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Royal University of Phnom Penh

Faculty of Engineering
Department of IT Engineering



Malware and Computer Anti-Virus Software

Group 4
Lecturer
Subject

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01

Computer Malware

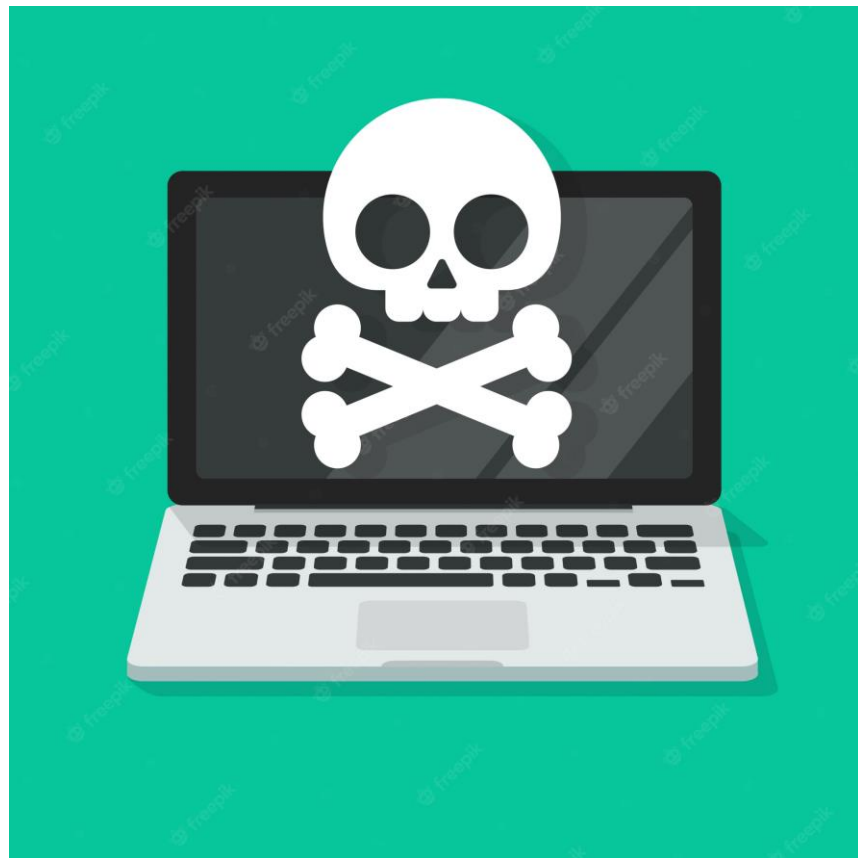


Presenter: Y Kimly

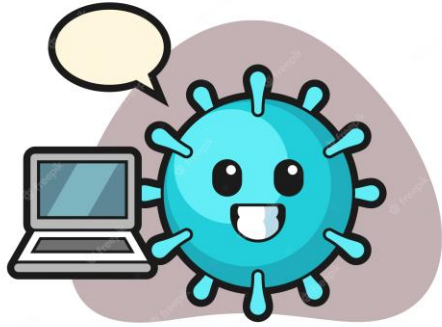


What is Computer Malware?

- Malware is intrusive software that is designed to damage and destroy computers and computer systems
- Malware is a contraction for Malicious Software
- It can also gain access to sensitive information



Types Of Malware



Virus

Infects and spreads to the system, programs, or files.



Worms

Replicates itself and infects other computers that are on the same network by consuming bandwidth and interrupting network.



Trojans

Disguise itself as legitimate software

Types Of Malware



Ransomware

Encrypt your files and block access to them until a ransom is paid.



Spyware

Invades and steals your personal information such as credit card, banking information and passwords

How does Malware work?



1

A hacker tricks the user to click on a malicious link, file or attachment

2

When the user clicks on the link, it will trigger the malware to install onto your device

3

After the installation. The malicious code executes actions that the user doesn't anticipate or intend



Malware History

The world's first virus was created using a concept by German mathematician John von Neumann

1971

The first PC virus called "Brain" originated in Pakistan

1986

The AIDS Trojan was created making it the first ransomware

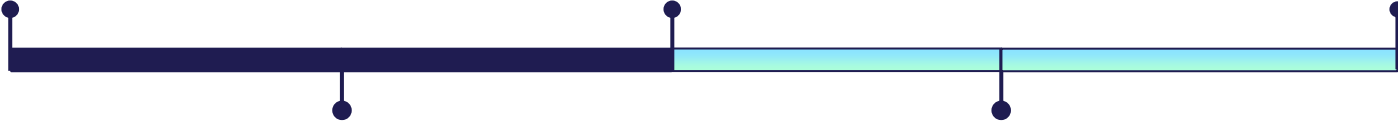
1989

1982

The first Mac virus was written by 15-years-old

1988

The Morris worm by Robert Morris



Advantages and Disadvantages of Malware



- Be able to access data or get control of the operating system without the other partner knowing
- Improve security system for future generation



- Data loss or data theft
- Hardware failure
- Inoperable of computer or network

Most Dangerous Malware



1. CLOP RANSOMWARE

Clop Ransomware is a dangerous file encrypting virus by planting the .Clop extension and preventing victims from accessing their files. It belongs to a Cryptomix ransomware family.



To receive a decryption key, each victim must pay a ransom

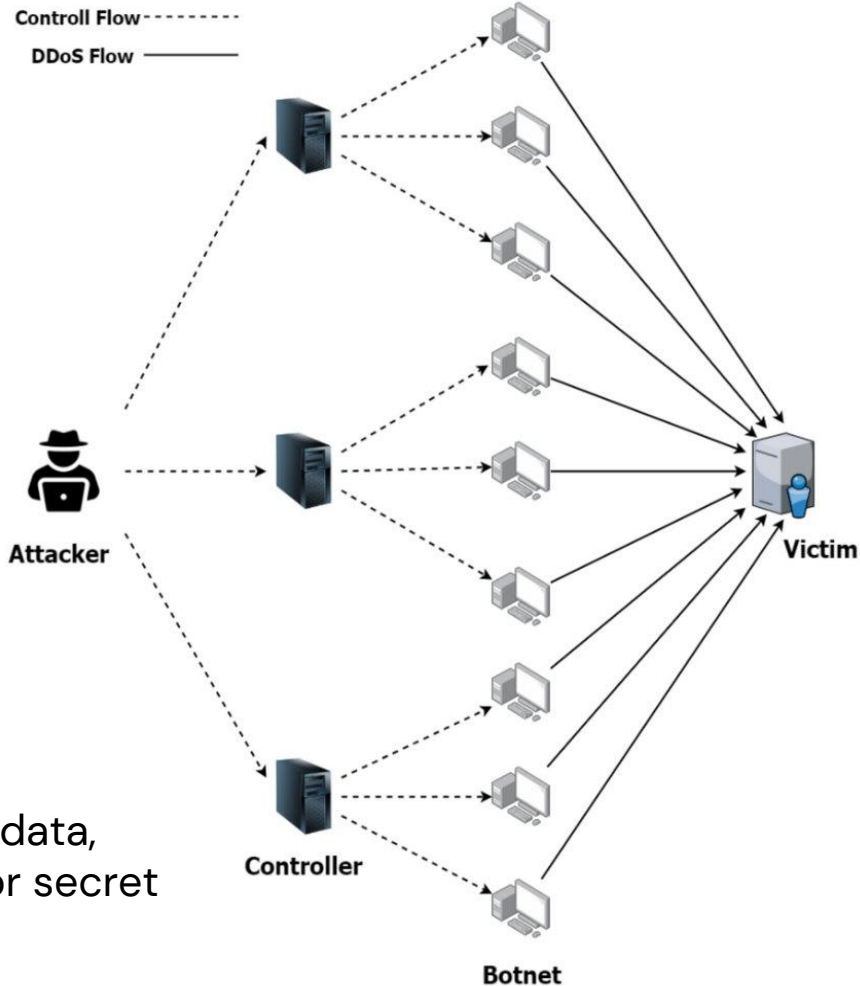
Regularly used files such as .jpg, .mp3, .doc etc. are targeted

2. GAMEOVER ZEUS

When users download the malware, it will infect the computer to connect to the Zeus network command-and-control center, where attackers give "orders" and update malware.



Zeus infection looks for personal data, credit card, info, customer data or secret corporate information



3. CRYPTO JACKING

How cryptojacking works



A hacker infects a website, open source code or malicious link with cryptomining software.



The victim connects to the website or opens the link, which downloads cryptomining software without the victim knowing it.



The software uses the victim's computing resources to surreptitiously mine cryptocurrency for the hacker.



Successfully mined cryptocurrency is sent to the hacker's server.

Crypto Jacking target computers, laptops, phone, servers and cloud infrastructures.

02

Anti-Virus Software



Presenter: In Sothiry

What is Anti-Virus Software?

- Anti-virus software is a special security software that aims to give better protection than that offered by the underlying operating system (such as Windows or Mac OS X).



- Anti-virus is designed to prevent computer infections by detecting malicious software, when appropriate, removing the malware and disinfecting the computer.

Detection Methods

1

Heuristic-based

Detection by examine code for suspicious properties

2

Signature-based

Searches for the specific digital code of a virus

3

Behavioral-based

Looks at what software does

4

Cloud antivirus

Running all detection on the server

5

Sandbox

Emulated environment for a suspicious program to run and inspect its behavior

6

Machine learning

Advance detection method using machine learning methods

How does Anti-Virus work?

1. Searching for viruses

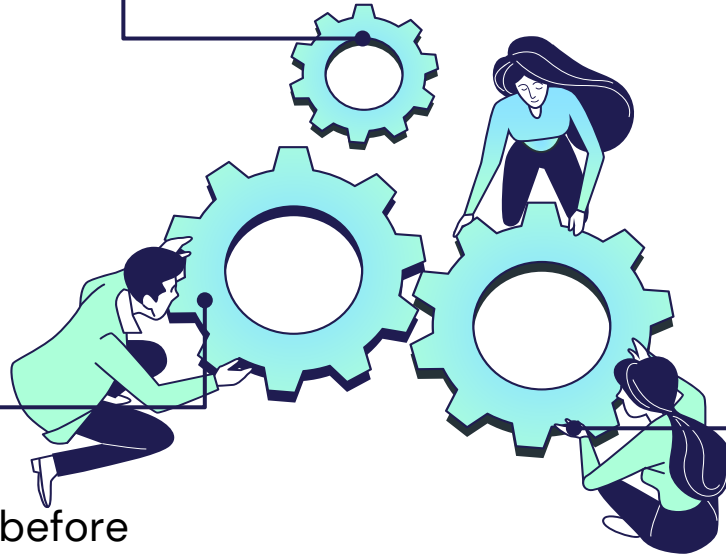
Scan all files, programs, or applications.

3. Removing viruses

Ask for user permission before "cleaning" a file or automatically clean it according to the user's setting adjustment

2. Detecting viruses

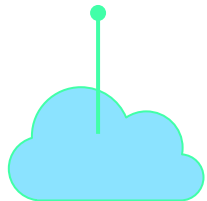
compares a specific set of code with information stored in its database by detecting. If they match, the file is quarantined.



ANTI-VIRUS SOFTWARE HISTORY

1987

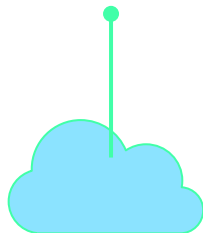
First program
to get rid of
Vienna



McAfee
G Data
ESET

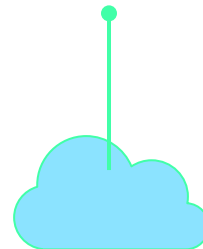
1991

Norton



1996

Bit Defender



1988

Avast
Avira
Trend micro
Freeware



1992

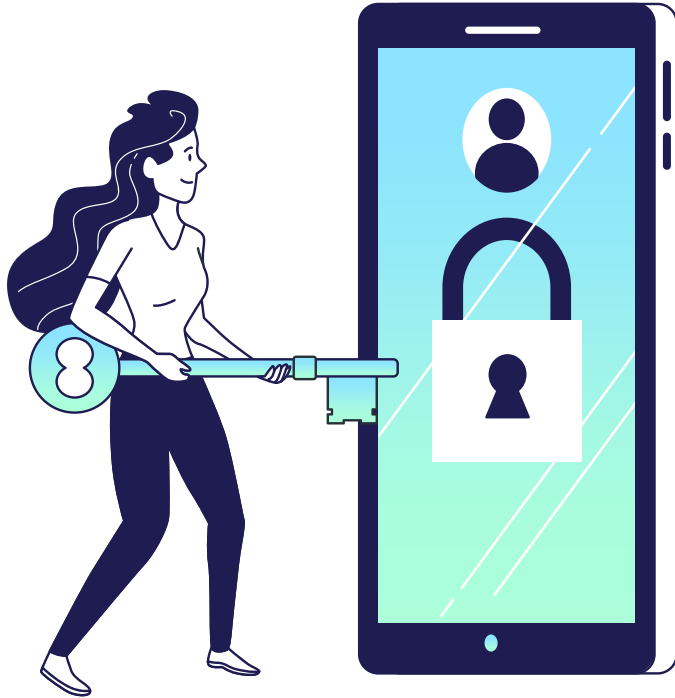
AVG



1997

Intego
Kaspersky
Webroot





Advantages & Disadvantages of Anti-Virus

ADVANTAGES

Virus Protection

Detects and removes malwares before they cause any harms to your computer

1

Spam Protection

Blocking spam emails and ads that sneak into your computer, causing irreversible damages.

4

Web Protection

Protect your valuable information while surfing the web.

2

Cost effective

Some programs are completely free of charge and inexpensive

5

Spyware Protection

Prevent spyware attacks that spy on your computer stealing all the confidential information such as credit card details, passwords, and other financial data.

3

Firewall Feature

Ensures 2 way protection to your PC, meaning whatever the information that is sent or received will be double checked.

6

DISADVANTAGES

System Slowdown

A lot of resources from the memory and the hard drive is being used and causing lags in the network

1

Limited Detection Techniques

Can give false alarms and fail to identify new types of viruses

4

No Complete Protection

Can identify only certain types of threats.

2

Frequent Advertisements

Can be annoying and degrade user experience by showing up every time.

5

Security Holes

Provide a chance for the virus to bypass the antivirus software.

3

No Customer Support

Lacks on the side of customers unless you pay for the premium version.

6

03

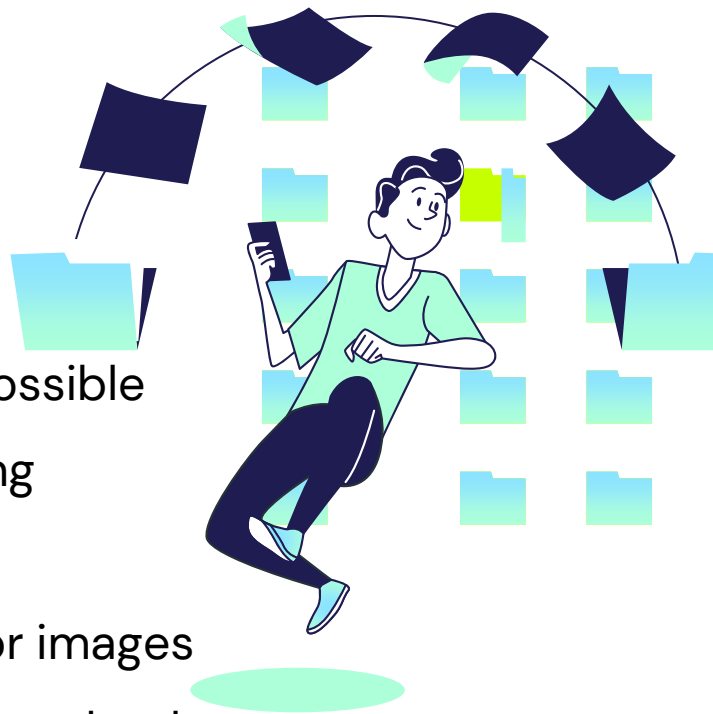
How to prevent Computer Malware

Presenter: Leng Kola



How to Prevent Computer Malware

- Keep your computer up to date
- Use antivirus software
- Use secure passwords
- Use a non-administrator account whenever possible
- Think twice before clicking links or downloading anything
- Be careful about opening email attachments or images
- Don't trust pop-up windows that ask you to download software

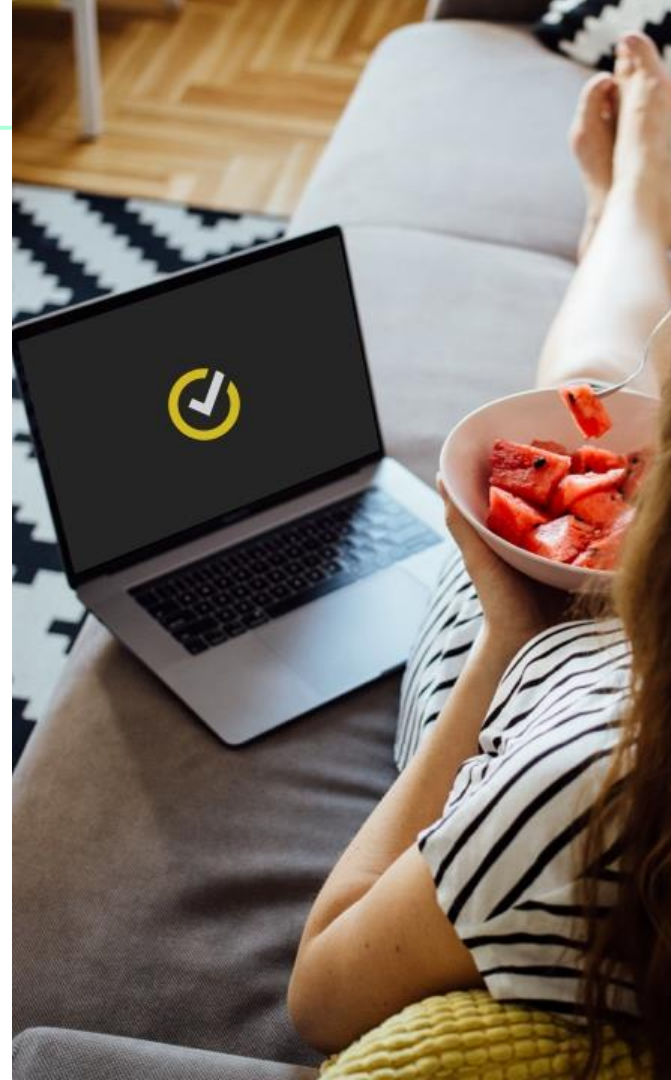


Anti-Virus Software Recommendations



Norton 360 Anti-Virus

- Norton AntiVirus is an anti-virus product founded by Peter Norton, distributed by Gen Digital since 1990
- Although it's a bit pricey, it has many features such as:
 - ✓ Virus scans
 - ✓ Real-time threat protection
 - ✓ Smart firewall
 - ✓ PC cloud backup
 - ✓ SafeCam protection
 - ✓ Secure VPN
 - ✓ System Optimization



Norton 360 Anti-Virus Price

Norton AntiVirus Plus

Annual

~~\$59.99~~ 66% OFF*

\$19.99 first yr

See subscription details below.*

Buy Now

- ✓ 1 PC, Mac, tablet, or phone
- ✓ Antivirus, malware, ransomware, and hacking protection
- ✓ 100% Virus Protection Promise²
- ✓ 2GB Cloud Backup^{††, 4}
- ✓ Password Manager

Norton 360 Standard

Annual

~~\$89.99~~ 55% OFF*

\$39.99 first yr

See subscription details below.*

Buy Now

- ✓ 3 PCs, Macs, tablets, or phones
- ✓ Antivirus, malware, ransomware, and hacking protection
- ✓ 100% Virus Protection Promise²
- ✓ 2GB Cloud Backup^{††, 4}
- ✓ Password Manager
- ✓ VPN private internet connection
- ✓ Dark Web Monitoring[§]

Norton 360 Deluxe

Annual

~~\$199.99~~ 54% OFF*

\$49.99 first yr

See subscription details below.*

Buy Now

- ✓ 5 PCs, Macs, tablets, or phones
- ✓ Antivirus, malware, ransomware, and hacking protection
- ✓ 100% Virus Protection Promise²
- ✓ 50GB Cloud Backup^{††, 4}
- ✓ Password Manager
- ✓ VPN private internet connection
- ✓ Dark Web Monitoring[§]
- ✓ Privacy Monitor
- ✓ Parental Control[‡]

Norton 360 with LifeLock Select

Annual Monthly

~~\$179.99~~ 44% OFF*

\$99.99 first yr

See subscription details below.*

Buy Now

- ✓ 10 PCs, Macs, tablets, or phones
- ✓ Antivirus, malware, ransomware, and hacking protection
- ✓ 100% Virus Protection Promise²
- ✓ 250GB Cloud Backup^{††, 4}
- ✓ Password Manager
- ✓ VPN private internet connection
- ✓ Dark Web Monitoring[§]
- ✓ Privacy Monitor
- ✓ Parental Control[‡]
- ✓ LifeLock identity theft protection

Bitdefender Anti-Virus

- Bitdefender is a Romanian cybersecurity company founded in 2001
- It's cheaper than most brands and has many features:
 - ✓ Advanced ransomware protection
 - ✓ System optimization
 - ✓ Secure web browser for safe online payments
 - ✓ Password manager
 - ✓ VPN
 - ✓ Anti-theft protection for Windows and Android



Bitdefender®



Bitdefender Anti-Virus Price



Bitdefender Antivirus
Free



Bitdefender Antivirus
Plus

Old Price ~~\$39.99~~

Savings \$25

Your total price: **\$14.99**
for the first year.

Buy Now

Sales tax included
See [Terms of Use](#) below.



Bitdefender Total
Security

Old Price ~~\$94.99~~

Savings \$55.01

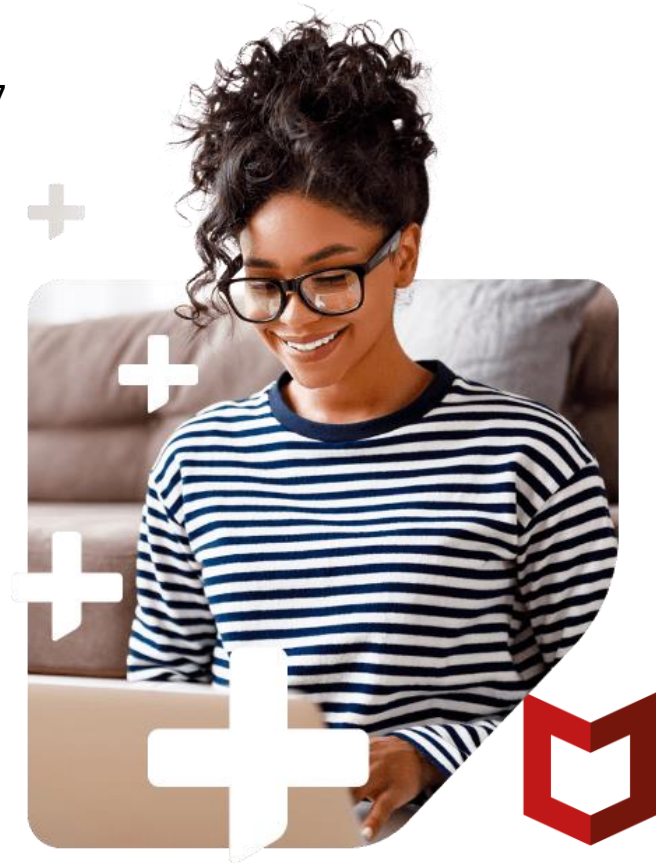
Your total price: **\$39.98**
for the first year.

Buy Now

Sales tax included
See [Terms of Use](#) below.

McAfee Anti-Virus

- McAfee is company founded by John McAfee in 1987
- It is one of most popular antivirus in the market. It's easy to use, user-friendly, and very secure. It also has:
 - ✓ Firewall and Wi-Fi network protection
 - ✓ Anti-phishing protection
 - ✓ VPN
 - ✓ Performance optimization
 - ✓ File shredder
 - ✓ Vulnerability scanner
 - ✓ Web protection and real-time malware detection



McAfee Anti-Virus Price

BEST VALUE

 **McAfee+** | Advanced

\$89.99* /yr

~~\$199.99~~ Save **\$110.00**

Buy

 **McAfee+** | Premium

\$59.99* /yr

~~\$149.99~~ Save **\$90.00**

Buy

Plus

\$39.99* /yr

~~\$119.99~~ Save **\$80.00**

Buy

Basic

1 Device
1yr Subscription

\$29.99*

~~\$84.99~~
(Save **\$55.00**)

Buy Now

Windows Defender

Security at a glance

See what's happening with the security and health of your device and take any actions needed.



Virus & threat protection

No action needed.



Account protection

No action needed.



Firewall & network protection

No action needed.



App & browser control

No action needed.



Device security

View status and manage hardware security features



Device performance & health

No action needed.



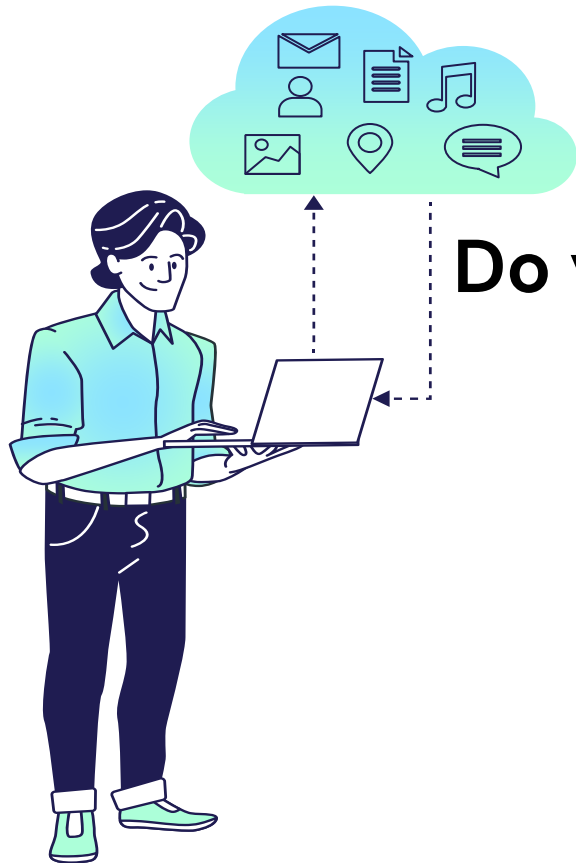
Family options

Manage how your family uses their devices.

Reference

- <https://repo.zenk-security.com/Magazine%20E-book/Antivirus%20hackers%20handbook.pdf>
- <https://www.hotspotshield.com/blog/history-of-the-antivirus/#:~:text=The%20beginnings%20of%20antivirus%20software, Ray%20Tomlinson%20developed%20the%20Reaper.>
- <https://blog.netwrix.com/2020/06/12/malware-prevention/>
- <https://www.avast.com/c-malware>
- <https://www.ncsc.gov.uk/guidance/what-is-an-antivirus-product>
- <https://www.security.org/antivirus/how-does-antivirus-work/>
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THANK YOU FOR YOUR ATTENTION!



Do you have any questions?

