Green University of Bangladesh
Department of Computer Science and Engineering (CSE)
Faculty of Sciences and Engineering
Semester: (Spring, Year:2025), B.Sc. in CSE (Day)

Lab Report NO # 03
Course Title: Computer Networking Lab
Course Code: CSE-312 Section:223-D2

Lab Experiment Name: Setting up Network Infrastructure for GUB, BUET, and KUET using RIP and NAT

Student Details

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Submission Date : 13/05/2025
Course Teacher's Name : Md. Sabbir Hosen Mamun

Lab Report Status

Marks: …… **Signature:.....**
Comments:..... **Date:.....**

Title: Setting up Network Infrastructure for GUB, BUET, and KUET using RIP and NAT.

Objectives:

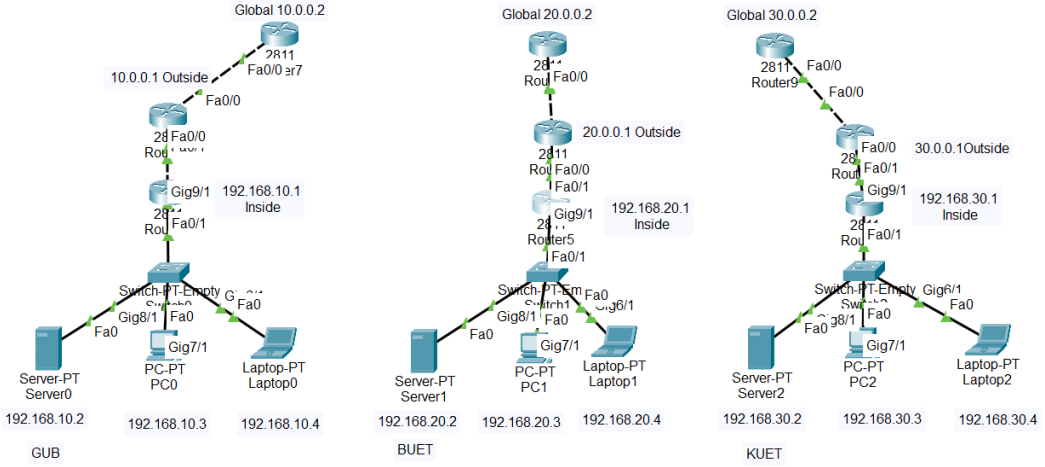
The objectives of the lab report Are:

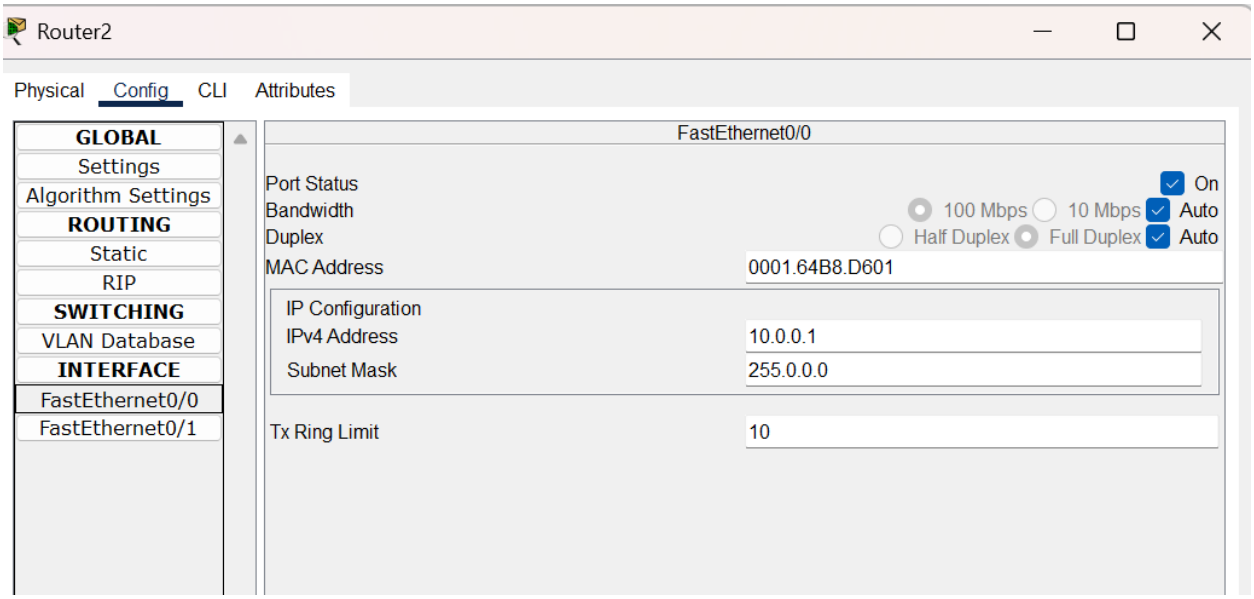
- Set up a network for GUB, BUET, and KUET using Cisco Packet Tracer.
- Assign unique subnets to each university's LAN and WAN.
- Configure routers, switches, servers, desktops, and laptops.
- Enable RIP for dynamic routing between universities.
- Set up NAT (PAT) to allow internal devices internet access.
- Test inter-university and internet connectivity.
- Use simulation tools to verify routing and NAT functionality.

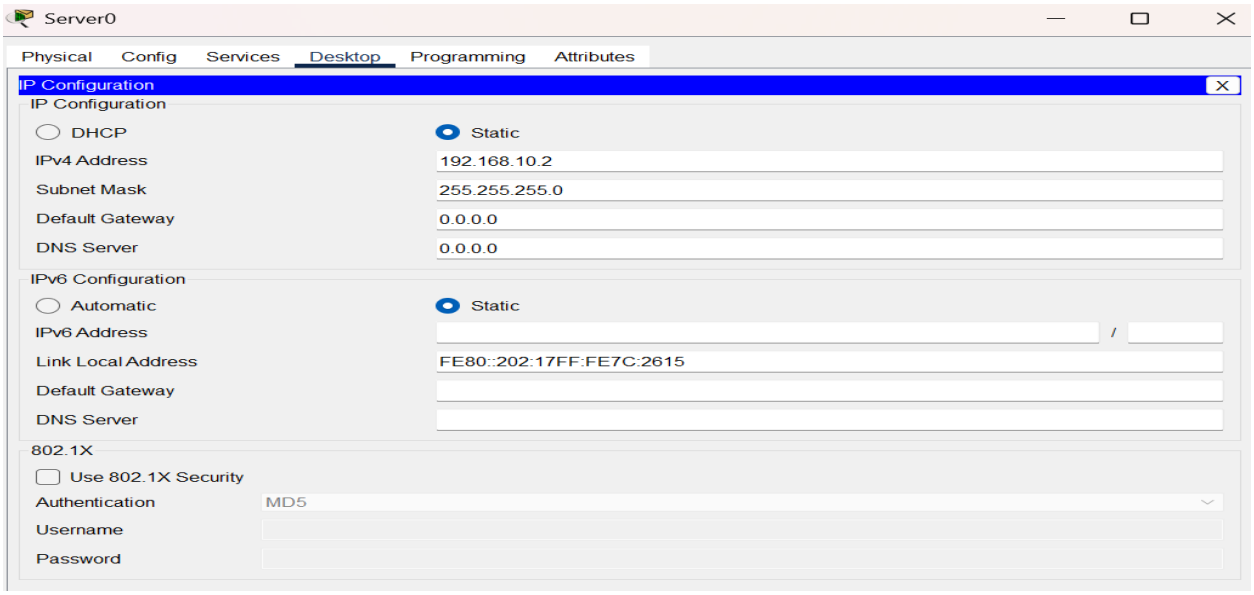
Procedure:

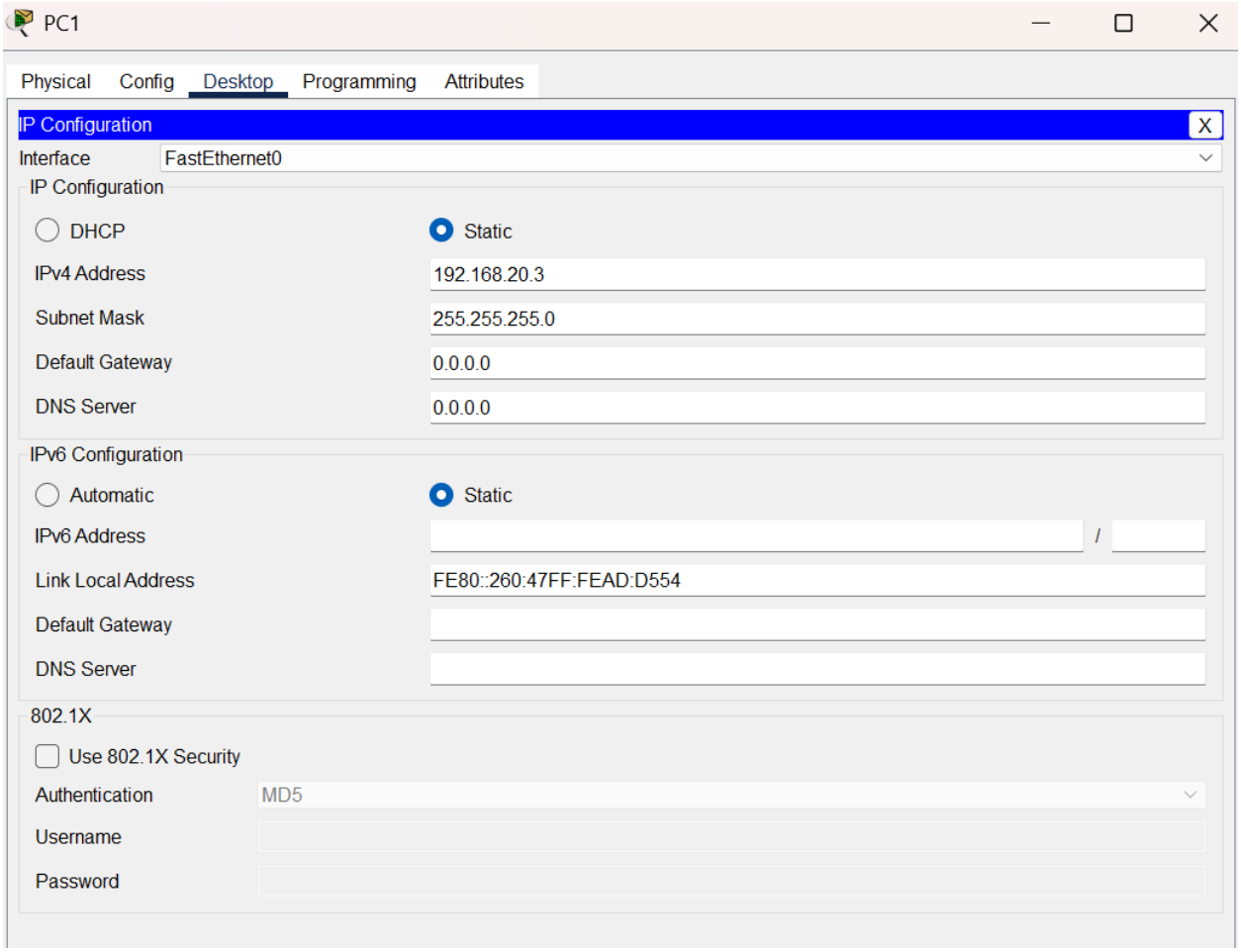
- Add routers, switches, servers, desktops, laptops, and global routers for GUB, BUET, and KUET.
- Assign IP addresses to all devices and router interfaces based on given subnets.
- Connect devices using appropriate cables.
- Configure inside and outside interfaces on each router.
- Set up RIP v2 on all routers to enable dynamic routing.
- Configure NAT using access lists and PAT on each router.
- Test connectivity using `ping` and verify with `show ip route` and `show ip nat translations`.

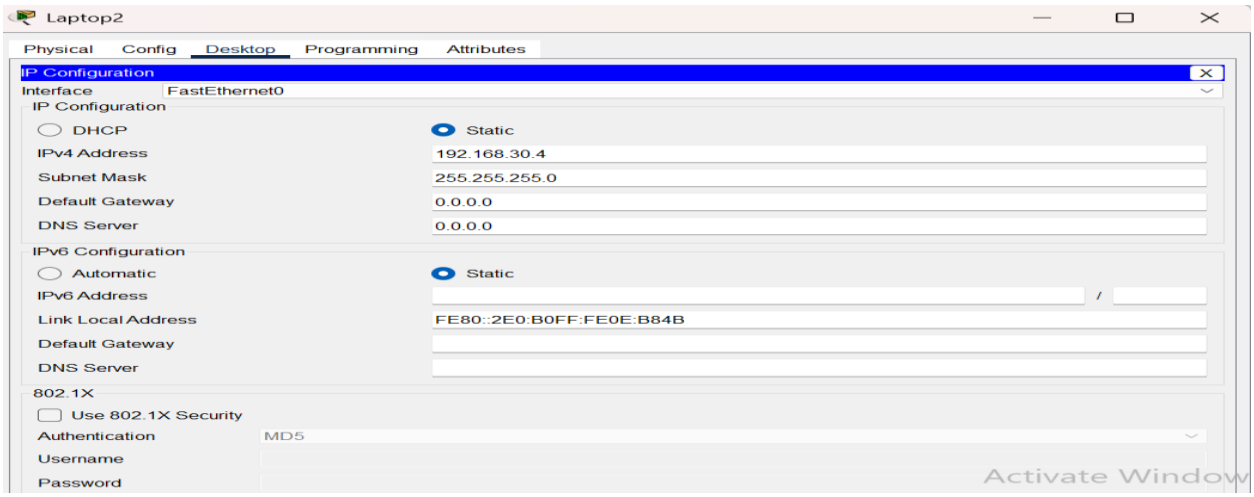
Implementation:

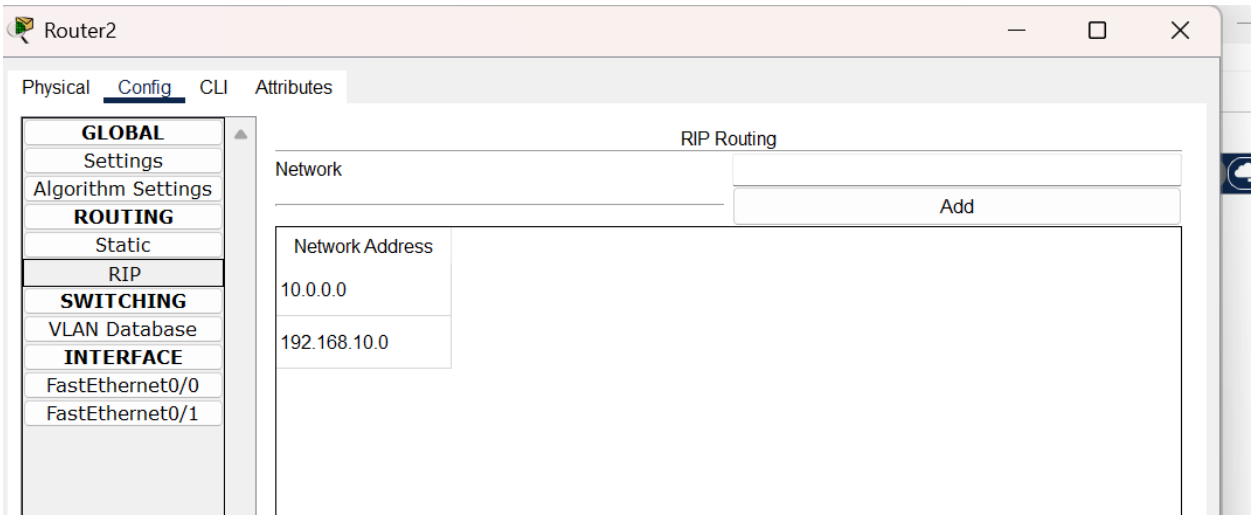


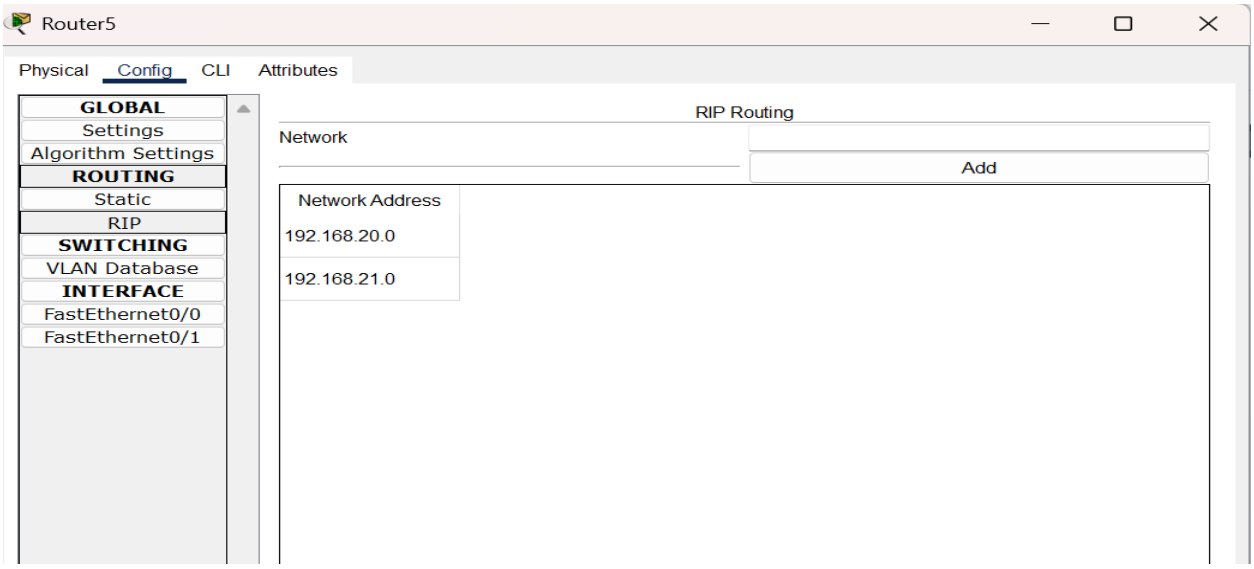



Server0
Physical
Config
Services
Desktop
Programming
Attributes
IP Configuration
IP Configuration
DHCP
Static
IPv4 Address
192.168.10.2
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::202:17FF:FE7C:2615
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password

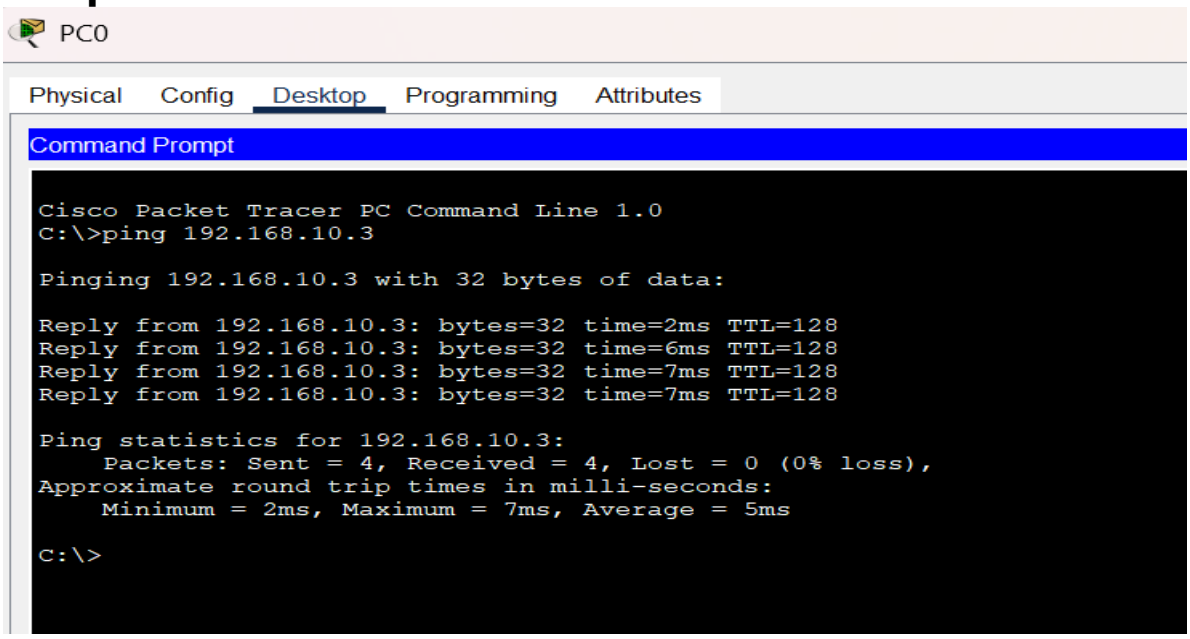

PC1
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.20.3
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::260:47FF:FEAD:D554
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password


Laptop2
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.30.4
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::2E0:B0FF:FE0E:B84B
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Activate Window


Router2
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
FastEthernet0/0
FastEthernet0/1
RIP Routing
Network
Add
Network Address
10.0.0.0
192.168.10.0


Router5
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
FastEthernet0/0
FastEthernet0/1
RIP Routing
Network
Add
Network Address
192.168.20.0
192.168.21.0

Output:



Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	Server0	PC0	ICMP		0.000	N	0	(edit)	(delete)
	Successful	Server0	Laptop0	ICMP		0.000	N	1	(edit)	(delete)
	Successful	PC0	Laptop0	ICMP		0.000	N	2	(edit)	(delete)

Activate Windows
Go to Settings to activate Windows.

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	Server1	PC1	ICMP		0.000	N	0	(edit)	(delete)
	Successful	Server1	Laptop1	ICMP		0.000	N	1	(edit)	(delete)
	Successful	PC1	Laptop1	ICMP		0.000	N	2	(edit)	(delete)

Activate Windows
Go to Settings to activate Windows.

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	Server2	PC2	ICMP		0.000	N	0	(edit)	(delete)
	Successful	Server2	Laptop2	ICMP		0.000	N	1	(edit)	(delete)
	Successful	PC2	Laptop2	ICMP		0.000	N	2	(edit)	(delete)

Activate Windows
Go to Settings to activate Windows.