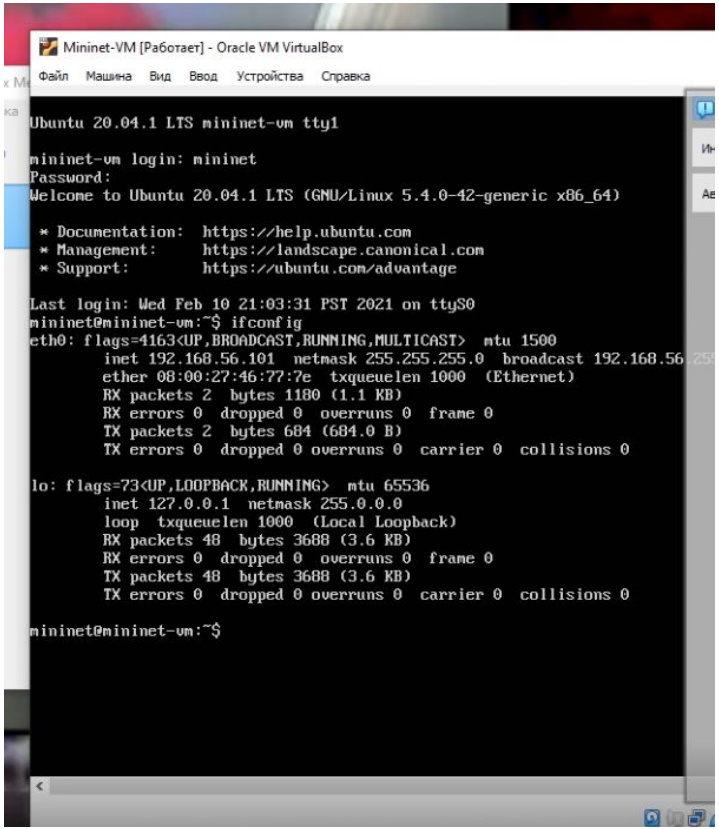
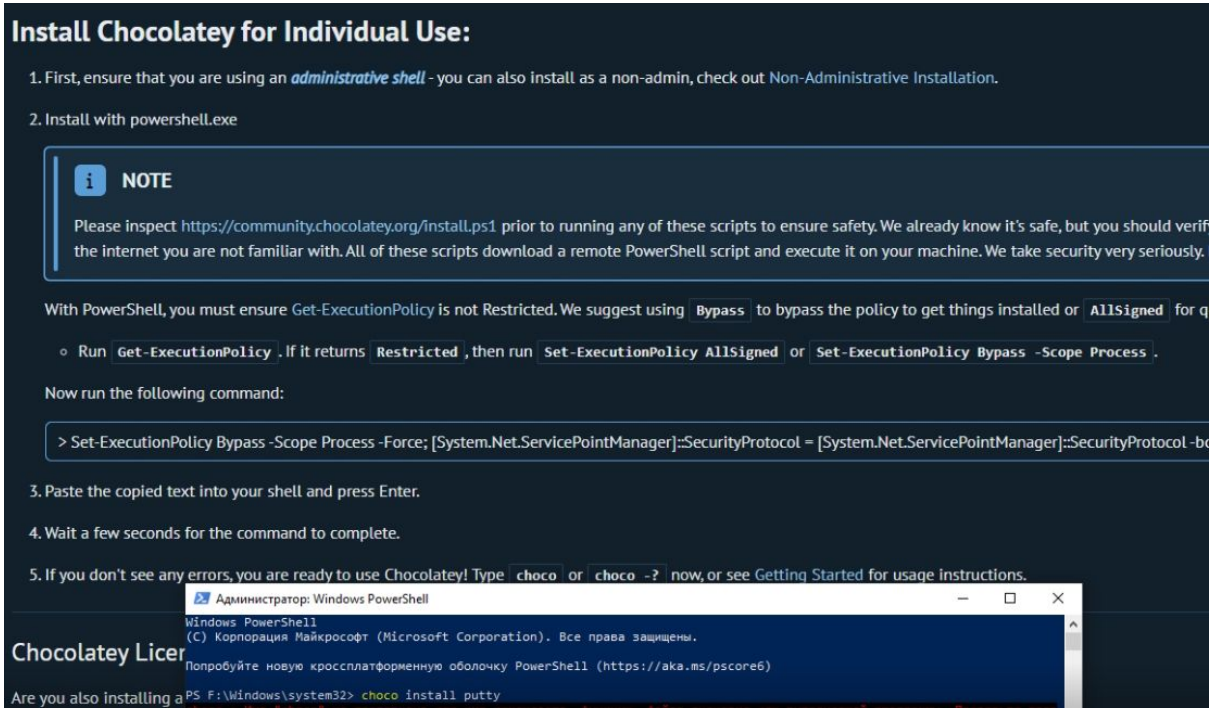
# Лабораторная работа №16

по дисциплине Моделирование систем передачи данных

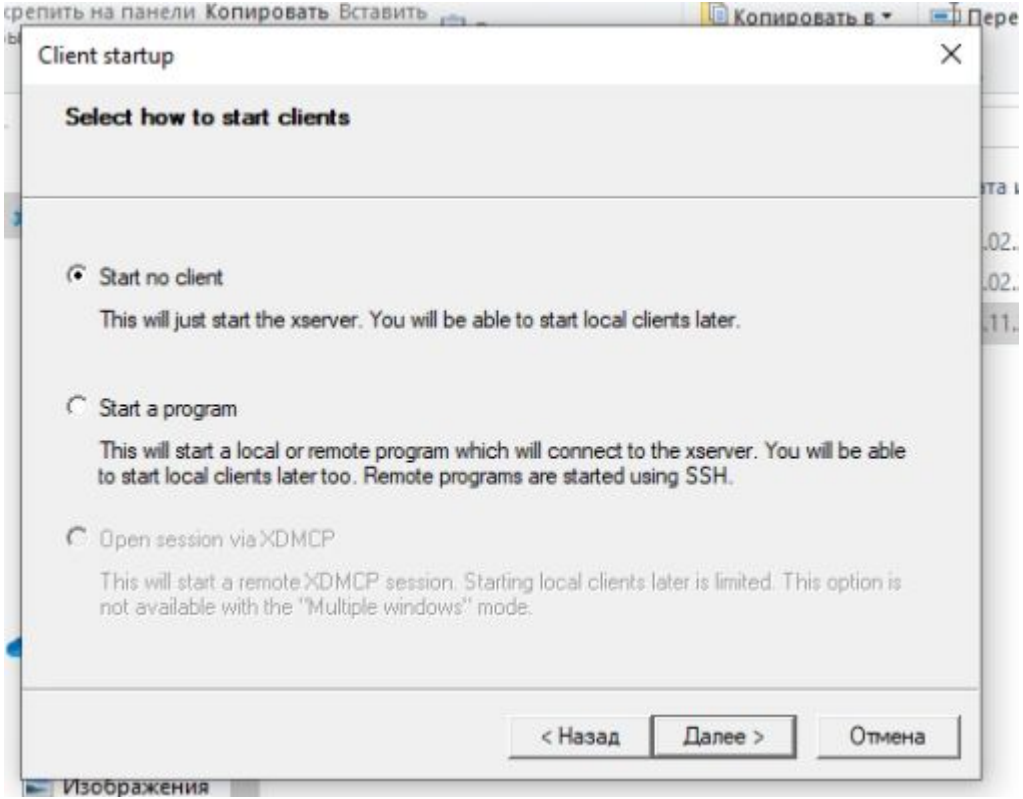
# Ход работы


Mininet-VM [Работает] - Oracle VM VirtualBox
Файл Машина Вид Ввод Устройства Справка
Ubuntu 20.04.1 LTS mininet-vm tty1
mininet-vm login: mininet
Password:
Welcome to Ubuntu 20.04.1 LTS (GNU/Linux 5.4.0-42-generic x86_64)
* Documentation: https://help.ubuntu.com
* Management: https://landscape.canonical.com
* Support: https://ubuntu.com/advantage
Last login: Wed Feb 10 21:03:31 PST 2021 on ttyS0
mininet@mininet-vm:~$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
inet 192.168.56.101 netmask 255.255.255.0 broadcast 192.168.56
ether 08:00:27:46:77:7e txqueuelen 1000 (Ethernet)
RX packets 2 bytes 1180 (1.1 KB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 2 bytes 684 (684.0 B)
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
loop txqueuelen 1000 (Local Loopback)
RX packets 48 bytes 3688 (3.6 KB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 48 bytes 3688 (3.6 KB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
mininet@mininet-vm:~$

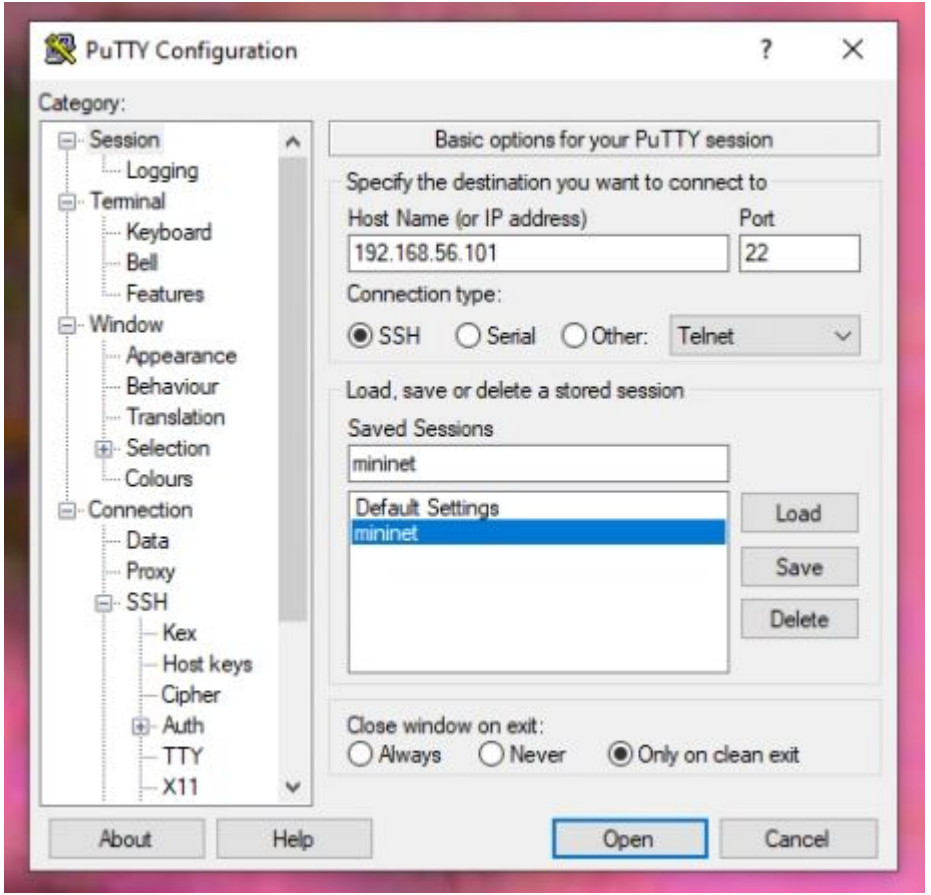
# Ход работы


Install Chocolatey for Individual Use:
1. First, ensure that you are using an administrative shell - you can also install as a non-admin, check out Non-Administrative Installation.
2. Install with powershell.exe
NOTE
Please inspect https://community.chocolatey.org/install.ps1 prior to running any of these scripts to ensure safety. We already know it's safe, but you should verif
the internet you are not familiar with. All of these scripts download a remote PowerShell script and execute it on your machine. We take security very seriously.
With PowerShell, you must ensure Get-ExecutionPolicy is not Restricted. We suggest using Bypass to bypass the policy to get things installed or AllSigned for q
Run Get-ExecutionPolicy. If it returns Restricted, then run Set-ExecutionPolicy AllSigned or Set-ExecutionPolicy Bypass -Scope Process.
Now run the following command:
> Set-ExecutionPolicy Bypass -Scope Process -Force; [System.Net.ServicePointManager]::SecurityProtocol = [System.Net.ServicePointManager]::SecurityProtocol -bo
3. Paste the copied text into your shell and press Enter.
4. Wait a few seconds for the command to complete.
5. If you don't see any errors, you are ready to use Chocolatey! Type choco or choco -? now, or see Getting Started for usage instructions.
Chocolatey Licer
Are you also installing a
Администратор: Windows PowerShell
Windows PowerShell
(C) Корпорация Майкрософт (Microsoft Corporation). Все права защищены.
Попробуйте новую кроссплатформенную оболочку PowerShell (https://aka.ms/pscore6)
PS F:\Windows\system32> choco install putty

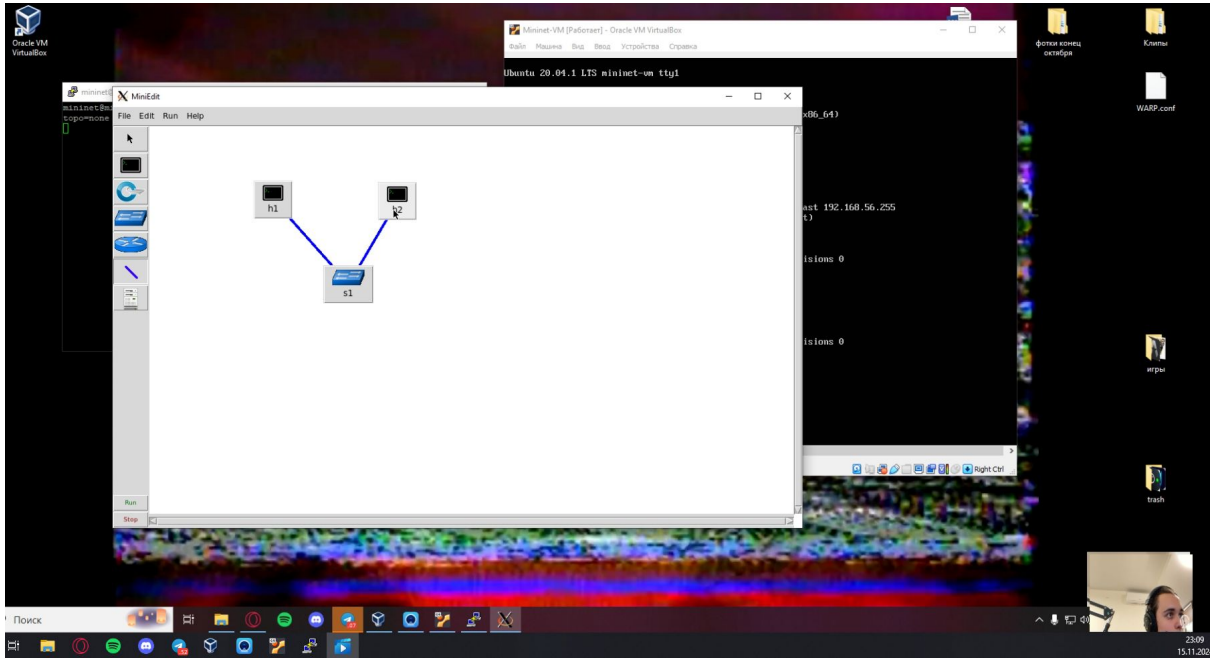
# Ход работы


Client startup
Select how to start clients
Start no client
This will just start the xserver. You will be able to start local clients later.
Start a program
This will start a local or remote program which will connect to the xserver. You will be able to start local clients later too. Remote programs are started using SSH.
Open session via XDMCP
This will start a remote XDMCP session. Starting local clients later is limited. This option is not available with the "Multiple windows" mode.
< Назад
Далее >
Отмена

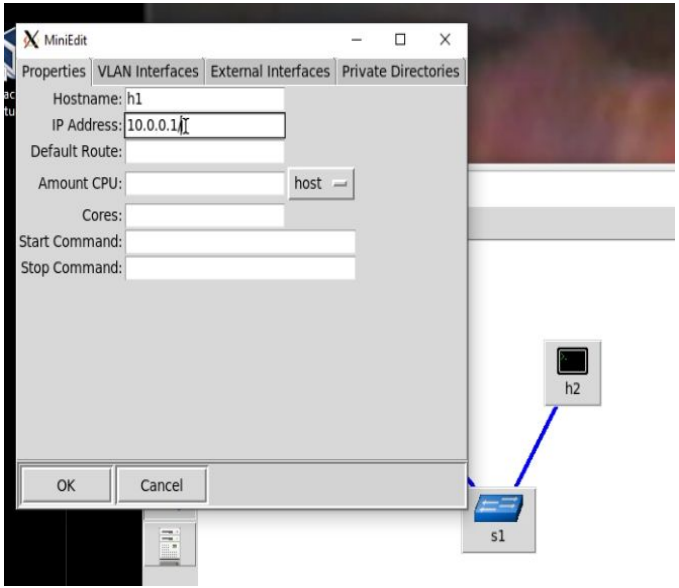
# Ход работы

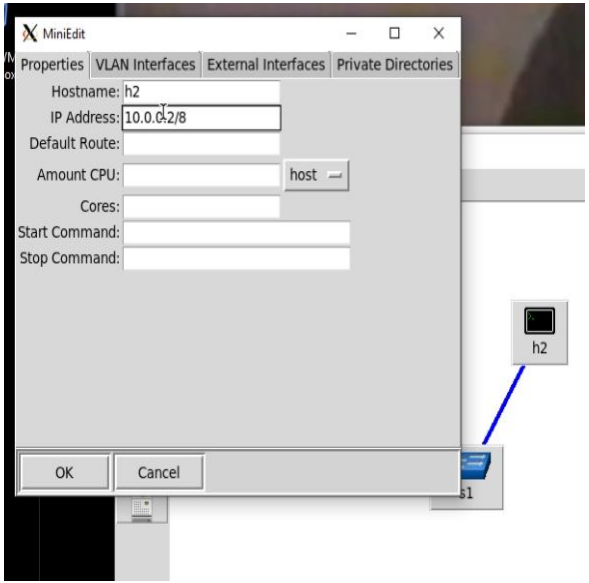

PuTTY Configuration
Category:
Session
Logging
Terminal
Keyboard
Bell
Features
Window
Appearance
Behaviour
Translation
Selection
Colours
Connection
Data
Proxy
SSH
Kex
Host keys
Cipher
Auth
TTY
X11
Basic options for your PuTTY session
Specify the destination you want to connect to
Host Name (or IP address)
Port
192.168.56.101
22
Connection type:
SSH
Serial
Other:
Telnet
Load, save or delete a stored session
Saved Sessions
mininet
Default Settings
mininet
Load
Save
Delete
Close window on exit:
Always
Never
Only on clean exit
About
Help
Open
Cancel

# Ход работы

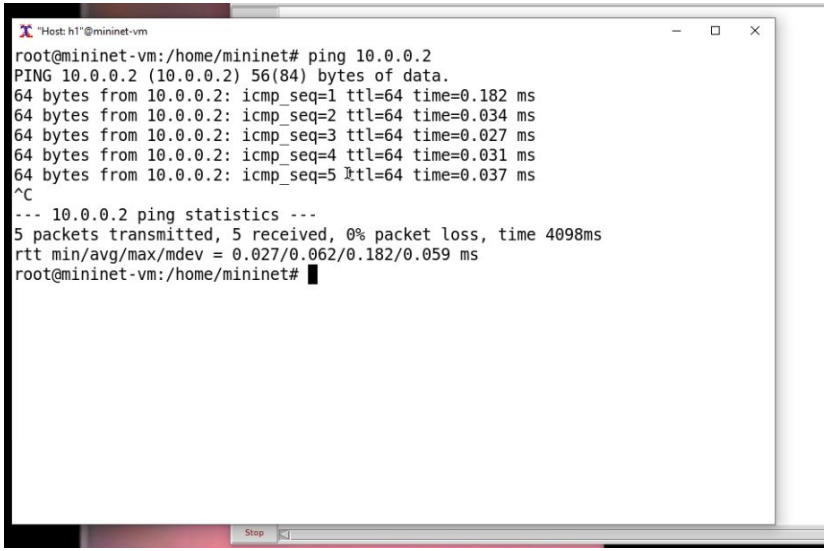

Oracle VM VirtualBox
MiniEdit
File Edit Run Help
h1
h2
s1
Run
Stop
Ubuntu 20.04.1 LTS mininet-vm tty1
Right Ctrl
Поиск

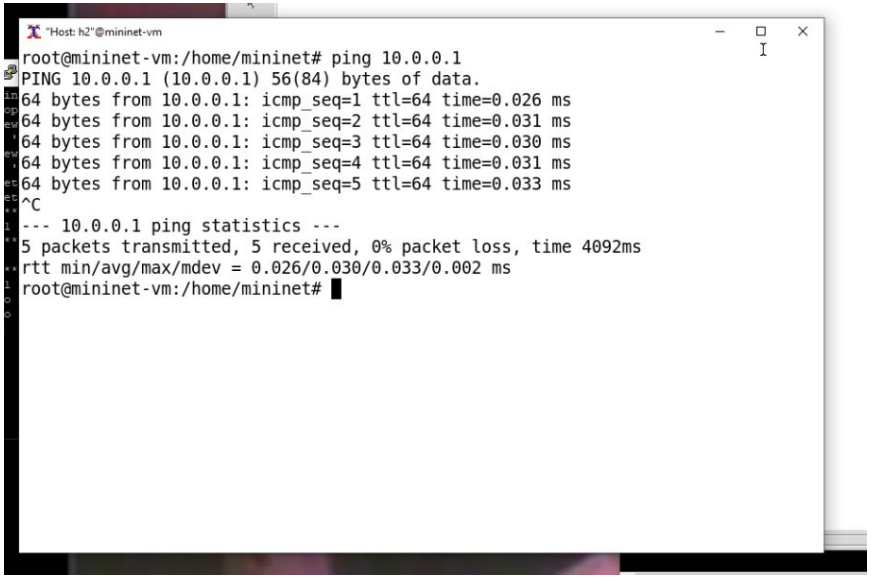
# Ход работы


MiniEdit
Properties
VLAN Interfaces
External Interfaces
Private Directories
Hostname: h1
IP Address: 10.0.0.1/
Default Route:
Amount CPU:
host
Cores:
Start Command:
Stop Command:
OK
Cancel
h2
s1

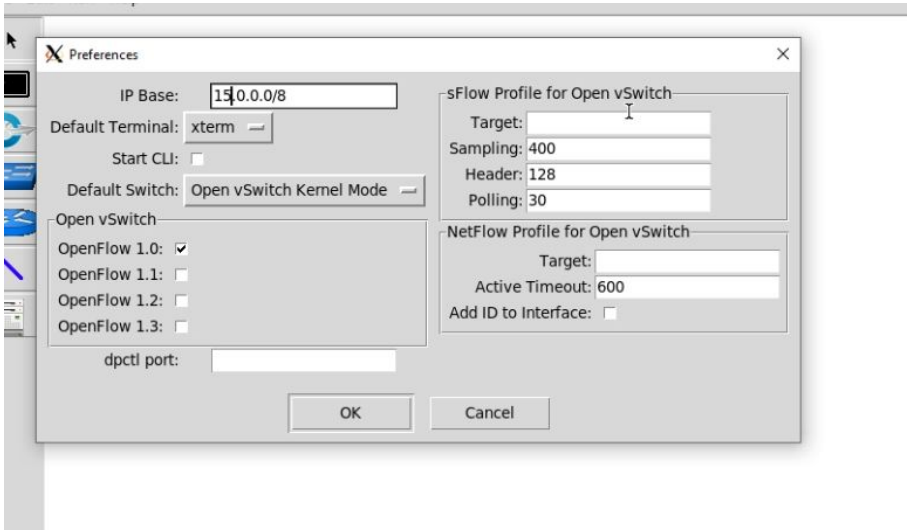

MiniEdit
Properties
VLAN Interfaces
External Interfaces
Private Directories
Hostname: h2
IP Address: 10.0.0.2/8
Default Route:
Amount CPU:
host
Cores:
Start Command:
Stop Command:
OK
Cancel
h2

# Ход работы

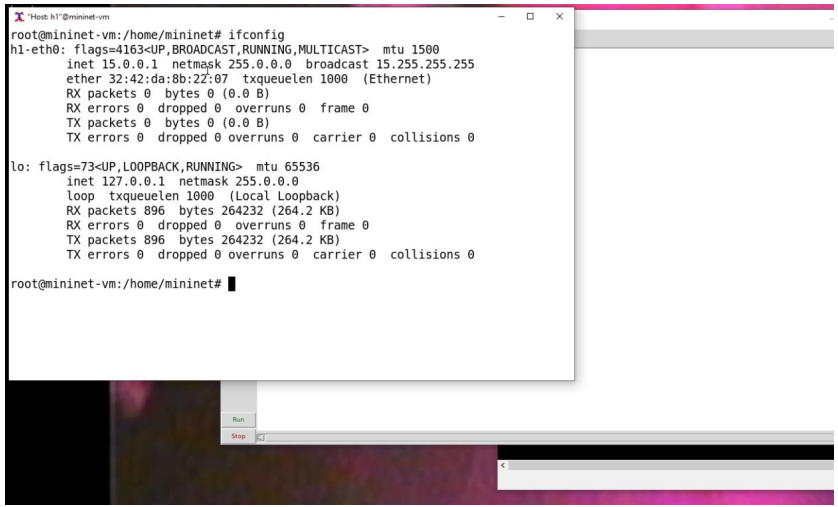

"Host: h1"@mininet-vm
root@mininet-vm:/home/mininet# ping 10.0.0.2
PING 10.0.0.2 (10.0.0.2) 56(84) bytes of data.
64 bytes from 10.0.0.2: icmp_seq=1 ttl=64 time=0.182 ms
64 bytes from 10.0.0.2: icmp_seq=2 ttl=64 time=0.034 ms
64 bytes from 10.0.0.2: icmp_seq=3 ttl=64 time=0.027 ms
64 bytes from 10.0.0.2: icmp_seq=4 ttl=64 time=0.031 ms
64 bytes from 10.0.0.2: icmp_seq=5 ttl=64 time=0.037 ms
^C
--- 10.0.0.2 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4098ms
rtt min/avg/max/mdev = 0.027/0.062/0.182/0.059 ms
root@mininet-vm:/home/mininet#

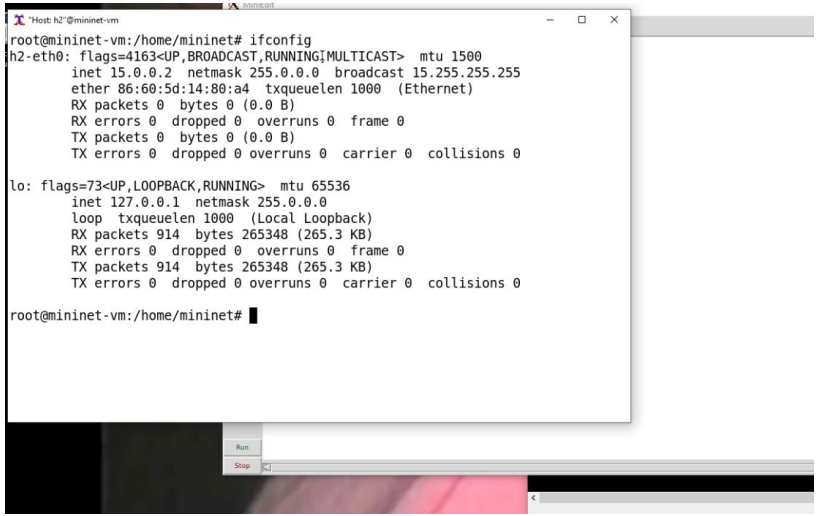

"Host: h2"@mininet-vm
root@mininet-vm:/home/mininet# ping 10.0.0.1
PING 10.0.0.1 (10.0.0.1) 56(84) bytes of data.
64 bytes from 10.0.0.1: icmp_seq=1 ttl=64 time=0.026 ms
64 bytes from 10.0.0.1: icmp_seq=2 ttl=64 time=0.031 ms
64 bytes from 10.0.0.1: icmp_seq=3 ttl=64 time=0.030 ms
64 bytes from 10.0.0.1: icmp_seq=4 ttl=64 time=0.031 ms
64 bytes from 10.0.0.1: icmp_seq=5 ttl=64 time=0.033 ms
^C
--- 10.0.0.1 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4092ms
rtt min/avg/max/mdev = 0.026/0.030/0.033/0.002 ms
root@mininet-vm:/home/mininet#

# Ход работы

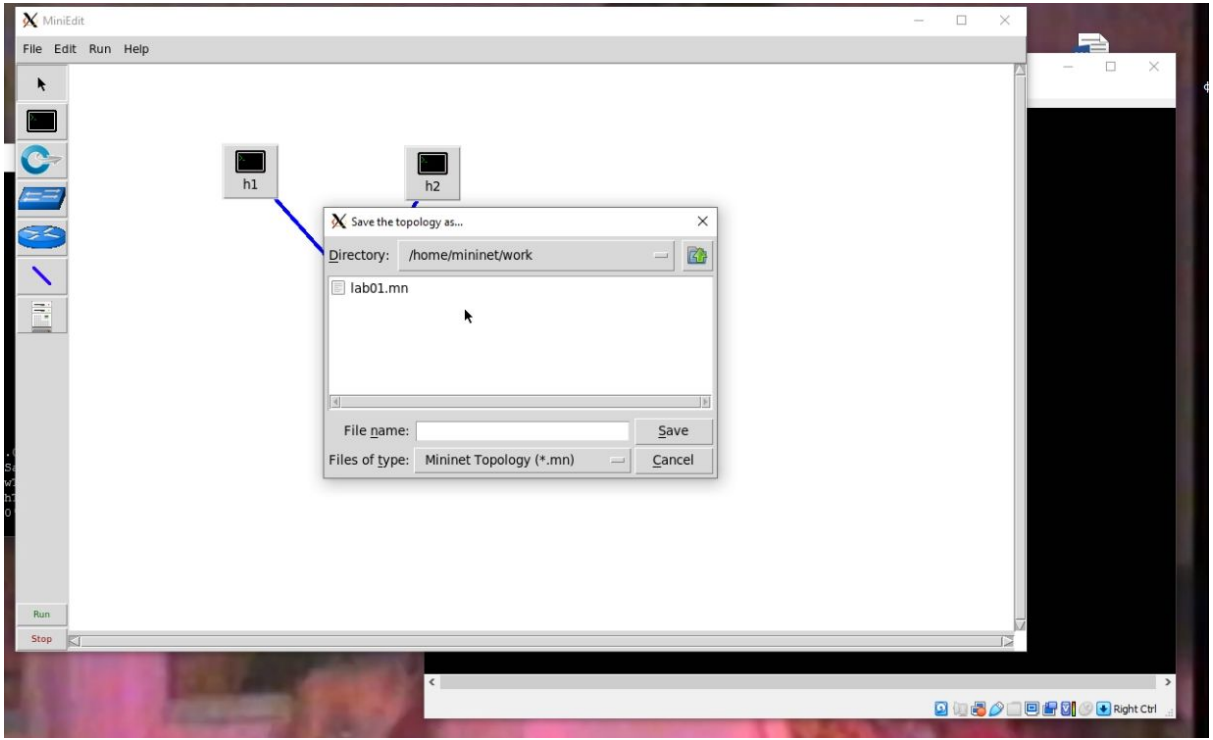

Preferences
IP Base:
10.0.0.0/8
Default Terminal:
xterm
Start CLI:
Default Switch:
Open vSwitch Kernel Mode
Open vSwitch
OpenFlow 1.0:
OpenFlow 1.1:
OpenFlow 1.2:
OpenFlow 1.3:
dpctl port:
sFlow Profile for Open vSwitch
Target:
Sampling:
400
Header:
128
Polling:
30
NetFlow Profile for Open vSwitch
Target:
Active Timeout:
600
Add ID to Interface:
OK
Cancel

# Ход работы


"Host: h1"@mininet-vm
root@mininet-vm:/home/mininet# ifconfig
h1-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
inet 15.0.0.1  netmask 255.0.0.0  broadcast 15.255.255.255
ether 32:42:da:8b:22:07  txqueuelen 1000  (Ethernet)
RX packets 0  bytes 0 (0.0 B)
RX errors 0  dropped 0  overruns 0  frame 0
TX packets 0  bytes 0 (0.0 B)
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
loop  txqueuelen 1000  (Local Loopback)
RX packets 896  bytes 264232 (264.2 KB)
RX errors 0  dropped 0  overruns 0  frame 0
TX packets 896  bytes 264232 (264.2 KB)
TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
root@mininet-vm:/home/mininet#
Run
Stop


"Host: h2"@mininet-vm
root@mininet-vm:/home/mininet# ifconfig
h2-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
inet 15.0.0.2  netmask 255.0.0.0  broadcast 15.255.255.255
ether 86:60:5d:14:80:a4  txqueuelen 1000  (Ethernet)
RX packets 0  bytes 0 (0.0 B)
RX errors 0  dropped 0  overruns 0  frame 0
TX packets 0  bytes 0 (0.0 B)
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
loop  txqueuelen 1000  (Local Loopback)
RX packets 914  bytes 265348 (265.3 KB)
RX errors 0  dropped 0  overruns 0  frame 0
TX packets 914  bytes 265348 (265.3 KB)
TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
root@mininet-vm:/home/mininet#
Run
Stop

# Ход работы


MiniEdit
File Edit Run Help
h1
h2
Save the topology as...
Directory: /home/mininet/work
lab01.mn
File name:
Save
Files of type: Mininet Topology (*.mn)
Cancel
Run
Stop
Right Ctrl