



## Practical & Un-Practical Uses for the WSL

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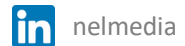
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# Practical & Un-Practical Uses for the WSL



PowerShell | DevOps | Cloud

## September 16<sup>th</sup> & 17<sup>th</sup>

Online Event

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International Conference



# Meet Mike



- 35+ years in tech
- Experience from Helpdesk to Architect
- Scripter not a coder
- Passion for community, teaching, learning
- Humble awards
- Midwest USA husband & dad
- Beer, BBQ, & EVs



# Agenda

 TL;DR - WSL 101

 Practical & Un-Practical

 Demos



"Free Software licenses are the devil's work." -  
*Microsoft PR (2001)*

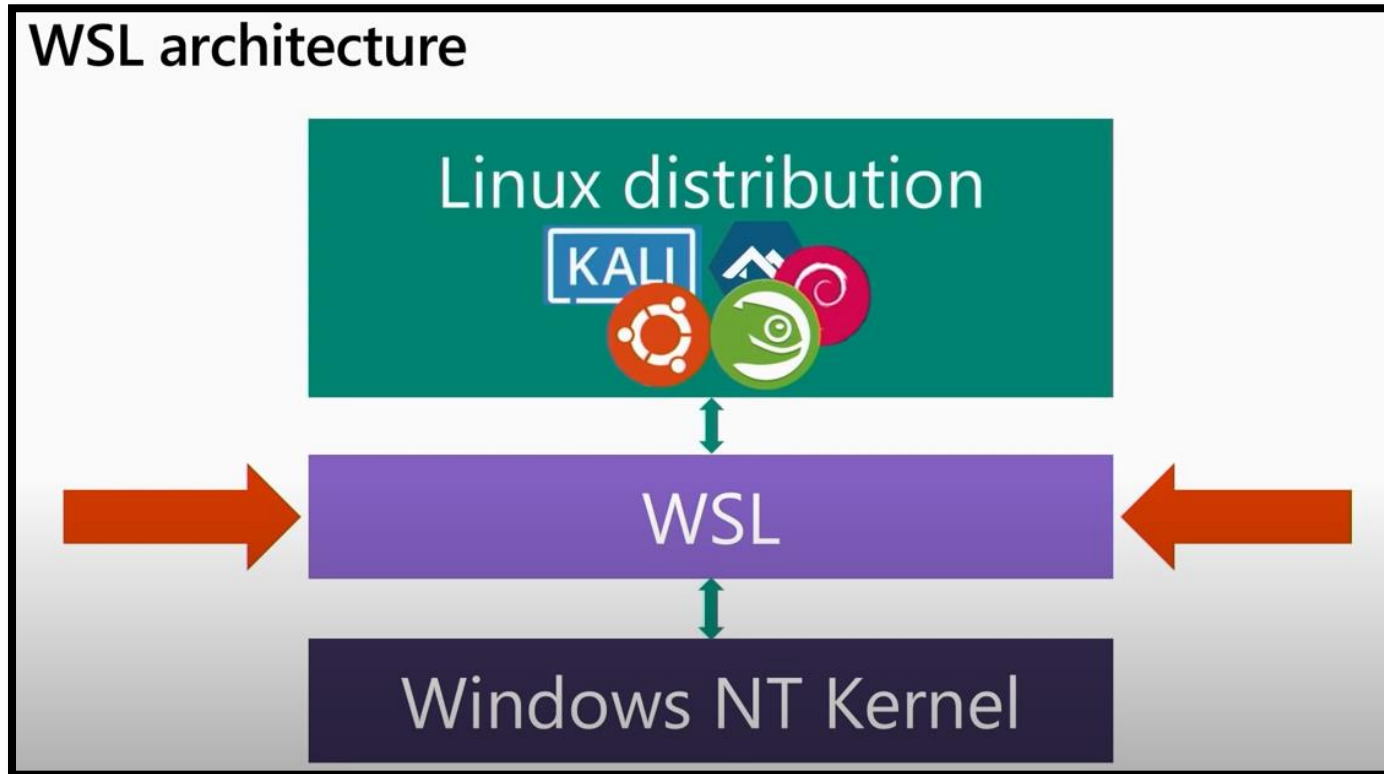
"Linux is a cancer that attaches itself in an intellectual property sense to everything it touches. That's the way that the license works." - *Steve Ballmer (2001)*

"I may make jokes about Microsoft at times, but at the same time, I think the Microsoft hatred is a disease."

- *Linus Torvalds*

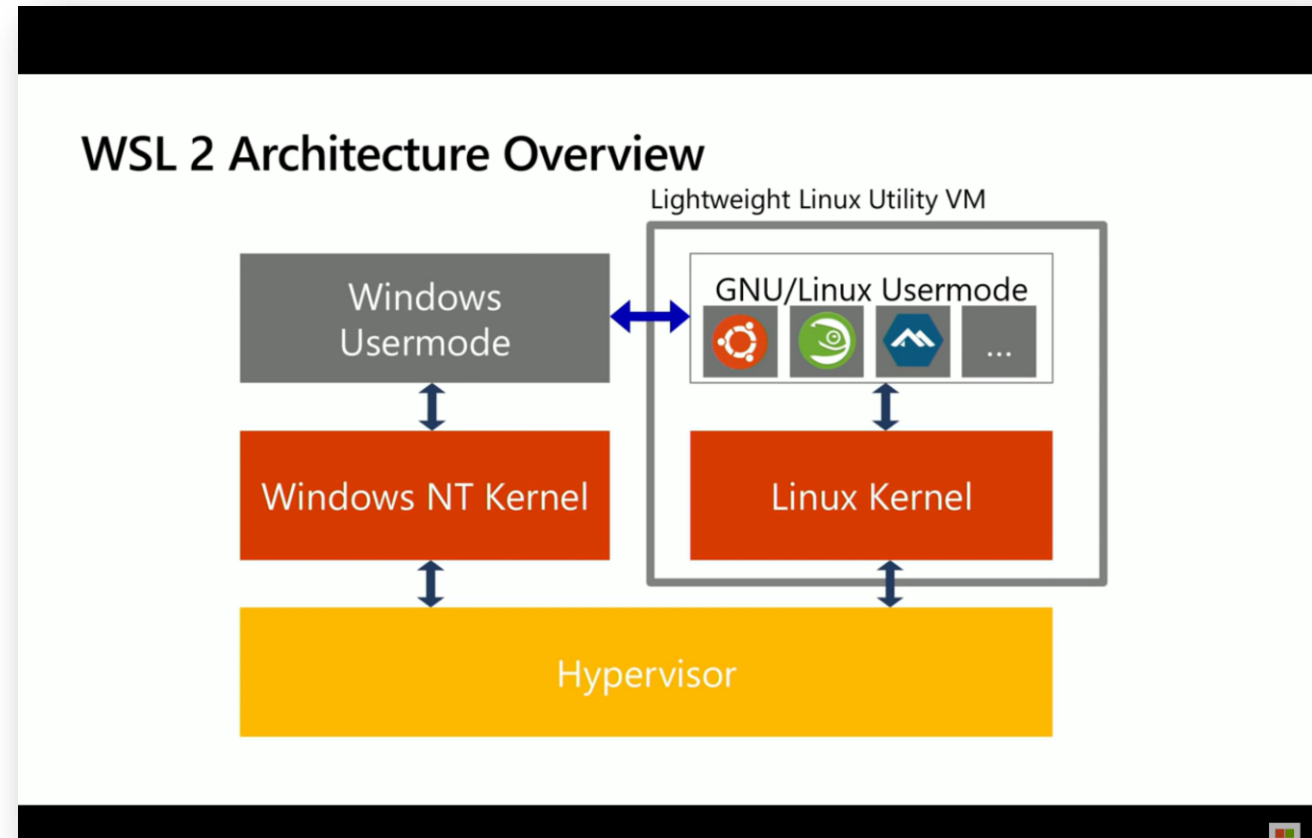
# WSL v1

- August 2016 Ubuntu only
- Late 2017 Store images
- W10 1607+ & Server 2019
- Linux-compatible kernel with GNU
- Could not scale
- Not like Cygwin
- No systemd – no binaries



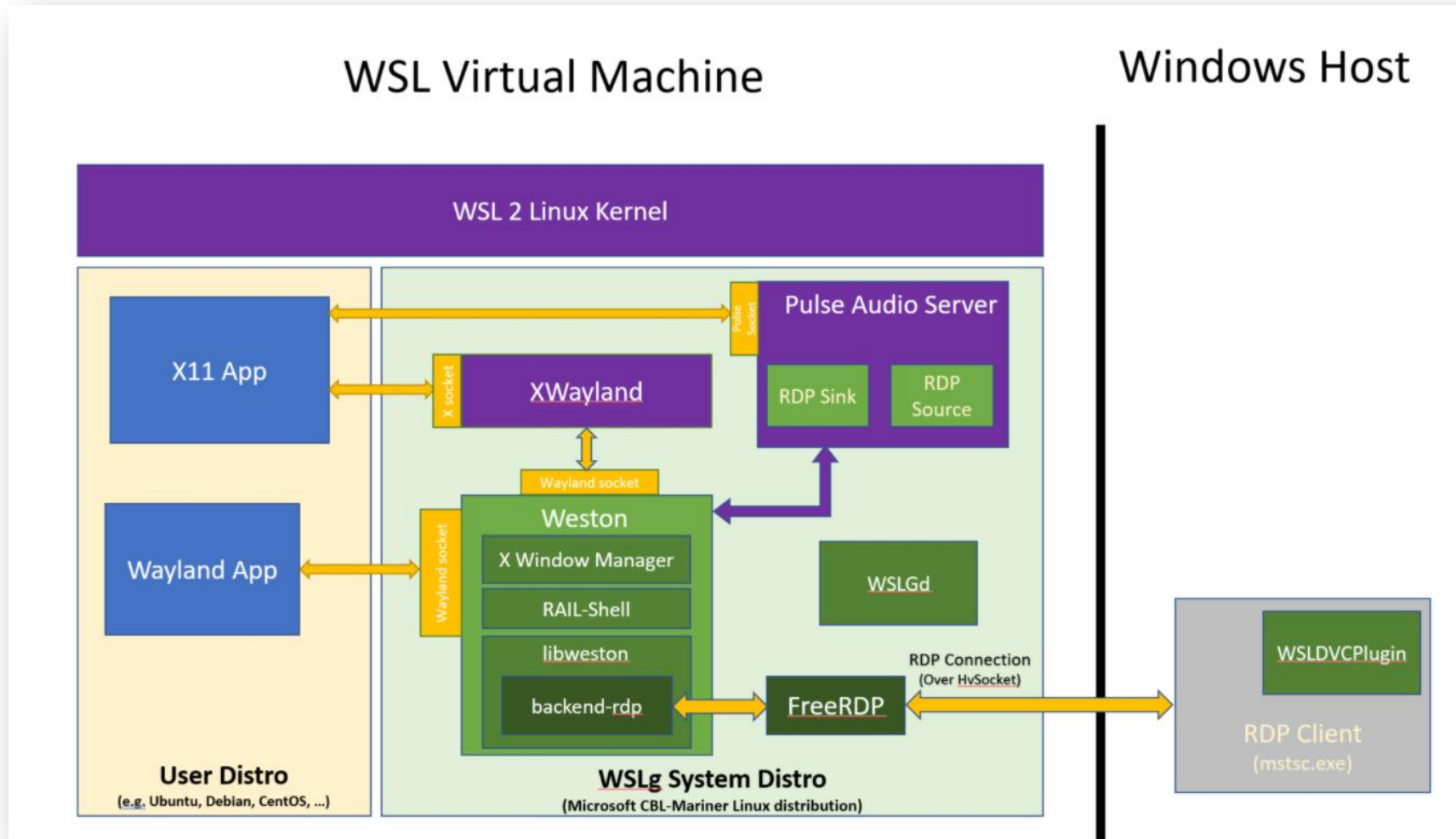
# WSL v2

- No longer emulating calls
- Type1 "Lightweight" Hypervisor running single VM with ext4 VHD
- One kernel running multiple distros
- Independent IP's
- New Docker backend
- Host filesystem accessible via 9P protocol (everything is a file)
- IFS Network Redirector for Linux file access





# WSLg



Insiders preview build 21364 or higher

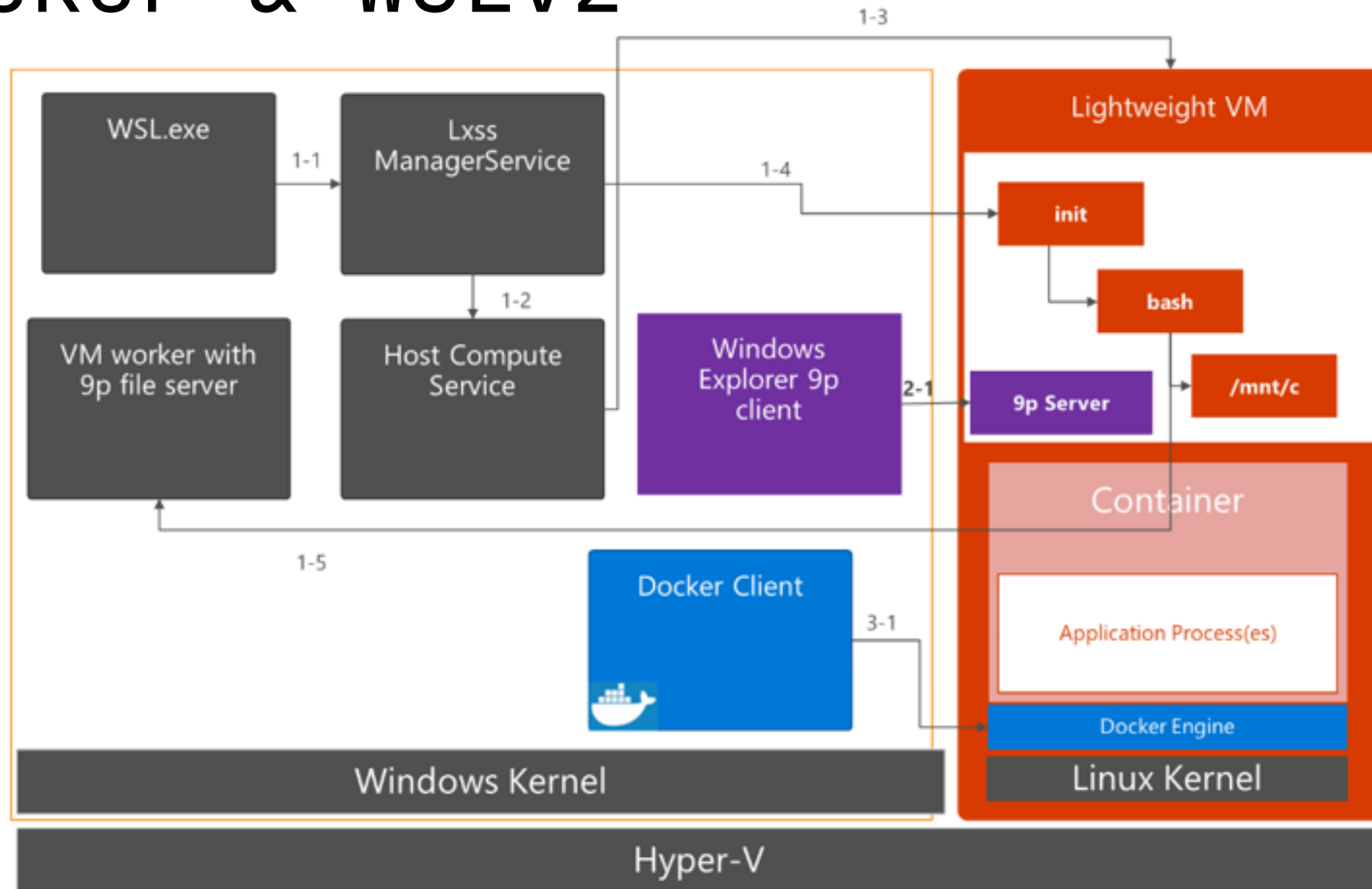
# WSLv1 VS WSLv2

Feature	WSL 1	WSL 2
Integration between Windows and Linux	Yes	Yes
Fast boot times	Yes	Yes
Small resource footprint	Yes	Yes
Runs with current versions of VMware and VirtualBox	Yes	Yes
Managed virtual machine	No	Yes
Full Linux kernel	No	Yes
Full system call compatibility	No	Yes
Performance across OS file systems	Yes	No

# Docker & WSLv2



# Docker & WSLv2

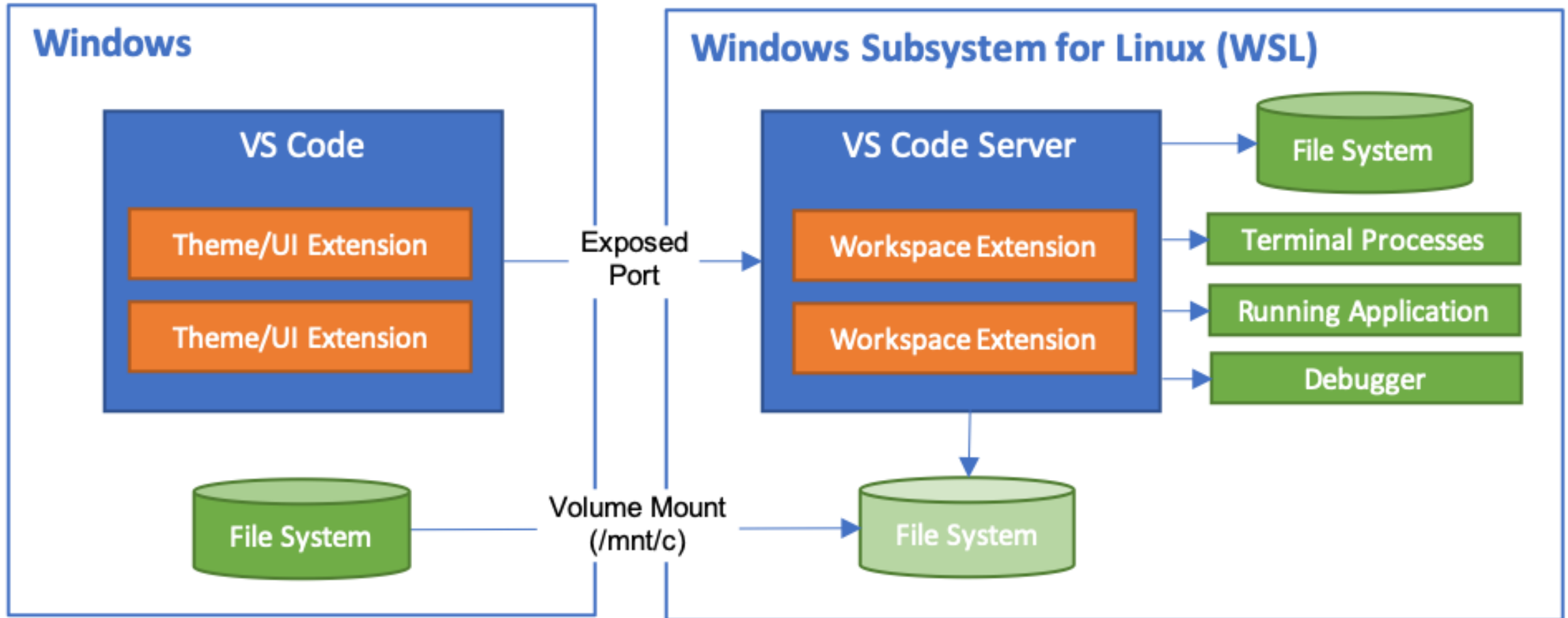


# Practical

- Raised on CLI - familiarity, muscle memory (CLI, not WSLg)
- Work with appliances - ~98% run on Linux (less than 2% of 300M users run Linux)
- Cross-Platform Docker Containers & Kubernetes (K8s / K3s)
- Cross-Develop - PowerShell, React Native, Xamarin, Ionic, HTML, JavaScript, CSS...
- Flexible automation & administration - automation frameworks that cross over
- It makes VMs optional



# Cross-Platform Development in VSCode



# Un-Practical

- Linux apps are \*better & \*cool
- Hacking is native, supported, & encouraged
- Sandbox throw-aways & no paper trail
- Create your own AIO
- It's really cool to play with!



# Remember these...

- Slashes `/\`, `cAsE`, & `CRLF`
- `exFAT/FAT32/NTFS` does not equal `ext4`
- `$HOME` in another dimension
- `$ENV:` is not seamless = `WSLENV`
- `/etc/wsl.conf` - `$HOMEPATH/.wslconfig` - Program Data\Microsoft\WSL\.`wslgconfig`
- `wsl -update` or via WUS (Insiders / 21H1)
- Roll your own - sharing is caring



# Demos





- v1 & v2 is all about cross-platform IO
- V2 should be your default
- WSLg needs to mature
- Docker is still kinda relevant
- Linux isn't so terrible, is it?
- Beta & Dev channels can break things... bad
- Apps can have the best of both worlds
- "Remember these..." slide
- OpenSource code is awesome!



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Thank you!



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