

Trabalho 3 - C115

MININET

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An abstract graphic design featuring overlapping translucent pink and magenta geometric shapes, creating a dynamic, layered effect against a white background. The composition includes sharp, angular forms and thin, intersecting lines that create a sense of depth and movement. The color palette ranges from light pink to deep magenta.

An abstract graphic design featuring overlapping translucent pink and magenta geometric shapes, creating a dynamic, layered effect against a white background. The composition includes sharp, angular forms and thin, intersecting lines that create a sense of depth and movement. The color palette ranges from light, airy pinks to deep, saturated magentas.

DUMP

```
<Host h6: h6-eth0:10.0.0.6 pid=759>
<Host h7: h7-eth0:10.0.0.7 pid=761>
<Host h8: h8-eth0:10.0.0.8 pid=763>
<Host h9: h9-eth0:10.0.0.9 pid=765>
<Host h10: h10-eth0:10.0.0.10 pid=767>
<Host h11: h11-eth0:10.0.0.11 pid=769>
<Host h12: h12-eth0:10.0.0.12 pid=771>
<Host h13: h13-eth0:10.0.0.13 pid=773>
<Host h14: h14-eth0:10.0.0.14 pid=775>
<Host h15: h15-eth0:10.0.0.15 pid=777>
<Host h16: h16-eth0:10.0.0.16 pid=779>
<Host h17: h17-eth0:10.0.0.17 pid=781>
<Host h18: h18-eth0:10.0.0.18 pid=783>
<Host h19: h19-eth0:10.0.0.19 pid=785>
<Host h20: h20-eth0:10.0.0.20 pid=787>
<Host h21: h21-eth0:10.0.0.21 pid=789>
<Host h22: h22-eth0:10.0.0.22 pid=791>
<Host h23: h23-eth0:10.0.0.23 pid=793>
<Host h24: h24-eth0:10.0.0.24 pid=795>
<Host h25: h25-eth0:10.0.0.25 pid=797>
<Host h26: h26-eth0:10.0.0.26 pid=799>
<Host h27: h27-eth0:10.0.0.27 pid=801>
<OVSSwitch s1: lo:127.0.0.1,s1-eth1:None,s1-eth2:None,s1-eth3:None pid=806>
<OVSSwitch s2: lo:127.0.0.1,s2-eth1:None,s2-eth2:None,s2-eth3:None,s2-eth4:None pid=809>
<OVSSwitch s3: lo:127.0.0.1,s3-eth1:None,s3-eth2:None,s3-eth3:None,s3-eth4:None pid=812>
<OVSSwitch s4: lo:127.0.0.1,s4-eth1:None,s4-eth2:None,s4-eth3:None,s4-eth4:None pid=815>
<OVSSwitch s5: lo:127.0.0.1,s5-eth1:None,s5-eth2:None,s5-eth3:None,s5-eth4:None pid=818>
<OVSSwitch s6: lo:127.0.0.1,s6-eth1:None,s6-eth2:None,s6-eth3:None,s6-eth4:None pid=821>
<OVSSwitch s7: lo:127.0.0.1,s7-eth1:None,s7-eth2:None,s7-eth3:None,s7-eth4:None pid=824>
<OVSSwitch s8: lo:127.0.0.1,s8-eth1:None,s8-eth2:None,s8-eth3:None,s8-eth4:None pid=827>
<OVSSwitch s9: lo:127.0.0.1,s9-eth1:None,s9-eth2:None,s9-eth3:None,s9-eth4:None pid=830>
<OVSSwitch s10: lo:127.0.0.1,s10-eth1:None,s10-eth2:None,s10-eth3:None,s10-eth4:None pid=833>
<OVSSwitch s11: lo:127.0.0.1,s11-eth1:None,s11-eth2:None,s11-eth3:None,s11-eth4:None pid=836>
<OVSSwitch s12: lo:127.0.0.1,s12-eth1:None,s12-eth2:None,s12-eth3:None,s12-eth4:None pid=839>
<OVSSwitch s13: lo:127.0.0.1,s13-eth1:None,s13-eth2:None,s13-eth3:None,s13-eth4:None pid=842>
<Controller c0: 127.0.0.1:6653 pid=742>
mininet> _
```

IFCONFIGs

```
<OVSSwitch s13: lo:127.0.0.1,s13-eth1:None,s13-eth2:None,s13-eth3:None,s13-eth4:None pid=842>
<Controller c0: 127.0.0.1:6653 pid=742>
mininet> h1 ifconfig
h1-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.0.1 netmask 255.0.0.0 broadcast 10.255.255.255
    ether 00:00:00:00:00:01 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 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

mininet> h2 ifconfig
h2-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.0.2 netmask 255.0.0.0 broadcast 10.255.255.255
    ether 00:00:00:00:00:02 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 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

mininet>
```

IFCONFIGs

```
TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

mininet> h3 ifconfig
h3-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.0.3  netmask 255.0.0.0  broadcast 10.255.255.255
    ether 00:00:00:00:00:03  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 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

mininet> h4 ifconfig
h4-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.0.4  netmask 255.0.0.0  broadcast 10.255.255.255
    ether 00:00:00:00:00:04  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 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

mininet> _
```


IFCONFIGs

```
TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

mininet> h5 ifconfig
h5-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.0.5  netmask 255.0.0.0  broadcast 10.255.255.255
    ether 00:00:00:00:00:05  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 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

mininet> h6 ifconfig
h6-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.0.6  netmask 255.0.0.0  broadcast 10.255.255.255
    ether 00:00:00:00:00:06  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 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

mininet>
```

IFCONFIGs

```
TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

mininet> h7 ifconfig
h7-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.0.7  netmask 255.0.0.0  broadcast 10.255.255.255
    ether 00:00:00:00:00:07  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 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

mininet> h8 ifconfig
h8-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.0.8  netmask 255.0.0.0  broadcast 10.255.255.255
    ether 00:00:00:00:00:08  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 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

mininet>
```

IFCONFIGs

```
TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

mininet> h9 ifconfig
h9-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.0.9  netmask 255.0.0.0  broadcast 10.255.255.255
    ether 00:00:00:00:00:09  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 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

mininet> h10 ifconfig
h10-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.0.10  netmask 255.0.0.0  broadcast 10.255.255.255
    ether 00:00:00:00:00:0a  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 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

mininet>
```


IFCONFIGs

```
TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

mininet> h11 ifconfig
h11-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.0.11  netmask 255.0.0.0  broadcast 10.255.255.255
    ether 00:00:00:00:00:0b  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 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

mininet> h12 ifconfig
h12-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.0.12  netmask 255.0.0.0  broadcast 10.255.255.255
    ether 00:00:00:00:00:0c  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 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

mininet> dump_
```

IFCONFIGs

```
mininet> h13 config
bash: config: command not found
mininet> h13 ifconfig
h13-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.0.13 netmask 255.0.0.0 broadcast 10.255.255.255
    ether 00:00:00:00:00:0d 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 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

mininet> h14 ifconfig
h14-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.0.14 netmask 255.0.0.0 broadcast 10.255.255.255
    ether 00:00:00:00:00:0e 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 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

mininet> _
```

IFCONFIGs

```
TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

mininet> h15 ifconfig
h15-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.0.15  netmask 255.0.0.0  broadcast 10.255.255.255
    ether 00:00:00:00:00:0f  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 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

mininet> h16 ifconfig
h16-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.0.16  netmask 255.0.0.0  broadcast 10.255.255.255
    ether 00:00:00:00:00:10  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 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

mininet> _
```


IFCONFIGs

```
TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

mininet> h17 ifconfig
h17-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.0.17  netmask 255.0.0.0  broadcast 10.255.255.255
    ether 00:00:00:00:00:11  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 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

mininet> h18 ifconfig
h18-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.0.18  netmask 255.0.0.0  broadcast 10.255.255.255
    ether 00:00:00:00:00:12  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 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

mininet> _
```


IFCONFIGs

```
TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

mininet> h19 ifconfig
h19-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.0.19  netmask 255.0.0.0  broadcast 10.255.255.255
    ether 00:00:00:00:00:13  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 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

mininet> h20 ifconfig
h20-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.0.20  netmask 255.0.0.0  broadcast 10.255.255.255
    ether 00:00:00:00:00:14  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 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

mininet> _
```

IFCONFIGs

```
TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

mininet> h21 ifconfig
h21-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.0.21  netmask 255.0.0.0  broadcast 10.255.255.255
    ether 00:00:00:00:00:15  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 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

mininet> h22 ifconfig
h22-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.0.22  netmask 255.0.0.0  broadcast 10.255.255.255
    ether 00:00:00:00:00:16  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 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

mininet>
```

IFCONFIGs

```
TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

mininet> h23 ifconfig
h23-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.0.23  netmask 255.0.0.0  broadcast 10.255.255.255
    ether 00:00:00:00:00:17  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 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

mininet> h24 ifconfig
h24-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.0.24  netmask 255.0.0.0  broadcast 10.255.255.255
    ether 00:00:00:00:00:18  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 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

mininet> _
```

IFCONFIGs

```
TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

mininet> h25 ifconfig
h25-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.0.25  netmask 255.0.0.0  broadcast 10.255.255.255
    ether 00:00:00:00:00:19  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 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

mininet> h26 ifconfig
h26-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.0.26  netmask 255.0.0.0  broadcast 10.255.255.255
    ether 00:00:00:00:00:1a  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 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

mininet>
```


IFCONFIGs

```
mininet> h27 ifconfig
h27-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.0.27 netmask 255.0.0.0 broadcast 10.255.255.255
    ether 00:00:00:00:00:1b 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 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

mininet> _
```

Teste de PING (pingall)

```
?  
h11 -> h1 h2 h3 h4 h5 h6 h7 h8 h9 h10 h12 h13 h14 h15 h16 h17 h18 h19 h20 h21 h22 h23 h24 h25 h26 h27  
?  
h12 -> h1 h2 h3 h4 h5 h6 h7 h8 h9 h10 h11 h13 h14 h15 h16 h17 h18 h19 h20 h21 h22 h23 h24 h25 h26 h27  
?  
h13 -> h1 h2 h3 h4 h5 h6 h7 h8 h9 h10 h11 h12 h14 h15 h16 h17 h18 h19 h20 h21 h22 h23 h24 h25 h26 h27  
?  
h14 -> h1 h2 h3 h4 h5 h6 h7 h8 h9 h10 h11 h12 h13 h15 h16 h17 h18 h19 h20 h21 h22 h23 h24 h25 h26 h27  
?  
h15 -> h1 h2 h3 h4 h5 h6 h7 h8 h9 h10 h11 h12 h13 h14 h16 h17 h18 h19 h20 h21 h22 h23 h24 h25 h26 h27  
?  
h16 -> h1 h2 h3 h4 h5 h6 h7 h8 h9 h10 h11 h12 h13 h14 h15 h17 h18 h19 h20 h21 h22 h23 h24 h25 h26 h27  
?  
h17 -> h1 h2 h3 h4 h5 h6 h7 h8 h9 h10 h11 h12 h13 h14 h15 h16 h18 h19 h20 h21 h22 h23 h24 h25 h26 h27  
?  
h18 -> h1 h2 h3 h4 h5 h6 h7 h8 h9 h10 h11 h12 h13 h14 h15 h16 h17 h19 h20 h21 h22 h23 h24 h25 h26 h27  
?  
h19 -> h1 h2 h3 h4 h5 h6 h7 h8 h9 h10 h11 h12 h13 h14 h15 h16 h17 h18 h20 h21 h22 h23 h24 h25 h26 h27  
?  
h20 -> h1 h2 h3 h4 h5 h6 h7 h8 h9 h10 h11 h12 h13 h14 h15 h16 h17 h18 h19 h21 h22 h23 h24 h25 h26 h27  
?  
h21 -> h1 h2 h3 h4 h5 h6 h7 h8 h9 h10 h11 h12 h13 h14 h15 h16 h17 h18 h19 h20 h22 h23 h24 h25 h26 h27  
?  
h22 -> h1 h2 h3 h4 h5 h6 h7 h8 h9 h10 h11 h12 h13 h14 h15 h16 h17 h18 h19 h20 h21 h23 h24 h25 h26 h27  
?  
h23 -> h1 h2 h3 h4 h5 h6 h7 h8 h9 h10 h11 h12 h13 h14 h15 h16 h17 h18 h19 h20 h21 h22 h24 h25 h26 h27  
?  
h24 -> h1 h2 h3 h4 h5 h6 h7 h8 h9 h10 h11 h12 h13 h14 h15 h16 h17 h18 h19 h20 h21 h22 h23 h25 h26 h27  
?  
h25 -> h1 h2 h3 h4 h5 h6 h7 h8 h9 h10 h11 h12 h13 h14 h15 h16 h17 h18 h19 h20 h21 h22 h23 h24 h26 h27  
?  
h26 -> h1 h2 h3 h4 h5 h6 h7 h8 h9 h10 h11 h12 h13 h14 h15 h16 h17 h18 h19 h20 h21 h22 h23 h24 h25 h27  
?  
h27 -> h1 h2 h3 h4 h5 h6 h7 h8 h9 h10 h11 h12 h13 h14 h15 h16 h17 h18 h19 h20 h21 h22 h23 h24 h25 h26  
6  
*** Results: 0% dropped (702/702 received)  
mininet> _
```

Teste de ping (pares)

Exemplo (teste de ping entre 2 hosts aleatórios):

```
**** Results: 0% dropped (702/702 received)
mininet> h1 ping -c 5 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=1.23 ms
64 bytes from 10.0.0.2: icmp_seq=2 ttl=64 time=2.23 ms
64 bytes from 10.0.0.2: icmp_seq=3 ttl=64 time=0.269 ms
64 bytes from 10.0.0.2: icmp_seq=4 ttl=64 time=0.077 ms
64 bytes from 10.0.0.2: icmp_seq=5 ttl=64 time=0.115 ms
```

Endereço - h1

```
mininet@mininet-vm: ~  
h1 h2  
*** Starting controller  
c0  
*** Starting 1 switches  
s1 ...  
*** Starting CLI:  
mininet> h1 ifconfig  
h1-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500  
    inet 10.0.0.1  netmask 255.0.0.0  broadcast 10.255.255.255  
    ether 00:00:00:00:00:01  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 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  
  
mininet> █
```


Endereço - h2

```
mininet@mininet-vm: ~  
  
loop txqueuelen 1000 (Local Loopback)  
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  
  
mininet> h2 ifconfig  
h2-eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500  
inet 10.0.0.2 netmask 255.0.0.0 broadcast 10.255.255.255  
ether 00:00:00:00:00:02 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 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  
  
mininet> 
```