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Report of the results

Students:

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(1) ping result

```
C:\>ping 1.0.0.5

Pinging 1.0.0.5 with 32 bytes of data:

Reply from 1.0.0.5: bytes=32 time<1ms TTL=127
Reply from 1.0.0.5: bytes=32 time=1ms TTL=127
Reply from 1.0.0.5: bytes=32 time<1ms TTL=127
Reply from 1.0.0.5: bytes=32 time<1ms TTL=127

Ping statistics for 1.0.0.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

```
C:\>ping 192.168.1.4

Pinging 192.168.1.4 with 32 bytes of data:

Reply from 192.168.1.4: bytes=32 time=64ms TTL=125
Reply from 192.168.1.4: bytes=32 time=2ms TTL=125
Reply from 192.168.1.4: bytes=32 time=2ms TTL=125
Reply from 192.168.1.4: bytes=32 time=75ms TTL=125

Ping statistics for 192.168.1.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 75ms, Average = 35ms
```

```
C:\>ping 192.168.2.3

Pinging 192.168.2.3 with 32 bytes of data:

Reply from 192.168.2.3: bytes=32 time=6ms TTL=125
Reply from 192.168.2.3: bytes=32 time=3ms TTL=125
Reply from 192.168.2.3: bytes=32 time=5ms TTL=125
Reply from 192.168.2.3: bytes=32 time=3ms TTL=125

Ping statistics for 192.168.2.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 3ms, Maximum = 6ms, Average = 4ms
```

```
C:\>ping 192.168.3.3

Pinging 192.168.3.3 with 32 bytes of data:

Reply from 192.168.3.3: bytes=32 time=58ms TTL=126
Reply from 192.168.3.3: bytes=32 time=1ms TTL=126
Reply from 192.168.3.3: bytes=32 time=2ms TTL=126
Reply from 192.168.3.3: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.3.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 58ms, Average = 15ms
```

```
C:\>ping 128.168.0.3

Pinging 128.168.0.3 with 32 bytes of data:

Reply from 128.168.0.3: bytes=32 time=27ms TTL=128
Reply from 128.168.0.3: bytes=32 time<1ms TTL=128
Reply from 128.168.0.3: bytes=32 time<1ms TTL=128
Reply from 128.168.0.3: bytes=32 time=20ms TTL=128

Ping statistics for 128.168.0.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 27ms, Average = 11ms
```

```
C:\>ping 192.168.4.2

Pinging 192.168.4.2 with 32 bytes of data:

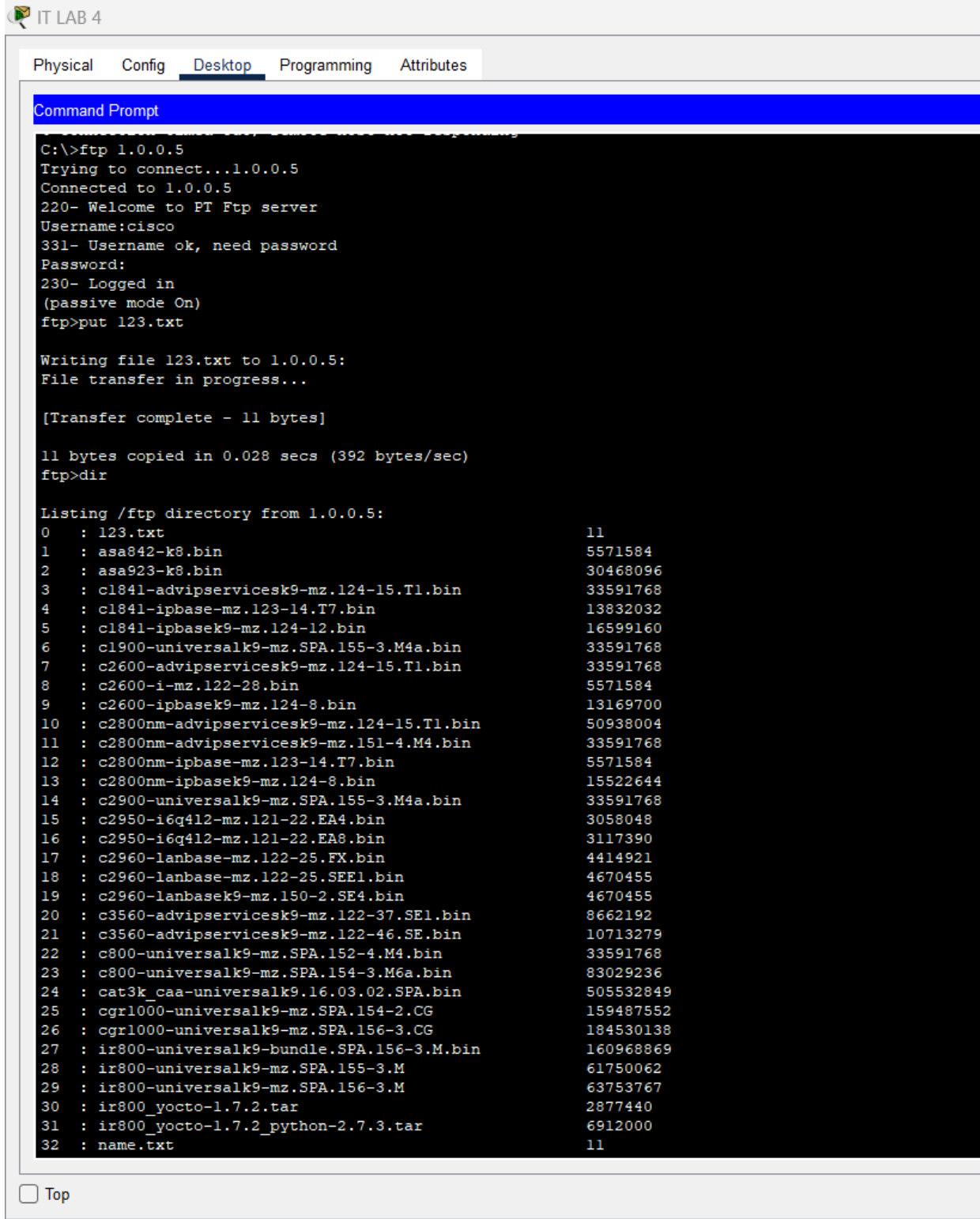
Reply from 192.168.4.2: bytes=32 time=2ms TTL=126
Reply from 192.168.4.2: bytes=32 time=2ms TTL=126
Reply from 192.168.4.2: bytes=32 time=1ms TTL=126
Reply from 192.168.4.2: bytes=32 time=2ms TTL=126

Ping statistics for 192.168.4.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 2ms, Average = 1ms
```

(2) FTP server :

In pc (IT LAB 4) -----→ network 192.168.1.0

First we open a connection with the ftp server then we enter the username and password for authentication then we uploaded file 123.txt in the ftp server



The screenshot shows a PC window titled "IT LAB 4" with tabs for Physical, Config, Desktop, Programming, and Attributes. The "Desktop" tab is active, displaying a Command Prompt window. The Command Prompt shows the following text:

```
C:\>ftp 1.0.0.5
Trying to connect...1.0.0.5
Connected to 1.0.0.5
220- Welcome to PT Ftp server
Username:cisco
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>put 123.txt

Writing file 123.txt to 1.0.0.5:
File transfer in progress...

[Transfer complete - 11 bytes]

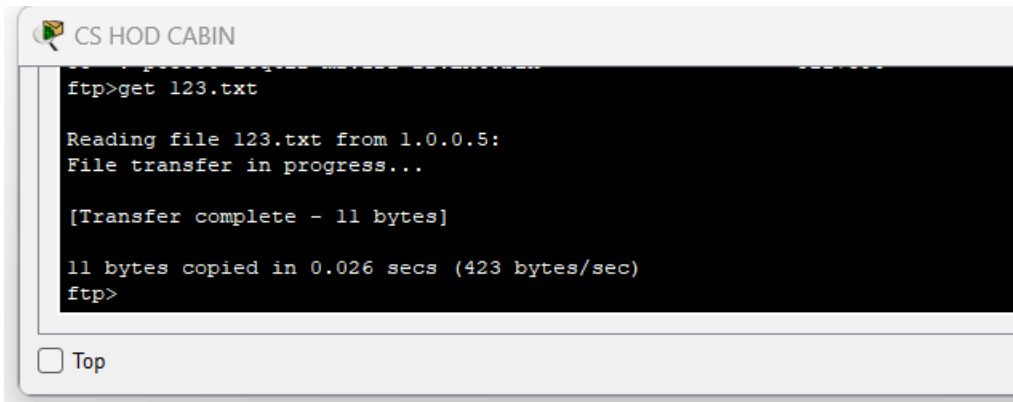
11 bytes copied in 0.028 secs (392 bytes/sec)
ftp>dir

Listing /ftp directory from 1.0.0.5:
0   : 123.txt                               11
1   : asa842-k8.bin                         5571584
2   : asa923-k8.bin                         30468096
3   : c1841-advipservicesk9-mz.124-15.T1.bin 33591768
4   : c1841-ipbase-mz.123-14.T7.bin          13832032
5   : c1841-ipbasek9-mz.124-12.bin           16599160
6   : c1900-universalk9-mz.SPA.155-3.M4a.bin 33591768
7   : c2600-advipservicesk9-mz.124-15.T1.bin 33591768
8   : c2600-i-mz.122-28.bin                  5571584
9   : c2600-ipbasek9-mz.124-8.bin            13169700
10  : c2800nm-advipservicesk9-mz.124-15.T1.bin 50938004
11  : c2800nm-advipservicesk9-mz.151-4.M4.bin 33591768
12  : c2800nm-ipbase-mz.123-14.T7.bin         5571584
13  : c2800nm-ipbasek9-mz.124-8.bin           15522644
14  : c2900-universalk9-mz.SPA.155-3.M4a.bin 33591768
15  : c2950-i6q412-mz.121-22.EA4.bin          3058048
16  : c2950-i6q412-mz.121-22.EA8.bin          3117390
17  : c2960-lanbase-mz.122-25.FX.bin          4414921
18  : c2960-lanbase-mz.122-25.SEE1.bin         4670455
19  : c2960-lanbasek9-mz.150-2.SE4.bin         4670455
20  : c3560-advipservicesk9-mz.122-37.SE1.bin  8662192
21  : c3560-advipservicesk9-mz.122-46.SE.bin  10713279
22  : c800-universalk9-mz.SPA.152-4.M4.bin     33591768
23  : c800-universalk9-mz.SPA.154-3.M6a.bin    83029236
24  : cat3k_caa-universalk9.16.03.02.SPA.bin   505532849
25  : cgr1000-universalk9-mz.SPA.154-2.CG      159487552
26  : cgr1000-universalk9-mz.SPA.156-3.CG      184530138
27  : ir800-universalk9-bundle.SPA.156-3.M.bin 160968869
28  : ir800-universalk9-mz.SPA.155-3.M         61750062
29  : ir800-universalk9-mz.SPA.156-3.M         63753767
30  : ir800_yocto-1.7.2.tar                   2877440
31  : ir800_yocto-1.7.2_python-2.7.3.tar      6912000
32  : name.txt                                11
```

At the bottom of the window, there is a checkbox labeled "Top".

In pc (HOD Cabin) --→ in network 192.168.2.0

We open the session with the ftp server then we get the file uploaded

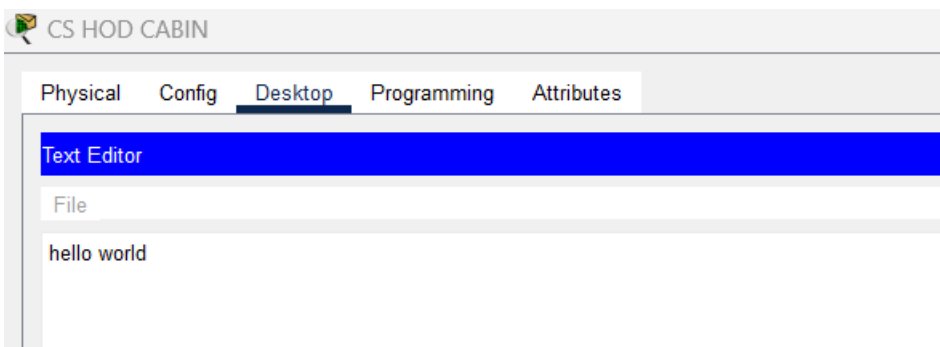
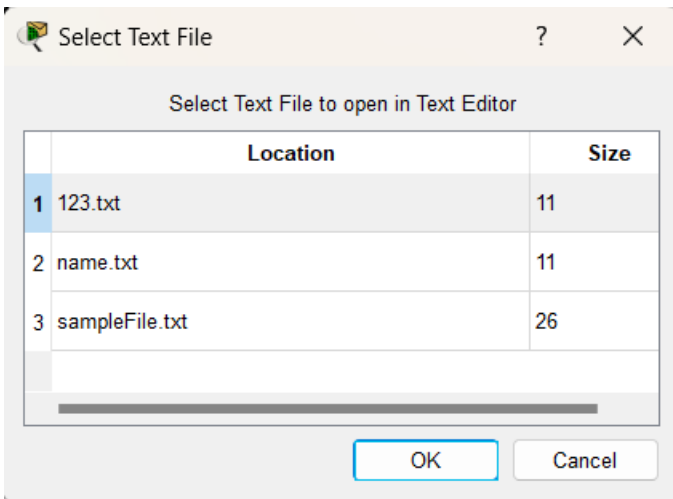


```
CS HOD CABIN
ftp>get 123.txt

Reading file 123.txt from 1.0.0.5:
File transfer in progress...

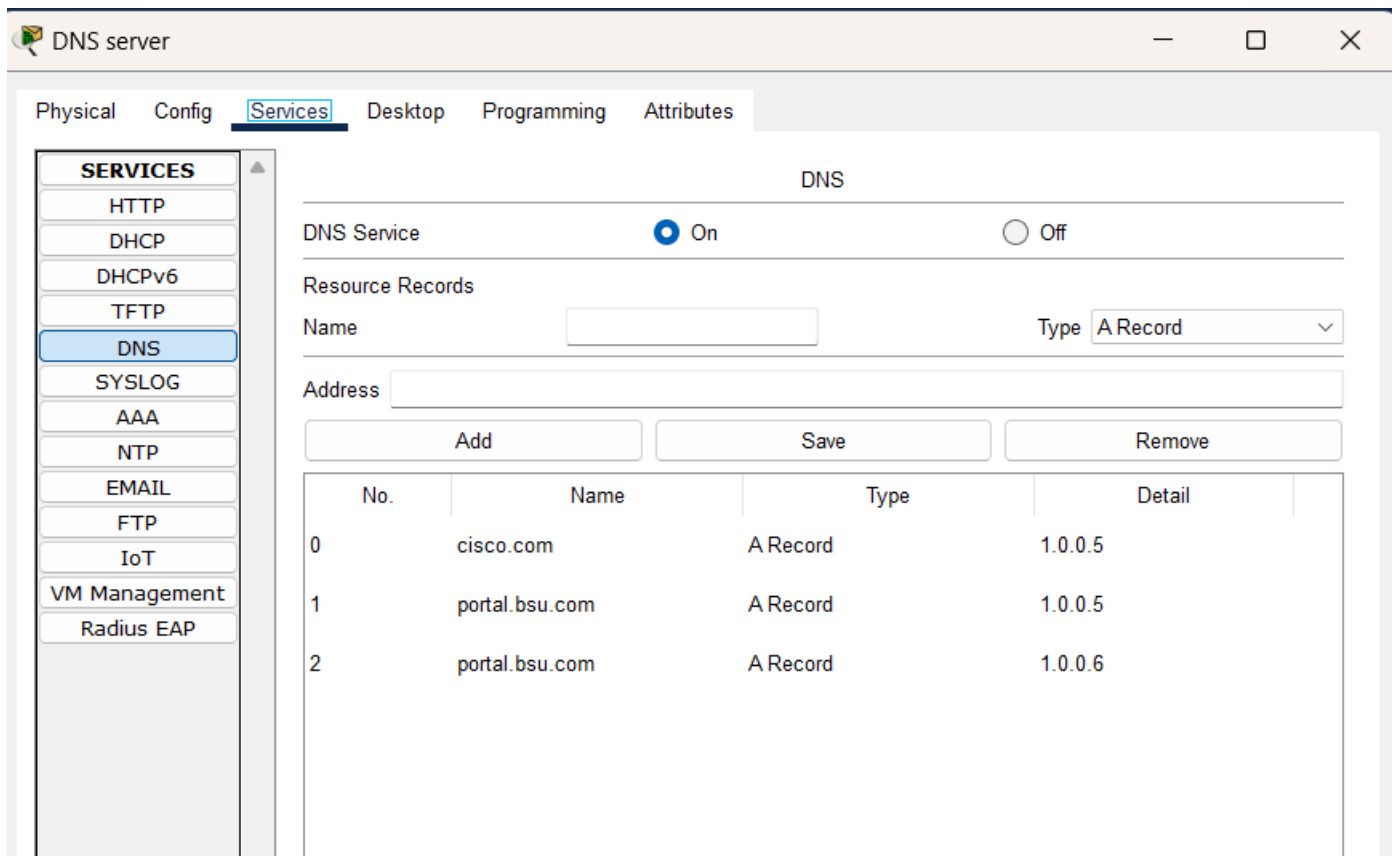
[Transfer complete - 11 bytes]

11 bytes copied in 0.026 secs (423 bytes/sec)
ftp>
```



(3) DNS SERVER :

We define a record with an IP address then we run the nslookup command that returns the IP address of the record



The screenshot shows a web-based configuration interface for a DNS server. The 'Services' tab is active, and the 'DNS' service is selected in the left-hand menu. The 'DNS Service' is currently 'On'. Below this, the 'Resource Records' section is visible, showing a table of existing records.

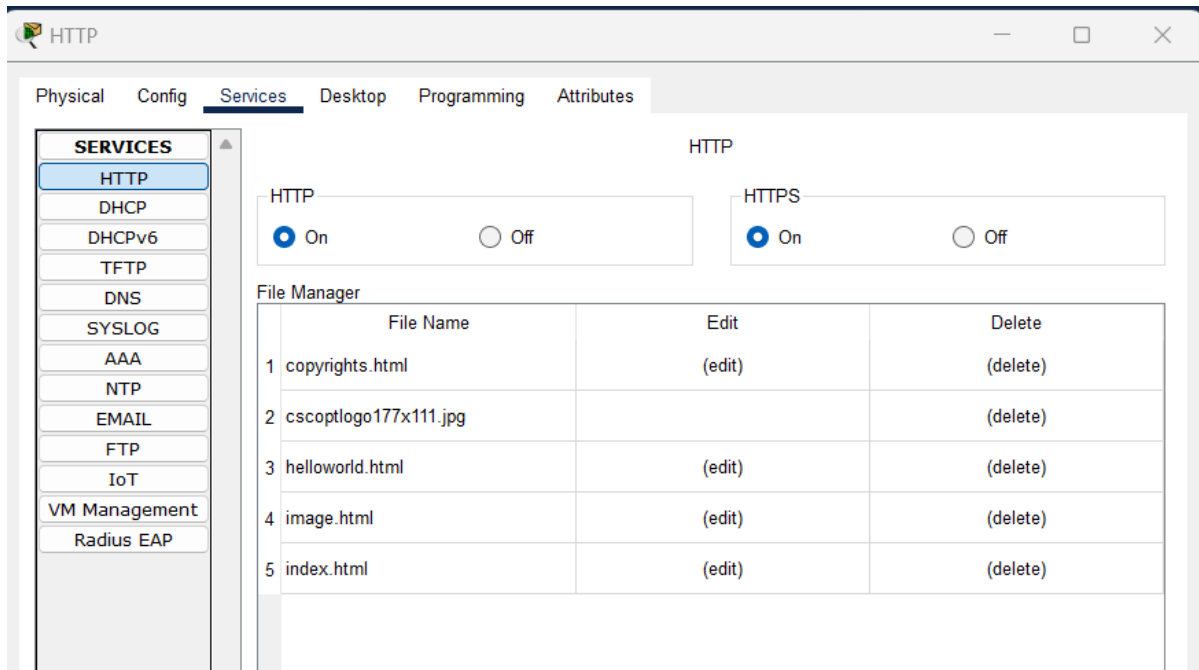
No.	Name	Type	Detail
0	cisco.com	A Record	1.0.0.5
1	portal.bsu.com	A Record	1.0.0.5
2	portal.bsu.com	A Record	1.0.0.6

```
C:\>nslookup cisco.com

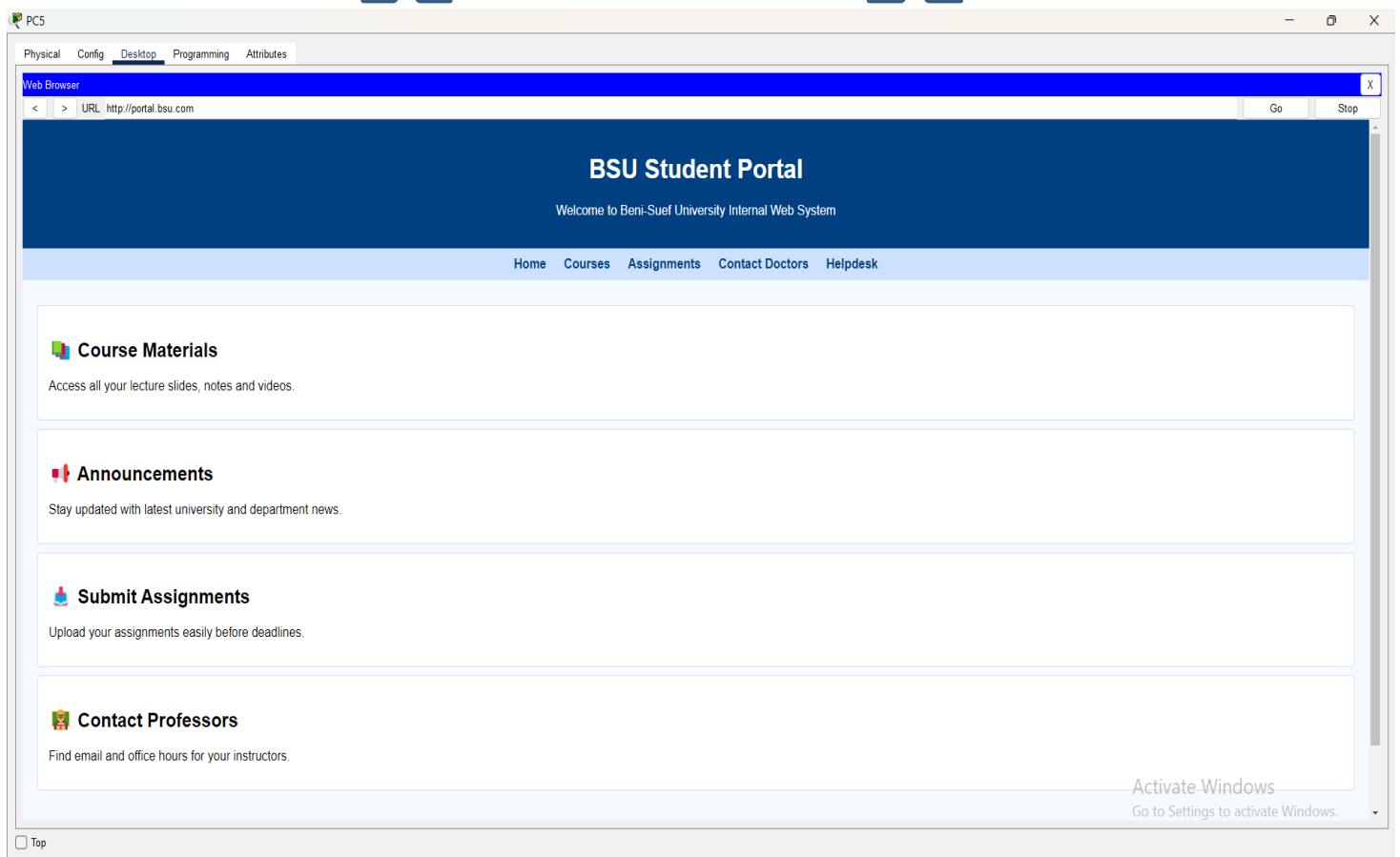
Server: [1.0.0.2]
Address: 1.0.0.2

Non-authoritative answer:
Name:   cisco.com
Address: 1.0.0.5
```

(4) HTTP / HTTPS server :



Our BSU Portal



(5) MAIL Serve:

Stores messages received and sent through the network

Smtp protocol used for sending messages

Pop3 used for receiving messages

User agent used to create or read messages

we created an email server same as our university email

The screenshot shows the 'MAIL server' configuration window with the 'Services' tab selected. On the left, a list of services includes HTTP, DHCP, DHCPv6, TFTP, DNS, SYSLOG, AAA, NTP, EMAIL (highlighted), FTP, IoT, VM Management, and Radius EAP. The main area is titled 'EMAIL' and contains two sections: 'SMTP Service' and 'POP3 Service', both with 'ON' radio buttons selected. Below these, the 'Domain Name' is set to 'eng.bsu.edu.eg'. A 'User Setup' section includes a 'User' field and a 'Password' field, with a list of users: student, net, student1, student2, student3, student4, student5, and student6. A '+' button is visible at the bottom right of the user list.

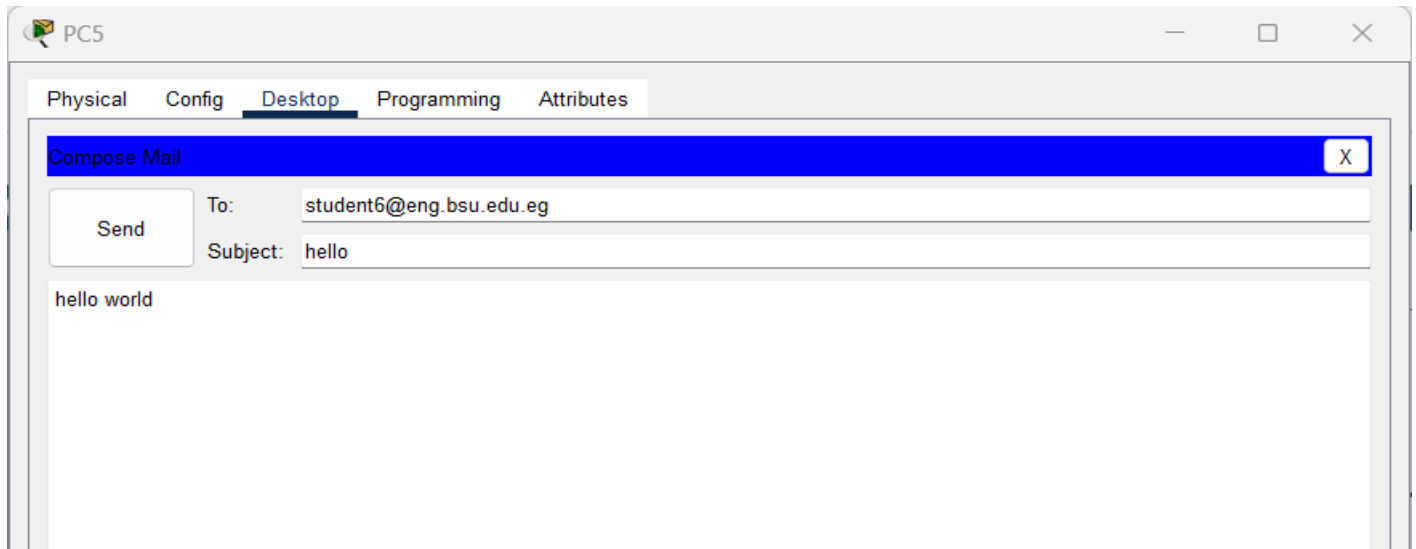
Email configuration

The screenshot shows the 'CS LAB 1' configuration window with the 'Desktop' tab selected. A 'Configure Mail' dialog box is open, displaying the following information:

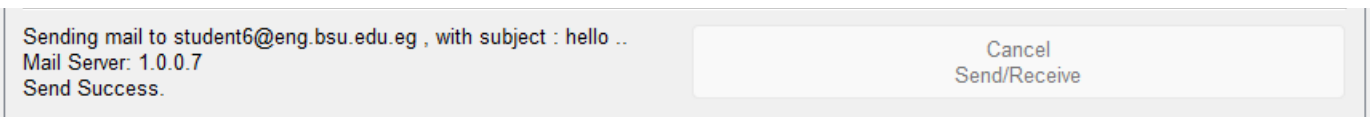
- User Information:**
 - Your Name: student6
 - Email Address: student6@eng.bsu.edu.eg
- Server Information:**
 - Incoming Mail Server: 1.0.0.6
 - Outgoing Mail Server: 1.0.0.6
- Logon Information:**
 - User Name: student6
 - Password: •••••

At the bottom of the dialog box are buttons for 'Save', 'Remove', 'Clear', and 'Reset'.

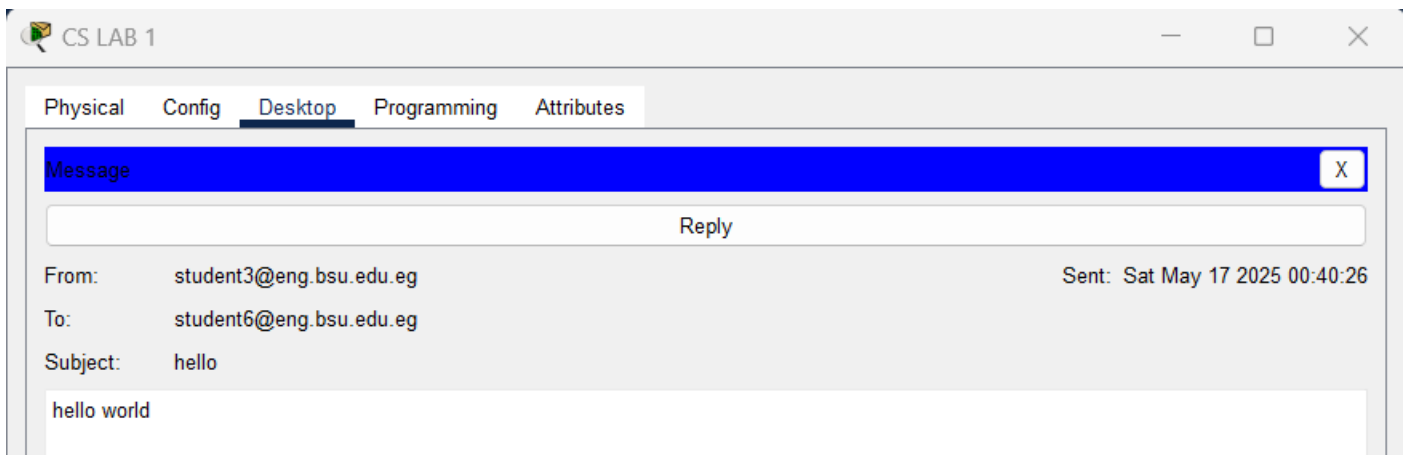
#composing a message:



#sending it



#receiving it on the another device



(6)syslog server : collects logs from the all network with date , time and IP

syslog server

PhysicalConfigServicesDesktopProgrammingAttributes

SERVICES

HTTP

DHCP

DHCPv6

TFTP

DNS

SYSLOG

AAA

NTP

EMAIL

FTP

IoT

VM Management

Radius EAP

Syslog

Service

On

Off

	Time	HostName	Message
1	05.15.2025 08:51:20.000 PM	1.0.0.1	%LINEPROTO-5-UPDOWN: ...
2	05.15.2025 08:51:20.000 PM	1.0.0.1	20:51:19: %OSPF-5-ADJCH...
3	05.15.2025 08:51:20.004 PM	1.0.0.1	%LINEPROTO-5-UPDOWN: ...
4	05.15.2025 08:51:29.854 PM	1.0.0.1	20:51:29: %OSPF-5-ADJCH...
5	05.15.2025 09:28:21.378 PM	1.0.0.1	%LINEPROTO-5-UPDOWN: ...
6	05.15.2025 09:28:21.378 PM	1.0.0.1	21:28:21: %OSPF-5-ADJCH...
7	05.15.2025 09:28:21.405 PM	1.0.0.1	%LINEPROTO-5-UPDOWN: ...
8	05.15.2025 09:28:31.425 PM	1.0.0.1	21:28:31: %OSPF-5-ADJCH...
9	05.15.2025 09:39:18.547 PM	1.0.0.1	%LINEPROTO-5-UPDOWN: ...
10	05.15.2025 09:39:18.547 PM	1.0.0.1	21:39:18: %OSPF-5-ADJCH...
11	05.15.2025 09:39:18.556 PM	1.0.0.1	%LINEPROTO-5-UPDOWN: ...
12	05.15.2025 09:39:28.552 PM	1.0.0.1	21:39:28: %OSPF-5-ADJCH...
13	05.15.2025 11:40:06.204 PM	1.0.0.1	%LINEPROTO-5-UPDOWN: ...
14	05.15.2025 11:40:06.204 PM	1.0.0.1	23:40:06: %OSPF-5-ADJCH...
15	05.15.2025 11:40:06.204 PM	1.0.0.1	%LINEPROTO-5-UPDOWN: ...
16	05.15.2025 11:40:16.151 PM	1.0.0.1	

Clear Log

(7)NTP server:

To collect logs correctly you need to set the time
So we use the ntp server to set the time true

```
User Access Verification

Username: admin
Password:
R2>en
R2#sh clock
2:36:7.153 UTC Mon May 19 2025
R2#
```

☐ Top

Copy Paste

(8) Radius & Tacacs+ servers:

Used for AAA authentication

The screenshot shows the RADIUS configuration window with the 'Services' tab selected. The 'AAA' service is configured with the 'Service' toggle set to 'On' and the 'Radius Port' set to '1645'. Under 'Network Configuration', a table lists the configured RADIUS server:

	Client Name	Client IP	Server Type	Key
1	R2	1.0.0.1	Radius	radius

Below the table are 'Add', 'Save', and 'Remove' buttons. The 'User Setup' section shows a table of configured users:

	Username	Password
1	admin	cisco
2	class	cisco
3	user	cisco

'Add' and 'Save' buttons are present for user management.

The screenshot shows the 'Desktop' tab of the RADIUS configuration window. It displays the 'AAA Accounting Records' section, which includes a table of accounting logs:

TACACS+ Accounting	RADIUS Accounting
DATE= 09:11:41 UTC May 17 2025 ,Username= admin ,Caller Id= ,Flag= Stop ,NAS IP= 1.0.0.20 ,NAS Port= con0	
DATE= 09:11:50 UTC May 17 2025 ,Username= admin ,Caller Id= ,Flag= Start ,NAS IP= 1.0.0.20 ,NAS Port= con0	

Tacacs+

PhysicalConfigServicesDesktopProgrammingAttributes

SERVICES

HTTPDHCPDHCPv6TFTPDNSSYSLOGAAA^{*}NTPEMAILFTPIoTVM ManagementRadius EAP

AAA

Service

☒ On☐ Off

Radius Port1645

Network Configuration

Client NameClient IPSecretServerTypeRadius

	Client Name	Client IP	Server Type	Key	
1	R1	192.168.4.1	Tacacs	tacacs	Add
					Save
					Remove

User Setup

UsernamePassword

	Username	Password	
1	user	admin	Add

AAA Accounting Records

X

TACACS+ AccountingRADIUS Accounting

DATE= 09:45:44 UTC May 17 2025 ,Username= user ,Caller Id= ,Flag= Stop ,NAS IP= 192.168.4.1 ,NAS Port= con0
DATE= 09:45:52 UTC May 17 2025 ,Username= user ,Caller Id= ,Flag= Start ,NAS IP= 192.168.4.1 ,NAS Port= con0