



# **American International University-Bangladesh (AIUB)**

Faculty of Science and Technology (FST)  
Department of Computer Science (CS)  
Undergraduate Program

**I. Course Code and Title:**  
**COE 3206: Computer Networks**

**II. Credit:**  
**3 credits**

**III. Nature:**  
**Core Course for CS, CSE, CSSE, SE, CIS**

## **Lab Manual**

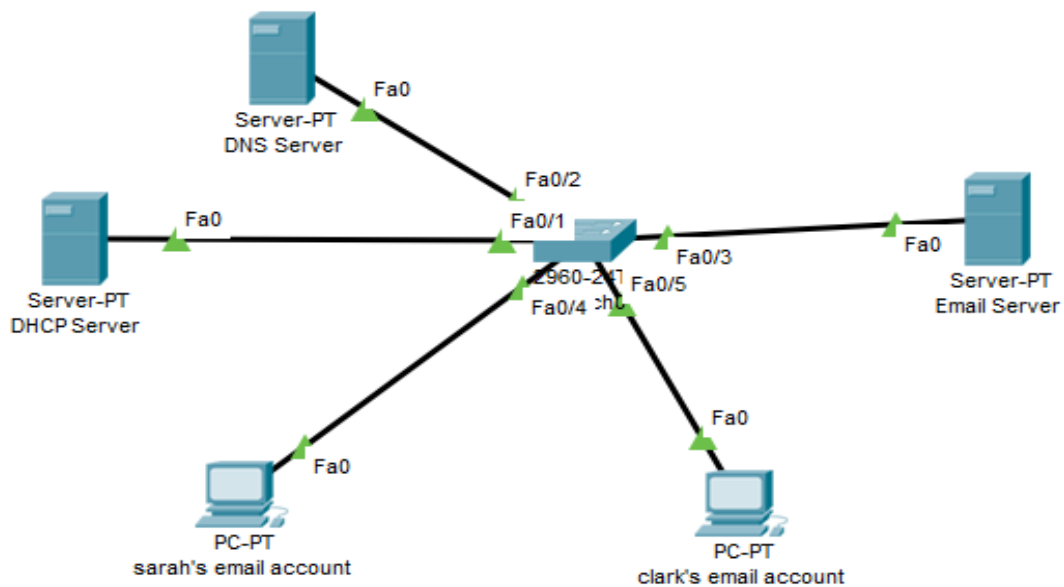
**Title: Configuration of DNS, DHCP and Email servers**

Abstract: This experiment is designed to introduce

1. DNS server configuration
2. DHCP server configuration
3. Email server configuration

**Software: Cisco Packet Tracer**

## Network Design



### 1st server: DHCP server

#### Desktop tab

→ IP configuration: Configure it manually

- Configure IP address,
- Configure subnet mask and
- Configure DNS server

#### DHCP Server

Physical	Config	Services	Desktop	Programming	Attributes
<input type="radio"/> DHCP <input checked="" type="radio"/> Static					
IP Address				<input type="text" value="10.0.0.1"/>	
Subnet Mask				<input type="text" value="255.0.0.0"/>	
Default Gateway				<input type="text"/>	
DNS Server				<input type="text" value="10.0.0.2"/>	

## Service tab

Activate service by clicking 'on'

Assign 10.0.0.2 as DNS server

### DHCP Server

Physical	Config	Services	Desktop	Programming	Attributes
<b>SERVICES</b>					
HTTP					
DHCP					
DHCPv6					
TFTP					
DNS					
SYSLOG					
AAA					

DHCP	
Interface	FastEthernet0
Pool Name	serverPool
Default Gateway	0.0.0.0
DNS Server	10.0.0.2

## 2nd Server: DNS server

### Desktop tab

→ Ip configuration: Since this is a server, we will set a static IP configuration.

### DNS Server

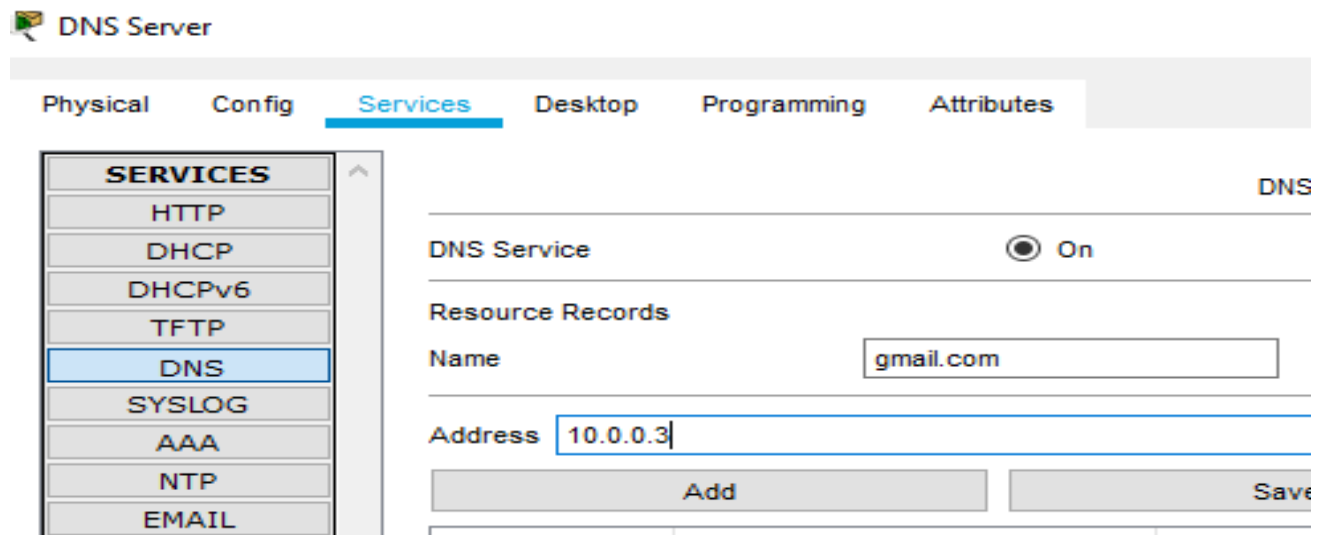
Physical	Config	Services	Desktop	Programming	Attributes
<input type="radio"/> DHCP <input checked="" type="radio"/> Static					
IP Address				10.0.0.2	
Subnet Mask				255.0.0.0	
Default Gateway				0.0.0.0	
DNS Server				10.0.0.2	

## Service tab

Activate service by clicking 'on'

Write down 'gmail.com' in 'Name' box and '10.0.0.3' in the 'Address' box

Then, click "Add" to store the record.

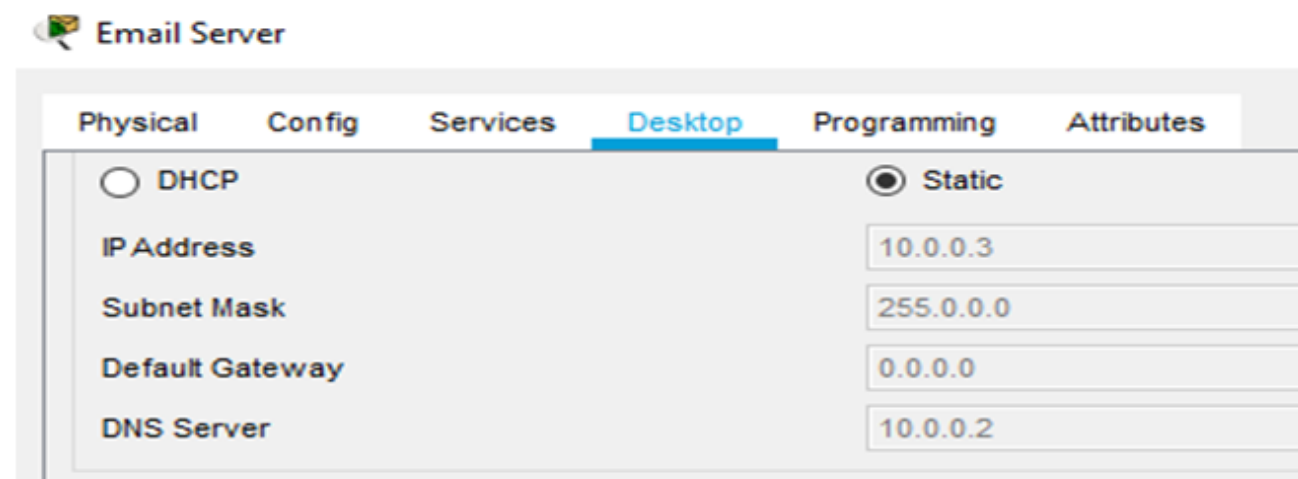


The screenshot shows the 'DNS Server' configuration window. The 'Services' tab is selected. On the left, a list of services includes HTTP, DHCP, DHCPv6, TFTP, DNS (highlighted), SYSLOG, AAA, NTP, and EMAIL. On the right, the 'DNS Service' is set to 'On'. Below it, the 'Resource Records' section has a 'Name' field containing 'gmail.com' and an 'Address' field containing '10.0.0.3'. At the bottom right, there are 'Add' and 'Save' buttons.

## 3rd Server: Email server

### Desktop tab

→ IP configuration: Since this is a server, we will set a static IP configuration.



The screenshot shows the 'Email Server' configuration window. The 'Desktop' tab is selected. On the left, there are radio buttons for 'DHCP' and 'Static'. The 'Static' option is selected. Below these are fields for 'IP Address' (10.0.0.3), 'Subnet Mask' (255.0.0.0), 'Default Gateway' (0.0.0.0), and 'DNS Server' (10.0.0.2).


## Service tab

Write down 'gmail.com' in 'Domain name' box

Press 'set' button

Write down 'sarah' in 'user' box and '123' in 'password' box

Press '+' button

 Email Server

Physical Config **Services** Desktop Programming Attributes

**SERVICES** EM.

- HTTP
- DHCP
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL**

SMTP Service

☒ ON ☐ OFF


Domain Name:

User Setup

User  Password

Write down 'clark' in 'user' box and '456' in 'password' box

Press '+' button

 Email Server

Physical Config **Services** Desktop Programming Attributes

**SERVICES** EMAIL

- HTTP
- DHCP
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL**
- FTP

SMTP Service

☒ ON ☐ OFF

Domain Name:

User Setup


User  Password

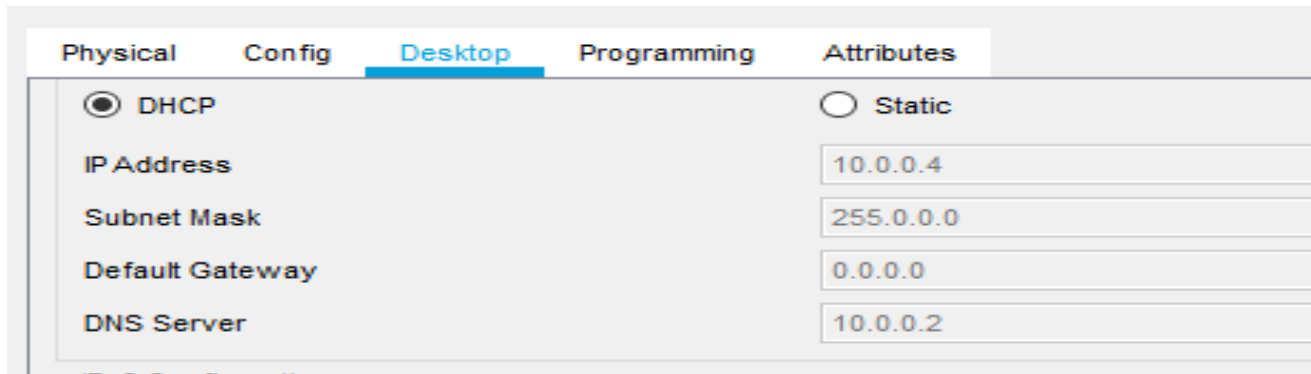
sarah

## Pc0

### Desktop tab

→ IP configuration: by clicking the DHCP option

 sarah's email account



The screenshot shows a configuration window for 'sarah's email account' with tabs for Physical, Config, Desktop, Programming, and Attributes. The Desktop tab is active, showing DHCP selected over Static. The IP Address is 10.0.0.4, Subnet Mask is 255.0.0.0, Default Gateway is 0.0.0.0, and DNS Server is 10.0.0.2.

Field	Value
IP Address	10.0.0.4
Subnet Mask	255.0.0.0
Default Gateway	0.0.0.0
DNS Server	10.0.0.2

### Desktop tab

→ Email tab: configure mail

Write down 'sarah' in 'Your name' box

Write down 'sarah@gmail.com' in 'Email address' box

Write down 'gmail.com' in 'Incoming mail server' box

Write down 'gmail.com' in 'Outgoing mail server' box

Write down 'sarah' in 'User Name' box

Write down '123' in 'password' box

Press 'save' button

## sarah's email account

Physical Config **Desktop** Programming Attributes

**Configure Mail**

User Information

Your Name:

Email Address:

Server Information

Incoming Mail Server:

Outgoing Mail Server:

Logon Information

User Name:

Password:

## Pc1

### Desktop tab

→ IP configuration: by clicking the DHCP option

## clark's email account

Physical Config **Desktop** Programming Attributes

☒ DHCP ☐ Static

IP Address:

Subnet Mask:

Default Gateway:

DNS Server:

IP Configuration

## Desktop tab

→ Email tab: Configure mail

Write down 'clark' in 'Your name' box

Write down 'clark@gmail.com' in 'Email address' box

Write down 'gmail.com' in 'Incoming mail server' box

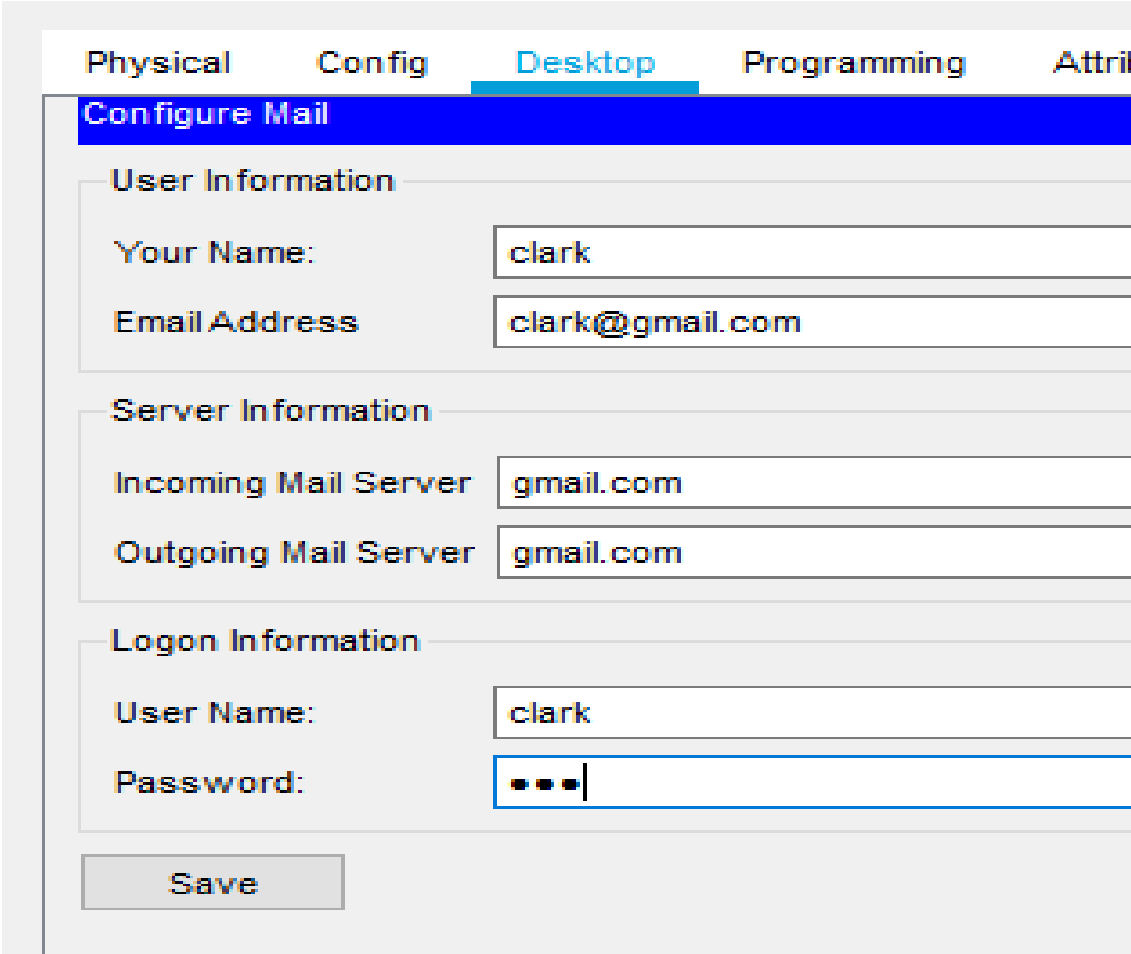
Write down 'gmail.com' in 'Outgoing mail server' box

Write down 'clark' in 'User Name' box

Write down '456' in 'password' box

Press 'save' button

### clark's email account



Physical	Config	Desktop	Programming	Attril
<b>Configure Mail</b>				
<b>User Information</b>				
Your Name:		clark		
Email Address		clark@gmail.com		
<b>Server Information</b>				
Incoming Mail Server		gmail.com		
Outgoing Mail Server		gmail.com		
<b>Logon Information</b>				
User Name:		clark		
Password:		••••		
<b>Save</b>				



Now you can compose and send mail

Open Desktop tab of PC0 and click Email. Then compose send email to Clark.

 sarah's email account

Physical Config **Desktop** Programming Attributes

Compose Mail

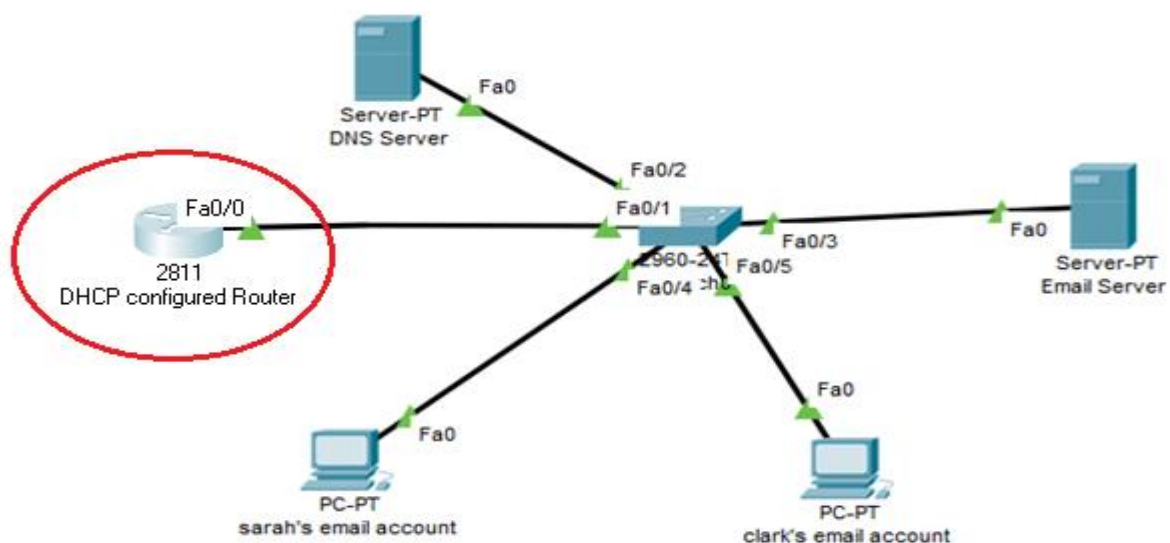
Send

To: clark@gmail.com

Subject: Hi

How are you?

You can configure DHCP in a router as well. Consider the following network,



## Router configuration

```
Router>en

Router#conf t

Router(config)#int f0/0

Router(config-if)#ip address 10.0.0.1 255.0.0.0

Router(config-if)#no shut

Router(config-if)#exit

Router(config)#ip dhcp pool dpool

Router(dhcp-config)#network 10.0.0.0 255.0.0.0

Router(dhcp-config)#default-router 10.0.0.1

Router(dhcp-config)#dns-server 10.0.0.2

Router(dhcp-config)#exit
```

**Note:** All the other configuration remains the same.