Lab 1: Set Up Environment and Test Basic Software

Questions

1. What protocol does "ping" and "traceroute" use? (10 points)

   Requirements:
   a) Ping and traceroute a website or a certain IP address and then use wireshark to figure out the protocol they use.
   b) Apart from the answers, please provide screenshots of the interface of wireshark in your report.

2. What is the IP address of www.baidu.com? (10 points)

   Requirements:
   a) You are required to use the ping command in this question.
   b) Apart from the answers, please provide screenshots of the Ubuntu terminal in your report.

3. What is the average round trip time (RTT) from your VM to www.baidu.com and mit.edu. Analyze the reason for the difference of their RTTs. (25 points)

   Requirements:
   a) You are required to use the command ping to send 5 packets and get the average RTT.
   b) Apart from the answers, please provide screenshots of the Ubuntu terminal in your report.

4. What is the TCP bandwidth between your two VMs? (25 points)

   Requirements:
   a) Open another VM and use iperf3 to test the TCP bandwidth between the two VMs.
   b) Apart from the answers, please provide screenshots of the Ubuntu terminal in your report.

5. Select a VM as your host machine, and another VM as your server machine, then use ssh on your host to connect to the server. (15 points)

   Requirements:
   a) Please provide screenshots of the Ubuntu terminal in your report.

6. Use scp to copy a file from your host to the server. (15 points)

   Requirements:
   a) Create a file named as "lab1.txt" in your host machine, and copy it to the "/home/test" directory of the server machine.
   b) Please provide screenshots of the Ubuntu terminal in your report.