Assignment 3

Duc Viet Le
CS536

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Problem 1.

1. All addresses must be located from 214.97.254.0/24

   - Subnet A: **214.97.255.0/24**
     Give subnet A the last 8 bit (256 addresses)
     Use first 24 bit to identify A: 11010110 01100001 11111111
   - Subnet B: **214.97.254.128/25**
     Give B the last 7 bit (128 addresses)
     Use first 25 bit to identify B: 11010110 01100001 11111110 1
   - Subnet C: **214.97.255.128/25**
     Give C the last 7 bit (128 addresses)
     Use first 25 bit to identify C: 11010110 01100001 11111111 1
   - Subnet D: **214.97.254.0/31**
     Give D the last 1 bit (2 addresses)
     Use first 31 bit to identify D: 11010110 01100001 11111110 0000000
   - Subnet E: **214.97.254.2/31**
     Give E the last 1 bit (2 addresses)
     Use first 31 bit to identify E: 11010110 01100001 11111110 0000001
   - Subnet F: **214.97.254.6/31**
     Give F the last 1 bit (2 addresses)
     Use first 31 bit to identify F: 11010110 01100001 11111110 0000011

2. Forwarding tables:
   Router 1:

prefix match	interface
11010110 01100001 11111111	Subnet A
11010110 01100001 11111110 0000011	Subnet F
11010110 01100001 11111110 0000000	Subnet D

   Router 2:

prefix match	interface
11010110 01100001 11111110 0000011	Subnet F
11010110 01100001 11111110 0000001	Subnet E
11010110 01100001 11111111 1	Subnet C

Router 3:

prefix match	interface
11010110 01100001 11111110 0000000	Subnet D
11010110 01100001 11111110 0000001	Subnet E
11010110 01100001 11111110 1	Subnet B

Problem 2.

- Only traffic arriving from hosts h1 and h6 should be delivered to hosts h3 or h4 (i.e., that arriving traffic from hosts h2 and h5 is blocked).

Ingess port	Mac src	Mac dst	Eth type	VLAND ID	IP Src	IP Dst	IP prot	TCPsport	TCP dport	Action
*	*	*	*	*	10.1.0.1	10.2.0.*	*	*	*	allow
*	*	*	*	*	10.3.0.6	10.2.0.*	*	*	*	allow
*	*	*	*	*	10.1.0.2	*	*	*	*	drop
*	*	*	*	*	10.2.0.*	*	*	*	*	drop
*	*	*	*	*	10.3.0.5	*	*	*	*	drop

  - explicitly allow all traffic from h1 and h6 to h3 or h4
  - block traffic that comes from h2,h3,h4,h5 just in case

- Only TCP traffic is allowed to be delivered to host h3 or host h4 (i.e., that UDP traffic is blocked).

Ingess port	Mac src	Mac dst	Eth type	VLAND ID	IP Src	IP Dst	IP prot	TCPsport	TCP dport	Action
*	*	*	*	*	*	10.2.0.*	TCP	*	*	allow
*	*	*	*	*	*	10.2.0.*	UDP	*	*	drop

  - allow TCP trafffic that has destination to h3 or h4
    Just in case:
  - block UDP traffic that go to h3 or h4

- Only traffic destined to h3 is to be delivered (i.e., all traffic to h4 is blocked).

Ingess port	Mac src	Mac dst	Eth type	VLAND ID	IP Src	IP Dst	IP prot	TCPsport	TCP dport	Action
*	*	*	*	*	*	10.2.0.3	*	*	*	allow
*	*	*	*	*	*	10.2.0.4	*	*	*	drop
*	*	*	*	*	*	10.1.0.*	*	*	*	drop
*	*	*	*	*	*	10.3.0.*	*	*	*	drop

  - explicitly allow traffic that comes to h3.
    Just in case:
  - block traffic to h4.
  - block traffic to subnet 1.
  - block traffic to subnet 3.

- Only UDP traffic from h1 and destined to h3 is to be delivered. All other traffic is blocked.

Ingess port	Mac src	Mac dst	Eth type	VLAND ID	IP Src	IP Dst	IP prot	TCPsport	TCP dport	Action
*	*	*	*	*	10.1.0.1	10.2.0.3	UDP	*	*	allow
*	*	*	*	*	*	10.2.0.4	*	*	*	drop
*	*	*	*	*	*	*	TCP	*	*	drop
*	*	*	*	*	10.1.0.2	*	*	*	*	drop
*	*	*	*	*	10.2.0.*	*	*	*	*	drop
*	*	*	*	*	10.3.0.*	*	*	*	*	drop

– explicily only allow UDP traffic from h1 to h3.

Just in case:

– block traffic to h4
– block TCP traffic
– block incoming traffic from h2,h3,h4,h5,h6