

# CSE421: Computer Networks

Group-05  
Lab Project

1.2.8.0/16

4th Oct.

3rd Oct.

128 64 32 16 8 4 2 1  
 1024 512 256

128 64 32 16 8 4 2 1

Department	Hosts	Network	Magic No	Subnet Mask	Broadcast
BBA	550	1.2.8.0/22	4	255.255.252.0	1.2.11.255/22
CSE	500	1.2.12.0/23	2	255.255.254.0	1.2.13.255/23
BEE	400	1.2.14.0/23	2	255.255.254.0	1.2.16.255/23
MNS	120	1.2.17.0/25	128	255.255.255.128	1.2.17.127/25
ARC	50	1.2.17.128/26	64	255.255.255.192	1.2.17.191/26
Admin	20	1.2.17.192/27	32	255.255.255.224	1.2.18.31/27
	2	1.2.18.32/30	4	255.255.255.252	1.2.18.35/30
	2	1.2.18.36/30	4	255.255.255.252	1.2.18.39/30
	2	1.2.18.40/30	4	255.255.255.252	1.2.18.43/30
	2	1.2.18.44/30	4	255.255.255.252	1.2.18.47/30
	2	1.2.18.48/30	4	255.255.255.252	1.2.18.51/30
	2	1.2.18.52/30	4	255.255.255.252	1.2.18.55/30
	2	1.2.18.56/30	4	255.255.255.252	1.2.18.59/30
	2	1.2.18.60/30	4	255.255.255.252	1.2.18.63/30
	2	1.2.18.64/30	4	255.255.255.252	1.2.18.67/30
	2	1.2.18.68/30	4	255.255.255.252	1.2.18.71/30
	2	1.2.18.72/30	4	255.255.255.252	1.2.10.75/30

**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	255.255.255.224	
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 '&'.
```

```
*****
```

```
!!!AUTHORIZED ACCESS ONLY!!!
```

```
*****
```

```
&
```

```
MNS(config)#enable secret hululu
MNS(config)#banner motd &
Enter TEXT message. End with the character '&'.
```

```
*****
```

```
!!!AUTHORIZED ACCESS ONLY!!!
```

```
*****
```

```
&
```

```
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 '&'.
```

```
*****
```

```
!!!AUTHORIZED ACCESS ONLY!!!
```

```
*****
```

```
&
```