

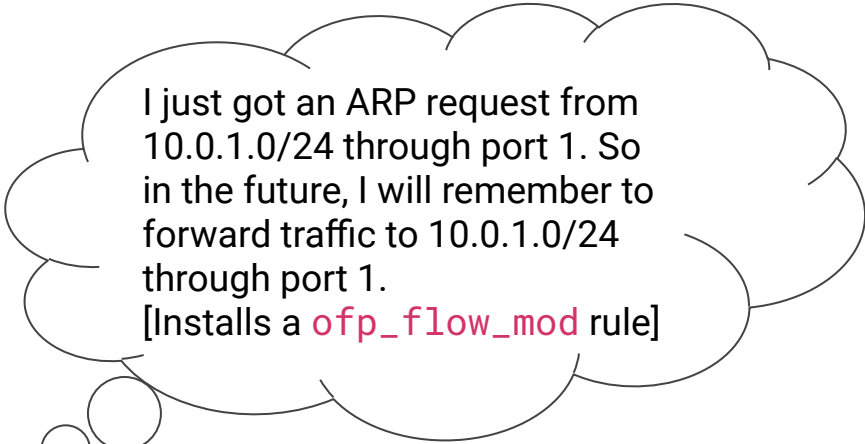
Section 6: Mininet II

CSE 461 Computer Networks

The background is a solid pink color. In the top right corner, there are several overlapping geometric shapes: a dark pink square, a medium pink square, and a light pink square, all partially cut off by the edge of the frame.

Hopefully part2
wasn't too bad...

Part 4 - h10 ping h20

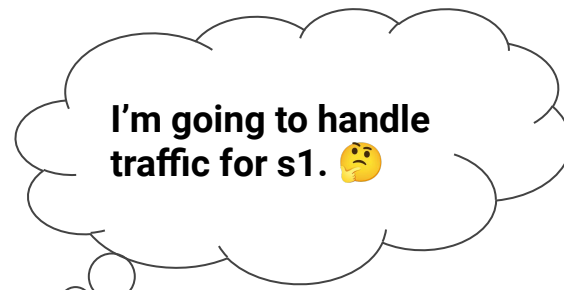


I just got an ARP request from 10.0.1.0/24 through port 1. So in the future, I will remember to forward traffic to 10.0.1.0/24 through port 1.

[Installs a `ofp_flow_mod` rule]

```
[h10@10.0.1.10/24]--{s1}--\  
[h20@10.0.2.20/24]--{s2}--{cores21}--{dcs31}--[serv1@10.0.4.10/24]  
[h30@10.0.3.30/24]--{s3}--/  
|  
[hnotrust1@172.16.10.100/24]
```

Part 4 - h10 ping h20



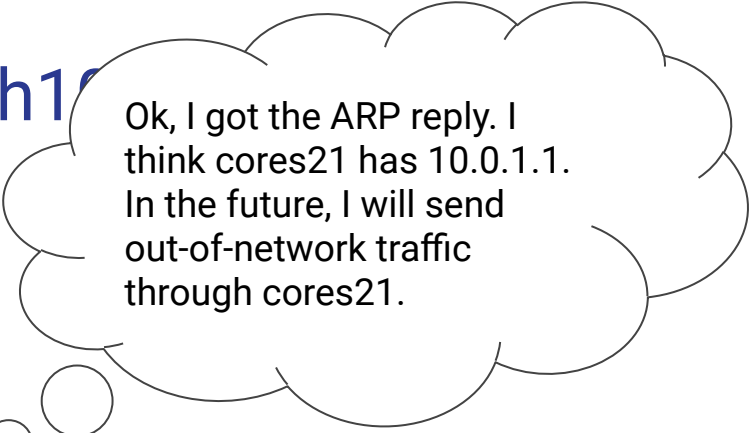
```
[h10@10.0.1.10/24]--{s1}--\  
[h20@10.0.2.20/24]--{s2}--{cores21}--{dcs31}--[serv1@10.0.4.10/24]  
[h30@10.0.3.30/24]--{s3}--/  
|  
[hnotrust1@172.16.10.100/24]
```


Part 4 - h10 ping h20

10.0.1.1 is at
de:ad:be:ef:ca:fe (I just
made that up, but I
replied so that's me
👉).

```
[h10@10.0.1.10/24]--{s1}--\  
[h20@10.0.2.20/24]--{s2}--{cores21}--{dcs31}--[serv1@10.0.4.10/24]  
[h30@10.0.3.30/24]--{s3}--/  
|  
[hnotrust1@172.16.10.100/24]
```

Part 4 - h10



Ok, I got the ARP reply. I think cores21 has 10.0.1.1. In the future, I will send out-of-network traffic through cores21.

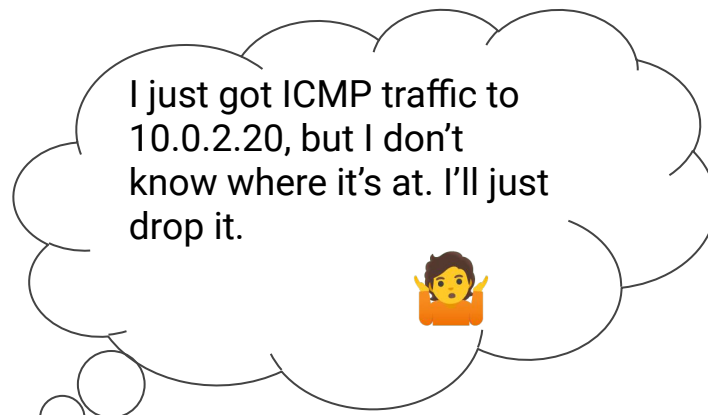
```
[h10@10.0.1.10/24]--{s1}--\
```

```
[h20@10.0.2.20/24]--{s2}--{cores21}--{dcs31}--[serv1@10.0.4.10/24]
```

```
[h30@10.0.3.30/24]--{s3}--/
```

```
      |  
      |  
[hnotrust1@172.16.10.100/24]
```

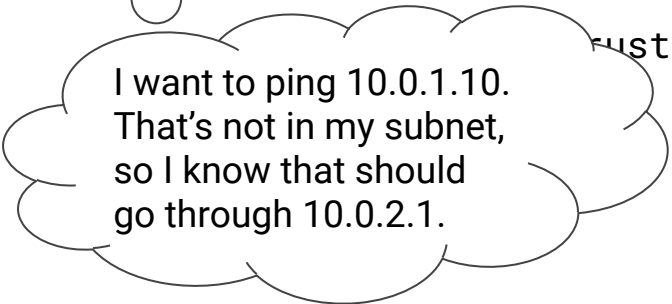

Part 4 - h10 ping h20



```
[h10@10.0.1.10/24]--{s1}--\  
[h20@10.0.2.20/24]--{s2}--{cores21}--{dcs31}--[serv1@10.0.4.10/24]  
[h30@10.0.3.30/24]--{s3}--/  
|  
[hnotrust1@172.16.10.100/24]
```


Part 4 - h20 ping h10

```
[h10@10.0.1.10/24]--{s1}--\  
[h20@10.0.2.20/24]--{s2}--{cores21}--{dcs31}--[serv1@10.0.4.10/24]  
[h30@10.0.3.30/24]--{s3}--/  
|  
[cust1@172.16.10.100/24]
```



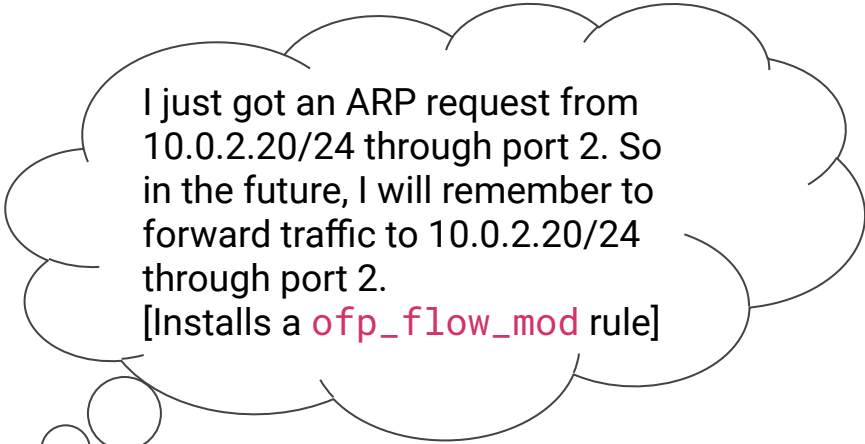
I want to ping 10.0.1.10.
That's not in my subnet,
so I know that should
go through 10.0.2.1.

Part 4 - h20 ping h10

```
[h10@10.0.1.10/24]--{s1}--\  
[h20@10.0.2.20/24]--{s2}--{cores21}--{dcs31}--[serv1@10.0.4.10/24]  
[h30@10.0.3.30/24]--{s3}--/ |  
                               |  
                               [hnotrust1@172.16.10.100/24]
```

ARP REQUEST:
Who is 10.0.2.1?
Tell 10.0.2.20

Part 4 - h20 ping h10

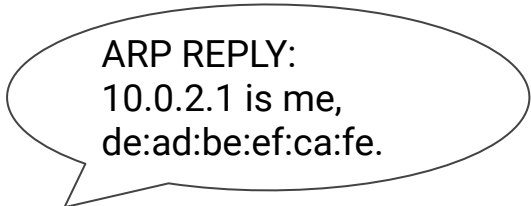


I just got an ARP request from 10.0.2.20/24 through port 2. So in the future, I will remember to forward traffic to 10.0.2.20/24 through port 2.

[Installs a `ofp_flow_mod` rule]

```
[h10@10.0.1.10/24]--{s1}--\  
[h20@10.0.2.20/24]--{s2}--{cores21}--{dcs31}--[serv1@10.0.4.10/24]  
[h30@10.0.3.30/24]--{s3}--/  
|  
[hnotrust1@172.16.10.100/24]
```


Part 4 - h20 ping h10

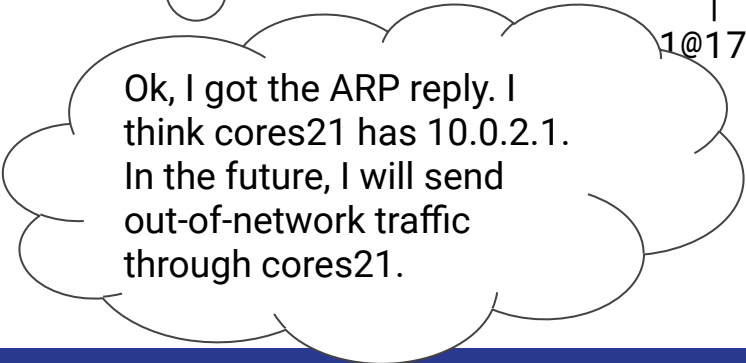


ARP REPLY:
10.0.2.1 is me,
de:ad:be:ef:ca:fe.

```
[h10@10.0.1.10/24]--{s1}--\  
[h20@10.0.2.20/24]--{s2}--{cores21}--{dcs31}--[serv1@10.0.4.10/24]  
[h30@10.0.3.30/24]--{s3}--/  
|  
[hnotrust1@172.16.10.100/24]
```

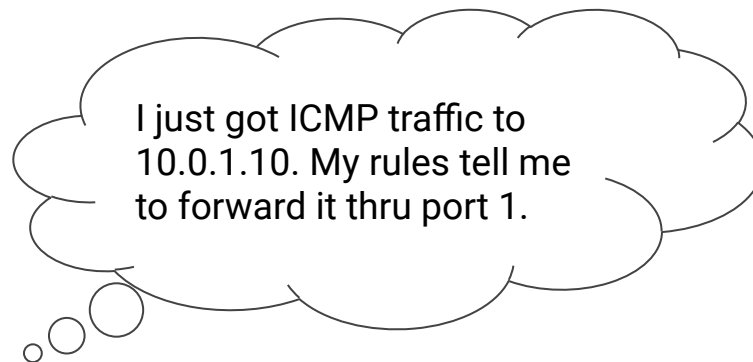
Part 4 - h20 ping h10

```
[h10@10.0.1.10/24]--{s1}--\  
[h20@10.0.2.20/24]--{s2}--{cores21}--{dcs31}--[serv1@10.0.4.10/24]  
[h30@10.0.3.30/24]--{s3}--/ |  
                               |  
                               1@172.16.10.100/24]
```



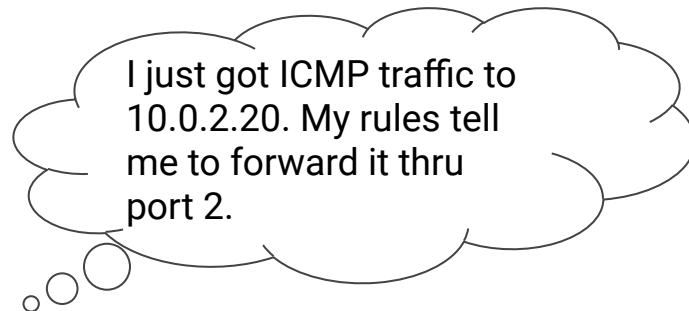
Ok, I got the ARP reply. I think cores21 has 10.0.2.1. In the future, I will send out-of-network traffic through cores21.

Part 4 - h20 ping h10



```
[h10@10.0.1.10/24]--{s1}--\  
[h20@10.0.2.20/24]--{s2}--{cores21}--{dcs31}--[serv1@10.0.4.10/24]  
[h30@10.0.3.30/24]--{s3}--/  
|  
[hnotrust1@172.16.10.100/24]
```


Part 4 - h20 ping h10




```
[h10@10.0.1.10/24]--{s1}--\  
[h20@10.0.2.20/24]--{s2}--{cores21}--{dcs31}--[serv1@10.0.4.10/24]  
[h30@10.0.3.30/24]--{s3}--/  
|  
[hnotrust1@172.16.10.100/24]
```

Part 4 - h20 ping h10

```
[h10@10.0.1.10/24]--{s1}--\  
[h20@10.0.2.20/24]--{s2}--{cores21}--{dcs31}--[serv1@10.0.4.10/24]  
[h30@10.0.3.30/24]--{s3}--/ |  
                                |  
                                trust1@172.16.10.100/24]
```



Part 4 Summary

- You need to block all IP traffic between server 1 and untrusted host
 - You need to block all ICMP traffic from untrusted host
 - You need to change `_handle_PacketIn` function
 - You need to handle ARP packets and add it to the routing table
 - You need to send the arp ack back to the sender. You can import `arp()` from `pox`
 - While sending the arp reply back, you can hardcode the mac address of `cores21`. You don't actually need to find it because it doesn't matter.
- 

Q&A, Extra OH

