

Basics of MAC Addressing

CSE320 – Data Communications

Department of Computer Science and Engineering
School of Data & Science

MAC Address

- ☐ Stands for Media Access Control
- ☐ Every node in the LAN is identified with MAC address
- ☐ Physical address, hardware address
- ☐ Globally unique
- ☐ Can not be altered
- ☐ Provided by manufacturer
- ☐ Represented in hexadecimal format, 48 bits long
- ☐ Example, 00:1B:44:11:3A:B7
- ☐ Separators can be: hyphen(-), colon(:) or period(.)

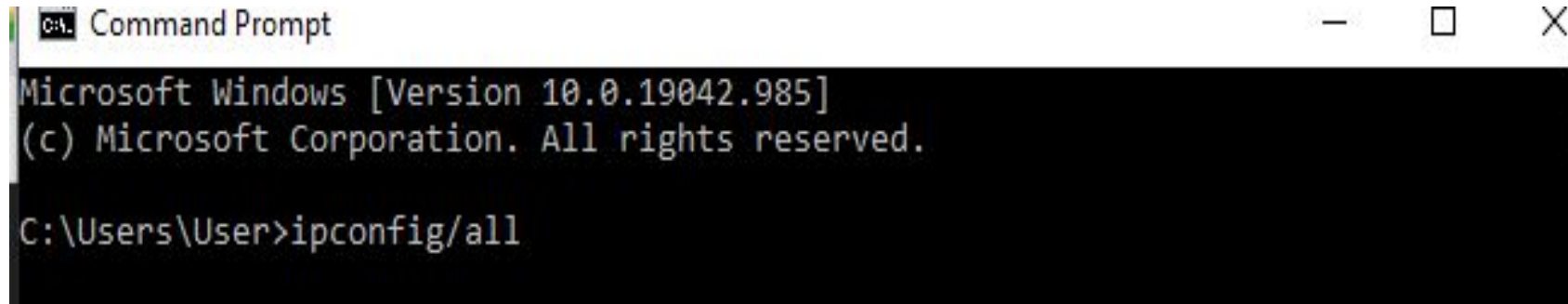
- ☐ **IP Address** **➡** **Location of a person**
- ☐ **MAC Address** **➡** **Name of the person**

Why do we need both IP and MAC address?

- ❑ MAC address - works on layer 2 network, identify devices within the same broadcast network
- ❑ IP address - used on layer 3, identify the devices on different networks

How to find the MAC address of a device

1. Open command prompt, type ipconfig/all command and press enter

A screenshot of a Windows Command Prompt window. The title bar at the top reads "C:\ Command Prompt" and includes standard window controls (minimize, maximize, close). The main area of the window has a black background with white text. It displays the Microsoft Windows version information: "Microsoft Windows [Version 10.0.19042.985]" and "(c) Microsoft Corporation. All rights reserved." Below this, the command prompt shows the user's location as "C:\Users\User" and the command "ipconfig/all" has been entered, followed by a cursor.

```
C:\ Command Prompt
Microsoft Windows [Version 10.0.19042.985]
(c) Microsoft Corporation. All rights reserved.

C:\Users\User>ipconfig/all
```

Select Command Prompt

Autoconfiguration Enabled : Yes

Wireless LAN adapter Local Area Connection* 2:

Media State : Media disconnected

Connection-specific DNS Suffix . :

Description : Microsoft Wi-Fi Direct Virtual Adapter #2

Physical Address. : 68-14-01-83-F9-29

DHCP Enabled. : Yes

Autoconfiguration Enabled : Yes

Wireless LAN adapter Local Area Connection* 3:

Media State : Media disconnected

Connection-specific DNS Suffix . :

Description : Microsoft Wi-Fi Direct Virtual Adapter #3

Physical Address. : 6A-14-01-83-F9-29

DHCP Enabled. : Yes

Autoconfiguration Enabled : Yes

Wireless LAN adapter Wi-Fi 3:

Connection-specific DNS Suffix . : domain.name

Description : Realtek RTL8723BE 802.11 bgn Wi-Fi Adapter

Physical Address. : 68-14-01-83-F9-29

DHCP Enabled. : Yes

Autoconfiguration Enabled : Yes

Link-local IPv6 Address : fe80::fc4d:f11a:9cca:ec71%11(Preferred)

IPv4 Address. : 192.168.0.5(Preferred)

Subnet Mask : 255.255.255.0