

Testing Connctivity

```
mininet@mininet-vm:~$ sudo mn
```

```
*** Creating network
```

```
*** Adding controller
```

```
*** Adding hosts:
```

```
h1 h2
```

```
*** Adding switches:
```

```
s1
```

```
*** Adding links:
```

```
(h1, s1) (h2, s1)
```

```
*** Configuring hosts
```

```
h1 h2
```

```
*** Starting controller
```

```
*** Starting 1 switches
```

```
s1
```

```
*** Starting CLI:
```

```
mininet> h1 ping h2
```

```
PING 10.0.0.2 (10.0.0.2) 56(84) bytes of data.
```

```
64 bytes from 10.0.0.2: icmp_req=1 ttl=64 time=2.40 ms
```

```
64 bytes from 10.0.0.2: icmp_req=2 ttl=64 time=0.038 ms
```

```
64 bytes from 10.0.0.2: icmp_req=3 ttl=64 time=0.032 ms
```

```
^C
```

```
--- 10.0.0.2 ping statistics ---
```

```
3 packets transmitted, 3 received, 0% packet loss, time 2000ms
```

```
rtt min/avg/max/mdev = 0.032/0.825/2.407/1.118 ms
```

Change Subnetting

```
mininet> h ifconfig h1-eth0 10.2.2.2/24
```

```
*** Unknown command: h ifconfig h1-eth0 10.2.2.2/24
```

```
mininet> h2 ifconfig h2-eth0 10.2.2.2/24
```

```
mininet> h1 ping h2
```

```
PING 10.2.2.2 (10.2.2.2) 56(84) bytes of data.
```

```
From 10.0.0.1 icmp_seq=1 Destination Host Unreachable
```

```
From 10.0.0.1 icmp_seq=2 Destination Host Unreachable
```

```
From 10.0.0.1 icmp_seq=3 Destination Host Unreachable
```

```
From 10.0.0.1 icmp_seq=4 Destination Host Unreachable
```

```
From 10.0.0.1 icmp_seq=5 Destination Host Unreachable
```

```
From 10.0.0.1 icmp_seq=6 Destination Host Unreachable
```

```
^C
```

```
--- 10.2.2.2 ping statistics ---
```

```
8 packets transmitted, 0 received, +6 errors, 100% packet loss, time 7037ms
```

```
pipe 3
```

Traceroute

```
mininet> h1 traceroute h2
```

```
traceroute to 10.2.2.2 (10.2.2.2), 30 hops max, 60 byte packets
```

```
1 10.0.0.1 (10.0.0.1) 2997.339 ms !H 2997.315 ms !H 2997.312 ms !H
```

ARP

mininet> h1 arp h2

10.2.2.2 (10.2.2.2) -- no entry



The screenshot shows a terminal window titled "mininet@mininet-vm: ~" with a menu bar (File, Edit, View, Search, Terminal, Tabs, Help). The terminal output shows the execution of the 'sudo mn' command, which sets up a Mininet network. The setup includes creating a network, adding a controller, adding hosts (h1, h2), adding switches (s1), adding links (h1-s1, h2-s1), and configuring hosts. After starting the controller and switches, the user enters 'h1 ping h2' at the 'mininet>' prompt. The output shows four successful ping requests from 10.0.0.2 to 10.0.0.2 with varying times. Finally, the user enters 'h1 arp h2' at the 'mininet>' prompt, and the output shows '10.2.2.2 (10.2.2.2) -- no entry'.

```
mininet@mininet-vm:~$ sudo mn
*** Creating network
*** Adding controller
*** Adding hosts:
h1 h2
*** Adding switches:
s1
*** Adding links:
(h1, s1) (h2, s1)
*** Configuring hosts
h1 h2
*** Starting controller
*** Starting 1 switches
s1
*** Starting CLI:
mininet> h1 ping h2
PING 10.0.0.2 (10.0.0.2): 56(84) bytes of data:
64 bytes from 10.0.0.2: icmp_req=1 ttl=64 time=2.75 ms
64 bytes from 10.0.0.2: icmp_req=2 ttl=64 time=8.048 ms
64 bytes from 10.0.0.2: icmp_req=3 ttl=64 time=8.037 ms
64 bytes from 10.0.0.2: icmp_req=4 ttl=64 time=8.048 ms
^C
--- 10.0.0.2 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3000ms
rtt min/avg/max/mdev = 8.837/8.719/2.754/1.174 ms
mininet> h1 arp h2
10.2.2.2 (10.2.2.2) -- no entry
```

```
Activities Terminal Wed 12:24 mininet@mininet-vm: ~
mininet@mininet-vm: ~
File Edit View Search Terminal Tabs Help
mininet@mininet-vm: ~
mininet@mininet-vm: ~$ sudo mn
*** Creating network
*** Adding controller
*** Adding hosts:
h1 h2
*** Adding switches:
s1
*** Adding links:
(h1, s1) (h2, s1)
*** Configuring hosts
h1 h2
*** Starting controller
*** Starting 1 switches
s1
*** Starting CLI:
mininet> h1 ping h2
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=2.40 ms
64 bytes from 10.0.0.2: icmp_seq=2 ttl=64 time=8.836 ms
64 bytes from 10.0.0.2: icmp_seq=3 ttl=64 time=8.832 ms
^C
-- 10.0.0.2 ping statistics --
3 packets transmitted, 3 received, 0% packet loss, time 2000ms
rtt min/avg/max/ndev = 8.832/8.825/2.407/1.118 ms
mininet> h1 ifconfig h1-eth8 10.2.2.2/24
*** Unknown command: h1 ifconfig h1-eth8 10.2.2.2/24
mininet> h2 ifconfig h2-eth0 10.2.2.2/24
mininet> h1 ping h2
PING 10.2.2.2 (10.2.2.2) 56(84) bytes of data:
From 10.0.0.1 icmp_seq=1 Destination Host Unreachable
From 10.0.0.1 icmp_seq=2 Destination Host Unreachable
From 10.0.0.1 icmp_seq=3 Destination Host Unreachable
From 10.0.0.1 icmp_seq=4 Destination Host Unreachable
From 10.0.0.1 icmp_seq=5 Destination Host Unreachable
From 10.0.0.1 icmp_seq=6 Destination Host Unreachable
[]
```

```
Activities Terminal Wed 12:26 mininet@mininet-vm: ~
mininet@mininet-vm: ~
File Edit View Search Terminal Tabs Help
mininet@mininet-vm: ~
mininet@mininet-vm: ~$ sudo mn
*** Creating network
*** Adding controller
*** Adding hosts:
h1 h2
*** Adding switches:
s1
*** Adding links:
(h1, s1) (h2, s1)
*** Configuring hosts
h1 h2
*** Starting controller
*** Starting 1 switches
s1
*** Starting CLI:
mininet> h1 ping h2
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=2.40 ms
64 bytes from 10.0.0.2: icmp_seq=2 ttl=64 time=8.836 ms
64 bytes from 10.0.0.2: icmp_seq=3 ttl=64 time=8.832 ms
^C
--- 10.0.0.2 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2000ms
rtt min/avg/max/ndev = 8.832/8.825/2.407/1.118 ms
mininet> h1 ifconfig h1-eth8 10.2.2.2/24
*** Unknown command: h1 ifcnfig h1-eth8 10.2.2.2/24
mininet> h2 ifconfig h2-eth0 10.2.2.2/24
mininet> h1 ping h2
PING 10.2.2.2 (10.2.2.2): 56(84) bytes of data:
From 10.0.0.1: icmp_seq=1 Destination Host Unreachable
From 10.0.0.1: icmp_seq=2 Destination Host Unreachable
From 10.0.0.1: icmp_seq=3 Destination Host Unreachable
From 10.0.0.1: icmp_seq=4 Destination Host Unreachable
From 10.0.0.1: icmp_seq=5 Destination Host Unreachable
From 10.0.0.1: icmp_seq=6 Destination Host Unreachable
^C
--- 10.2.2.2 ping statistics ---
8 packets transmitted, 8 received, +6 errors, 188% packet loss, time 7837ms
pipe 3
mininet>
Interrupt
mininet> h1 traceroute h2
traceroute to 10.2.2.2 (10.2.2.2): 30 hops max, 60 byte packets
 1 10.0.0.1 (10.0.0.1) 2997.339 ms !H 2997.315 ms !H 2997.312 ms !H
mininet> h1 arp h2
10.2.2.2 (10.2.2.2) -- no entry
mininet> 
```