

SRE Training (Day 6) - LINUX

About LINUX

Linux is an open-source operating system. It is the foundation of many operating systems (called distributions or **distros**) like **Ubuntu, Debian, Fedora, Arch, and Kali Linux**. Linux is widely used in servers, desktops, embedded systems, cloud computing etc.

Key features of linux

- ✓ **Open-Source** – Free to use and modify
- ✓ **Secure** – Less vulnerable to viruses and malware
- ✓ **Customizable** – Modify anything, from the UI to the kernel
- ✓ **Lightweight & Fast** – Runs efficiently on old and new hardware
- ✓ **Powerful CLI** – Command-line interface gives full control
- ✓ **Stable & Reliable** – Used in mission-critical systems (NASA, Google, AWS, etc.)
- ✓ **Huge Community Support** – Forums, documentation, and open-source projects

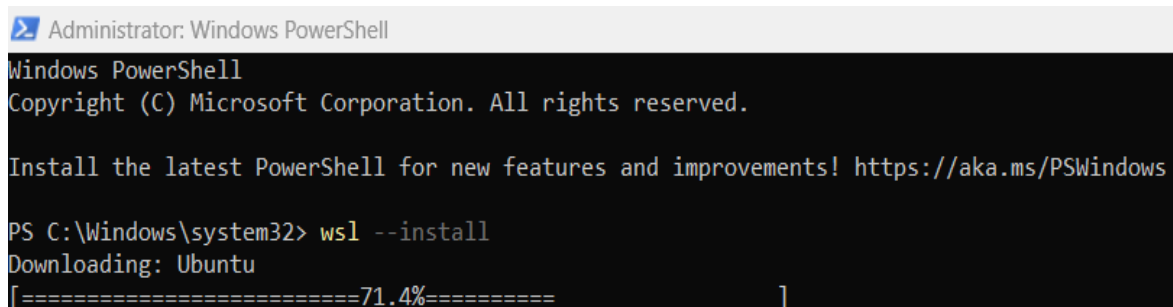
What is WSL?

WSL (Windows Subsystem for Linux) is a compatibility layer developed by Microsoft that allows you to run a Linux environment directly on Windows without needing a separate virtual machine or dual boot setup.

Useful WSL commands

- **wsl** - run ubuntu
- **wsl --version** - check wsl version
- **sudo apt update && sudo apt upgrade -y** -update Ubuntu packages
- **wslconfig /setdefault Ubuntu** - sets Ubuntu as the default Linux distribution for WSL
- **wsl --unregister Ubuntu** - Uninstall/remove Ubuntu

INSTALLING WSL



```
Administrator: Windows PowerShell
Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Windows\system32> wsl --install
Downloading: Ubuntu
[=====71.4%=====]
```

```

Administrator: Windows PowerShell
Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Windows\system32> wsl --version
WSL version: 2.4.11.0
Kernel version: 5.15.167.4-1
WSLg version: 1.0.65
MSRDC version: 1.2.5716
Direct3D version: 1.611.1-81528511
DXCore version: 10.0.26100.1-240331-1435.ge-release
Windows version: 10.0.22631.4751
PS C:\Windows\system32> wsl --install
Downloading: Ubuntu
PS C:\Windows\system32> 2.2% ]
PS C:\Windows\system32> wsl --install
Downloading: Ubuntu
[==== 8.1% ]

```

INSTALLING MYSQL ON UBUNTU

We can install mysql on the ubuntu virtual machine using **sudo apt install mysql-server-y** command. It allows us to use sql on ubuntu cli.

Commands : **sudo apt update**
sudo apt install mysql-server -y
sudo service mysql start
sudo mysql -u root -p

```

sudo apt install mysql-server -y
Hit:1 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:2 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:4 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
100 packages can be upgraded. Run 'apt list --upgradable' to see them.
root@RheaAlisha:/mnt/c/Windows/system32# mysql --version
Command 'mysql' not found, but can be installed with:
apt install mysql-client-core-8.0 # version 8.0.39-0ubuntu0.24.04.2, or
apt install mariadb-client-core # version 1:10.11.8-0ubuntu0.24.04.1
root@RheaAlisha:/mnt/c/Windows/system32# sudo apt install mysql-server -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done

```

```

Setting up mysql-server-8.0 (8.0.41-0ubuntu0.24.04.1) ...
update-alternatives: using /etc/mysql/mysql.cnf to provide /etc/mysql/my.cnf (my.cnf) in auto mode
Renaming removed key_buffer and myisam-recover options (if present)
mysqld will log errors to /var/log/mysql/error.log
mysqld is running as pid 1528
Created symlink /etc/systemd/system/multi-user.target.wants/mysql.service → /usr/lib/systemd/system/mysql.service.
Setting up libcgi-pm-perl (4.63-1) ...
Setting up libhtml-template-perl (2.97-2) ...
Setting up mysql-server (8.0.41-0ubuntu0.24.04.1) ...
Setting up libcgi-fast-perl (1:2.17-1) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for libc-bin (2.39-0ubuntu8.3) ...

```

MYSQL SERVICE STATUS CHECK - **sudo systemctl status mysql**

```

root@RheaAlisha:/mnt/c/Windows/system32# sudo systemctl status mysql
● mysql.service - MySQL Community Server
   Loaded: loaded (/usr/lib/systemd/system/mysql.service; enabled; preset: enabled)
   Active: active (running) since Mon 2025-02-17 05:37:21 UTC; 1min 24s ago
   Process: 1696 ExecStartPre=/usr/share/mysql/mysql-systemd-start pre (code=exited, status=0/SUCCESS)
   Main PID: 1705 (mysqld)
     Status: "Server is operational"
    Tasks: 37 (limit: 9338)
   Memory: 358.7M ()
   CGroup: /system.slice/mysql.service
           └─1705 /usr/sbin/mysqld

Feb 17 05:37:20 RheaAlisha systemd[1]: Starting mysql.service - MySQL Community Server...
Feb 17 05:37:21 RheaAlisha systemd[1]: Started mysql.service - MySQL Community Server.
root@RheaAlisha:/mnt/c/Windows/system32# sudo systemctl status mysql
● mysql.service - MySQL Community Server
   Loaded: loaded (/usr/lib/systemd/system/mysql.service; enabled; preset: enabled)
   Active: active (running) since Mon 2025-02-17 05:37:21 UTC; 2min 6s ago
   Process: 1696 ExecStartPre=/usr/share/mysql/mysql-systemd-start pre (code=exited, status=0/SUCCESS)
   Main PID: 1705 (mysqld)
     Status: "Server is operational"
    Tasks: 37 (limit: 9338)
   Memory: 359.0M ()
   CGroup: /system.slice/mysql.service
           └─1705 /usr/sbin/mysqld

```

STARTING MYSQL

```

Feb 17 05:37:20 RheaAlisha systemd[1]: Starting mysql.service - MySQL Community Server...
Feb 17 05:37:21 RheaAlisha systemd[1]: Started mysql.service - MySQL Community Server.
root@RheaAlisha:/mnt/c/Windows/system32# sudo mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.41-0ubuntu0.24.04.1 (Ubuntu)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

```

CREATING NEW DATABASE & TABLES

```
mysql> create database mthree_one;
Query OK, 1 row affected (0.02 sec)

mysql> use mthree_one;
Database changed
mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mthree_one |
| mysql |
| performance_schema |
| sys |
+-----+
5 rows in set (0.01 sec)
```

WORKING WITH FILES AND DIRECTORIES

```
root@RheaAlisha:/mnt/c# mkdir mthree_practice
root@RheaAlisha:/mnt/c# cd mthree_practice

root@RheaAlisha:/mnt/c/mthree_practice# touch {a..e}.txt
root@RheaAlisha:/mnt/c/mthree_practice# ls
a.txt b.txt c.txt d.txt e.txt
root@RheaAlisha:/mnt/c/mthree_practice# ls-lrt
ls-lrt: command not found
root@RheaAlisha:/mnt/c/mthree_practice# ls -lrt
total 0
-rwxrwxrwx 1 root root 0 Feb 17 06:29 a.txt
-rwxrwxrwx 1 root root 0 Feb 17 06:29 b.txt
-rwxrwxrwx 1 root root 0 Feb 17 06:29 c.txt
-rwxrwxrwx 1 root root 0 Feb 17 06:29 d.txt
-rwxrwxrwx 1 root root 0 Feb 17 06:29 e.txt
```