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**CS 4480 - Homework Assignment 6**

**P17**

1. Following are the network addresses for the subnets with hosts (supporing at least 250 clients for A, 120 clients for B, and 120 clients for C):  
     
    A: 214.97.254.0/24   
    B: 214.97.255.0/25  
    C: 214.97.255.128/25  
     
   And following are the network addresses for the subnets between routers (supporting a minimum of two interfaces):  
     
    D: 214.97.255.248/29  
    E: 214.97.255.252/30  
    F: 214.97.255.254/31
2. Following are the forwarding tables (using longest prefix matching) for each of the three routers:

|  |  |
| --- | --- |
| R1 Forwarding Table | |
| Prefix Match | Link Interface |
| 11010110 01100001 11111110 | A |
| 11010110 01100001 11111111 11111 | D |
| 11010110 01100001 11111111 1111111 | F |

|  |  |
| --- | --- |
| R2 Forwarding Table | |
| Prefix Match | Link Interface |
| 11010110 01100001 11111111 1 | C |
| 11010110 01100001 11111111 111111 | E |
| 11010110 01100001 11111111 1111111 | F |

|  |  |
| --- | --- |
| R3 Forwarding Table | |
| Prefix Match | Link Interface |
| 11010110 01100001 11111110 0 | B |
| 11010110 01100001 11111111 11111 | D |
| 11010110 01100001 11111111 111111 | E |

**P21**

1. The addresses for the three host interfaces will become...  
     
    192.168.1.1  
    192.168.1.2  
    192.168.1.3  
     
   ...and the address for the LAN interface of the router will become:  
     
    192.168.1.4
2. Here's one possibility for the NAT table:

|  |  |
| --- | --- |
| WAN side | LAN side |
| 24.34.112.235, 5001 | 192.168.1.1, 3345 |
| 24.34.112.235, 5002 | 192.168.1.1, 3346 |
| 24.34.112.235, 5003 | 192.168.1.2, 3345 |
| 24.34.112.235, 5004 | 192.168.1.2, 3346 |
| 24.34.112.235, 5005 | 192.168.1.3, 3345 |
| 24.34.112.235, 5006 | 192.168.1.3, 3346 |

**P26**

Dijkstra's shortest-path algorithm

**P28**

distance-vector algorithm

**P37**

OSPF, RIP, eBGP, iBGP

**P38**

forwarding tables

**P40**

network topology

**P42**

peering and routes