Exploring Email

Introduction

Email is one of the most common forms of communication we use these days. This assignment covers setting up a simulated email server, sending and receiving messages and reviewing the packets used to retrieve the messages.

Objectives

In this project/lab the student will:

- Setup an Email Server
- Configure Email for Users
- Send an Email Message
- Receive an Email Message
- Review Email Packets

Resources

- Cisco Packet Tracer
- Email Exploration.pkt downloaded from HERE

Procedure

Setup an Email Server

1. Open the Email Exploration Packet Tracer file.
2. Click the Sniffer Kali icon, click the GUI tab, then click the radio button to turn the service on. This will act as our packet sniffer to view the sending and receiving of email messages. Close the Kali window.
3. Click the Server1 icon, click the Services tab, then click Email in the left column. Click the radio button to turn the SMTP and POP3 services On.
4. In the domain name field, type nerdify.com and click Set. In the User field, type “L1” and type “Password1” in the password field. Click the “+” (plus) sign to add the user.
5. Create a second user named “PC” using the password “Password1” and click the “+” (plus) sign to add the user. Close the Server1 windows.

Configure Email for Users

1. Click L1 which is indicated by the laptop icon on the left of the network map. Click the Desktop tab, then click the Email application. Click Configure Mail. Input the following settings, then click Save:

a. Your Name: L1
b. Email Address: L1@nerdify.com
c. Incoming Mail Server: pop.nerdify.com
d. Outgoing Mail Server: smtp.nerdify.com
e. Username: L1
f. Password: Password1

2. Click PC1 which is indicated by the laptop icon on the left of the network map. Click the Desktop tab, then click the Email application. Click Configure Mail. Input the following settings, then click Save:
    a. Your Name: PC1
    b. Email Address: PC1@nerdify.com
    c. Incoming Mail Server: pop.nerdify.com
    d. Outgoing Mail Server: smtp.nerdify.com
    e. Username: PC1
    f. Password: Password1

Send an Email Message

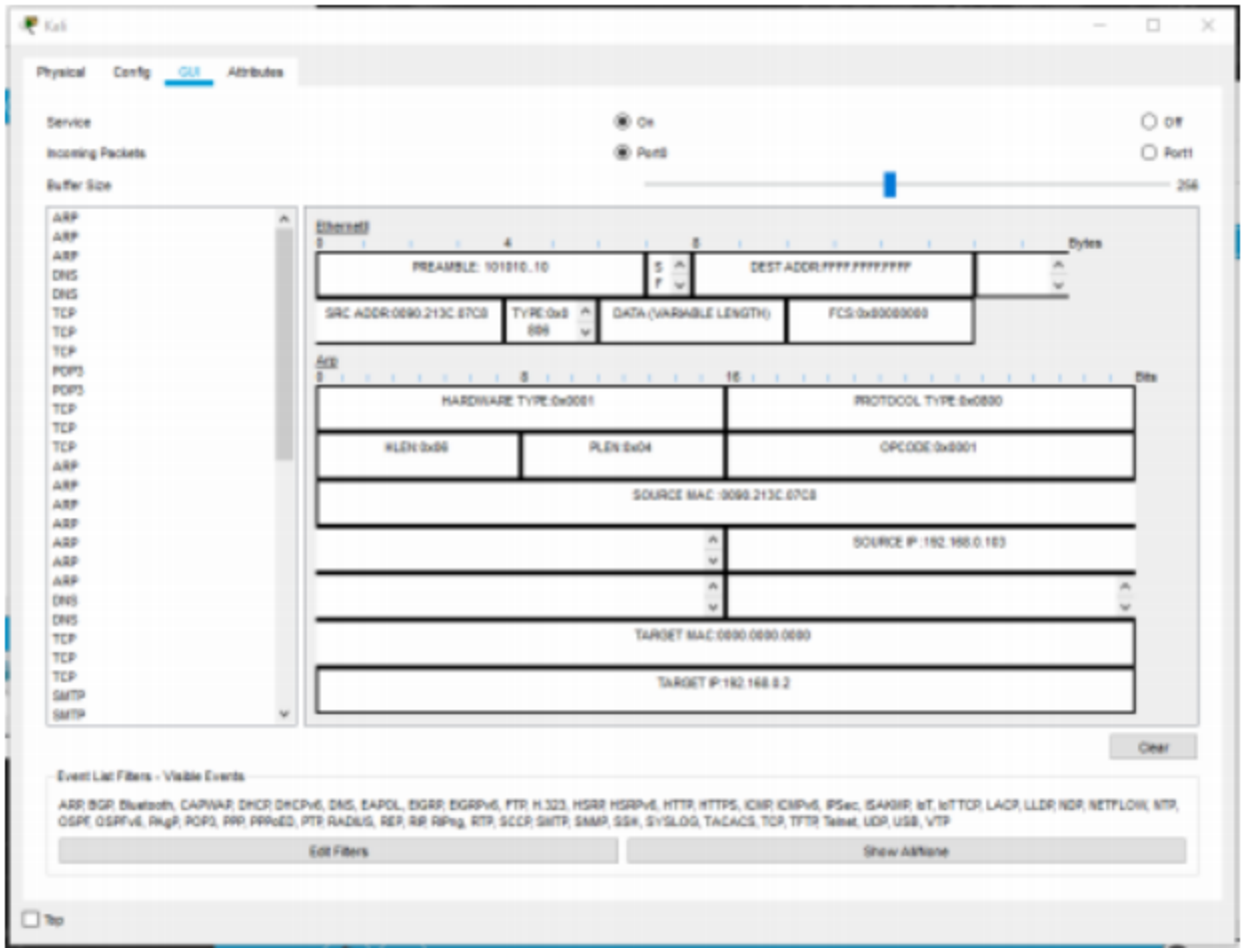
1. Click L1, then click the Desktop tab, then click the Email application.
2. In the mail browser, click Compose.
3. In the To: field, type PC1@nerdify.com. In the subject field, type "Test Email Message". In the Body of the message, type "Test Message from PC1 - xx" (Where xx is your first and last initial).
4. Click Send.
5. The Compose Mail window closes. The bottom left hand corner shows the status of the sending of the message. Close L1.

Receive an Email Message

1. Click PC1, then click the Desktop tab, then click the Email application.
2. In the mail browser, click Receive. The bottom left hand corner shows the status of contacting the mail server.
3. Click the email message that shows up in the top pane. Notice it's from L1 and contains content you sent from L1. Close PC1.

Review Email Packets

1. Click Sniffer Kali, then click the GUI tab. Similar to Wireshark, this shows the packets that have travelled across the network. You can resize this window for increased readability. Use this information to answer the assignment questions.



Reflection

1. Find the first POP3 packet and answer the following questions:
   a. What is the source IP address?
   b. Which PC does this represent?
   c. What is the destination IP address?
   d. What PC does this represent?
   e. Is POP3 a TCP or UDP Protocol? How can you tell?

2. Find the first SMTP packet and answer the following questions:
   a. What is the source IP address?
   b. Which PC does this represent?
   c. What is the source port number?
   d. What is the destination IP address?
   e. What PC does this represent?
   f. What is the source port number?
   g. Is SMTP a TCP or UDP Protocol? How can you tell?
   h. What does this SMTP packet represent during the send/receive process?

3. Find the final set of POP3 packets and answer the following questions about the first in the set:
    a. What is the source IP address?
    b. Which PC does this represent?
    c. What is the source port number?
    d. What is the destination IP address?
    e. What PC does this represent?
    f. What is the source port number?
    g. What does this POP3 packet represent during the send/receive process?

As you can see, it takes quite a few packets traversing the network just to make the sending and receiving of email possible. Describe what's going on in the network with ARP, DNS, and other TCP packets on the network.

Submit your completed Email Exploration.pkt file along with your answer to the reflection questions.

Rubric

Standards for This Competency	Point Value
Submitted completed Email Exploration.pkt	0 points
Correct answer to Question 1 (5 points each)	25 points
Correct answer to Question 2 (5 points each)	40 points
Correct answer to Question 3 (5 points each)	35 points