

# Lab 18 – Using ipconfig to view and modify network information on Windows

## Lab Objective:

- The goal of this lab is to **learn how to use a tool called ipconfig** in **Windows**.
- **ipconfig** lets you **view and change network information** on your computer.

## What is ipconfig?

- **ipconfig** stands for **Internet Protocol Configuration**.
- It's a **tool** that lets you **see and manage** how your computer is connected to the internet or local network.
- It's like a window that shows you **all the network settings** on your computer.

## Lab Tool:

- You'll be using **Windows** to do these commands.

## Lab Walkthrough:

### Task 1: Viewing your network information

**Step 1:** Open the **Command Prompt** (it's where you can type commands).

- Press the **Windows key** on your keyboard and type "**Command Prompt**", then open it.

**Step 2:** Type the following command into the Command Prompt and press **Enter**: ipconfig

## What happens?

- This command shows you a bunch of **network information** like:
  - Your **IP address** (this is like your computer's address on the network).
  - Your **Subnet Mask** (helps computers know which addresses are local and which are outside).
  - Your **Default Gateway** (the device that helps you connect to the internet).

## Task 2: Viewing detailed network information

**Step 1:** Type this command into the Command Prompt and press **Enter**: `ipconfig /all`

## What happens?

- This gives you **more detailed information** about all your network connections, like:
  - Your **MAC address** (a unique number for your network card).
  - The **DNS servers** (they help you find websites by their names, like turning `google.com` into an IP address).

## Task 3: Releasing and renewing your IP address

Sometimes, you might need to change your computer's **IP address**. Here's how:

**Step 1:** To release your IP address (this disconnects you from the network), type: `ipconfig /release`

**Step 2:** To release the IPv6 address (if you're using IPv6), type: `ipconfig /release6`

**Step 3:** To renew your IP address (this reconnects you), type: `ipconfig /renew`

#### What happens?

- When you release and renew your IP, you're asking your network router to give you a **new address**. It's like getting a new house number from the post office.

#### Task 4: Flushing the DNS cache

Your computer stores information about websites you've visited in a **DNS cache**. Sometimes this cache can get outdated, and you need to clear it.

**Step 1:** Type this command into the Command Prompt: `ipconfig /flushdns`

#### What happens?

- This clears the DNS cache (all the information your computer has saved about websites).
- It's like erasing the **history** of web addresses your computer remembers.

#### Task 5: Registering DNS names

Sometimes, your computer needs to **update** or **register** your computer's name with the DNS system.

**Step 1:** Type this command to refresh the DNS registration: `ipconfig /registerdns`

### What happens?

- This command tells your computer to **register** its name with DNS servers so other devices can find it correctly on the network.

**Important:** You may need to run the Command Prompt as **Administrator** to use this command (right-click on Command Prompt and select **Run as Administrator**).

### Task 6: Viewing the DNS cache content

If you want to **see** what your computer remembers about websites, you can look at the **DNS cache**.

**Step 1:** Type this command: `ipconfig /displaydns`