Accessing Mininet VM Remotely

Vipin Gupta
BE,RHCE,CEH,CCNA,MCSE,MCSA
vipin2411@gmail.com
Mobile: 93563-10379
www.linuxexpert.in

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In imported mininet VM, GUI is not available. Also when we installed mininet from source on ubuntu 14.04 server edition, it also does not contain any GUI. Sometimes when we need x terminals in mininet, for that we need gui. First method to solve this problem is by installing gui. Other option is to access mininet machine from another system having gui. We configured our lab as shown.

Step 1: Check IP Address of Both VMs

```
mininet@mininet-vm:~$ hostname
mininet-vm
mininet@mininet-vm:~$
mininet@mininet-vm:~$ ifconfig
eth0      Link encap:Ethernet  HWaddr 08:00:27:23:1d:6e
          inet addr:172.24.0.21  Bcast:172.24.255.255  Mask:255.255.0.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:10 errors:0 dropped:0 overruns:0 frame:0
          TX packets:4 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:2681 (2.6 KB)  TX bytes:316 (316.0 B)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
```

Check ip address of both VMs

```
root@gui:~# hostname
gui
root@gui:~# ifconfig
eth0      Link encap:Ethernet  HWaddr 08:00:27:8a:cd:58
          inet addr:172.24.0.51  Bcast:172.24.255.255  Mask:255.255.0.0
          inet6 addr: fe80::a00:27ff:fe8a:cd58/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:10 errors:0 dropped:0 overruns:0 frame:0
          TX packets:62 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:1138 (1.1 KB)  TX bytes:8799 (8.7 KB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
```

Step 2: Check Connectivity

```
root@gui:~# ping -c2 172.24.0.21
PING 172.24.0.21 (172.24.0.21) 56(84) bytes of data.
64 bytes from 172.24.0.21: icmp_seq=1 ttl=64 time=0.370 ms
64 bytes from 172.24.0.21: icmp_seq=2 ttl=64 time=0.388 ms

--- 172.24.0.21 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 999ms
rtt min/avg/max/mdev = 0.370/0.379/0.388/0.009 ms
```

Test the connectivity between 2 VMs. As can be seen in above screenshot, both are connected.

Step 3: Access Mininet VM Remotely using “ssh”

```
mininet@gui:~$
mininet@gui:~$ ssh -Y mininet@172.24.0.21
The authenticity of host '172.24.0.21 (172.24.0.21)' can't be established.
ECDSA key fingerprint is 74:76:7c:18:52:54:ed:fd:60:f7:55:57:46:dc:82:b8.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '172.24.0.21' (ECDSA) to the list of known hosts.
mininet@172.24.0.21's password:
Welcome to Ubuntu 14.04.4 LTS (GNU/Linux 4.2.0-27-generic x86_64)

 * Documentation:  https://help.ubuntu.com/
Last login: Fri Jul 13 20:39:06 2018
mininet@mininet-vm:~$
mininet@mininet-vm:~$ sudo -s
root@mininet-vm:~# _
```

Access Mininet VM remotely by using *“ssh”*. Do not forget to specify *“-Y”* option. As can be seen above, we are successful in accessing the VM remotely.

Step 4: Create Topology & Display X Terminals

```
root@mininet-vm:~# mn --mac --topo single,4 --controller none
*** Creating network
*** Adding controller
*** Adding hosts:
h1 h2 h3 h4
*** Adding switches:
s1
*** Adding links:
(h1, s1) (h2, s1) (h3, s1) (h4, s1)
*** Configuring hosts
h1 h2 h3 h4
*** Starting controller

*** Starting 1 switches
s1 ...
*** Starting CLI:
mininet>
mininet> xterm h1 h2 h3 h4
```

Create topology using *"mn"*. On Mininet prompt, type *"xterm h1 h2 h3 h4"*. X terminals for *h1, h2, h3 & h4* opened successfully.