

Precept 3

Host Configuration

Peng Sun

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What TCP conn. running?

- Commands
 - netstat [-n] [-p] [-c] (Linux)
 - lsof -i -P (Mac)
 - ss (newer version of netstat)
- Demo
 - iperf: TCP-based throughput test tool

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Demo

```

graph LR
    node0[10.1.1.2] --> node1[10.1.1.3]
    node1 --> node2[10.1.2.2]
  
```

node0:~> netstat -np | grep node1
 node1:~> netstat -np | grep node2
 node0:~> iperf -c 10.1.1.3
 node1:~> iperf -s

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Play with IP Layer

- ifconfig**
 - show all the network interfaces
 - configure IP
 - configure MAC (!)
- route**
 - show local IP routing table
 - set routes: add/del

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Demo

```

graph LR
    node0[10.1.1.2] --> node1[10.1.1.3]
    node1 --> node2[10.1.2.2]
  
```

node0:~> ping 10.1.2.2
connected

node0:~> route add -net 10.1.2.0 netmask 255.255.255.0 gw 10.1.1.3
 node2:~> route add -net 10.1.1.0 netmask 255.255.255.0 gw 10.1.2.3

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traceroute

- Why we need traceroute?**
 - No global information
 - Want to know the forwarding path
- Based on ICMP**
 - Internet Control Message Protocol
 - Used to signal error
- Adjust Time-To-Live for each hop**
 - When timeout, ICMP returns the IP where TTL expires.

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