

Advanced Sniffing Game

Pre-Requisite Knowledge and Skills

1. Understand the basics of network packet and network data transmission
2. Understand the basics of sniffer tools and network packet analyzer
3. Be able to use sniffer tools or commands to intercept unencrypted network packet

Learning Objective:

1. Understand the network transmission protocols and data packet
2. Understand the importance of network data encryption
3. Be able to use sniffer tools or commands to intercept unencrypted network packet
4. Be able to interpret network data packet with IP address and port number to recover user name and password

Recommended Running Environment and Software:

1. Computers Running Windows 7 or Window 10 x64 OS
2. Unity3D Exe files and data folders of Basic Sniffing Game

Instructional Material:

1. Basic Sniffing Game
2. In-game Instructions of Gameplay
3. PPT Lecture Slides

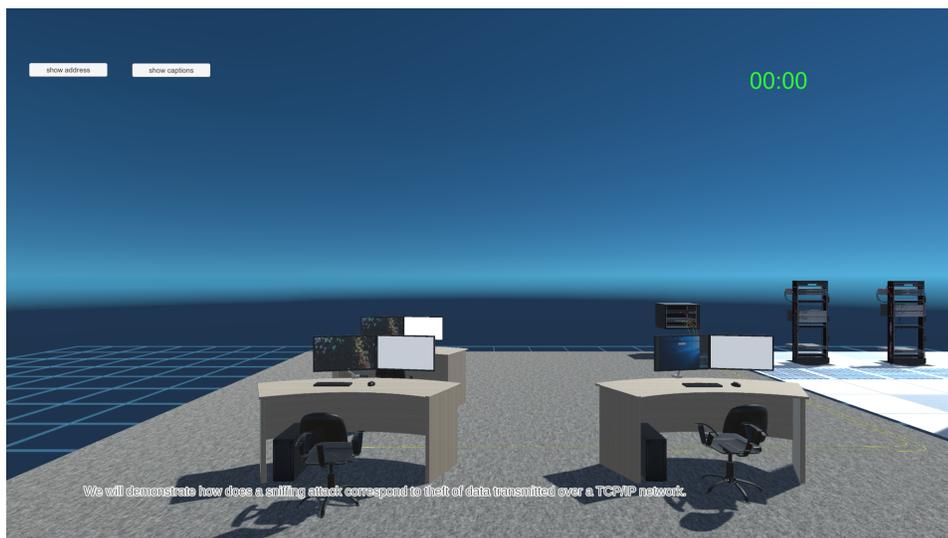
Video Demonstration:

1. to be developed

Lab Assessment:

1. Windows OS

Lab Instructions



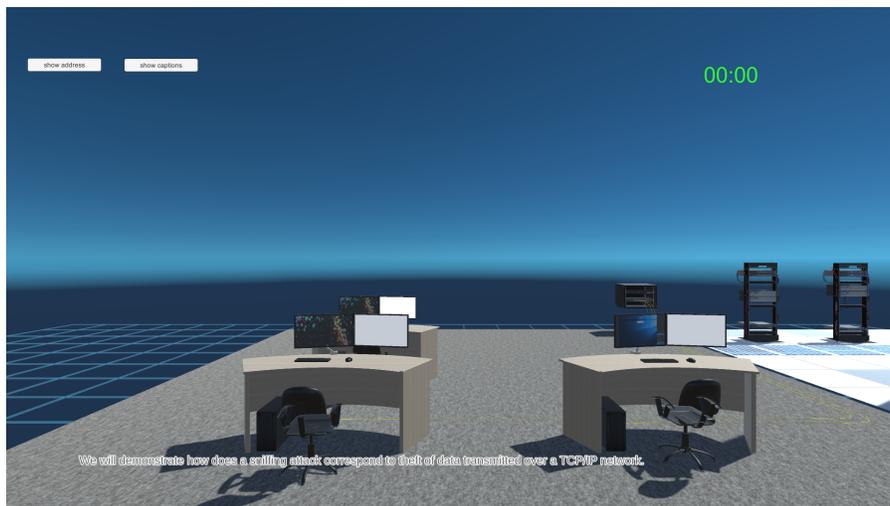
Basic Sniffing Game Main Menu

A sniffer is an application that can capture network packets. If the network packets are not encrypted, the data within the network packet can be read using a sniffer. Sniffing refers to the process used by attackers to capture network traffic using a sniffer. Once the packet is captured using a sniffer, the contents of packets can be analyzed. Telnet is a reliable connection-oriented Transmission control protocol but vulnerable too. It transmits information on clear text format and a sniffer can tap or simply use a sniffing application to theft the information over a TCP/IP network.

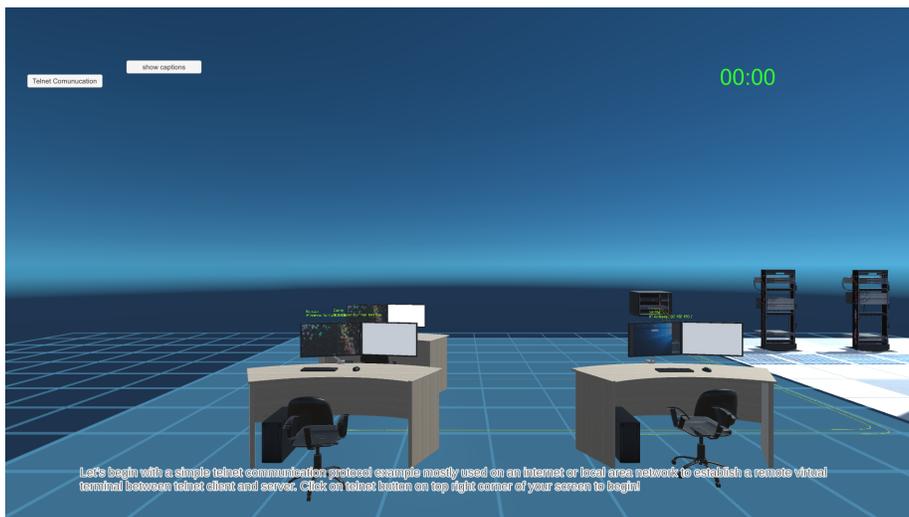
Step 1: Tutorial

- **Click on the “show address” button on the left**

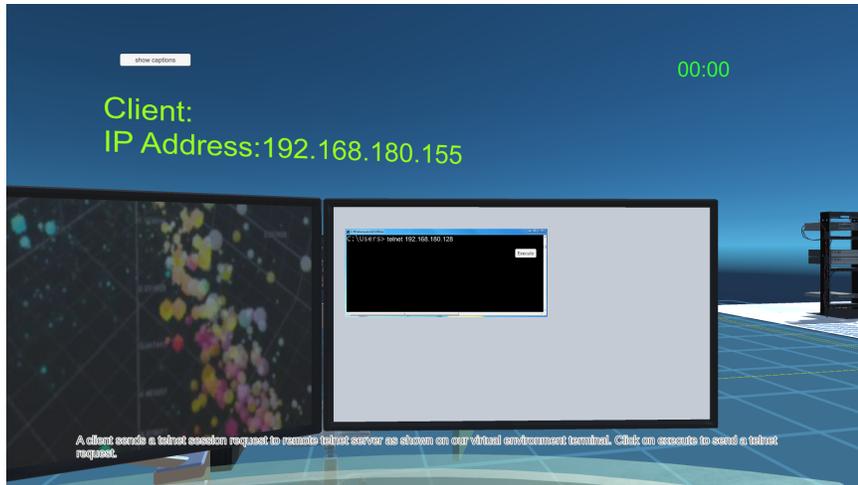
A short introduction script and audio clip will play



1. After the introduction, click on “telnet communication” button to continue



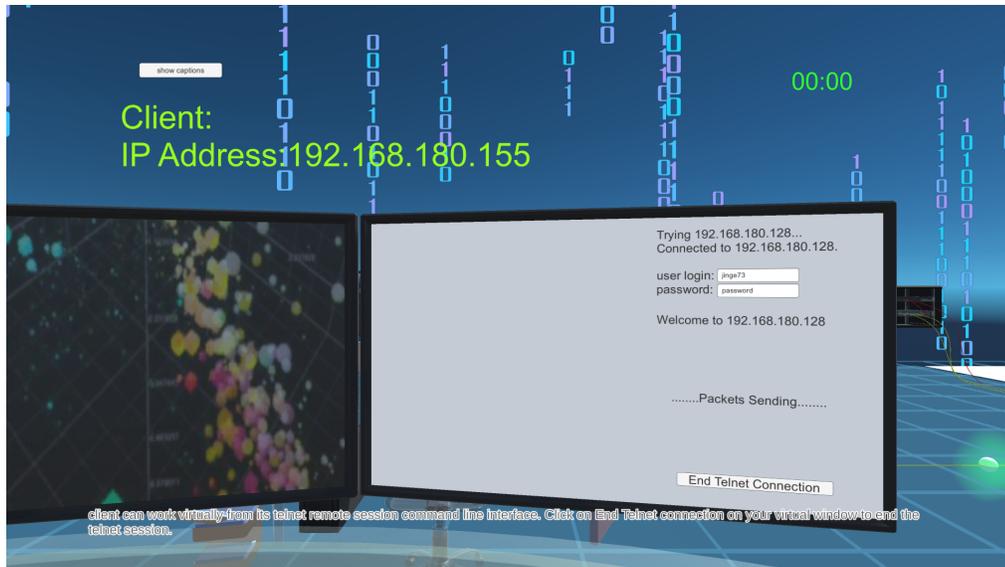
2. After script and audio clip, click on “Execute” button to continue. A short animation will be played for about 30 seconds.



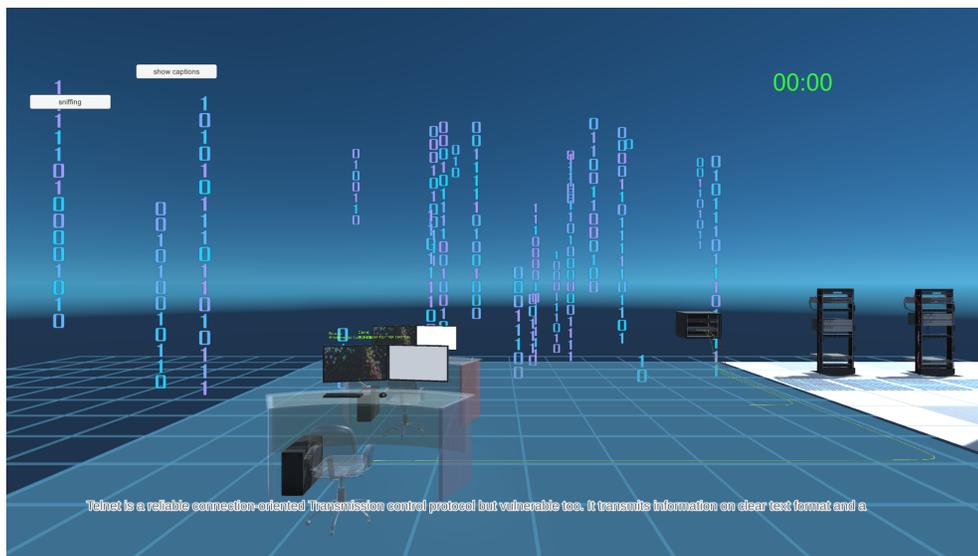
3. After a brief animation, student will need to type in user name and password, then click “Enter” button.



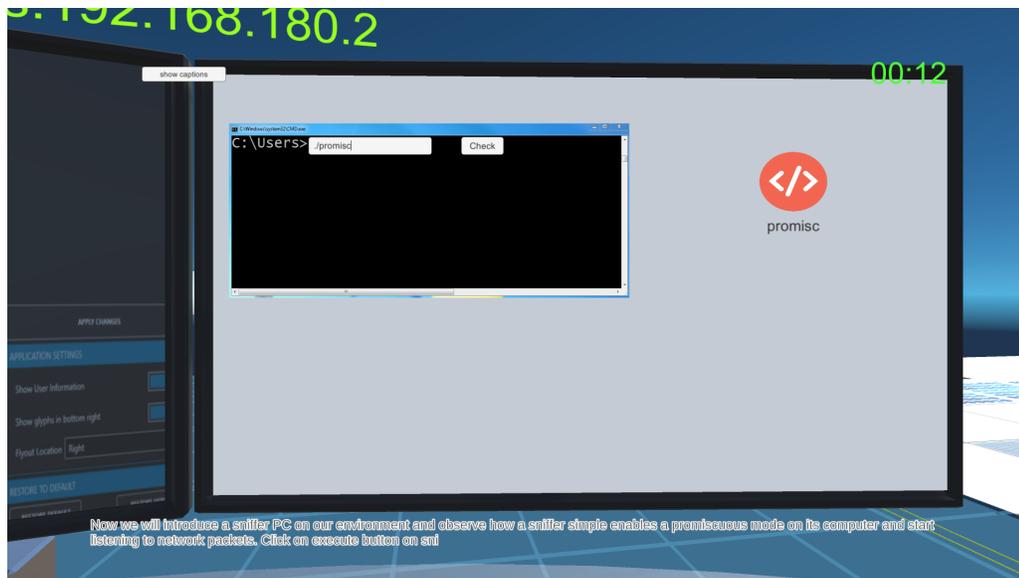
4. After another brief animation, student needs to click “End telnet connection” button from the computer monitor screen. After short description, student can start to play interactive sniffing game.



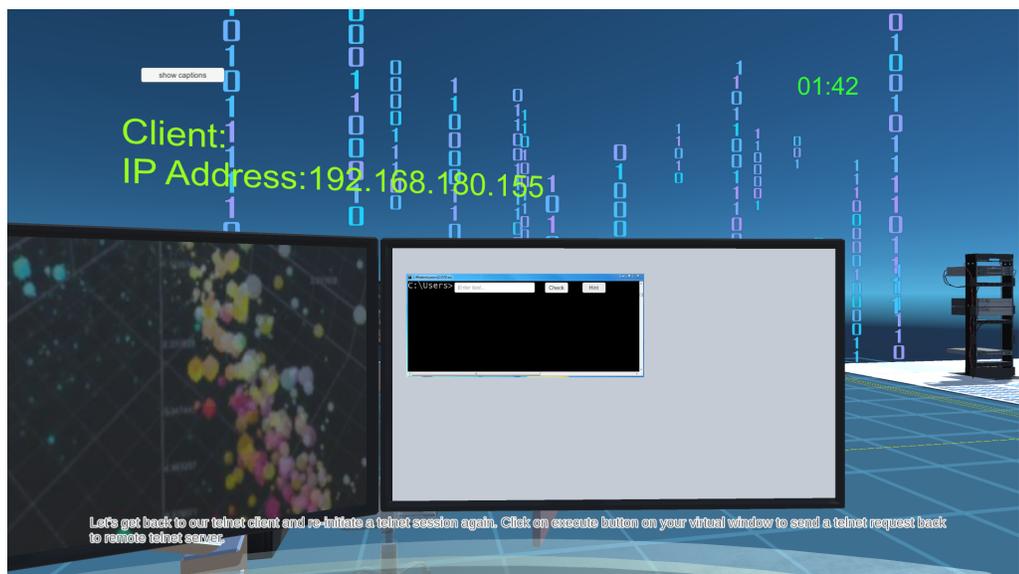
5. Click on “sniffing” button on the left to start sniffing game. After click the button, the timer will start to count the time.



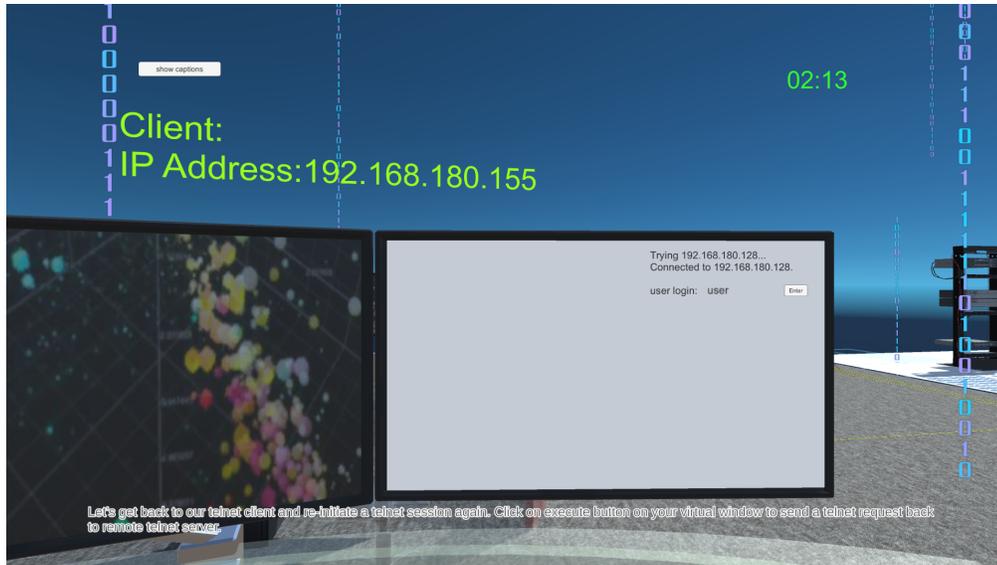
6. From the sniffer computer monitor screen, type in “./promisc” command and click “check” button. Now the “Execute” button will show up. Click “Execute” button to start sniffing Telnet network packet



- After short animation, from the client computer to type in telnet command “telnet 192.168.180.128”, which is the IP address of receiver computer. Click the “check” button. If the telnet command is correct, the “Execute” button will show up. Click “Execute” button to start sniffing.



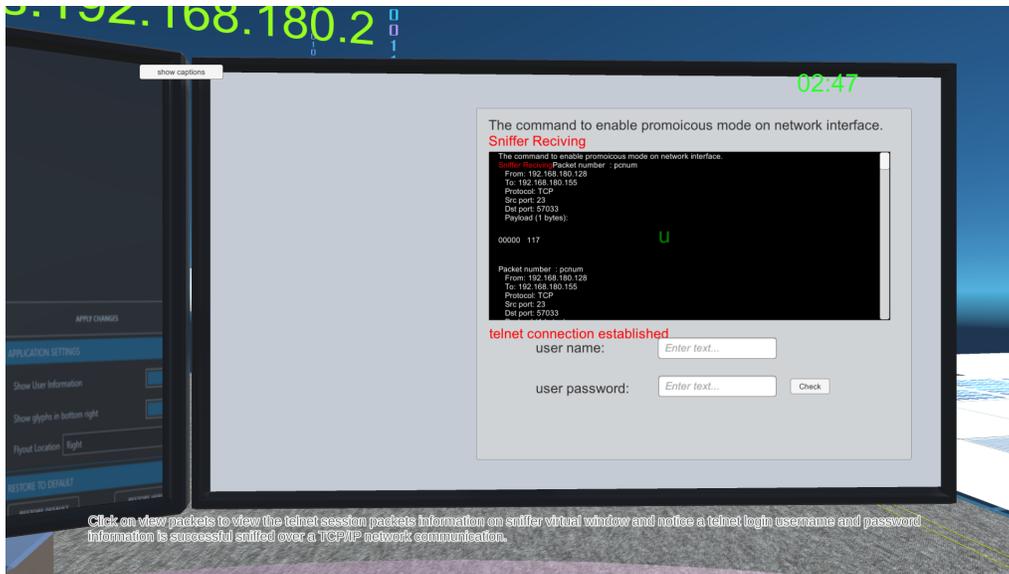
- For the user name and password input box, click on “Enter” button to simulate the input for user name and password. The user name is always “user” and the password is randomly generated. Student need to understand the sniffer tool to interpret the correct user name and password.



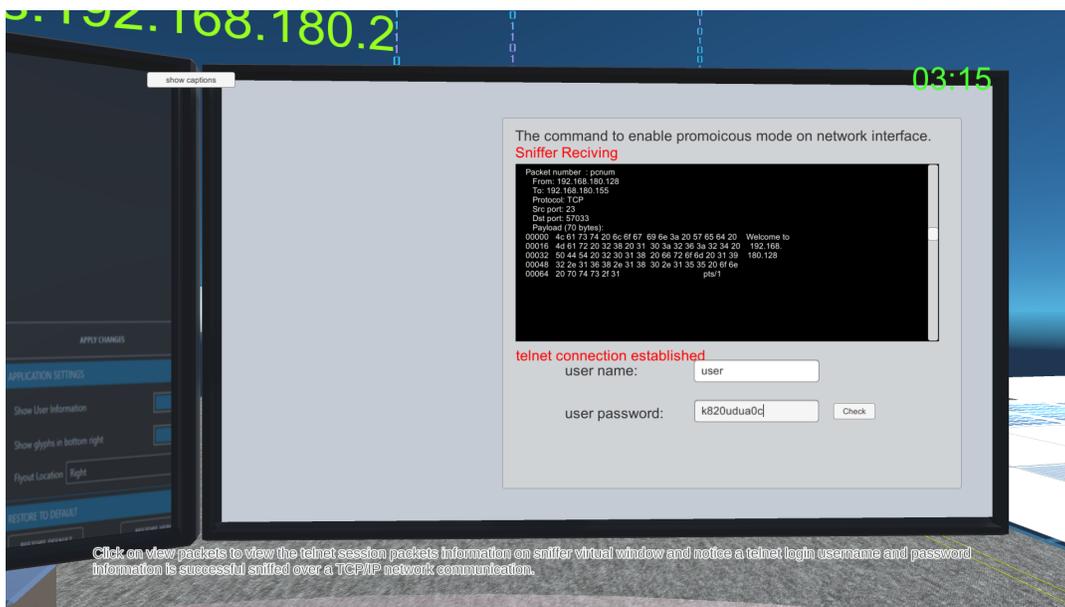
9. After short animation, Click on “Go to Sniffer Computer” button.



10. At the sniffer computer monitor, scroll down the vertical scroll bar to see all data packets intercepted by the sniffer tool. Student will be asked to analyse each data packet to recover the user name and password from the intercepted data packets



11. For each data packet, student will look into the IP addresses of “From” and “To” and port number to correctly recover the password. After interpret all characters for the password, student can click “Check” button. If the password is correct, the student can click “End” button to finish the game



12. After completing the game, the student who completed in the shortest amount of time will be the winner.

Discussion

- How to interpret data packet from network packet analyser?
- What are the risks of unencrypted data transmission?