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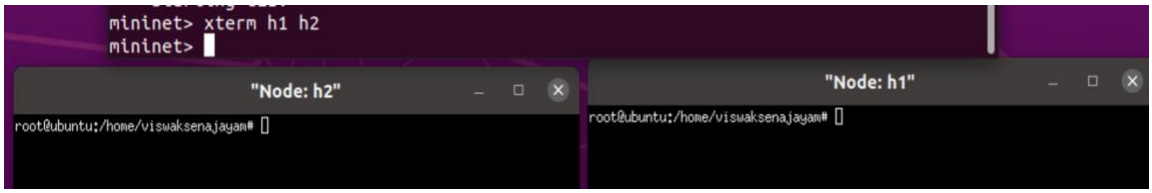
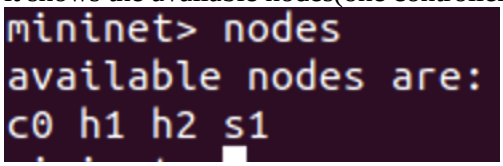
Assignment 2 – **Mininet Installation and Basic Commands**

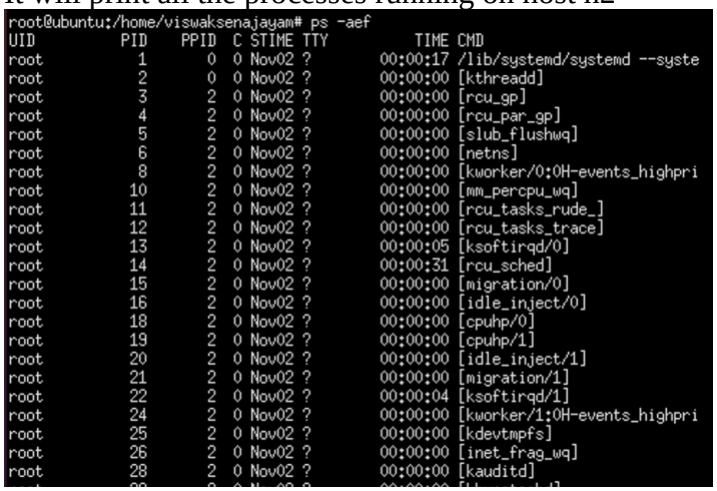
1. **How do I open a Xterm on a host?**
   mininet> xterm h1 h2



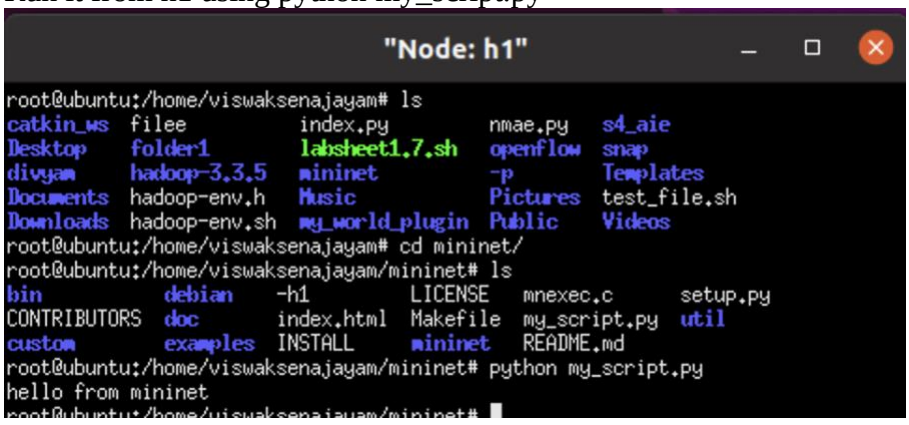
2. How do I get to know all the nodes in the topology?
   mininet> nodes
   it shows the available nodes(one controller, two hosts, one switch



3. How do I run a command ‘ps -aef’ on specific host h2?
   mininet> ps -aef #in terminal h2
   It will print all the processes running on host h2

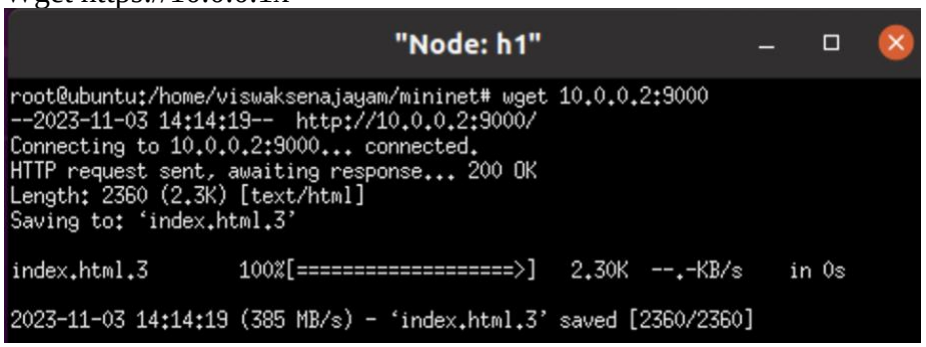


4. How to run an example Python program on a specific host h1?
   Create from inside mininet
   Run it from h1 using python my_script.py

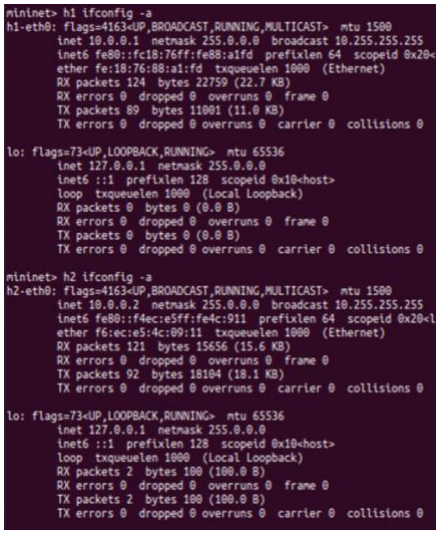


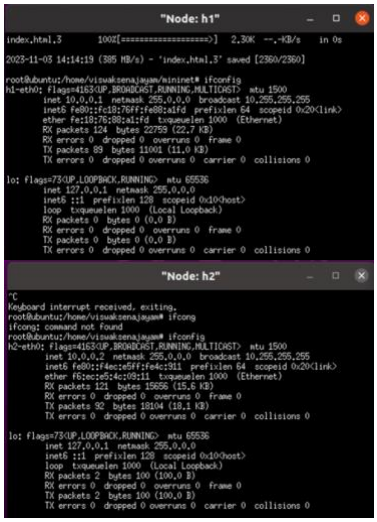
5. How do I start a web server on a host and access the index page from another host?
   → start the server
   Python3 -m http.server 8080

   Get file
   Wget https://10.0.0.1x



6. How do I get the IP address corresponding to a host?





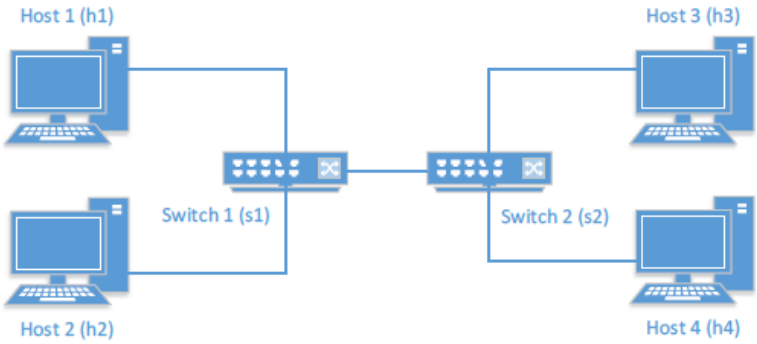
7. How do I find out all the interface for a switch?

8. What does the command iperf do?
   A tool for ensuring that a network can meet its performance requirements and for troubleshooting network problems.
9. Try out linear, Single topology with different number of nodes and switches
   sudo mn --topo linear,**4** --mac --switch ovsk --controller remote
   Based on the value input before –mac –switch ovsk it gives the specified number of nodes and switches in a linear configuration.

```
Viswaksena@ubuntu:~$ sudo mn --topo linear,4 --mac --switch ovsk --controller remote
[sudo] password for Viswaksena:
*** Creating network
*** Adding controller
Unable to contact the remote controller at 127.0.0.1:6653
Unable to contact the remote controller at 127.0.0.1:6633
Setting remote controller to 127.0.0.1:6653
*** Adding hosts:
h1 h2 h3 h4
*** Adding switches:
s1 s2 s3 s4
*** Adding links:
(h1, s1) (h2, s2) (h3, s3) (h4, s4) (s2, s1) (s3, s2) (s4, s3)
*** Configuring hosts
h1 h2 h3 h4
*** Starting controller
c0
*** Starting 4 switches
s1 s2 s3 s4 ...
*** Starting CLI:
```

```
Viswaksena@ubuntu: ~
Viswaksena@ubuntu:~$ sudo mn --topo single,4 --mac --switch ovsk --controller remote
[sudo] password for Viswaksena:
*** Creating network
*** Adding controller
Unable to contact the remote controller at 127.0.0.1:6653
Unable to contact the remote controller at 127.0.0.1:6633
Setting remote controller to 127.0.0.1:6653
*** 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
c0
*** Starting 1 switches
s1 ...
*** Starting CLI:
mininet> nodes
available nodes are:
c0 h1 h2 h3 h4 s1
```

10. Create a topology with 4 hosts and 2 switches as follows and ping all the nodes. (Code should be submitted) You may use the following url for Python based mininet APIs http://mininet.org/api/classmininet_1_1net_1_1Mininet.html



Code:-

```
Open
1 from mininet.topo import Topo
2
3 class MyTopo(Topo):
4     def __init__(self):
5         Topo.__init__(self)
6
7         s1 = self.addSwitch('s1')
8         s2 = self.addSwitch('s2')
9
10        h1 = self.addHost('h1')
11        h2 = self.addHost('h2')
12        h3 = self.addHost('h3')
13        h4 = self.addHost('h4')
14
15        self.addLink(h1, s1)
16        self.addLink(h2, s1)
17        self.addLink(h3, s2)
18        self.addLink(h4, s2)
19
20        self.addLink(s1, s2)
21
22 topos = {'mytopo': (lambda: MyTopo())}
23
```

```
Viswaksena@ubuntu:~$ sudo mn --custom /home/viswaksenajayam/mininet_topology.py --topo
mytopo
*** Creating network
*** Adding controller
*** Adding hosts:
h1 h2 h3 h4
*** Adding switches:
s1 s2
*** Adding links:
(h1, s1) (h2, s1) (h3, s2) (h4, s2) (s1, s2)
*** Configuring hosts
h1 h2 h3 h4
*** Starting controller
c0
*** Starting 2 switches
s1 s2 ...
*** Starting CLI:
mininet> pingall
*** Ping: testing ping reachability
h1 -> h2 h3 h4
h2 -> h1 h3 h4
h3 -> h1 h2 h4
h4 -> h1 h2 h3
*** Results: 0% dropped (12/12 received)
```