# CSE421: Computer Networks

Group-05  
Lab Project

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**Network Address Allocation:**

| Name | Network Address | Slash | Subnet Mask |
| --- | --- | --- | --- |
| Bachelor of Business  Administration | 1.2.8.0 | /22 | 255.255.252.0 |
| Computer Science and  Engineering | 1.2.12.0 | /23 | 255.255.254.0 |
| Electrical & Electronics  Engineering | 1.2.14.0 | /23 | 255.255.254.0 |
| Mathematics & Natural  Science | 1.2.17.0 | /25 | 255.255.255.128 |
| Department of Architecture | 1.2.17.128 | /26 | 255.255.255.192 |
| Central Administrative  Building. | 1.2.17.192 | /27 | 255.255.255.224 |

**Addressing Table:**

| Device | Interface | IPv4 Address | Subnet Mask | Default Getway |
| --- | --- | --- | --- | --- |
| BBA Router | S0/0 | 1.2.18.37 | 255.255.255.252 |  |
| S1/0 | 1.2.18.33 | 255.255.255.252 |  |
| F2/0 | 1.2.8.1 | 255.255.252.0 |  |
| CSE Router | S0/0 | 1.2.18.49 | 255.255.255.252 |  |
| S1/0 | 1.2.18.46 | 255.255.255.252 |  |
| S2/0 | 1.2.18.57 | 255.255.255.252 |  |
| F3/0 | 1.2.12.1 | 255.255.254.0 |  |
| S4/0 | 209.165.200.225 | 255.255.255.252 |
| EEE Router | S0/0 | 1.2.18.34 | 255.255.255.252 |  |
| S1/0 | 1.2.18.54 | 255.255.255.252 |  |
| F2/0 | 1.2.14.1 | 255.255.254.0 |  |

| MNS Router | S0/0 | 1.2.18.53 | 255.255.255.252 |  |
| --- | --- | --- | --- | --- |
| S1/0 | 1.2.18.50 | 255.255.255.252 |  |
| S2/0 | 1.2.18.62 | 255.255.255.252 |  |
| S3/0 | 1.2.18.65 | 255.255.255.252 |  |
| F4/0 | 1.2.17.1 | 255.255.255.128 |
| ARC Router | S0/0 | 1.2.18.45 | 255.255.255.252 |  |
| S1/0 | 1.2.18.42 | 255.255.255.252 |  |
| F2/0 | 1.2.17.129 | 255.255.255.192 |  |
| ADMIN Router | S0/0 | 1.2.18.41 | 255.255.255.252 |  |
| S1/0 | 1.2.18.38 | 255.255.255.252 |  |
| S2/0 | 1.2.18.70 | 255.255.255.252 |  |
| F3/0 | 1.2.17.193 | 255.255255.224 |
| Backup Router 1 | S0/0 | 1.2.18.58 | 255.255.255.252 |  |
| S1/0 | 1.2.18.61 | 255.255.255.252 |  |
| Backup Router 2 | S0/0 | 1.2.18.66 | 255.255.255.252 |  |
| S1/0 | 1.2.18.69 | 255.255.255.252 |  |
| PC0 | F0 | 1.2.17.131 | 255.255.255.192 | 1.2.17.129 |
| PC1 | F0 | 1.2.17.130 | 255.255.255.192 | 1.2.17.129 |
| PC2 | F0 | 1.2.12.4 | 255.255.254.0 | 1.2.12.1 |
| PC3 | F0 | 1.2.12.3 | 255.255.254.0 | 1.2.12.1 |
| PC4 | F0 | 1.2.12.2 | 255.255.254.0 | 1.2.12.1 |
| PC5 | F0 | 1.2.17.2 | 255.255.255.128 | 1.2.17.1 |
| PC6 | F0 | 1.2.17.3 | 255.255.255.128 | 1.2.17.1 |
| PC7 | F0 | 1.2.14.2 | 255.255.254.0 | 1.2.14.1 |
| PC8 | F0 | 1.2.14.3 | 255.255.254.0 | 1.2.14.1 |
| PC9 | F0 | 1.2.14.4 | 255.255.254.0 | 1.2.14.1 |
| PC10 | F0 | 1.2.8.2 | 255.255.252.0 | 1.2.8.1 |
| PC11 | F0 | 1.2.8.3 | 255.255.252.0 | 1.2.8.1 |
| PC12 | F0 | 1.2.8.4 | 255.255.252.0 | 1.2.8.1 |
| PC13 | F0 | 1.2.17.194 | 255.255.255.224 | 1.2.17.193 |
| Web Server | F0 | 64.100.0.10 | 255.255.255.0 | 64.100.0.1 |
| DNS Server | F0 | 8.8.8.8 | 255.255.255.0 | 8.8.8.1 |

**Commands:**

**Assigning IPs to all interfaces:**

BBA router:

Router>en

Router#conf t

Router#conf terminal

Router(config)#interface fa2/0

Router(config-if)#ip address 1.2.8.1 255.255.252.0

Router(config-if)#no shutdown

Router(config-if)#exit

Router(config)#

Router>en

Router#conf t

Router(config)#interface se1/0

Router(config-if)#ip address 1.2.18.33 255.255.255.252

Router(config-if)#no shutdown

Router(config-if)#exit

Router(config)#interface se0/0

Router(config-if)#ip address 1.2.18.37 255.255.255.252

Router(config-if)#no shutdown

Router(config-if)#exit

**CSE Router:**

Router>en

Router#conf t

Router#conf terminal

Router(config)#interface fa3/0

Router(config-if)#ip address 1.2.12.1 255.255.254.0

Router(config-if)#no shutdown

Router(config-if)#exit

Router(config)#interface se1/0

Router(config-if)#ip address 1.2.18.46 255.255.255.252

Router(config-if)#no shutdown

Router(config-if)#exit

Router(config)#interface se0/0

Router(config-if)#ip address 1.2.18.49 255.255.255.252

Router(config-if)#no shut

Router(config-if)#exit

Router(config)#interface se2/0

Router(config-if)#ip address 1.2.18.57 255.255.255.252

Router(config-if)#no shut

Router(config-if)#exit

**MNS router:**

Router>en

Router#conf t

Router(config)#interface fa4/0

Router(config-if)#ip address 1.2.17.1 255.255.255.128

Router(config-if)#no shutdown

Router(config-if)#exit

Router>en

Router#conf t

Router(config)#interface se1/0

Router(config-if)#ip address 1.2.18.50 255.255.255.252

Router(config-if)#no shut

Router(config-if)#exit

Router(config)#interface se0/0

Router(config-if)#ip address 1.2.18.53 255.255.255.252

Router(config-if)#no shut

Router(config-if)#exit

Router>en

Router#conf t

Router(config)#interface se2/0

Router(config-if)#ip address 1.2.18.62 255.255.255.252

Router(config-if)#no shut

Router(config-if)#exit

Router(config)#interface se3/0

Router(config-if)#ip address 1.2.18.65 255.255.255.252

Router(config-if)#no shut

Router(config-if)#exit

**EEE router:**

Router>en

Router#conf t

Router(config)#interface fa2/0

Router(config-if)#ip address 1.2.14.1 255.255.254.0

Router(config-if)#no shutdown

Router(config-if)#exit

Router>en

Router#conf t

Router(config)#interface se0/0

Router(config-if)#ip address 1.2.18.34 255.255.255.252

Router(config-if)#no shut

Router>en

Router#conf t

Router(config)#interface se1/0

Router(config-if)#ip address 1.2.18.54 255.255.255.252

Router(config-if)#no shut

Router(config-if)#exit

**Architecture Router:**

Router>en

Router#conf t

Router(config)#interface fa2/0

Router(config-if)#ip address 1.2.17.129 255.255.255.192

Router(config-if)#no shutdown

Router(config-if)#exit

Router(config)#

Router(config)#interface se1/0

Router(config-if)#ip address 1.2.18.42 255.255.255.252

Router(config-if)#no shutdown

Router(config-if)#exit

Router(config)#interface se0/0

Router(config-if)#ip address 1.2.18.45 255.255.255.252

Router(config-if)#no shutdown

**ADMIN router:**

Router>en

Router#conf t

Router#conf terminal

Router(config)#interface fa3/0

Router(config-if)#ip address 1.2.17.193 255.255.255.224

Router(config-if)#no shutdown

Router(config-if)#exit

Router>en

Router#conf t

Router(config)#interface se1/0

Router(config-if)#ip address 1.2.18.38 255.255.255.252

Router(config-if)#no shutdown

Router(config-if)#exit

Router(config)#interface se0/0

Router(config-if)#ip address 1.2.18.41 255.255.255.252

Router(config-if)#no shutdown

Router(config-if)#exit

Router>en

Router#conf t

Router(config)#interface se2/0

Router(config-if)#ip address 1.2.18.70 255.255.255.252

Router(config-if)#no shut

Router(config-if)#exit

**Backup router1:**

Router>en

Router#conf t

Router(config)#interface se0/0

Router(config-if)#ip address 1.2.18.58 255.255.255.252

Router(config-if)#no shut

Router(config-if)#exit

Router(config)#interface se1/0

Router(config-if)#ip address 1.2.18.61 255.255.255.252

Router(config-if)#no shut

Router(config-if)#exit

**Backup router2:**

Router>en

Router#conf t

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface se0/0

Router(config-if)#ip address 1.2.18.66 255.255.255.252

Router(config-if)#no shut

Router(config-if)#exit

Router(config)#interface se1/0

Router(config-if)#ip address 1.2.18.69 255.255.255.252

Router(config-if)#no shut

Router(config-if)#exit

**Dynamic Routing:**

**CSE Router:**

Router>en

Router#configure terminal

Router(config)#hostname CSE

CSE(config)#router rip

CSE(config-router)#version 2

CSE(config-router)#net

CSE(config-router)#network 1.2.12.0

CSE(config-router)#network 1.2.18.44

CSE(config-router)#network 1.2.18.48

CSE(config-router)#network 1.2.18.56

CSE(config-router)#passi

CSE(config-router)#passive-interface f3/0

CSE(config-router)#no aut

CSE(config-router)#no auto-summary

CSE(config-router)#def

CSE(config-router)#default-information ori

CSE(config-router)#default-information originate

**MNS Router:**

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#hostname MNS

MNS(config)#router rip

MNS(config-router)#version 2

MNS(config-router)#no au

MNS(config-router)#no auto-summary

MNS(config-router)#network 1.2.18.48

MNS(config-router)#network 1.2.17.0

MNS(config-router)#network 1.2.18.52

MNS(config-router)#passive-interface f4/0

**EEE Router:**

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#hostname EEE

EEE(config)#router rip

EEE(config-router)#version 2

EEE(config-router)#no au

EEE(config-router)#no auto-summary

EEE(config-router)#net

EEE(config-router)#network 1.2.18.52

EEE(config-router)#network 1.2.14.0

EEE(config-router)#network 1.2.18.32

EEE(config-router)#pass

EEE(config-router)#passive-interface f2/0

**BBA Router:**

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#hostname BBA

BBA(config)#router rip

BBA(config-router)#version 2

BBA(config-router)#no au

BBA(config-router)#no auto-summary

BBA(config-router)#net

BBA(config-router)#network 1.2.18.32

BBA(config-router)#network 1.2.18.36

BBA(config-router)#network 1.2.8.0

BBA(config-router)#pass

BBA(config-router)#passive-interface f2/0

**Admin Router:**

Router>enable

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#hostname Admin

Admin(config)#router rip

Admin(config-router)#version 2

Admin(config-router)#no auto

Admin(config-router)#no auto-summary

Admin(config-router)#net

Admin(config-router)#network 1.2.17.192

Admin(config-router)#network 1.2.18.36

Admin(config-router)#network 1.2.18.40

Admin(config-router)#pass

Admin(config-router)#passive-interface f3/0

**ARC Router:**

Router>enable

Router#configure terminal

Router(config)#hostname ARC

ARC(config)#router rip

ARC(config-router)#version 2

ARC(config-router)#no au

ARC(config-router)#no auto-summary

ARC(config-router)#netw

ARC(config-router)#network 1.2.17.128

ARC(config-router)#network 1.2.18.40

ARC(config-router)#network 1.2.18.44

ARC(config-router)#pass

ARC(config-router)#passive-interface f2/0

**Alternate route:**

CSE(config)#ip route 1.2.17.192 255.255.255.224 1.2.18.50 121

CSE(config)#ip route 1.2.17.0 255.255.255.128 1.2.18.58 121

CSE(config)#ip route 1.2.17.192 255.255.255.224 1.2.18.58 122

MNS(config)#ip route 1.2.17.192 255.255.255.224 1.2.18.66 121

MNS(config)#ip route 1.2.12.0 255.255.254.0 1.2.18.61 121

EEE(config)#ip route 1.2.17.192 255.255.255.224 1.2.18.53 121

BBA(config)#ip route 1.2.17.192 255.255.255.224 1.2.18.34 121

ARC(config)#ip route 1.2.17.192 255.255.255.224 1.2.18.46 121

Admin(config)#ip route 1.2.12.0 255.255.254.0 1.2.18.69 121

Admin(config)#ip route 1.2.17.0 255.255.255.128 1.2.18.69 121

Admin(config)#ip route 1.2.14.0 255.255.254.0 1.2.18.69 121

Admin(config)#ip route 1.2.8.0 255.255.252.0 1.2.18.69 121

Admin(config)#ip route 1.2.17.128 255.255.255.192 1.2.18.69 121

Backup\_whole(config)#ip route 1.2.17.192 255.255.255.224 1.2.18.70

Backup\_whole(config)#ip route 1.2.12.0 255.255.254.0 1.2.18.65

Backup\_whole(config)#ip route 1.2.17.0 255.255.255.128 1.2.18.65

Backup\_whole(config)#ip route 1.2.14.0 255.255.254.0 1.2.18.65

Backup\_whole(config)#ip route 1.2.8.0 255.255.252.0 1.2.18.65

Backup\_whole(config)#ip route 1.2.17.128 255.255.255.192 1.2.18.65

Backup\_CSE-MNS(config)#ip route 1.2.12.0 255.255.254.0 1.2.18.57

Backup\_CSE-MNS(config)#ip route 1.2.17.0 255.255.255.128 1.2.18.62

Backup\_CSE-MNS(config)#ip route 1.2.17.192 255.255.255.224 1.2.18.62

Backup\_CSE-MNS(config)#ip route 1.2.12.0 255.255.254.0 1.2.18.46

**Security:**

CSE(config)#enable secret hululu

CSE(config)#banner motd &

Enter TEXT message. End with the character '&'.

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!!!AUTHORIZED ACCESS ONLY!!!

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&

MNS(config)#enable secret hululu

MNS(config)#banner motd &

Enter TEXT message. End with the character '&'.

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!!!AUTHORIZED ACCESS ONLY!!!

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&

Backup\_CSE-MNS(config)#enable secret hululu

Backup\_CSE-MNS(config)#banner mot

Backup\_CSE-MNS(config)#banner motd &

Enter TEXT message. End with the character '&'.

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!!!AUTHORIZED ACCESS ONLY!!!

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