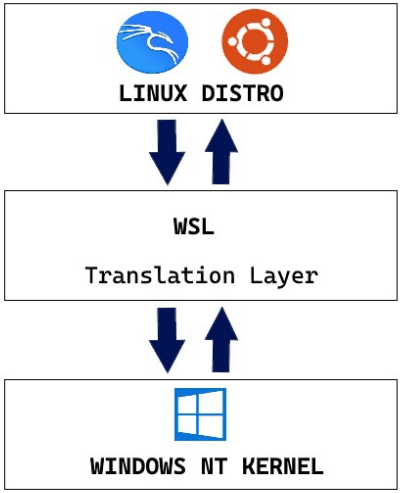
Leveraging the Power of Linux on Windows

HOW TO DEPLOY AND USE WSL

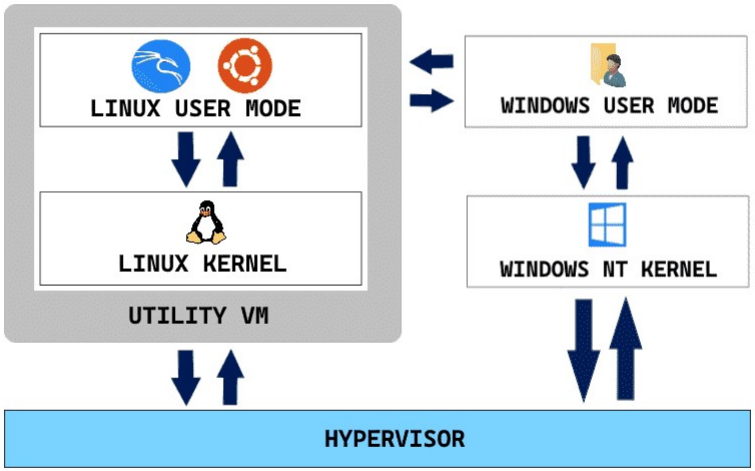
Definition and purpose of WSL

WSL Architecture

WSLv1 ARCHITECTURE



WSLv2 ARCHITECTURE



System Requirements

- Windows 11
- Windows 10 v1903 (Build > 18362)
- Memory and CPU Cores up to half the system, can be tuned.
- 1-2 GB of disk space is recommended.
- It is recommended to have at least 4 GB of RAM for a smooth experience.
- The CPU must support hardware virtualization features (most modern CPUs).
- C:/> systeminfo

Using Windows CLI with WSL.

- wsl
- wsl [COMMAND]
- wsl --list (-l)
- wsl --list --verbose (-l -v)
- wsl -d [DISTRO]
- wsl --set-default [DISTRO]
- wsl --install [DISTRO]
- wsl --shutdown
- wsl --unregister [DISTRO]
- wsl --export [DISTRO][FILENAME]
- wsl --import [DISTRO][LOC][FILENAME]
- wsl --set-version [DISTRO][VERSION]
- wsl --help

Installation

```
C:\> wsl --install
Installing: Virtual Machine Platform
Virtual Machine Platform has been installed.
Installing: Windows Subsystem for Linux
Windows Subsystem for Linux has been installed.
Downloading: Ubuntu
The requested operation is successful.  Change will not be
effective until the system is rebooted.
C:\> Restart-Computer -Force
```

Updating WSL

```
C:\> wsl --update
Installing: Windows Subsystem for Linux
Windows Subsystem for Linux has been installed.
C:\>
```

Set WSL Version

```
C:\> wsl --set-version ubuntu 1
C:\> wsl --set-version ubuntu 2
```

Set WSL2 as Default

```
$> wsl --set-default-version 2
For information on key differences with WSL 2
please visit https://aka.ms/wsl2
The operation completed successfully.
PS C:\>
```

Listing Available Distros

```
C:\> wsl --list --online
NAME                                   FRIENDLY NAME
Ubuntu                                 Ubuntu
Debian                                 Debian GNU/Linux
kali-linux                             Kali Linux Rolling
C:\>
```

Selecting a Distribution

Debian

Ubuntu

Fedora

CentOS

Install a Distro

```
PS C:\> wsl --install Ubuntu
Installing: Ubuntu
Ubuntu has been installed.
Launching Ubuntu...
```

Launching a Distro

```
PS C:\> wsl --list --verbose
PS C:\> wsl -l -v
PS C:\> wsl
PS C:\> wsl -d Ubuntu
PS C:\> wsl --shutdown
```

Listing Distros

```
PS C:\> wsl --list --verbose
  NAME            STATE           VERSION
* Ubuntu-22.04    Stopped         2
  Debian          Stopped         2
  Ubuntu-20.04    Stopped         2
PS C:\>
```

Backing Up an Instance

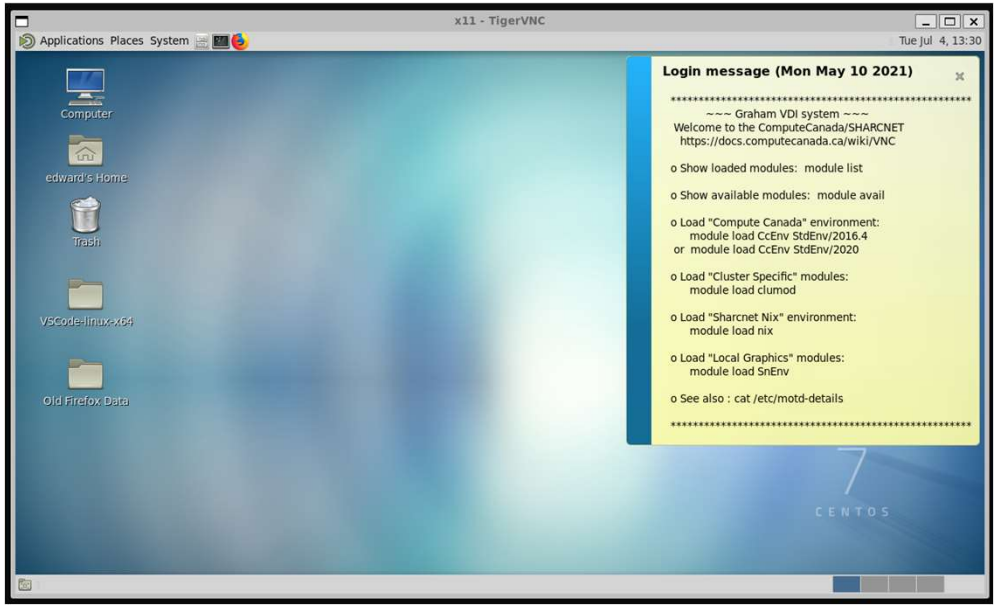
```
$> sudo apt update
$> sudo apt upgrade
C:/> wsl --export Ubuntu-20.04 backup.tar
Export in progress, this may take a few minutes
C:/> tar -cvzf debian.tar.gz debian.tar
a Debian.tar
C:/>
```

Restoring an Instance

```
C:/> wsl --import debian2 . debian.tar
C:/> wsl -d debian2
$> vim /etc/wsl.conf
Vim>
[user]
default=edward
C:/> wsl --shutdown
C:/> wsl -d debian2
https://learn.microsoft.com/en-us/windows/wsl/wsl-config
```

WSL and Remote Desktop

- `sudo apt-get install tigervnc-viewer`
- `vncviewer gra-vdi.computecanada.ca`



Using a Browser in WSL

```
$> sudo wget https://dl.google.com/linux/direct/google-chrome-stable_current_amd64.deb
$> sudo dpkg -i google-chrome-stable_current_amd64.deb
$> sudo apt install --fix-broken -y
$> google-chrome
```

Using VSCode With WSL

- You can install VSCode in WSL but it isn't advised.
- Install VSCode in Windows and add the "Remote Development" extension pack.

Thank You

Q&A