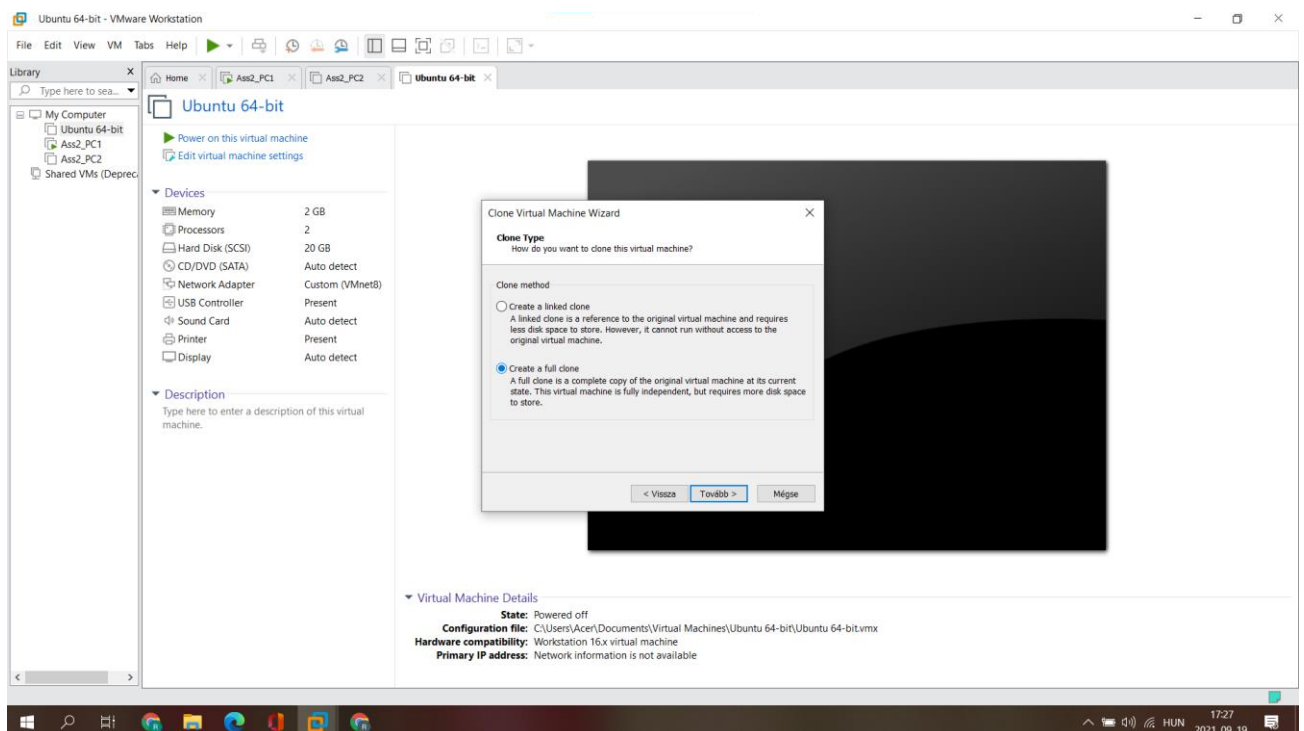
- wireshark
- tcpdump
- putty
- net-tools
- bridge-utils
- iproute2
- curl
- ufw

Now, let's right click on our virtual Linux machine in the VMware workstation app on the left side and choose manage and then clone.

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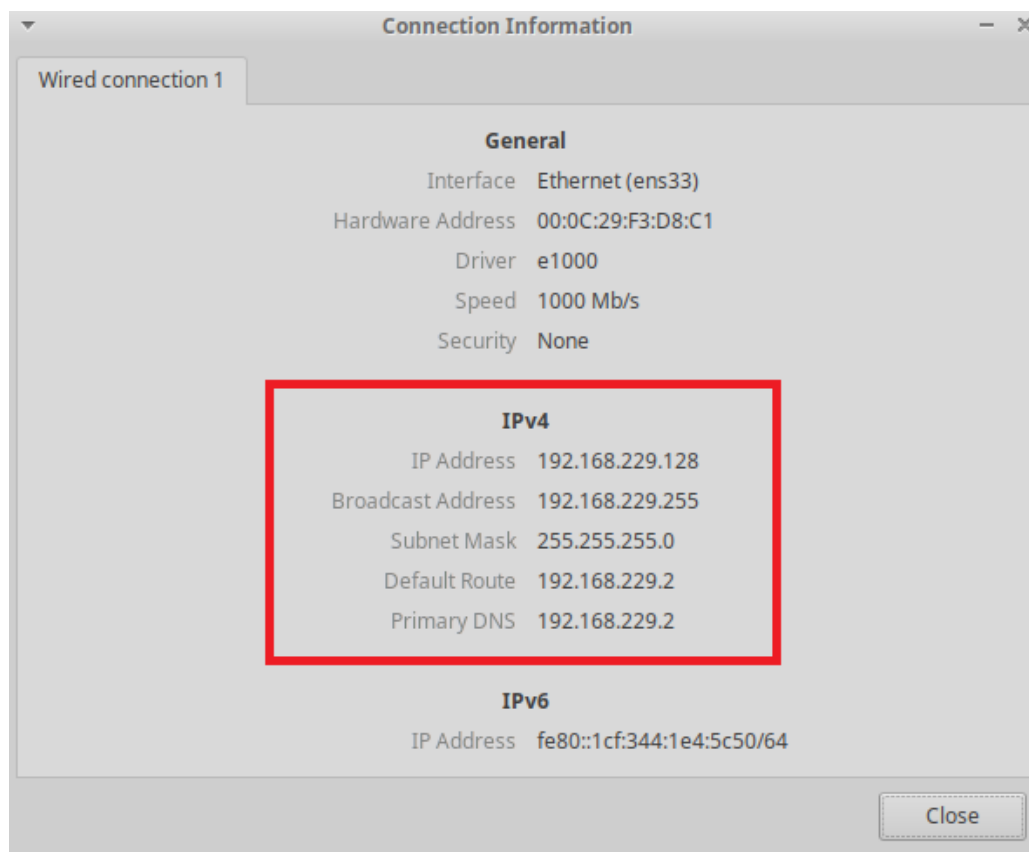
Leave the clone the current state dot but on the next page choose the full clone option. Give a name to the new machine and change the installation folder if you like, then install.



Do this process two times and now you have two additional virtual machines.

## How to set up static IP address on Xubuntu Linux hosts

Our next step is to check the network settings in our virtual machine by clicking on the connectivity sign in the top right corner and choose “Connection Information”. What is under the IPv4 that is important to us.



Let's power up our cloned machines to set the static IP on them. Disable network on the top right corner then choose edit connection. On the new window click on the plus sign, leave ethernet, then give it a name on the upper line. Switch to the IPv4 Settings page and switch the method to manual. Add a new address and fill in with the information from the previous picture but with the optional ending in the address, then type in the DNS servers: 8.8.8.8 and save it. Do it again on the other machine.



## Using ping to check connectivity between the two hosts

Open the terminal again and in one of the cloned machines and type: “ping” and the other machines IP then “-c 5”. This will limit the pings to 5 so it won't go in an infinite loop. Press enter.

If everything is correct the machine will successfully ping the other machine 5 times that you can see in the terminal, and there you have it.