

openHPI Course: Cyberthreats by Malware

# Malware: Its Way to your Computer

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# Malware – the Central Attack Vector on the Internet

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**Malware** – **malicious software** – as one of the central weapons of cybercriminals:

- **Any device** and **any computer system** could be a potential target for malware
- Can infect **end-users** as well as **service providers**
  - potentially, home computers are vulnerable to malware attacks over the Internet
- Malware are especially easy to use for attacks ...

# Malware – Potential Dangers

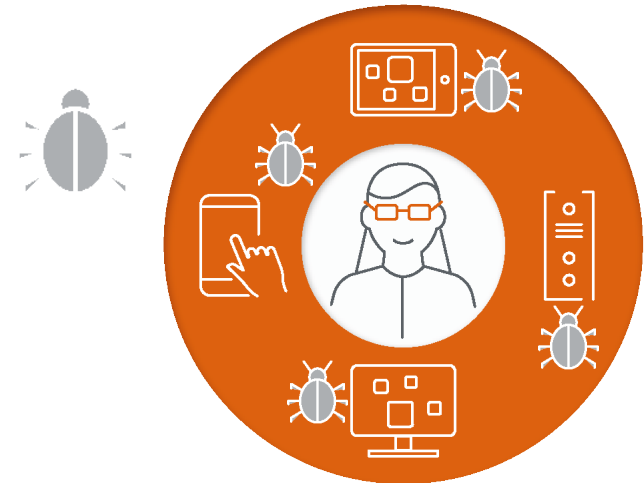
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## **Malware offers a wide range of functionalities and unlimited possibilities for attacks:**

- Utilization of computing power
- Data destruction
- Destruction of entire computer systems
- Advertisements for profits
- Create fear in the user
- Blackmail
- Espionage
- ...

# Malware – How Could it Infect You

Then cybercriminals inject the malware to a medium, such as an application or email, and send it to potential victims



Cybercriminals first develop the malware to infect the victim's computer systems

Once the victim access the medium, the malware will be installed in the victim's computer system

# Malware – Attack Vector

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In general malware could be installed to computer systems through different attack vectors:

- Human factors
- Technical factors / failures

# Malware – Attack Vector: Human

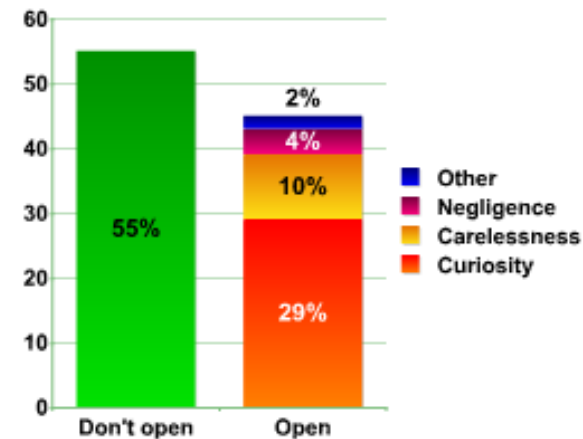
Often victim's **lack of attention** is enough to install malware to the victim's computer system

Malware could also be injected into computer system via **social engineering**

## Examples:

- Opening a email with malicious attachment
- Downloading and opening infected files from the Internet
- Downloading and installing "helpful" software
- Connecting a foreign **USB stick**
- Using a public WLAN
- ...

## Why people open unknown attachments or applications?



Source: <https://securelist.com/the-human-factor-and-information-security/36067/>

# Malware – Attack Vector: Technical

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Malware could infect computer systems **without** any user interaction

## **Examples:**

- Exploiting available vulnerabilities in the system
- Inadequate security protection measures
- In the same network as the infected computers
- ...