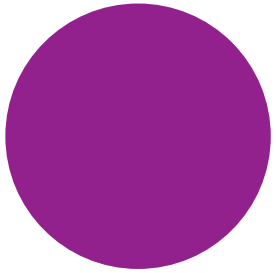
IT ESSENTIALS FOR HTM PROFESSIONALS MAY 2026

PRESENTED BY: TUCKER BRINKMAN

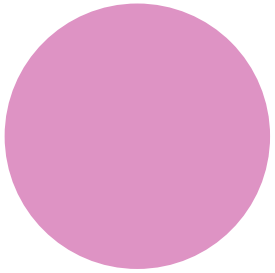
Introduction

- Serving as HonorHealth's Medical Device Vulnerability Management Specialist
- Background:
  - Cyber Network Operator (0651) – United States Marine Corps
  - Gonzaga University - Class of 2022
- Certifications:
  - ISC2 AI for Cybersecurity
  - CompTIA CySA+
  - CompTIA Security+
  - ITIL Foundation

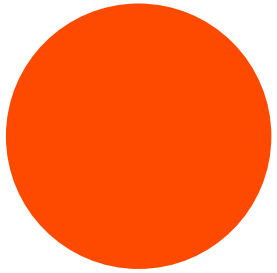
Agenda



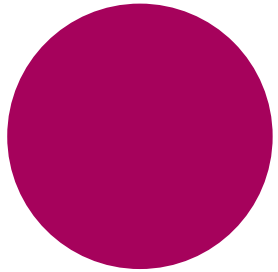
HARDWARE / SOFTWARE / FIRMWARE



IP ADDRESSES



MAC ADDRESSES



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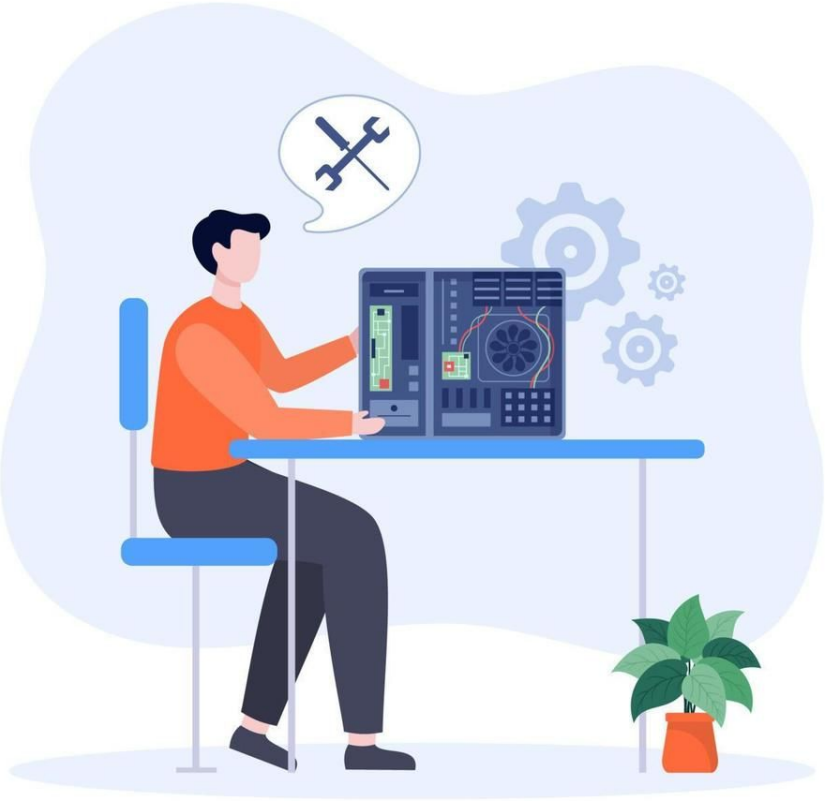
HARDWARE

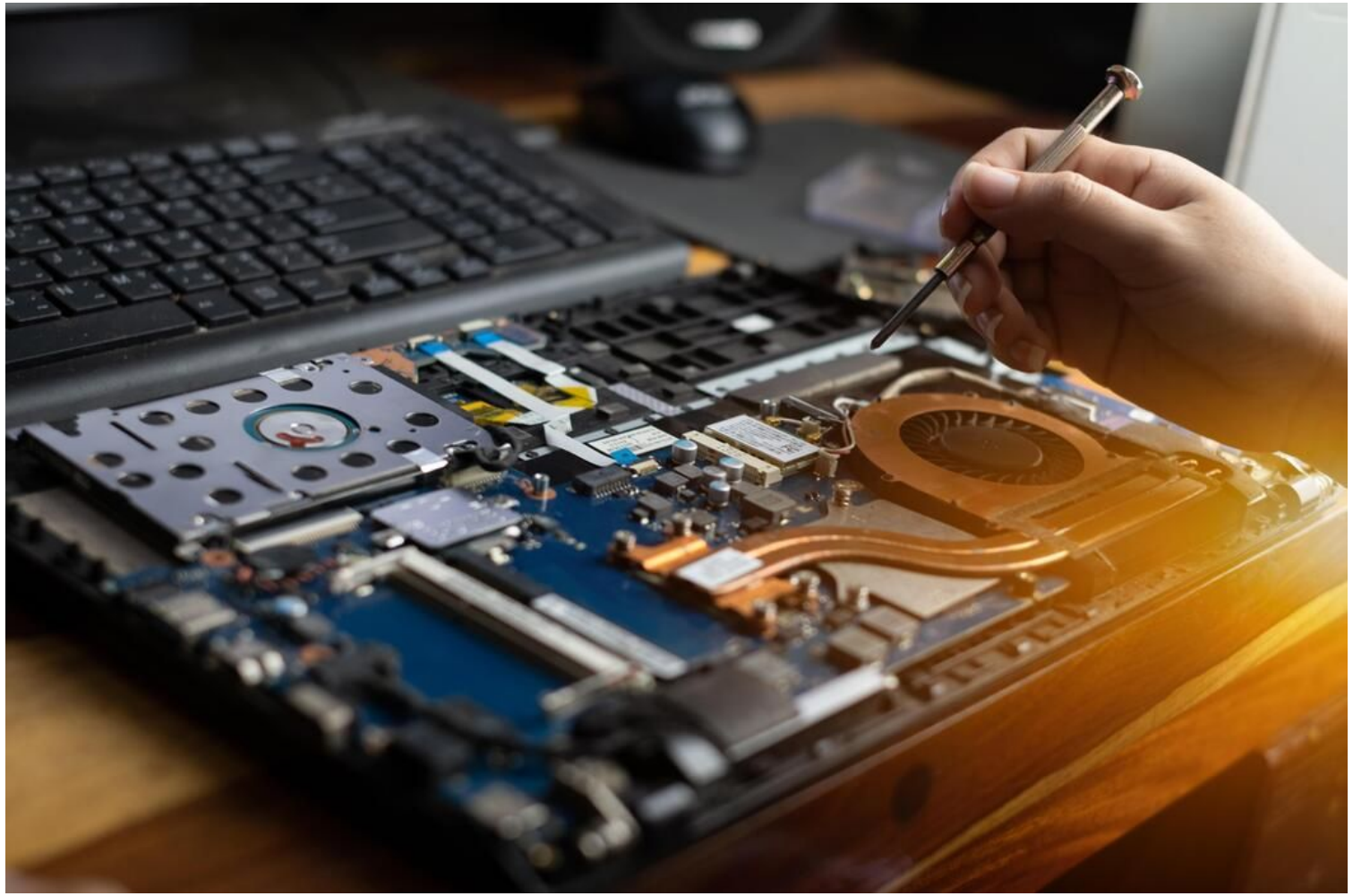
Hardware



- The physical components of a computer system that enable it to perform tasks such as input, output, processing, and storage.
- Responsible for the physical operations of a computer, machine, or device

Hardware Includes:

- Random Access Memory
- Peripheral Input/Output Devices
- Motherboard
- Central Processing Unit
- Smartphones
- Printers



SECURING HARDWARE

- Cable Locks
- USB Port Locks
- Lock Your Screens
- Enable Auto-Timeouts
- Keep Equipment Behind Locked and Secured Doors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SOFTWARE

Software

- Sets of instructions, programs, procedures, and related data that tell a computer or other digital device what to do
- Unlike hardware, software is intangible and is used to control and manage hardware operations

- Software is written in programming languages and translated into machine language that the computer's hardware can understand
  - Python, Java, C++, SQL
- Essential for both system management and user productivity

Software Types

System Software

- Controls the computer's internal functioning and manages hardware interaction. Examples include operating systems, device drivers, and utilities
  - Operating Systems
  - Drivers
  - Antivirus Software
  - Language Processors

Application Software

- Designed to perform specific tasks for end users
  - Productivity Software
  - Multimedia Software
  - Web and Mobile Applications
  - Database Software

Software That Secures

Antivirus software, also known as *anti-malware*, is a type of cybersecurity program that protects devices from harmful software such as viruses, worms, trojans, spyware, ransomware, and adware


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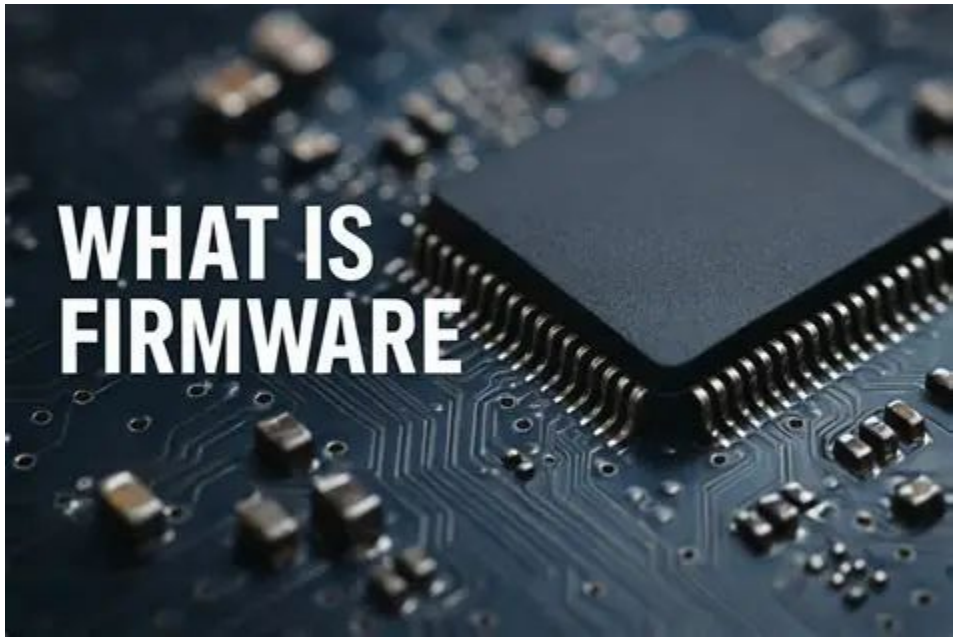
FIRMWARE

Firmware

Specialized type of software that provides low-level control for a device's specific hardware. Unlike regular software, firmware is tightly linked to the hardware it controls and is often essential for the device's basic functionality.

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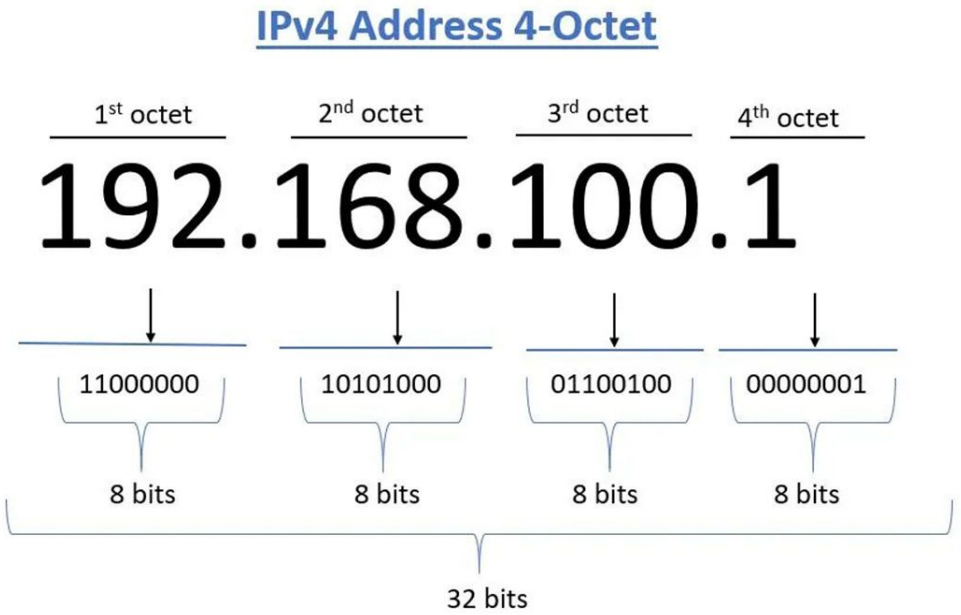
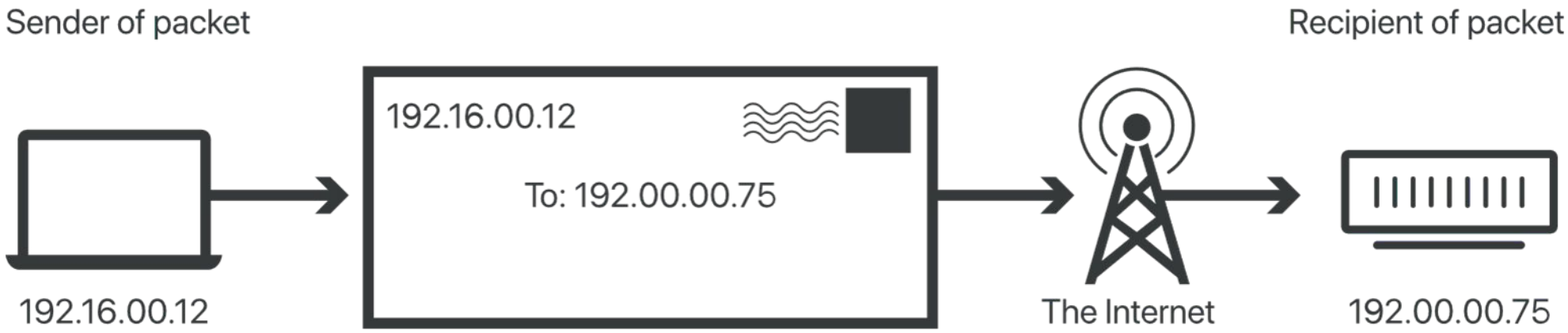
IP ADDRESSES

IP ADDRESSES

- Internet Protocol address (IP address) is a numerical label, such as 192.0.2.1 that is assigned to EVERY device connected to a network that uses the Internet Protocol for communication

- Two Main Functions:
  - Network Interface Addressing
  - Location Addressing





IP ADDRESSES

Static vs Dynamic

STATIC IP ADDRESSES

- This type of address does not change and is manually assigned to a device. It is often used for servers and other critical devices.
- Hard-coded

DYNAMIC IP ADDRESSES

- Dynamic Host Configuration Protocol (DHCP)
- This type of address is assigned by a DHCP server and can change over time. It is commonly used for general devices like computers and smartphones
- This process simplifies the management of IP addresses, allowing devices to connect to the network without manual configuration
- Based on a lease system

Public vs Private

PUBLIC IP ADDRESSES

Used to communicate outside a local network over the internet

- It is globally routable and allows devices or networks to send and receive data from external systems.
- These IP addresses are typically assigned by an Internet Service Provider (ISP).
- Due to IPv4 address exhaustion, public IPv4 addresses are increasingly limited and may be harder to obtain.

PRIVATE IP ADDRESSES

Used for communication within a local network (LAN). It enables devices such as computers, smartphones, and printers to exchange data internally.

- These addresses are typically assigned by a router or DHCP server, ensuring that each device on the network has a unique local identifier.
- Private IP addresses are not routable on the public internet, meaning they cannot be accessed directly from outside the local network.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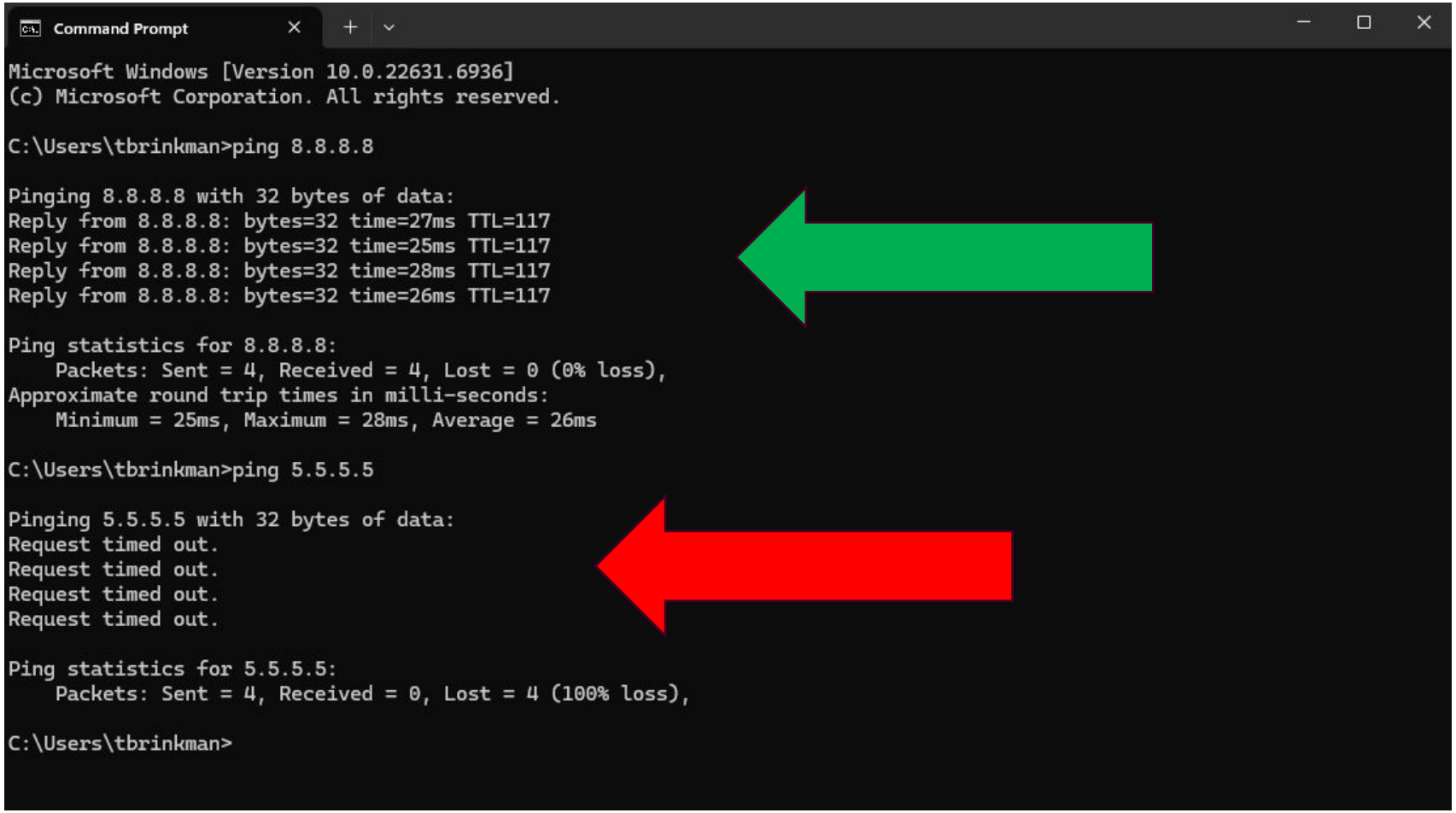
TROUBLESHOOTING
WITH IP ADDRESSES

Troubleshooting

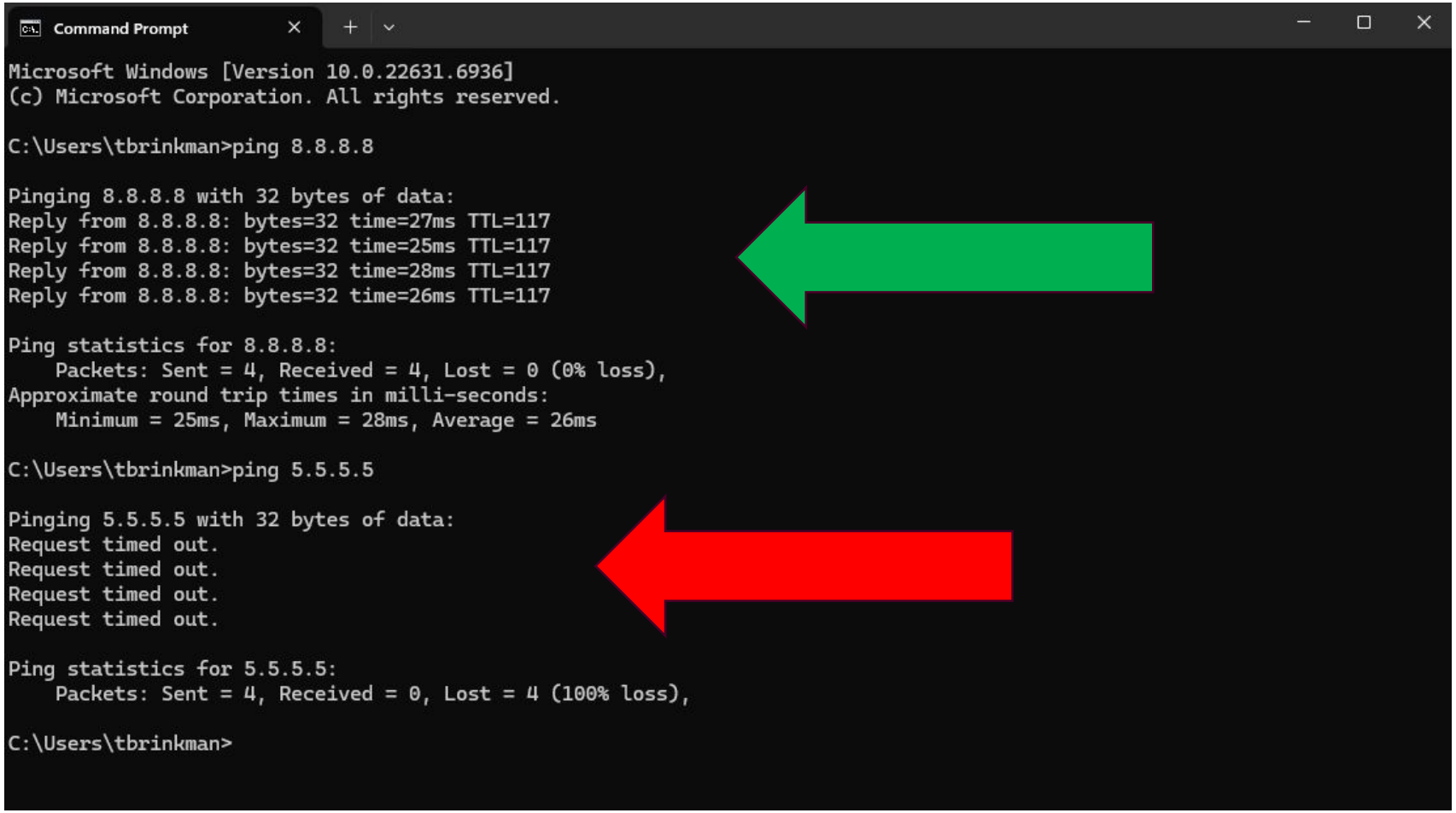
- The ping command checks if one computer can talk to another on a network
- This command is used by sending messages to see if another computer replies
- You can ping a device using its name or IP address to test the connection



Troubleshooting

- Internet Control Message Protocol (ICMP) Echo Request

- If a network printer doesn't respond to a ping, it might be offline or have a disconnected cable. You might also ping a medical device to confirm your computer can connect and rule it out as a network issue.



Troubleshooting

Click the Start menu and type Event Viewer in the search bar.

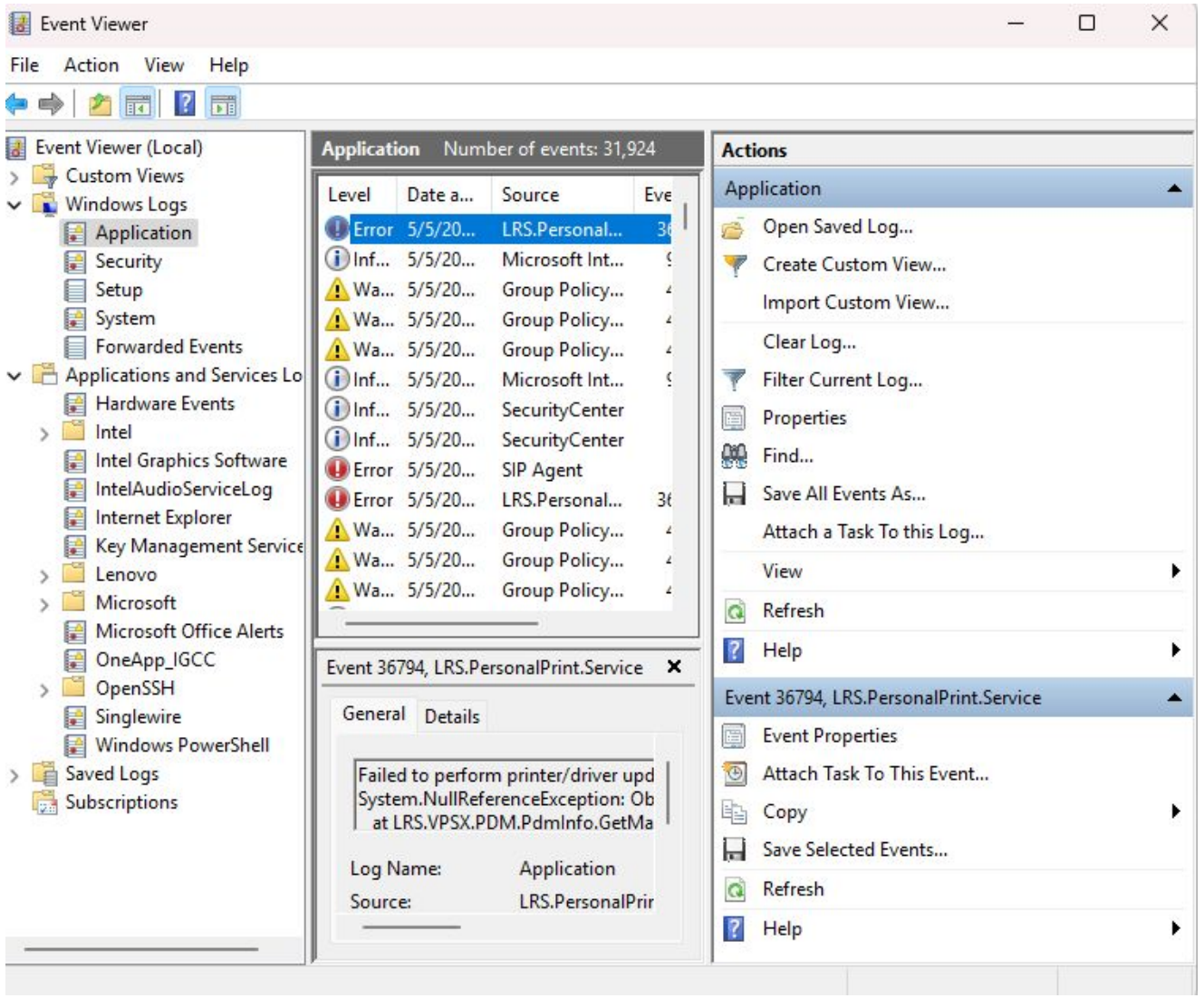
Select Event Viewer from the search results to launch it. Expand Windows Logs in the left-hand pane.

Click the desired log type, such as Application, Security, or System.

Review the entries in the center pane for errors, warnings, or information.

Use Filter Current Log to narrow results by date, event level, or ID.

Right-click the log and select Save All Events As to export it.



Troubleshooting

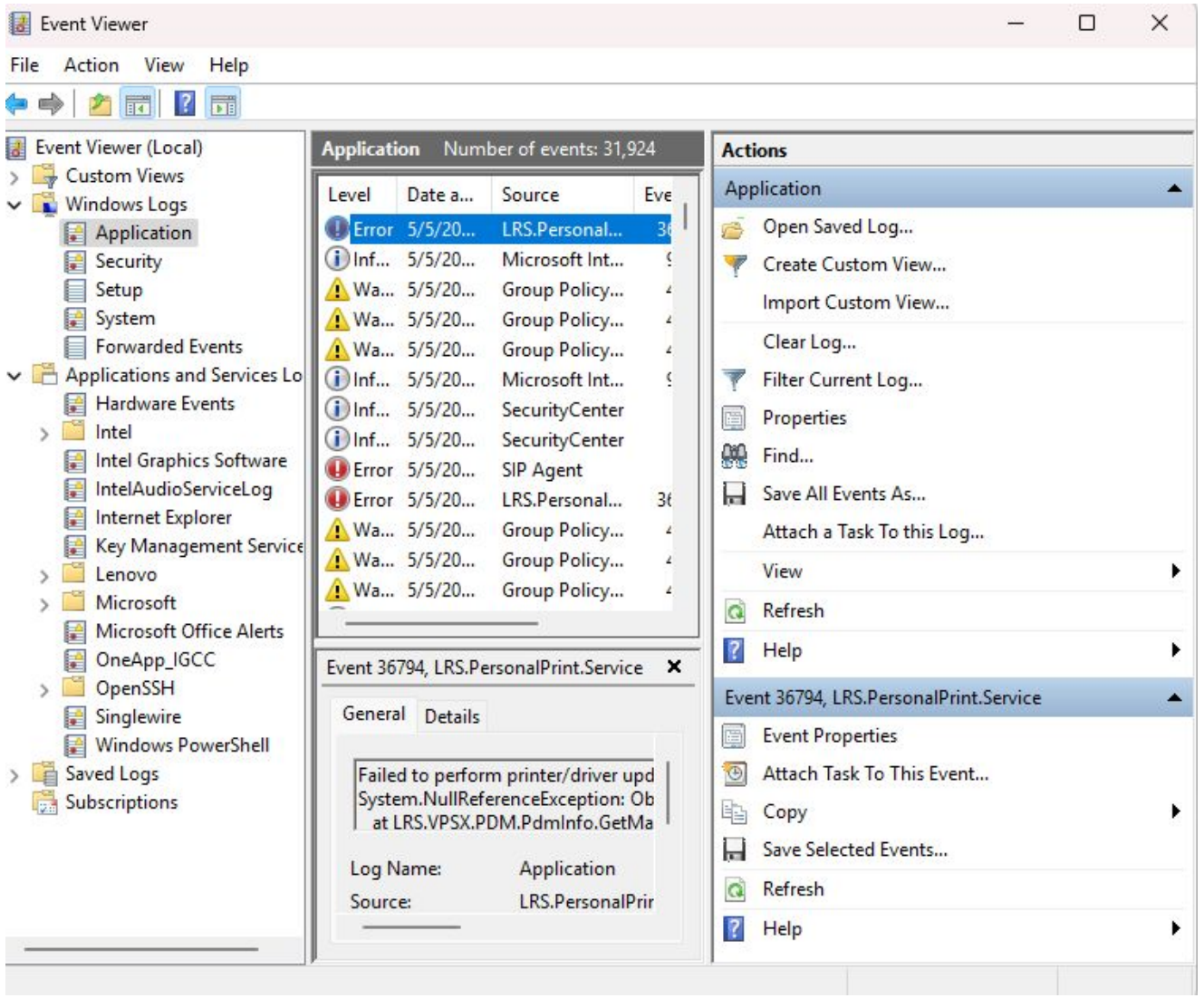
Application: Logs the events associated with the applications installed in the device

Security: Logs data based on the device's audit policy, events like login attempts, and resource access

Setup: Logs the events during Windows installation

System: Logs info about system changes, device changes, device drivers, etc.

Forwarded events: These are the logs of other computers in the same network as the "collector computer". these logs are found in the collector computer

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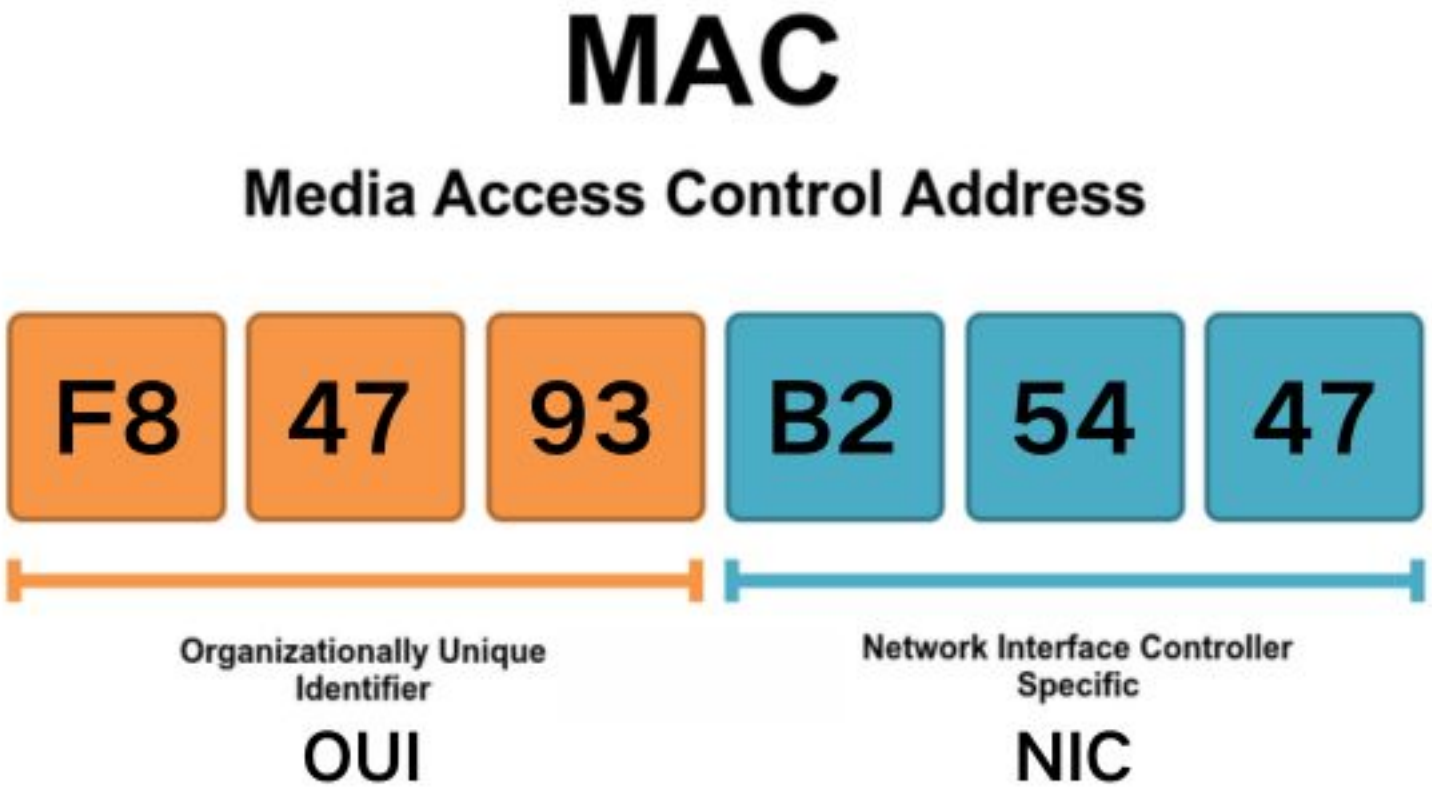
MAC ADDRESSES

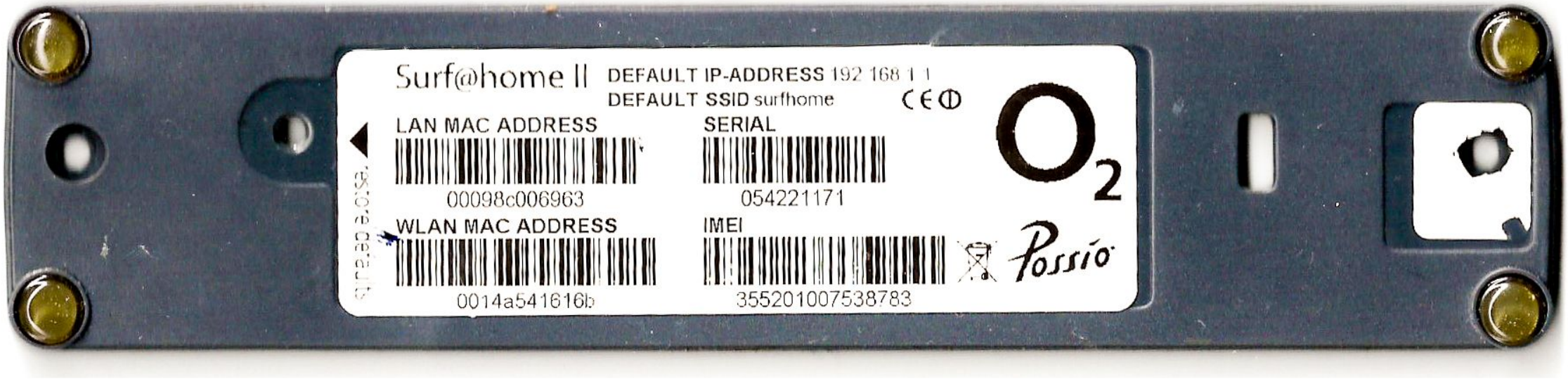
Big Mac®

NOPE, NOT THIS!

MAC ADDRESSES

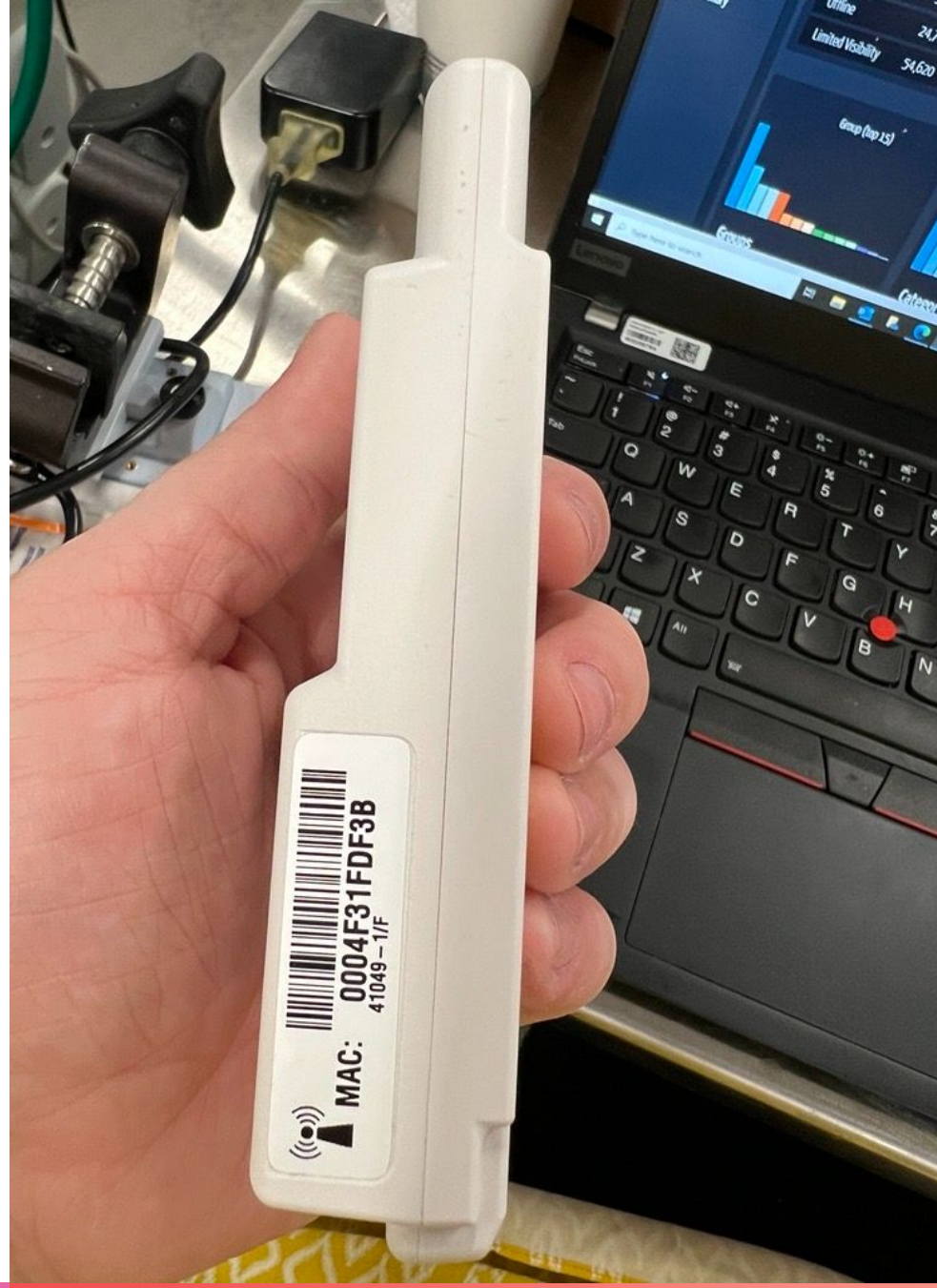


MAC ADDRESSES



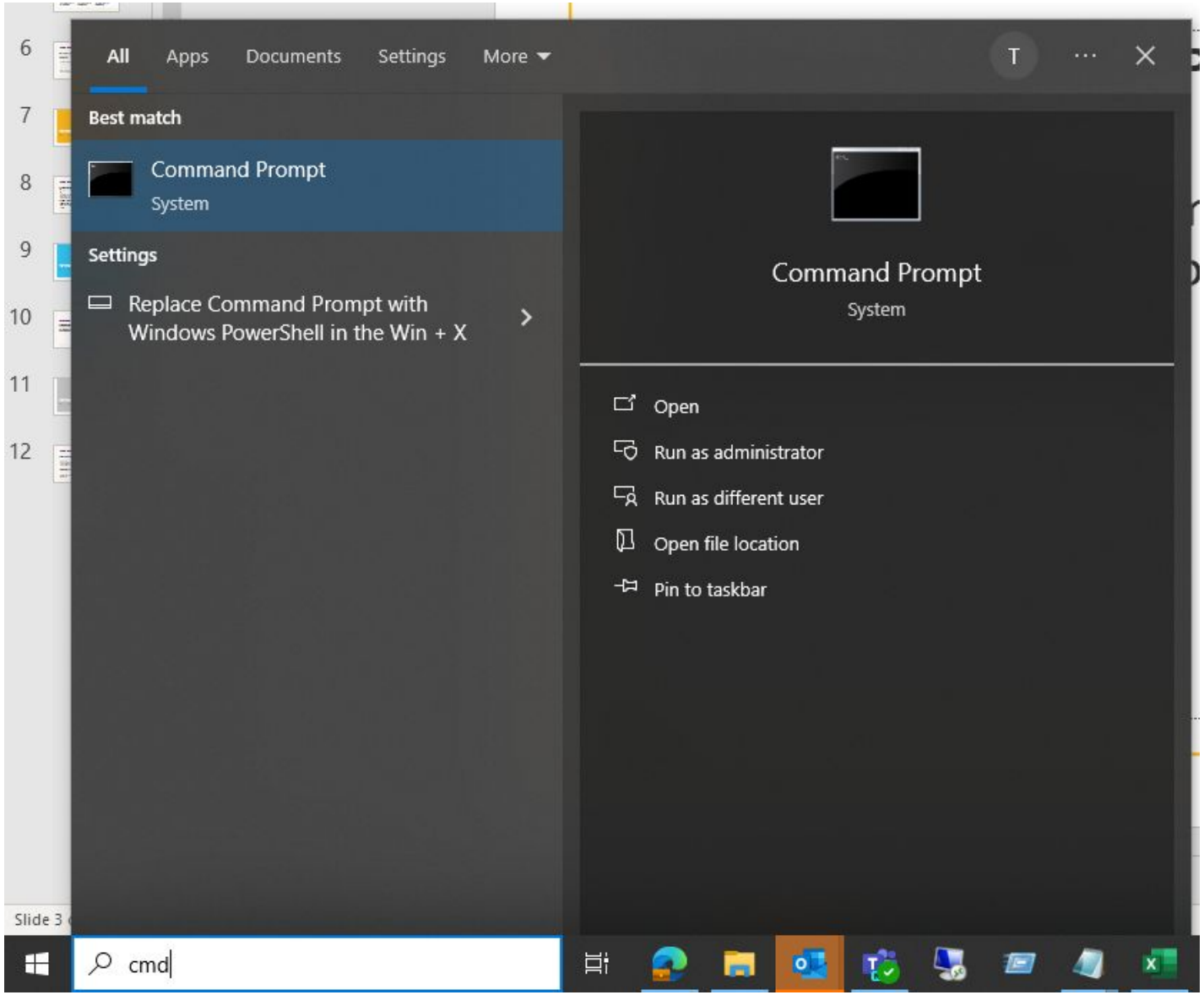
Examples


MT45
Rx only
WiFi CERTIFIED
IPX7
2019-09-10
Made in USA from foreign & domestic components
C84483
Model # MX40-WL3
Service #: 453564615331
SN US099F7304
REF 865352
MAC 00-09-FB-A5-E2-84


MAC: 0004F31FDF3B
41049-1/F

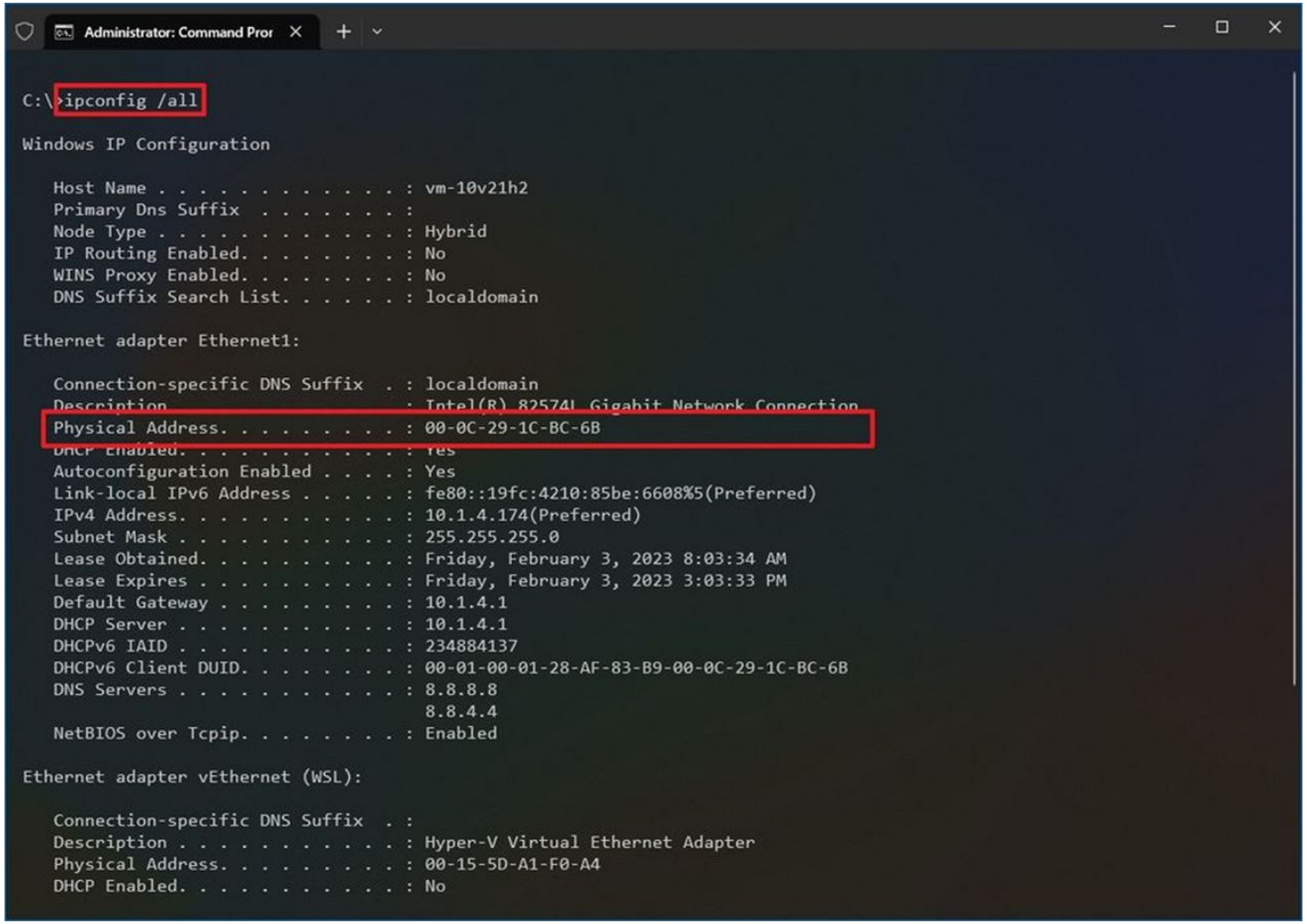
FINDING MAC ADDRESSES VIA COMMAND PROMPT

Search for Command Prompt (type "cmd") and click the top result to open the app.



LOCATING MAC ADDRESSES VIA COMMAND PROMPT

1. Type the following command:
   ipconfig /all
2. The MAC will be listed in the "Physical Address" setting.

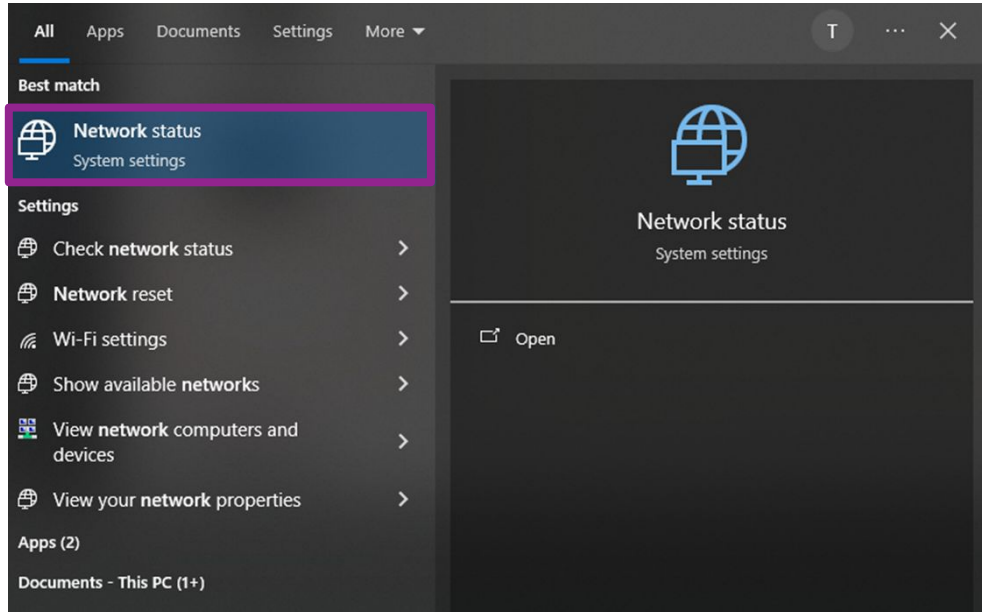


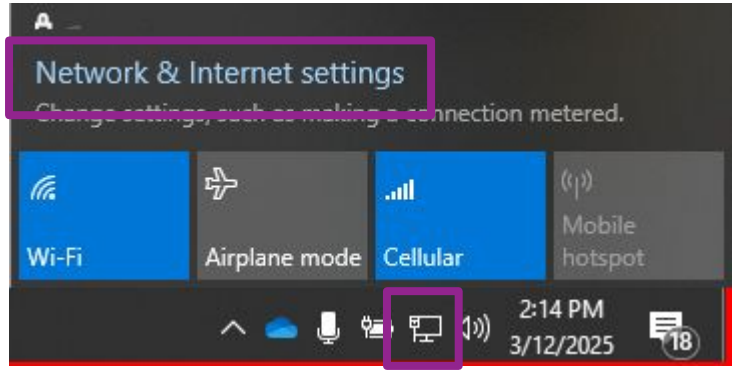
LOCATING MAC ADDRESS VIA NETWORK STATUS

1. On the taskbar type in "Network status," and click on the icon.

   OR

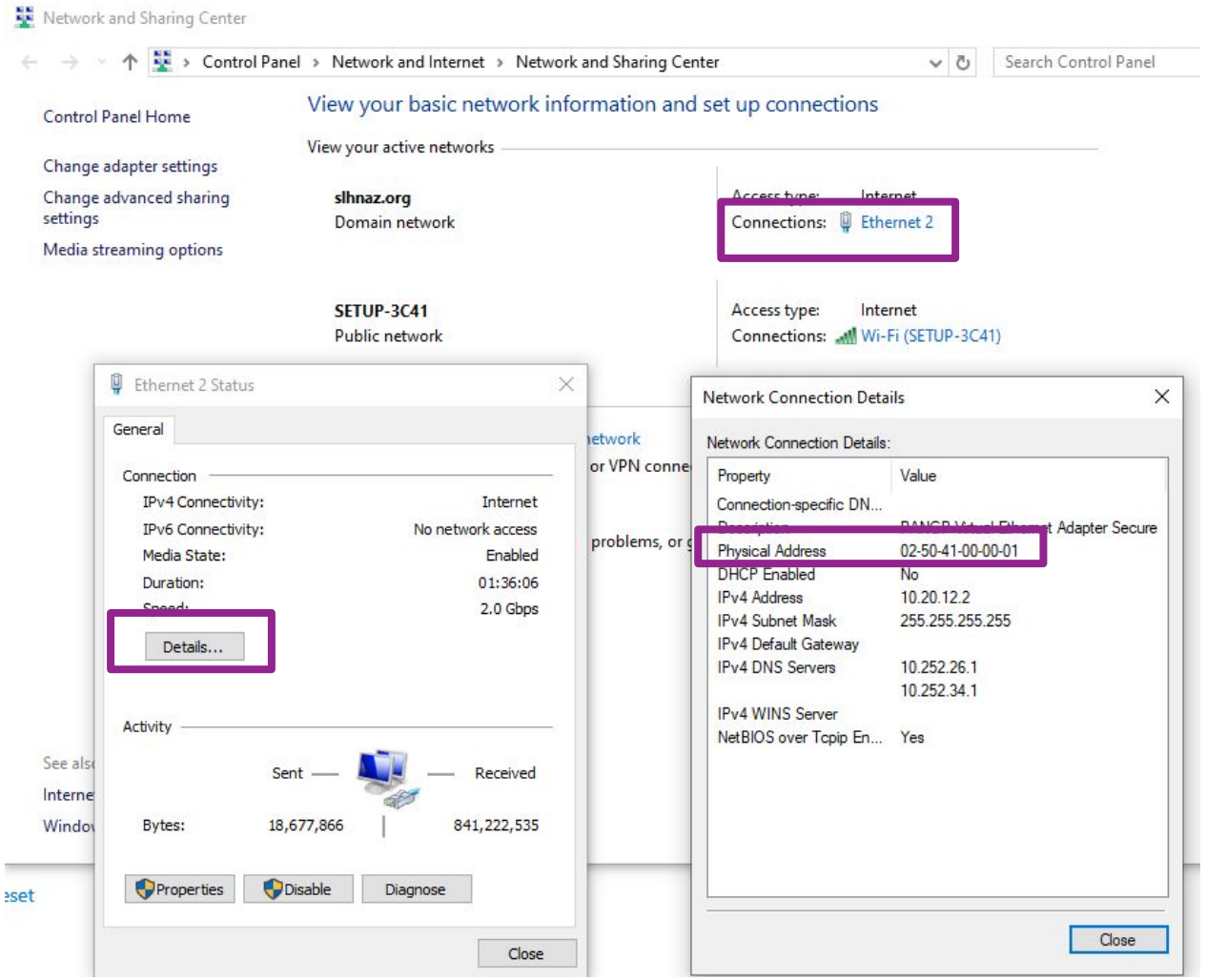
2. Click on Internet Access icon in the bottom right corner





LOCATING MAC ADDRESS VIA NETWORK STATUS - CONTINUED

3. Select Network and Sharing Center
4. Select your network connection
5. Click on the "Details" button
6. This will open the Network Connections Details window

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CONFIDENTIALITY
CIA
TRIAD
INTEGRITY
AVAILABILITY

Confidentiality

- Ensures that sensitive information is accessed only by authorized individuals or systems
- Confidential information should remain hidden from unauthorized users while being available to those who require access to it for legitimate purposes
- Often associated with privacy, as it focuses on protecting personal, sensitive, or classified information from being disclosed to unauthorized individuals or entities

Integrity

Refers to the accuracy and trustworthiness of data. It ensures that information remains unaltered during transmission, storage, or processing, except by authorized individuals or systems

Data integrity guarantees that the information received is strictly as intended, without any unauthorized modifications, deletions, or additions

Any corruption or unauthorized modification of data could have severe consequences, including financial losses, legal penalties, or threats to public safety

Availability

Ensures authorized users have reliable and timely access to systems, networks, and data when needed

Crucial for maintaining business continuity, as downtime or unavailability of critical systems can lead to financial losses, reputational damage, and operational disruptions

Ensures that a system's hardware and software components function correctly and can handle both anticipated and unexpected loads


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QUESTIONS?