**Lab 7-01: File and Directories Permissions**

**Scenario**

A major financial company experienced a data breach as a result of incorrectly configured file and directory permissions. By taking advantage of lax access safeguards, an outside attacker was able to obtain sensitive financial data without authorization. Significant financial losses and harm to the company's reputation resulted from the incident. In order to prevent further intrusions and protect sensitive data, the company revised its permission settings, put in place stringent access restrictions, and carried out routine audits.

**Solution**

The company addressed file and directory permission vulnerabilities by enforcing strict access controls based on the principle of least privilege. Robust IAM solutions, including MFA, were deployed alongside regular audits and monitoring. Employee training emphasized adherence to security protocols. These measures bolstered cyber defenses, mitigating the risk of data breaches and protecting sensitive financial information.

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| **// Open the Terminal in Kali Linux**  1. sudo is a command in Linux that allows users to run commands with privileges only root users have. It is a command that updates all the installed packages on your Kali Linux machine. **Sudo apt update / sudo apt-get update**    2. For the information on your hard disk partition.  To see the devices attached to our system (like hard disks, disk partitions, etc.), we need to use the **sudo fdisk -l** (here -l flag displays partitions) command. This also shows us external drives connected to our system.    3. You can manage services on Linux.  Services are servers that can run on our Linux or Kali Linux system, such as SSH, Apache, FTP, etc. To manage services on Linux, we need to use commands like the following:  **#sudo service servicename status to check the status of the service.**  **#sudo service servicename start to start a service.**  **#sudo service servicename stop to stop a service.**  **#sudo service servicename restart to restart a service.**    4. You can also manage package installation in Linux and install any package by using **sudo apt install *packagename.*** For instance, to install Python version 3, use the command **sudo apt install python3.**    **// Create Files in Linux**  1. First, you need to choose where you want to create a new file, then go into that particular folder by using the **cd** command. Here, we have chosen the **Desktop**. You can create any file by using the **touch** command. Here, we have created the file **XYZFILE** by using the command **touch XYZFILE.**    2. To edit any file in Linux, you need to run the command **nano *filename.***Then, you can edit your file. To edit the **XYZFILE** file, use command **nano** **XYZFILE.**    3. The edited file is;    4. To execute this file, you first need to give permission to the file. To get permission to access any file, run the command **chmod +x *filename.*** Hence, we will use the command chmod +x XYZFILE here.    8. To execute any file, add **./** before the file. Hence, it is successfully executed.    **//Add New Users to Your Kali Linux Machine**  1. To add a new user to your machine, run the command **sudo adduser *username.*** Set a new password for the user, then press **ENTER**. Here, we have set the username as **test1.**    2. Also, run these commands to store the user name in the Zshell script.    3. To access other users, log out from the machine. Enter the password you set.    4. Other user successfully logged in. |