



# قسم الامانة الไซبراني

**Department of Cyber Security**

**Subject: Principles of Cyber Security**

**Class: 1st**

**Lecture: (4)**

**Direct Intrusion – Dial-up Intrusion – Hacking Techniques**

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## Introduction to Cyber Attacks

**Information Security is a critical field in computer science that focuses on protecting systems, networks, and data from unauthorized access, misuse, alteration, or destruction. With the rapid growth of digital technologies and global connectivity, cyber attacks have become more sophisticated and frequent.**

**This lecture covers three important security-related topics:**

- 1. Direct Intrusion**
- 2. Dial-up Intrusion**
- 3. Hacking Techniques**

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**Direct Intrusion** is one of the most common and dangerous forms of cyber attacks. In this type of attack, an intruder gains unauthorized access to a target system directly through a network connection, usually via the Internet or a local network.

**Key Characteristics:**

- Occurs through direct network connections**
- Exploits software or system vulnerabilities**
- Can cause immediate damage**
- Often difficult to detect**

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## Direct Intrusion

Attackers use various techniques to perform direct intrusion, including:

**1. Exploiting Vulnerabilities:**

Taking advantage of unpatched operating systems, servers, or applications.

**2. Password Attacks:**

Using brute-force attacks or guessing weak passwords.

**3. Malware Installation:**

Deploying Trojans, spyware, or backdoors.

**4. Social Engineering:**

Manipulating users into revealing login credentials.

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## Risks and Impacts of Direct Intrusion

Direct intrusion can lead to serious consequences, such as:

- Theft of sensitive data
- Data modification or deletion
- System downtime and service disruption
- Loss of privacy
- Financial and reputational damage

## Dial-up Intrusion

**Dial-up Intrusion** is an attack method that uses traditional telephone lines and modems to gain access to computer systems. This type of intrusion was more common before the widespread adoption of broadband Internet but can still affect legacy systems.

### Security Concern:

Dial-up connections may bypass modern firewall protections.

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### **Dial-up Intrusion Techniques**

Common techniques used in dial-up intrusion include:

**1. War Dialing:**

Automatically dialing a large range of phone numbers to locate modems.

**2. Exploiting Weak Modem Security:**

Using default or weak passwords.

**3. Impersonation:**

Pretending to be a legitimate user to gain access.

**Hacking Techniques** are systematic approaches used to compromise computer systems, networks, or applications.

### **Common Motivations:**

- Data theft
- Sabotage
- Espionage
- Challenge or reputation

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### **Common Hacking Techniques**

Some of the most widely used hacking techniques include:

#### **1. Scanning and Reconnaissance:**

Collecting information about the target system.

#### **2. Password Cracking:**

Breaking authentication credentials.

#### **3. Malware Attacks:**

Using viruses, worms, and ransomware.

#### **4. Man-in-the-Middle Attacks:**

Intercepting communication between two parties.

#### **5. Denial of Service (DoS):**

Overloading systems to make services unavailable.