*Ahmed Allam*

project

Project OSPF and Servers

Network

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Project

This project is a small project in which we use a group of servers. We use the email server to create emails for users, and we use the web server and DNS server to create a small website. We also built the network using OSPF Protocol.

- ## **Network Topology**

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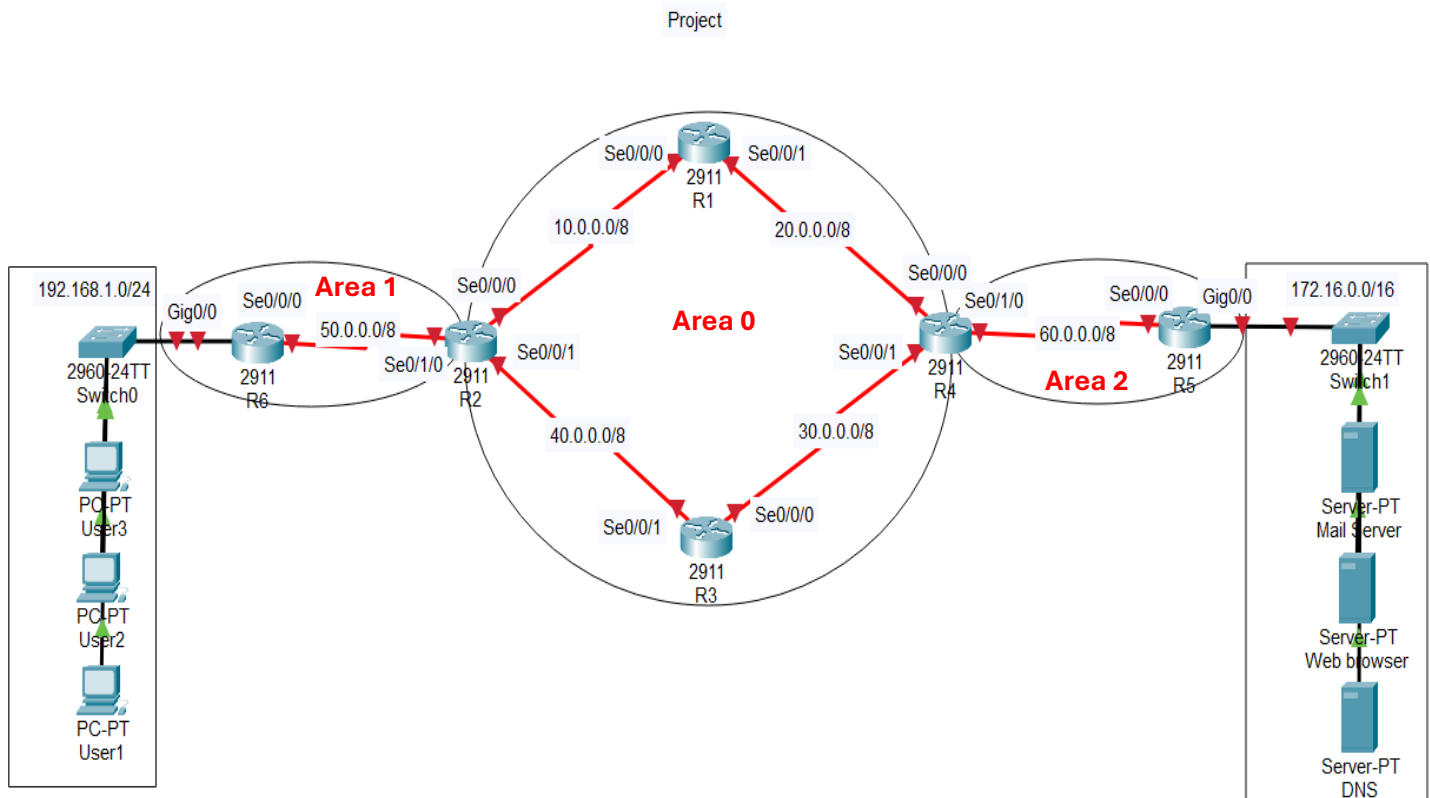
- ## **Configuration Topology**
  - o **Configuration OSPF**

R1
R1(config)#

R1(config)#int s0/0/0
R1(config-if)#ip add 10.0.0.1 255.0.0.0
R1(config-if)#no sh
R1(config)#int se0/0/1
R1(config-if)#ip add 20.0.0.1 255.0.0.0
R1(config-if)#no sh
R1(config)#router ospf 1
R1(config-router)#router-id 100.100.100.100
R1(config-router)#network 10.0.0.0 0.255.255.255 area 0
R1(config-router)#network 20.0.0.0 0.255.255.255 area 0
R1(config-router)#exit
R1(config)#exit
R1#wr
Building configuration...
[OK]
R1#

R2

R2(config)#
R2(config)#int s0/0/0
R2(config-if)#ip add 10.0.0.2 255.0.0.0
R2(config-if)#no sh
R2(config-if)#int s0/0/1
R2(config-if)#ip add 40.0.0.2 255.0.0.0
R2(config-if)#no sh
R2(config-if)#int s0/1/0
R2(config-if)#ip add 50.0.0.2 255.0.0.0
R2(config-if)#no sh
R2(config)#router ospf 1
R2(config-router)#router-id 99.99.99.99
R2(config-router)#network 10.0.0.0 0.255.255.255 area 0
R2(config-router)#network 40.0.0.0 0.255.255.255 area 0
R2(config-router)#network 50.0.0.0 0.255.255.255 area 1
R2(config-router)#exit
R2(config)#exit
R2#wr
Building configuration...
[OK]

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R3
R3(config)#
R3(config)#int s0/0/0
R3(config-if)#ip add 30.0.0.3 255.0.0.0
R3(config-if)#no sh
R3(config)#int s0/0/1
R3(config-if)#ip add 40.0.0.3 255.0.0.0
R3(config-if)#no sh
R3(config)#router ospf 1
R3(config-router)#router-id 88.88.88.88
R3(config-router)#network 30.0.0.0 0.255.255.255 area 0
R3(config-router)#network 40.0.0.0 0.255.255.255 area 0
R3(config-router)#exit
R3(config)#exit
R3#wr
Building configuration...
[OK]
R3#

R4
R4(config)#
R4(config)#int s0/0/0
R4(config-if)#ip add 20.0.0.4 255.0.0.0
R4(config-if)#no sh
R4(config)#int s0/0/1
R4(config-if)#ip add 30.0.0.4 255.0.0.0
R4(config-if)#no sh
R4(config)#int s0/1/0
R4(config-if)#ip add 60.0.0.4 255.0.0.0
R4(config-if)#no sh
R4(config)#router ospf 1
R4(config-router)#router-id 77.77.77.77
R4(config-router)#network 30.0.0.0 0.255.255.255 area 0
R4(config-router)#network 20.0.0.0 0.255.255.255 area 0
R4(config-router)#network 60.0.0.0 0.255.255.255 area 2
R4(config-router)#exit
R4(config)#exit
R4#wr
Building configuration...
[OK]
R4#

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| R5 |
|---|
| R5(config)#
R5(config)#int s0/0/0
R5(config-if)#ip add 60.0.0.5 255.0.0.0
R5(config-if)#no sh
R5(config)#int gig0/0
R5(config-if)#ip add 172.16.0.1 255.255.0.0
R5(config-if)#no sh
R5(config)#router ospf 1
R5(config-router)#router-id 66.66.66.66
R5(config-router)#network 60.0.0.0 0.255.255.255 area 2
R5(config-router)#network 172.16.0.0 0.0.255.255 area 2
R5(config-router)#exit
R5(config)#exit
R5#wr
Building configuration...
[OK]
R5# |
| **R6** |
| Router(config)#
Router(config)#int s0/0/0
Router(config-if)#ip add 50.0.0.6 255.0.0.0
Router(config-if)#no sh
Router(config)#int gig0/0
Router(config-if)#ip add 192.168.1.1 255.255.255.0
Router(config-if)#no sh
Router(config)#router ospf 1
Router(config-router)#router-id 55.55.55.55
Router(config-router)#network 50.0.0.0 0.255.255.255 area 1
Router(config-router)#network 192.168.1.0 0.0.0.255 area 1
Router(config-router)#exit
Router(config)#exit
Router#wr
Building configuration...
[OK]
Router# |

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```
R1#sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

      10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C        10.0.0.0/8 is directly connected, Serial0/0/0
L        10.0.0.1/32 is directly connected, Serial0/0/0
      20.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C        20.0.0.0/8 is directly connected, Serial0/0/1
L        20.0.0.1/32 is directly connected, Serial0/0/1
O     30.0.0.0/8 [110/192] via 10.0.0.2, 00:18:40, Serial0/0/0
O     40.0.0.0/8 [110/128] via 10.0.0.2, 00:19:00, Serial0/0/0
O IA 50.0.0.0/8 [110/128] via 10.0.0.2, 00:06:22, Serial0/0/0
O IA 60.0.0.0/8 [110/128] via 20.0.0.4, 00:13:09, Serial0/0/1
O IA 172.16.0.0/16 [110/129] via 20.0.0.4, 00:11:21, Serial0/0/1
O IA 192.168.1.0/24 [110/129] via 10.0.0.2, 00:03:51, Serial0/0/0

R1#
```


Project

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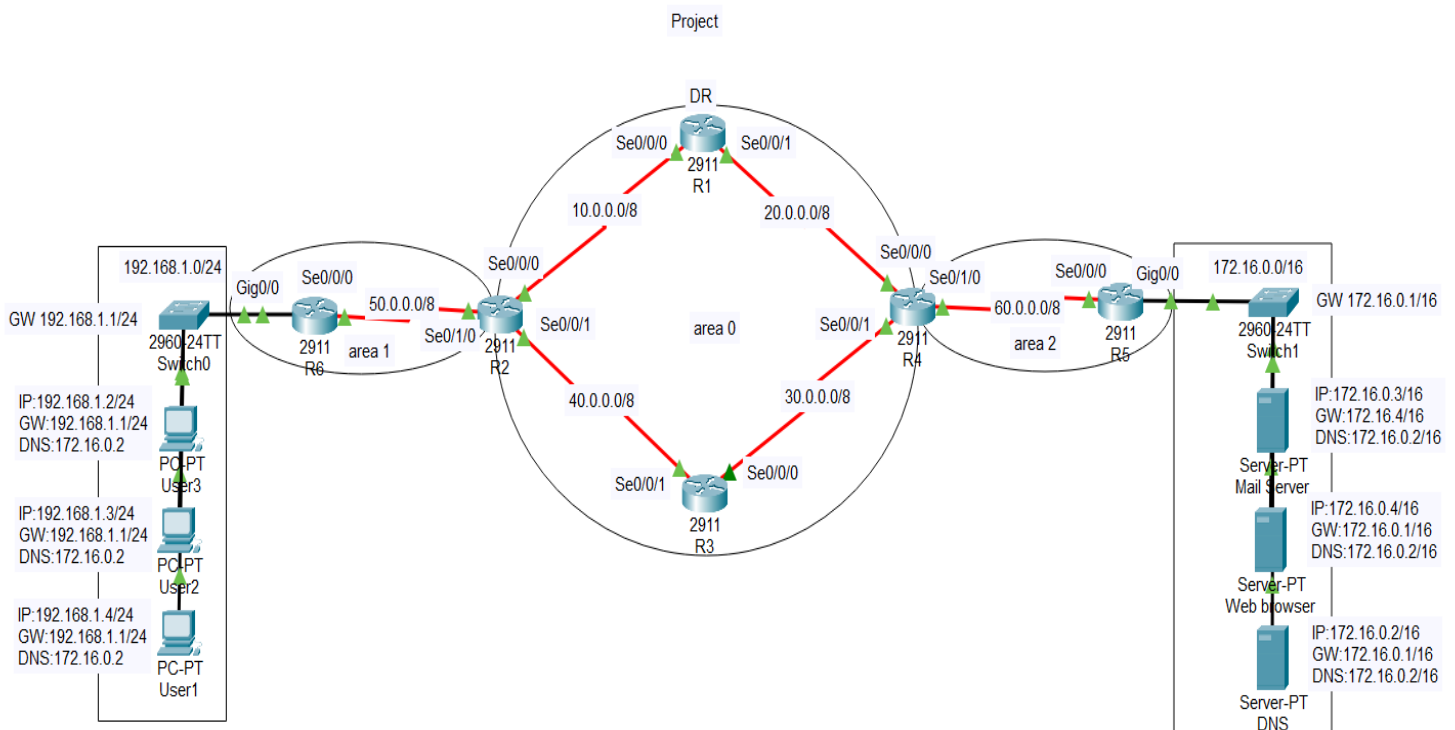
Email Server

Mail Server — □ X

| Physical | Config | Services | Desktop | Programming | Attributes |

IP Configuration [X]

IP Configuration

○ DHCP   ● Static

IPv4 Address   172.16.0.3

Subnet Mask   255.255.0.0

Default Gateway   172.16.0.1

DNS Server   172.16.0.2

Mail Server — □ X

| Physical | Config | Services | Desktop | Programming | Attributes |

SERVICES
- HTTP
- DHCP
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

EMAIL

SMTP Service   POP3 Service
● ON   ○ OFF   ● ON   ○ OFF

Domain Name: test.com   [Set]

User Setup

User [   ] Password [   ]

user1
user2
user3

[+]
[-]
[Change Password]

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HTTP server

Web browser — □ X

| Physical | Config | Services | Desktop | Programming | Attributes |

IP Configuration X

IP Configuration

○ DHCP   ● Static

IPv4 Address   172.16.0.4

Subnet Mask   255.255.0.0

Default Gateway   172.16.0.1

DNS Server   172.16.0.2

Web browser — □ X

| Physical | Config | Services | Desktop | Programming | Attributes |

SERVICES

- HTTP
- DHCP
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

File Name: index.html

```
        box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);
        text-align: center;
    }

    .company-card h1 {
        margin-bottom: 20px;
        color: #333;
    }

    .company-image {
        width: 150px;
        height: 150px;
        border-radius: 50%;
        margin-bottom: 20px;
        object-fit: cover;
    }

    .company-card p {
        margin: 5px 0;
        color: #555;
    }
    </style>
</head>
<body>
    <div class="company-card">
        <h1>Allam Company</h1>
        <img src="https://scontent.fcai21-4.fna.fbcdn.net/v/
t39.30808-6/450077025_1199307041261285_6950087612330302981_n.jpg?stp=dst-
jpg_p526x296&_nc_cat=102&ccb=1-7&_nc_sid=833d8c&_nc_eui2=AeGSz8PRRJI7DIFU8r2c
wlk0Ghbs1sdPxKlaFuzWx0_EoqRA9LnAa-
olJAXJ3Uut_n4LQagpWQkslGimogky5xnV&_nc_ohc=W7VbyOFRkTcQ7kNvgHi3_q8&_nc_ht=
scontent.fcai21-4.fna&oh=00_AYBOABQWTQiAB2B2ecORHH1Py5lvLYZfQz4q8UnNFAsKbg&
oe=66C0212A" alt="Company Image" class="company-image">
        <p>Owner: Ahmed Allam</p>
        <p>Location: Sohag, Egypt</p>
    </div>
</body>
</html>
```
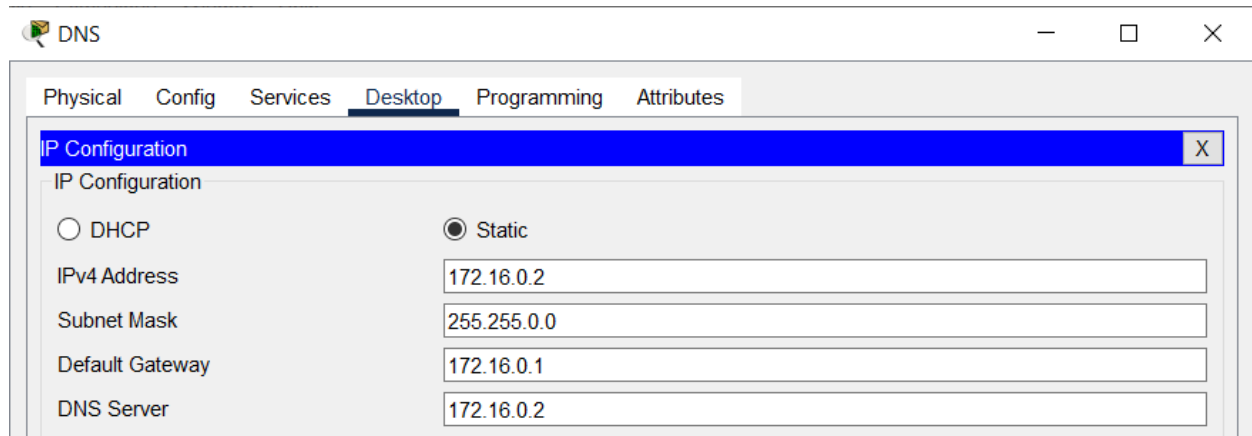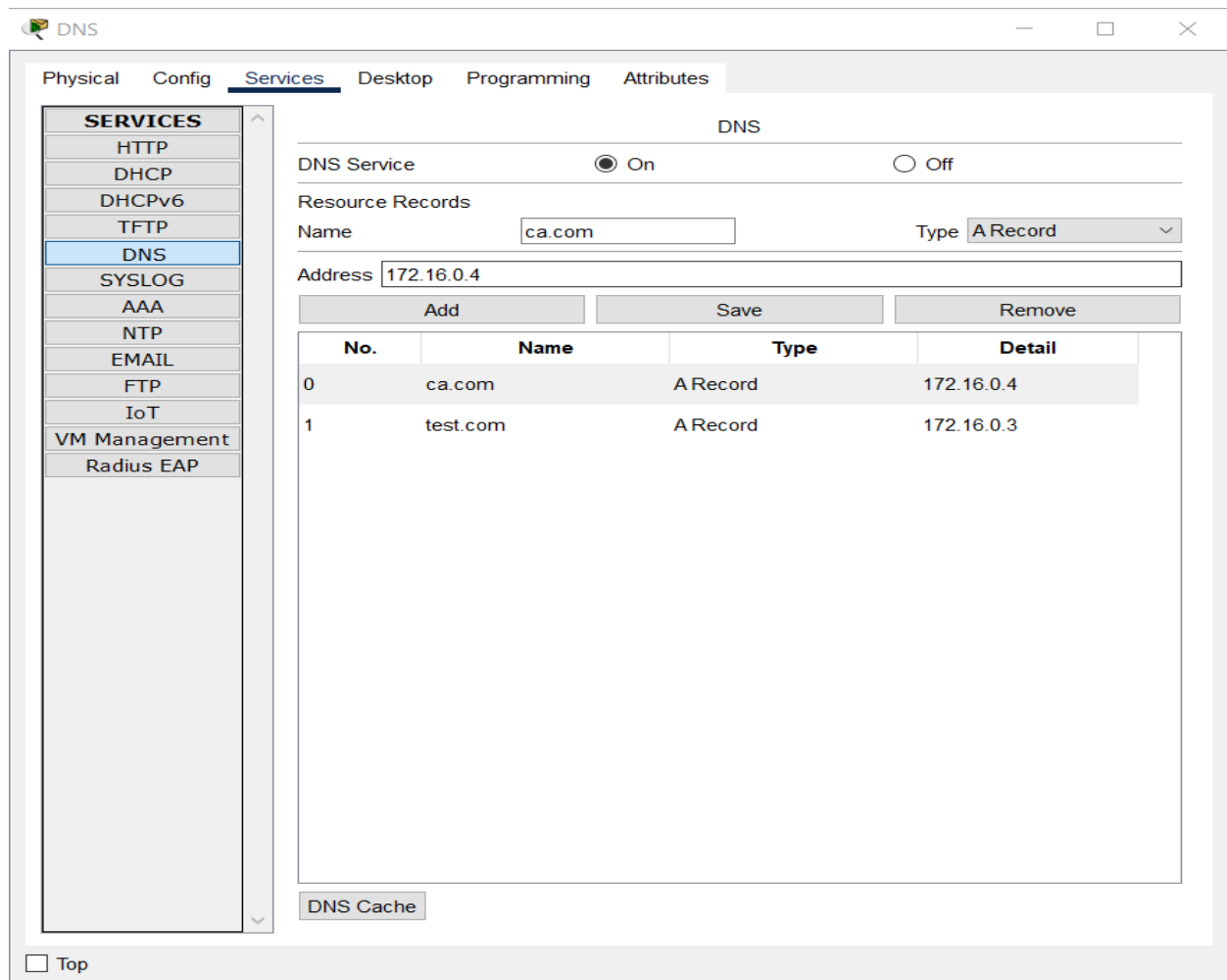
File Manager   Save

☐ Top

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DNS Server

Create two domains http://CA.com and Email test.com

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Add Emails in PCs

User2   — □ ×

Physical   Config   Desktop   Programming   Attributes

Configure Mail   X

User Information

Your Name: User2

Email Address   user2@test.com

Server Information

Incoming Mail Server   172.16.0.3

Outgoing Mail Server   172.16.0.3

Logon Information

User Name: User2

Password: •••••

Save   Remove   Clear   Reset

User3   — □ ×

Physical   Config   Desktop   Programming   Attributes

Configure Mail   X

User Information

Your Name: User3

Email Address   user3@test.com

Server Information

Incoming Mail Server   172.16.0.3

Outgoing Mail Server   172.16.0.3

Logon Information

User Name: User3

Password: •••••

Save   Remove   Clear   Reset

User1   — □ ×

Physical   Config   Desktop   Programming   Attributes

Configure Mail   X

User Information

Your Name: User1

Email Address   user1@test.com

Server Information

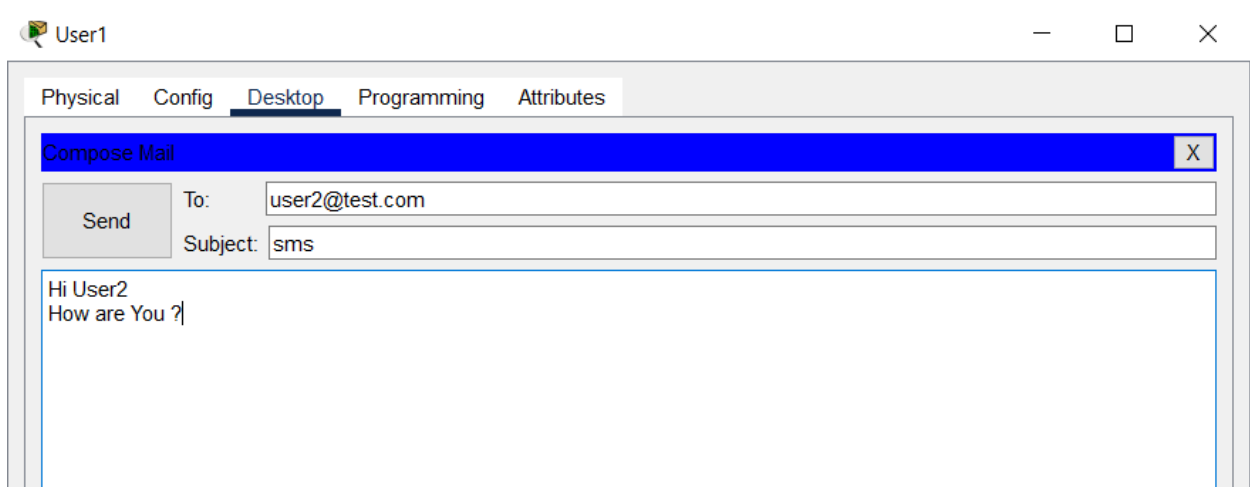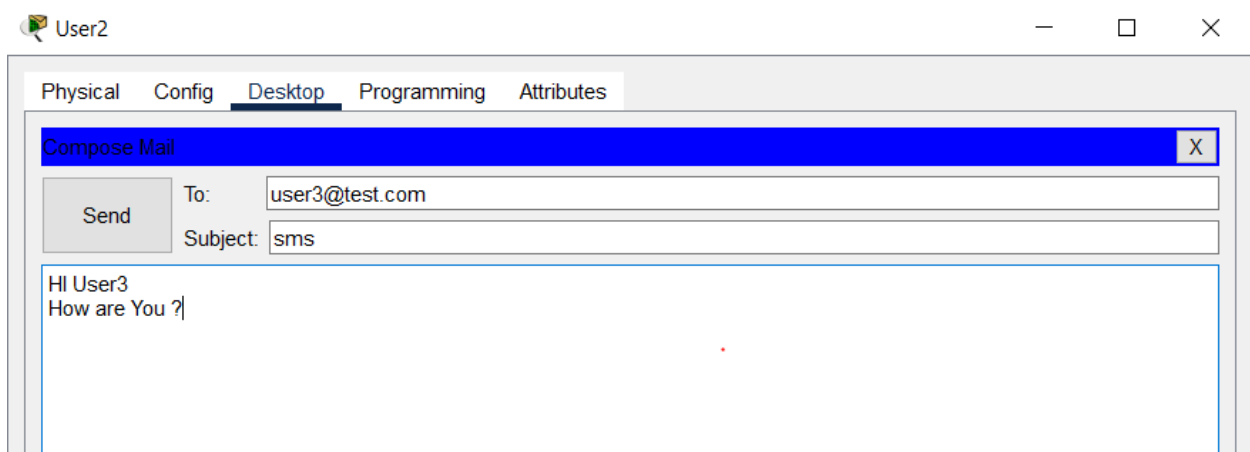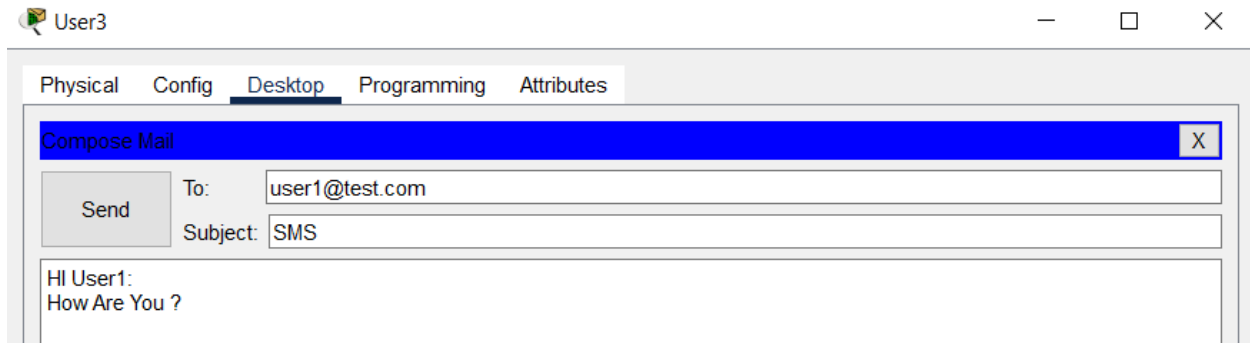Incoming Mail Server   172.16.0.3

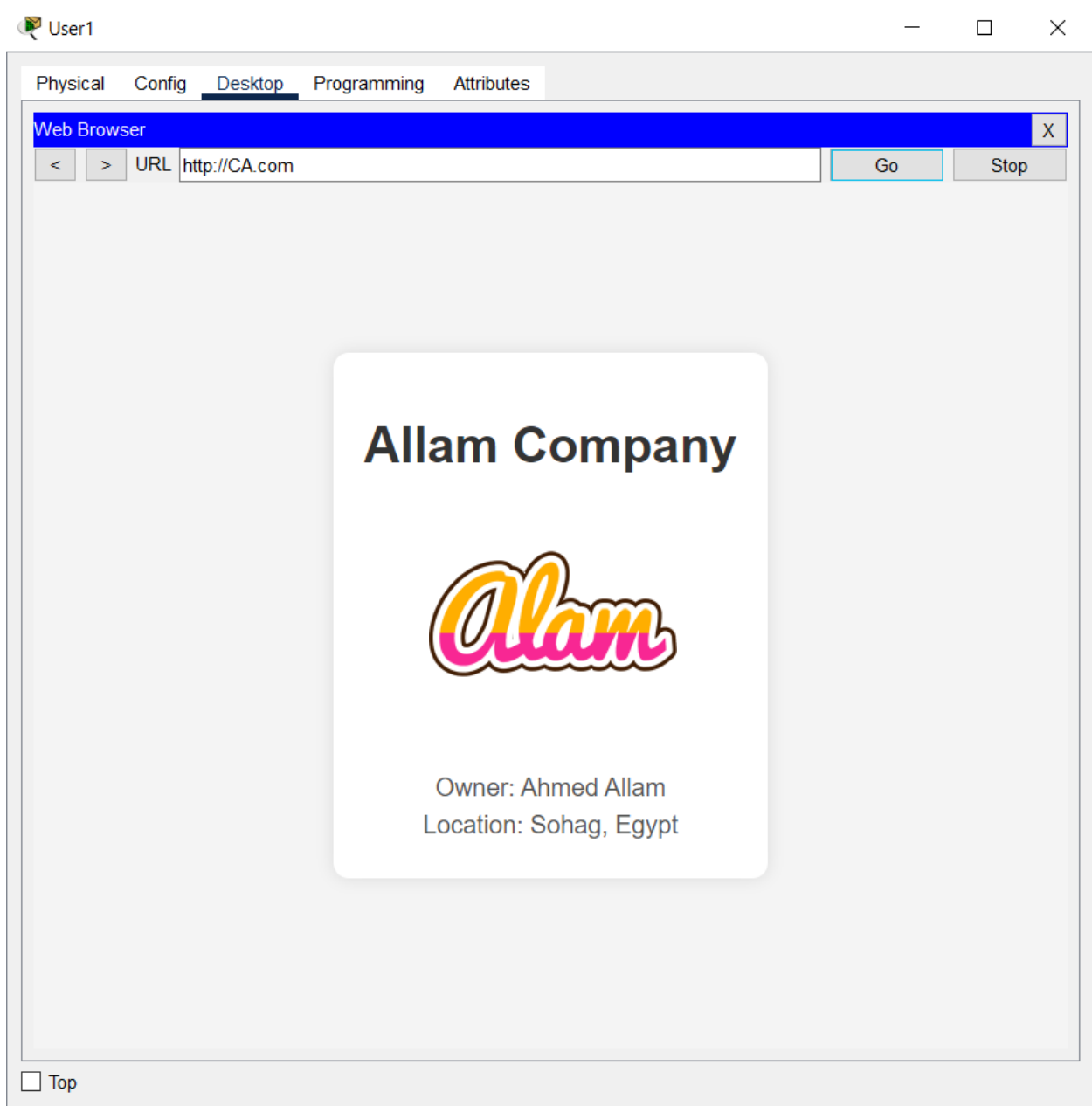Outgoing Mail Server   172.16.0.3

Logon Information

User Name: User1

Password: •••••

Save   Remove   Clear   Reset

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Testing PCs

User3   —   □   ✕

Physical   Config   Desktop   Programming   Attributes

Compose Mail   X

| Send | To: | user1@test.com |
| | Subject: | SMS |

HI User1:
How Are You ?

User2   —   □   ✕

Physical   Config   Desktop   Programming   Attributes

Compose Mail   X

| Send | To: | user3@test.com |
| | Subject: | sms |

HI User3
How are You ?

User1   —   □   ✕

Physical   Config   Desktop   Programming   Attributes

Compose Mail   X

| Send | To: | user2@test.com |
| | Subject: | sms |

Hi User2
How are You ?

Ahmed Allam

Test Web Browser domain http://CA.com

Thanks

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