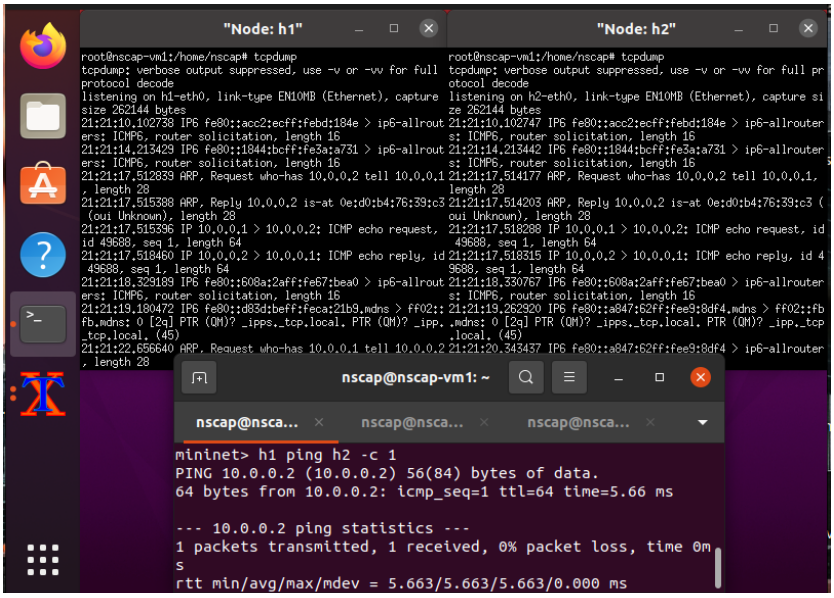
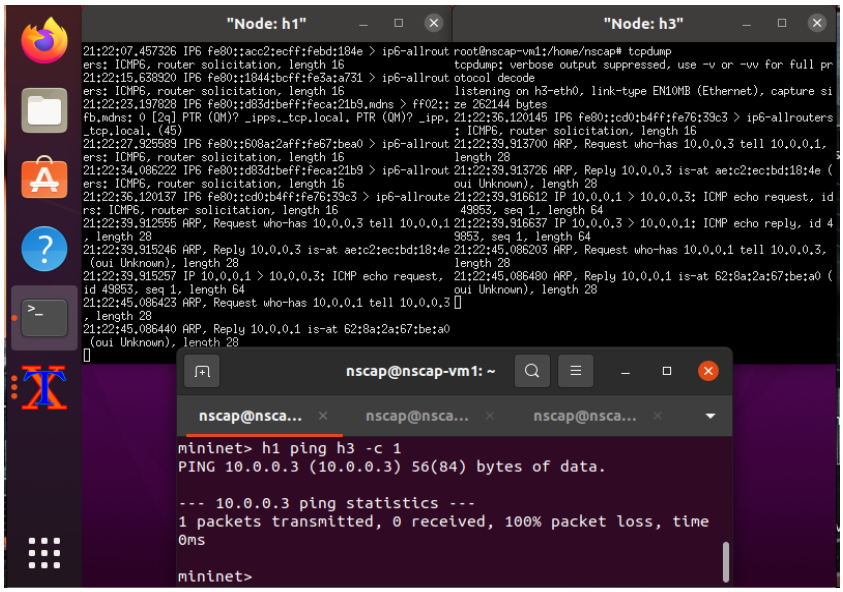
Network System Capstone
Homework 7
Report

1. When h1 ping h2, what will happen?



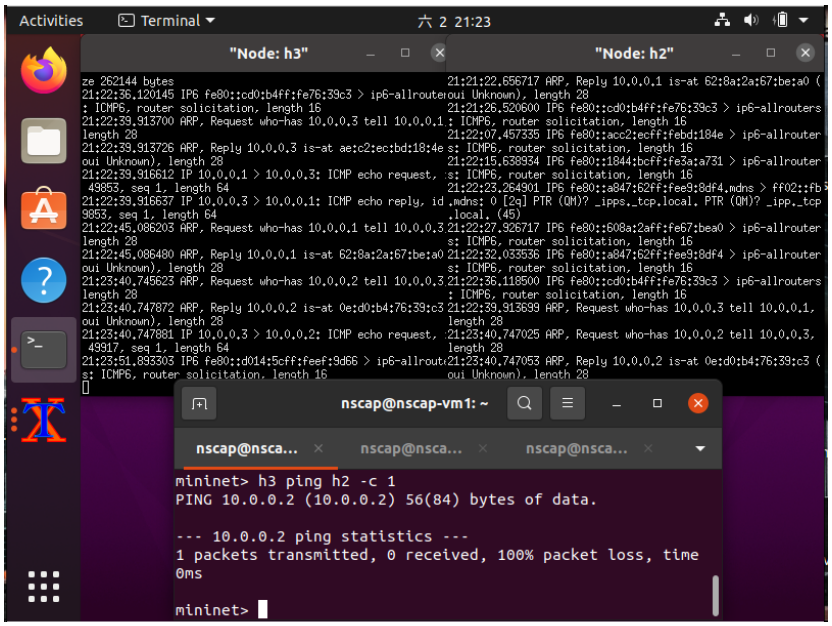
- ARP:
  h1 send request -> h2 received and replied -> h1 received reply
- ICMP:
  h1 send request -> h2 received and replied -> h1 received reply
  -> ping SUCCESS!

2. When h1 ping h3, what will happen?



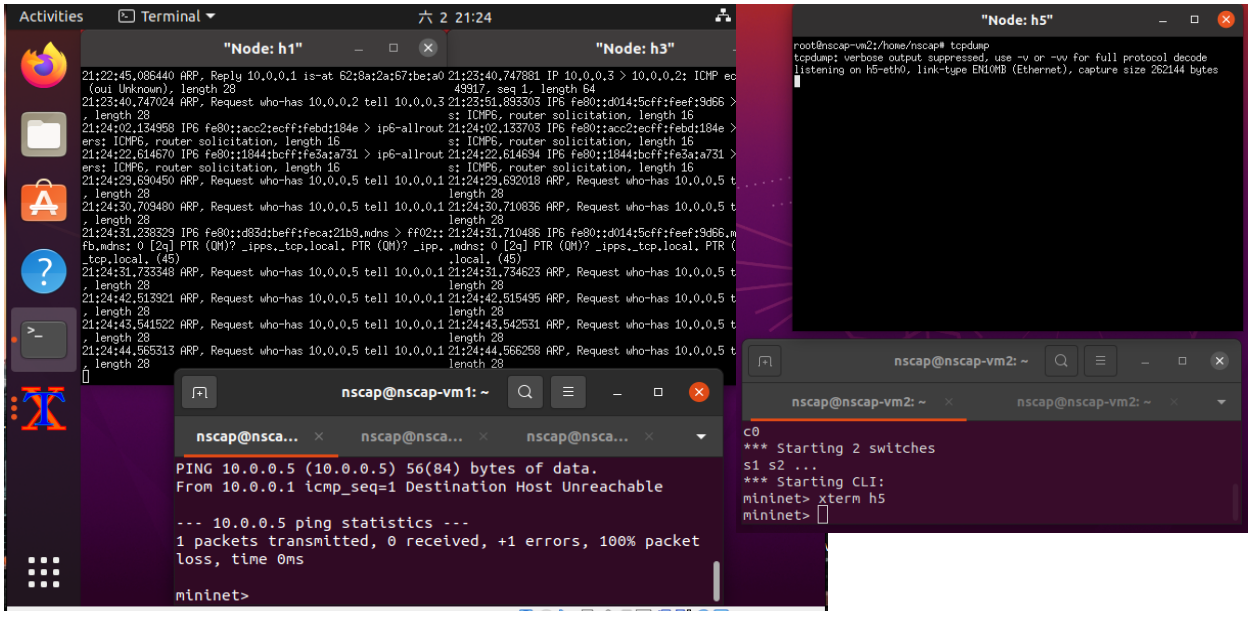
- ARP:
  h1 send request -> h3 received and replied -> h1 received reply
- ICMP:
  h1 send request -> h3 received and replied ->
  Dropped by switch…… -> ping FAILED!

3. **When h3 ping h2, what will happen?**



- ARP:
  h3 send request -> h2 received and replied -> h3 received reply
- ICMP:
  h3 send request -> Dropped by switch……
  -> ping FAILED!

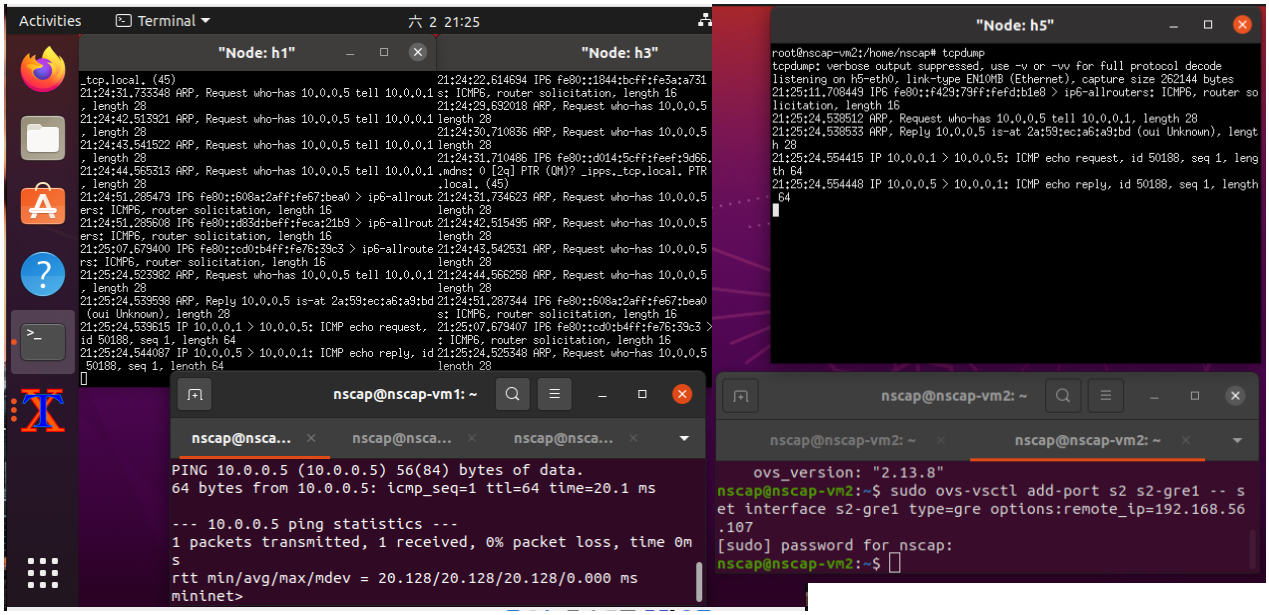
4. **When h1 ping h5, what will happen?**



- ARP:

  h1 send request -> No response……
  -> ping FAILED (Port Unreachable) !

5. When h1 ping h5, what will happen?



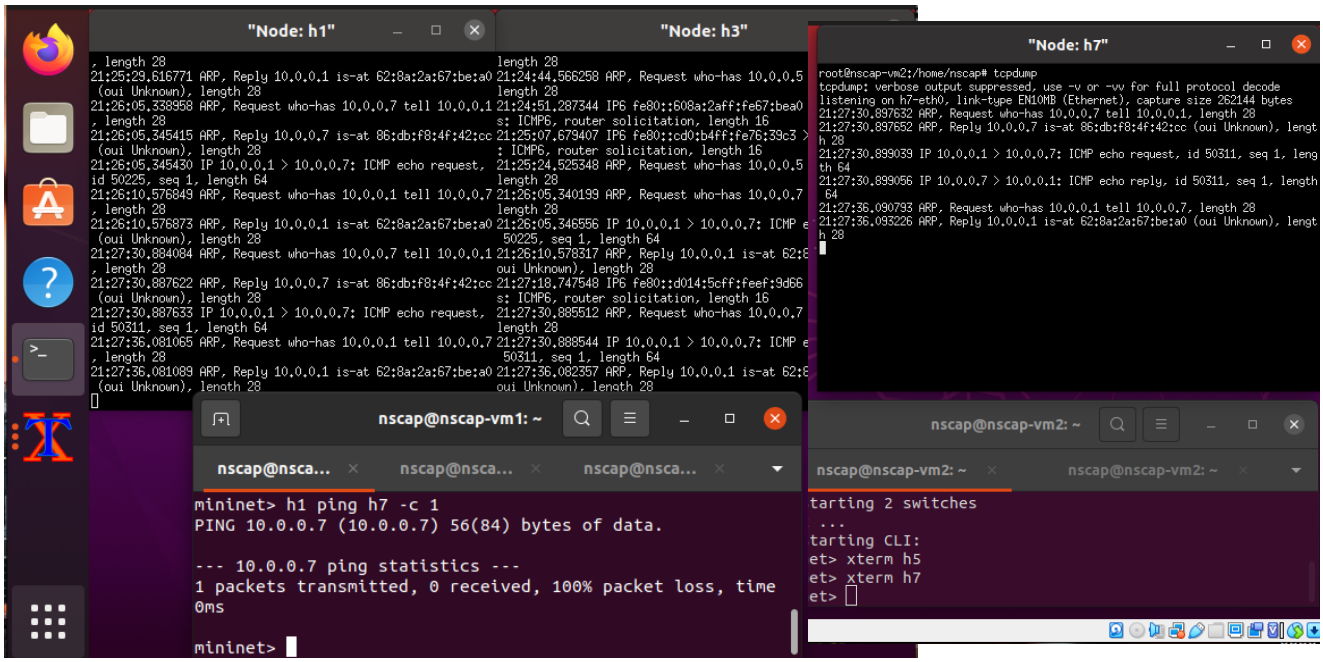
- ARP:

  h1 send request -> h5 received and replied -> h1 received reply

- ICMP:

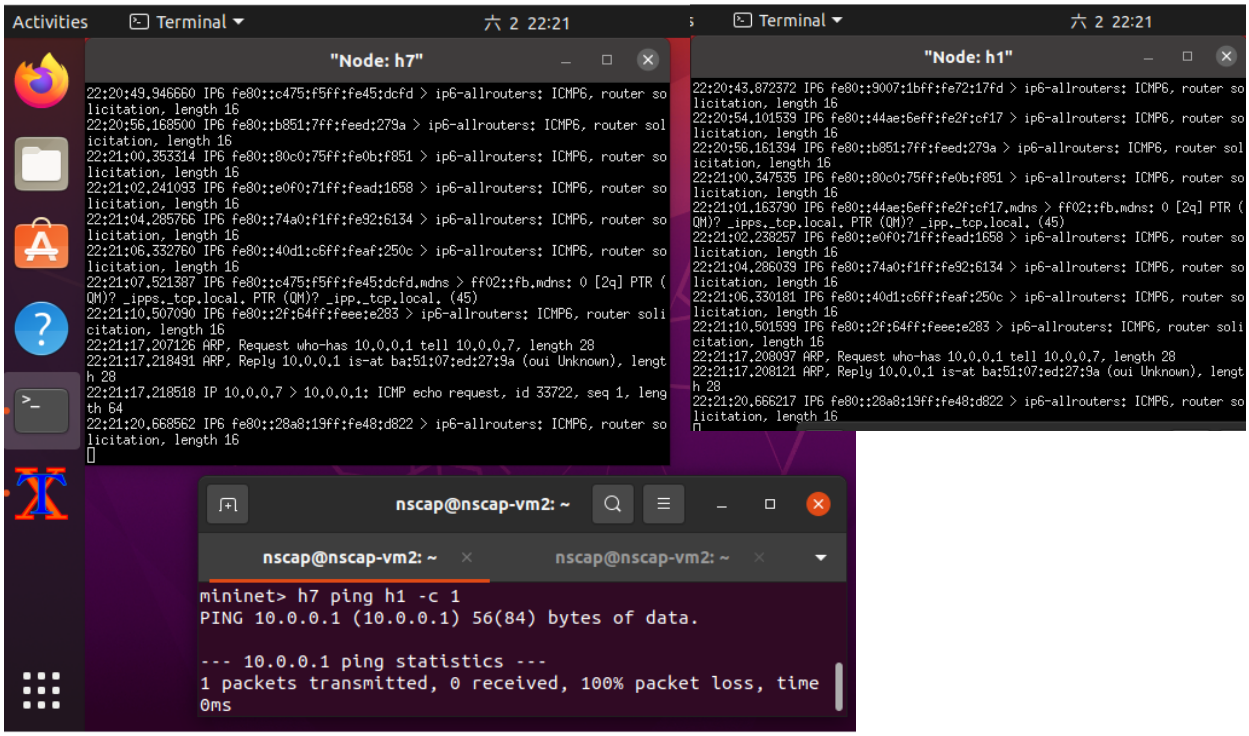
  h1 send request -> h5 received and replied -> h1 received reply
  -> ping SUCCESS!

6. When h1 ping h7, what will happen?



- ARP:
  h1 send request -> h7 received and replied -> h1 received reply
- ICMP:
  h1 send request -> h7 received and replied ->
  Dropped by switch…… -> ping FAILED!

7. **When h7 ping h1, what will happen?**



- ARP:
  h7 send request -> h1 received and replied -> h7 received reply
- ICMP:
  h7 send request ->
  Dropped by switch…… -> ping FAILED!

8. **If the packet in question 6 or 7 is dropped in some part of the network, are the outcome and explanation the same as that of question 4?** (use screenshot to prove)

以實驗結果來講，他們是不同階段被Drop掉的(圖請看上方各小題):
Q4是因為s1, s2之間當時還沒有GRE Tunnel，所以ARP連Reply都沒有
Q6Q7時已經建立switch間的GRE Tunnel，但被Drop掉的階段稍有不同，Q6是因為ICMP Reply是來自switch port3所以被Drop, Q7是因為ICMP Req就是來自switch port3所以被Drop。

9. **Change filter_table2 rule**
   From: packets coming from port_3 or port_4 will be dropped, while other packets will be allowed to pass.
   To: packets coming from port_1 or port_2 will be allowed to pass, while other packets will be dropped.
   Will the outcome of questions 5, 6, and 7 differ? (no need to print screenshot) explain why or why not.

   應該是一樣的, 因為s1, s2只有接1-4號port, filter_table2又只有ICMP Packets, 因此結果一樣。