

A.1.1

```
pkill -9 -f .ssh/mn
rm -f ~/.ssh/mn/*
*** Cleanup complete.
mininet@mininet-vm:~$ sudo
emote
*** Creating network
*** Adding controller
Unable to contact the remote
Connecting to remote controller
*** Adding hosts:
h1 h2 h3
*** Adding switches:
s1
*** Adding links:
(h1, s1) (h2, s1) (h3, s1)
*** Configuring hosts
h1 h2 h3
*** Starting controller
c0
*** Starting 1 switches
s1 ...
*** Starting CLI:
mininet> xterm h1 h2 h3
mininet>

INFO:forwarding.hub:Hub ready
DEBUG:core:POX 0.2.0 (carp)
DEBUG:core:Running on CPU
DEBUG:core:Platform is Linux
INFO:core:POX 0.2.0 (carp)
DEBUG:openflow.of_01:List
INFO:openflow.of_01:[None]
INFO:openflow.of_01:[00-00-00-00-00-00]
INFO:forwarding.hub:Hubif

1 packets transmitted, 1 received, 0% packet loss, time 0ms
rtt min/avg/max/mdev = 0.446/0.446/0.446/0.000 ms
root@mininet-vm:~# ping -c1 10.0.0.9
PING 10.0.0.9 (10.0.0.9) 56(84) bytes of data.
From 10.0.0.3 icmp_seq=1 Destination Host Unreachable
--- 10.0.0.9 ping statistics ---
1 packets transmitted, 0 received, +1 errors, 100% packet loss, time 0ms
root@mininet-vm:~#
```

When you ping a non-exist host , for example, 10.0.0.9, the sender host will broadcast the message twice to find the location of the new host. There's no response for these 2 broadcasting. The sender host wait until timeout and it doesn't get the MAC address. So it will break this ping process as 'Destination Host Unreachable' and return the statistics, which is 100% packet loss.

A.1.2

```
mininet> pingall
*** Ping: testing ping reachability
h1 -> h2 h3
h2 -> h1 X
h3 -> h1 X
*** Results: 33% dropped (4/6 received)
mininet> █
```

The output is shown above. As we can see, the h2 and h3 are not able to communicate with each other any more.

A.2.1

```
Accuray Incorporated 5
Akebia Therapeutics, Inc. 4
American River Bankshares 7
Antares Pharma, Inc. 2
Aquestive Therapeutics, Inc. 2
Arch Capital Group Ltd. 3
Arotech Corporation 4
Aspen Group Inc. 3
Attis Industries Inc. 1
Aware, Inc. 1
B. Riley Financial, Inc. 8
Barclays PLC 1
BioCryst Pharmaceuticals, Inc. 2
Bridgewater Bancshares, Inc. 1
Brighthouse Financial, Inc. 7
Bruker Corporation 3
CASI Pharmaceuticals, Inc. 1
CM Seven Star Acquisition Corporation 2
CPI Card Group Inc. 2
CSI Compressco LP 1
CUI Global, Inc. 2
Cadiz, Inc. 2
Capital Bancorp, Inc. 1
CareTrust REIT, Inc. 1
Celcuity Inc. 3
Cellestar Biosciences, Inc. 3
ClearBridge All Cap Growth ETF 2
Clearfield, Inc. 2
Corcept Therapeutics Incorporated 1
CryoPort, Inc. 4
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DarioHealth Corp. 1
Davis Select International ETF 2
Deciphera Pharmaceuticals, Inc. 4
DiamondPeak Holdings Corp. 3
Discovery, Inc. 6
Ekso Bionics Holdings, Inc. 1
Enphase Energy, Inc. 3
Entera Bio Ltd. 1
Evofem Biosciences, Inc. 1
FSB Bancorp, Inc. 1
First Midwest Bancorp, Inc. 3
Five Star Senior Living Inc. 4
FlexShopper, Inc. 1
Fortress Biotech, Inc. 1
Gilead Sciences, Inc. 8
Gladstone Commercial Corporation 1
Golar LNG Partners LP 2
Gordon Pointe Acquisition Corp. 4
Greenland Acquisition Corporation 1
HD Supply Holdings, Inc. 1
HMS Holdings Corp 1
HopFed Bancorp, Inc. 3
Huntington Bancshares Incorporated 4
IRIDEX Corporation 4
InterDigital, Inc. 1
Invesco DWA Momentum ETF 2
Kala Pharmaceuticals, Inc. 1
Longevity Acquisition Corporation 1
Luminex Corporation 1
MTBC, Inc. 1
Minerva Neurosciences, Inc 1
Monocle Acquisition Corporation 1
NantKwest, Inc. 1
Newell Brands Inc. 3
Patterson Companies, Inc. 8
PennantPark Floating Rate Capital Ltd. 3
Perceptron, Inc. 5
PetIQ, Inc. 5
Phunware, Inc. 3
Profire Energy, Inc. 1
RF Industries, Ltd. 8
Restoration Robotics, Inc. 1
Retrophin, Inc. 2
RigNet, Inc. 1
Schultze Special Purpose Acquisition Corp. 1
Senior Housing Properties Trust 1

ServisFirst Bancshares, Inc. 1
 SigmaTron International, Inc. 4
 Simulations Plus, Inc. 1
 Soliton, Inc. 2
 Sotherly Hotels LP 1
 Sunrun Inc. 1
 The Trade Desk, Inc. 7
 TiVo Corporation 1
 TravelCenters of America LLC 4
 Travelzoo 1
 Tribune Publishing Company 1
 United Bancshares, Inc. 4
 United Natural Foods, Inc. 4
 Universal Logistics Holdings, Inc. 5
 Vanda Pharmaceuticals Inc. 9
 Vertex Pharmaceuticals Incorporated 3
 Viacom Inc. 5
 VictoryShares Emerging Market High Div Volatility Wtd ETF 1
 eGain Corporation 5
 iShares Russell 1000 Pure U.S. Revenue ETF 1

A2.2

Accuray Incorporated 118
 Akebia Therapeutics, Inc. 68
 American River Bankshares 121
 Antares Pharma, Inc. 49
 Aquestive Therapeutics, Inc. 113
 Arch Capital Group Ltd. 105
 Arotech Corporation 120
 Aspen Group Inc. 120
 Attis Industries Inc. 42
 Aware, Inc. 93
 B. Riley Financial, Inc. 16
 Barclays PLC 68
 BioCryst Pharmaceuticals, Inc. 94
 Bridgewater Bancshares, Inc. 60
 Brighthouse Financial, Inc. 71
 Bruker Corporation 85
 CASI Pharmaceuticals, Inc. 107
 CM Seven Star Acquisition Corporation 139
 CPI Card Group Inc. 135
 CSI Compressco LP 119
 CUI Global, Inc. 58
 Cadiz, Inc. 17

Capital Bancorp, Inc. 61
CareTrust REIT, Inc. 103
Celcuity Inc. 136
Cellecstar Biosciences, Inc. 63
ClearBridge All Cap Growth ETF 44
Clearfield, Inc. 171
Corcept Therapeutics Incorporated 39
CryoPort, Inc. 36
DarioHealth Corp. 98
Davis Select International ETF 60
Deciphera Pharmaceuticals, Inc. 42
DiamondPeak Holdings Corp. 144
Discovery, Inc. 118
Ekso Bionics Holdings, Inc. 11
Enphase Energy, Inc. 125
Entera Bio Ltd. 158
Evofem Biosciences, Inc. 74
FSB Bancorp, Inc. 41
First Midwest Bancorp, Inc. 75
Five Star Senior Living Inc. 126
FlexShopper, Inc. 36
Fortress Biotech, Inc. 130
Gilead Sciences, Inc. 41
Gladstone Commercial Corporation 62
Golar LNG Partners LP 42
Gordon Pointe Acquisition Corp. 21
Greenland Acquisition Corporation 35
HD Supply Holdings, Inc. 22
HMS Holdings Corp 52
HopFed Bancorp, Inc. 154
Huntington Bancshares Incorporated 115
IRIDEX Corporation 124
InterDigital, Inc. 29
Invesco DWA Momentum ETF 123
Kala Pharmaceuticals, Inc. 70
Longevity Acquisition Corporation 54
Luminex Corporation 12
MTBC, Inc. 19
Minerva Neurosciences, Inc 12
Monocle Acquisition Corporation 115
NantKwest, Inc. 88
Newell Brands Inc. 14
Patterson Companies, Inc. 150
PennantPark Floating Rate Capital Ltd. 91
Perceptron, Inc. 55
PetIQ, Inc. 131

Phunware, Inc. 29
Profire Energy, Inc. 86
RF Industries, Ltd. 148
Restoration Robotics, Inc. 99
Retrophin, Inc. 141
RigNet, Inc. 38
Schultze Special Purpose Acquisition Corp. 81
Senior Housing Properties Trust 57
ServisFirst Bancshares, Inc. 103
SigmaTron International, Inc. 50
Simulations Plus, Inc. 19
Soliton, Inc. 134
Sotherly Hotels LP 141
Sunrun Inc. 19
The Trade Desk, Inc. 15
TiVo Corporation 34
TravelCenters of America LLC 139
Travelzoo 104
Tribune Publishing Company 121
United Bancshares, Inc. 175
United Natural Foods, Inc. 105
Universal Logistics Holdings, Inc. 83
Vanda Pharmaceuticals Inc. 149
Vertex Pharmaceuticals Incorporated 161
Viacom Inc. 30
VictoryShares Emerging Market High Div Volatility Wtd ETF 16
eGain Corporation 143
iShares Russell 1000 Pure U.S. Revenue ETF 21

A.2.3

(404)934-5110 77
(216)684-9356 72
(410)516-8171 69

A.2.4

(396)073-8185 1261
(871)758-4694 1116
(376)303-1515 791

A.2.5

1 p.m. 20754

2 p.m. 12212

12 a.m. 12191