How to Run Linux Commands on Windows Using WSL

Linux is a powerful and flexible operating system widely used in various environments, from servers to development machines. However, many users operate within a Windows environment and may need to execute Linux commands without switching to a different OS. This is where the Windows Subsystem for Linux (WSL) comes into play. WSL allows you to run a Linux distribution alongside your Windows installation, providing access to Linux command-line tools and utilities.

This article will guide you through the process of setting up WSL on your Windows machine and running Linux commands seamlessly. This is particularly useful for developers, system administrators, and power users who need the capabilities of both operating systems.

Examples:

1. **Installing WSL:** To install WSL, you need to enable the feature in Windows. Open PowerShell as an administrator and run the following command:

   ```
   wsl --install
   ```

   This command will enable the WSL feature and install the default Linux distribution (usually Ubuntu).

2. **Setting Up a Specific Linux Distribution:** If you prefer a specific Linux distribution, you can choose and install it from the Microsoft Store. For example, to install Debian, follow these steps:

   - Open the Microsoft Store.
   - Search for "Debian" and select it.
   - Click "Get" to install the distribution.

3. **Running Linux Commands:** Once WSL and your preferred Linux distribution are installed, you can start using Linux commands. Open the installed Linux distribution from the Start menu or run it via CMD or PowerShell:

   ```
   wsl
   ```

   This will open a WSL terminal where you can run Linux commands. For example:

   ```
   ls -l
   ```

This command lists the files and directories in the current directory with detailed information.

4. **Accessing Windows Files from WSL:** You can access your Windows files directly from the WSL environment. For instance, to navigate to your C: drive, use:

   ```
   cd /mnt/c
   ```

   This allows you to interact with your Windows file system using Linux commands.

5. **Running a Linux Script:** To run a Linux script from WSL, create a script file (e.g., script.sh) and execute it:

   ```
   chmod +x script.sh
   ./script.sh
   ```

   This is particularly useful for automating tasks and running complex command sequences.