PowerShell Networking Commands – Notes

1. IPCONFIG / Get-NetIPAddress / Get-NetIPConfiguration

- **Purpose:** Displays network configuration details of your system.
- **Example Uses:**
  - `ipconfig` → Shows IPv4, IPv6, subnet mask, default gateway, etc.
  - `Get-NetIPAddress` → Shows all IP addresses assigned to your network adapters.
  - `Get-NetIPConfiguration` → Displays full network configuration (DNS, Gateway, etc.).

2. Tracert / Test-NetConnection -Traceroute

- **Purpose:** Checks the route (path) taken by packets to reach a destination.
- **Example Uses:**
  - `tracert 127.0.0.0` → Displays hops between your computer and the destination.
  - `Test-NetConnection -Traceroute www.google.com` → Shows route information using PowerShell.

3. Get-NetAdapter / wmic nic get adaptertype, name, MACAddress

- **Purpose:** Displays network adapter details.
- **Example Uses:**
  - `Get-NetAdapter` → Lists all network adapters with their status (Up/Down).
  - `wmic nic get adaptertype, name, MACAddress` → Shows NIC (Network Interface Card) info including MAC address.

4. Ping / Test-NetConnection

- **Purpose:** Tests network connectivity between your system and a remote host.
- **Example Uses:**
  - `ping 127.0.0.0` → Tests connection to the given IP.
  - `Test-NetConnection www.google.com` → Tests connection and gives more details (Ping, Port, DNS, etc.).

5. Enable / Disable-NetAdapter

- **Purpose:** Turns a network adapter ON or OFF.
- **Example Uses:**
  - `Enable-NetAdapter -Name "Ethernet"` → Enables Ethernet adapter.
  - `Disable-NetAdapter -Name "Ethernet"` → Disables Ethernet adapter.

6. DNSClient

- **Purpose:** Manages and displays DNS client settings.
- **Example Use:**

- `Get-DnsClient` → Shows DNS configuration of network interfaces.

7. Resolve-DnsName

- **Purpose:** Resolves a domain name to its IP address (like nslookup).
- **Example Use:**
  - `Resolve-DnsName www.google.com` → Displays the IP address of Google's domain.

9. New-NetIPAddress

- **Purpose:** Assigns a new static IP address to a network adapter.
- **Example Use:**
  - `New-NetIPAddress -IPAddress 127.0.0.0 -PrefixLength 24 -InterfaceAlias "Ethernet"` → Sets a static IP with a subnet prefix.

10. netsh interface ipv4 set address

- **Purpose:** Configures static IP settings using `netsh` (older method).
- **Syntax:**
- `netsh interface ipv4 set address name="Ethernet" static IP SM DG`
  - **IP:** IP Address
  - **SM:** Subnet Mask
  - **DG:** Default Gateway
- **Example:**

```
netsh interface ipv4 set address name="Ethernet" static 192.168.1.10
255.255.255.0 192.168.1.1
```

11. Get-Date

- **Purpose:** Displays the current system date and time.
- **Example Use:**
- `Get-Date`

  → Shows current date, time, and timezone information.

12. Get-TimeZone

- **Purpose:** Displays the current system timezone settings.
- **Example Use:**
- `Get-TimeZone`

  → Shows timezone name, offset from UTC, and daylight saving info.

13. Notepad, Control, Calc, mspaint & winword

- **Purpose:** Opens common Windows applications using PowerShell.
- **Examples:**
  - `notepad` → Opens Notepad.

- `control` → Opens Control Panel.
- `calc` → Opens Calculator.
- `mspaint` → Opens Microsoft Paint.
- `winword` → Opens Microsoft Word.

14. Set-Content file.txt 'Here is your text'

- **Purpose:** Creates or replaces the content of a file.
- **Example Use:**
- `Set-Content file.txt 'Here is your text'`

  → Creates a file named **file.txt** and writes the given text inside it.

Powershell ise commands for create a file and add text some