DEPLOY A VIRUS

COMPUTER NETWORKING

Time: 60 mins

Introduction

In this class, the students will learn how to create an executable virus and deploy it on the target system.

New Commands Introduced

- Chmod +x filename — changes the execute permission of the file and allows it to be run as a program.

Vocabulary

- **Executable File** is a file that system can execute directly when the user clicks the file icon.
- **Infected File** is a file that has been impacted by a computer virus.
- **Malware** is any type of program or software designed to harm or exploit any programmable device, service or network.
- **Worm** is a type of malware whose primary function is to self-replicate and infect other computers while remaining active on infected systems.
- **Trojan** is a type of malware that downloads onto a computer disguised as a legitimate program. Attackers use it to try and gain users' system access with their software.

Learning Objectives

Student/s should be able to:

- ***Recall*** what is a virus and how does it work.
- ***Explain*** different ways to deploy a virus on the target system.
- ***Demonstrate*** the virus deployment by internet and email downloads.

Activities

1. **Class Narrative:** *(3 mins)*
    - Brief the student/s that the anomalies were discovered on everyone's systems suggesting presence of virus on the server.
2. **Concept Introduction Activity:** *(4 mins)*
    - Let the student/s undertake the explore-activity to observe how does a virus work and where did it get downloaded on the system.

- Give examples of the different ways a virus can spread on the system:
    - **Email Attachments:** Hackers often disguise their malicious code as seemingly harmless files, such as documents or images unsuspecting users open without a second thought. For example, Ursnif banking Trojan campaigns are known to spread via email attachments posing as invoices or financial statements.
    - **Internet Downloads:** Viruses can also hide in software installers, media files, or even browser extensions that you download from the web. A notorious case was the Download.com scandal, where popular applications were bundled with adware and other unwanted programs by default.
    - **File Sharing Networks:** Networks like torrent sites and peer-to-peer platforms can easily transmit viruses. Innocent-looking movie torrents or cracked software may carry hidden payloads designed to compromise your device upon installation. For example, The Pirate Bay used a browser-based cryptocurrency miner, so when someone visited the website, their computer was used to mine cryptocurrency without their knowledge or consent.
    - **Removable Media:** Viruses can attach to removable media, such as USB drives and CDs/DVDs, infecting any computer they're plugged into. The infamous Stuxnet worm is a prime example of a virus that spreads through removable media.
- Using the slides, explain that the student/s will learn:
    - to create an executable virus file.
    - to deploy the virus using a webbsite download.
    - to deploy the virus using an email download..

3. **Activity 1: Create an Executable Virus** *(12 mins)*

    Teacher Activity: *(5 mins)*

- Demonstrate how to convert a python file into an executable file.
- Double click the executable file to run the virus.

    Note: For windows, you will have to install pyInstaller library whereas for Max/Linux, you can directly run the **`chmod`** command.

    Student Activity: *(7 mins)*

- Guide the student/s to install the python library and convert the python file into an executable file..

4. **Activity 2: Deploy Virus using a Website** *(13 mins)*

   Teacher Activity: *(5 mins)*

   - Explain how infect the HTML file by adding a java script to download the executable virus when you click on a website button..
   - Demonstrate how to deploy and download the infected file on clicking the 'Download Receipt' button.

   Student Activity: *(5 mins)*

   - Guide the student/s to change the ecommerce website and add a javascript to download the virus on taregt system on button click.

5. **Activity 3: Deploy Virus via Email (***13 mins)*

   - Explain how to add a link to the executable file on the email..
   - Demonstrate how to compose an infected email to download the executable virus on the target system on click.

   Student Activity: *(6 mins)*

   - Guide the students to create an infected email with order details for an ecommerce website to deploy a virus on the target system.

6. **Introduce the Post class project:** *(2 min)*

   - Create an executable virus file for the calculator application.

7. **Test and Summarize the class learnings:** *(5 mins)*

   - Check for understanding through quizzes and summarize learning after respective activities.
   - Summarize the overall class learning towards the end of the class.
   - Give a few tips to protect themselves from executing a virus.

8. **Additional activities:**

   - Encourage the student/s to create another executable virus.
   - Encourage the student/s to deploy the new virus using spam email.

9. **State the Next Class Objective:** *(1 min)*

   - In the next class, student/s will learn to identify loop holes and security risks in the code and how to prevent them.

U.S. Standards:

CSTA: 2-AP-11, 2-AP-12, 2-AP-13, 2-AP-14, 2-AP-19

Links Table		
Activity	**Activity Name**	**Link**
Class Presentation	Deploy a Virus	https://s3-whjr-curriculum-uploads.whjr.online/adfc2dd4-9a38-4f5d-b973-cd5a0cb981c5.html
Explore Activity	Deploy a Virus	https://github.com/Tynker-Computer-Networks/TNK-M16-C127-SAS-BP
Teacher Activity 1	Create an Executable Virus	https://github.com/Tynker-Computer-Networks/TNK-M16-C127-TAS-BP
Teacher Reference: Teacher Activity 1 Solution	Create an Executable Virus	https://github.com/Tynker-Computer-Networks/TNK-M16-C127-TAS
Student Activity 1	Create an Executable Virus	https://github.com/Tynker-Computer-Networks/TNK-M16-C127-SAS-BP
Teacher Reference: Student Activity 1 Solution	Create an Executable Virus	https://github.com/Tynker-Computer-Networks/TNK-M16-C127-SAS
Teacher Activity 2	Deploy Virus using a Website	https://github.com/Tynker-Computer-Networks/TNK-M16-C127-TAS-BP
Teacher Reference: Teacher Activity 2 Solution	Deploy Virus using a Website	https://github.com/Tynker-Computer-Networks/TNK-M16-C127-TAS
Student Activity 2	Deploy Virus using a Website	https://github.com/Tynker-Computer-Networks/TNK-M16-C127-SAS-BP
Teacher Reference: Student Activity 2 Solution	Deploy Virus using a Website	https://github.com/Tynker-Computer-Networks/TNK-M16-C127-SAS
Teacher Activity 3	Deploy Virus via Email	https://github.com/Tynker-Computer-Networks/TNK-M16-C127-TAS-BP
Teacher Reference: Teacher Activity 3 Solution	Deploy Virus via Email	https://github.com/Tynker-Computer-Networks/TNK-M16-C127-TAS
Student Activity 3	Deploy Virus via Email	https://github.com/Tynker-Computer-Networks/TNK-M16-C127-SAS-BP
Teacher Reference: Student Activity 3 Solution	Deploy Virus via Email	https://github.com/Tynker-Computer-Networks/TNK-M16-C127-SAS
Student's Additional Activity 1	Create Another Virus	https://github.com/Tynker-Computer-Networks/TNK-M16-C127-SAS-BP

Teacher Reference: Student's Additional Activity 1 Solution	Create Another Virus	https://github.com/Tynker-Computer-Networks/TNK-M16-C127-SAS
Student's Additional Activity 2	Deploy Virus via Spam Email	https://github.com/Tynker-Computer-Networks/TNK-M16-C127-SAS-BP
Teacher Reference: Student's Additional Activity 2 Solution	Deploy Virus via Spam Email	https://github.com/Tynker-Computer-Networks/TNK-M16-C127-SAS
Post Class Project	Calculator Virus	https://github.com/Tynker-Computer-Networks/TNK-M16-C127-PCP-BP
Teacher Reference: Post Class Project Solution	Calculator Virus	https://github.com/Tynker-Computer-Networks/TNK-M16-C127-PCP