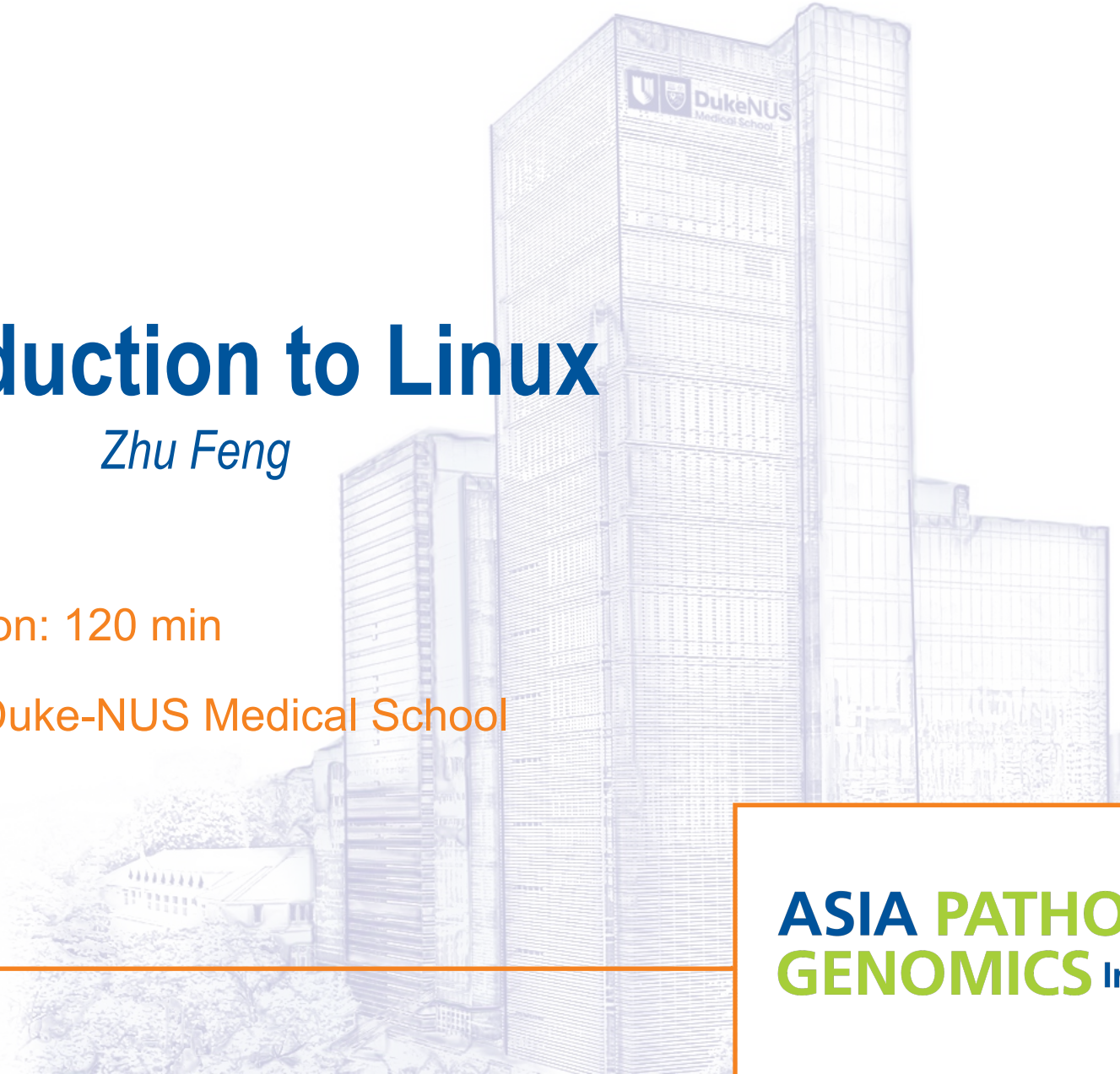
DukeNUS Medical School | Centre for Outbreak Preparedness

Introduction to Linux

Zhu Feng

Date : 6th July 2024 Duration: 120 min

Venue : Meeting Room 5C, Duke-NUS Medical School



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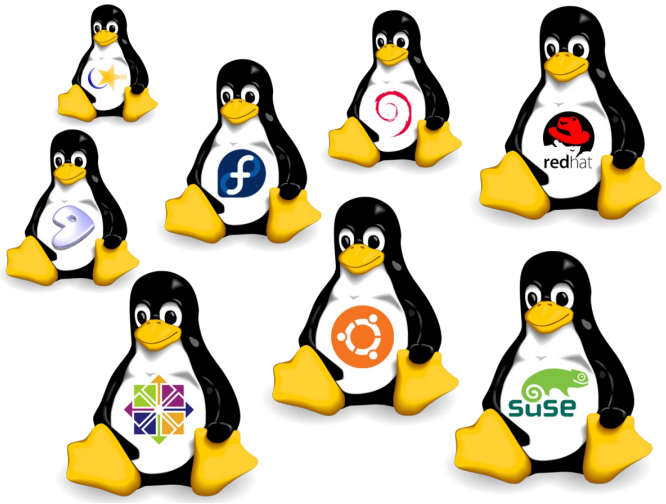
What is Linux



Linux is a free and open-source operating system that was first created by Linus Torvalds in 1991. It is based on the Unix operating system and is known for its stability, security, and flexibility.

It has many different flavors..

It can be deployed on servers and desktops/laptops.

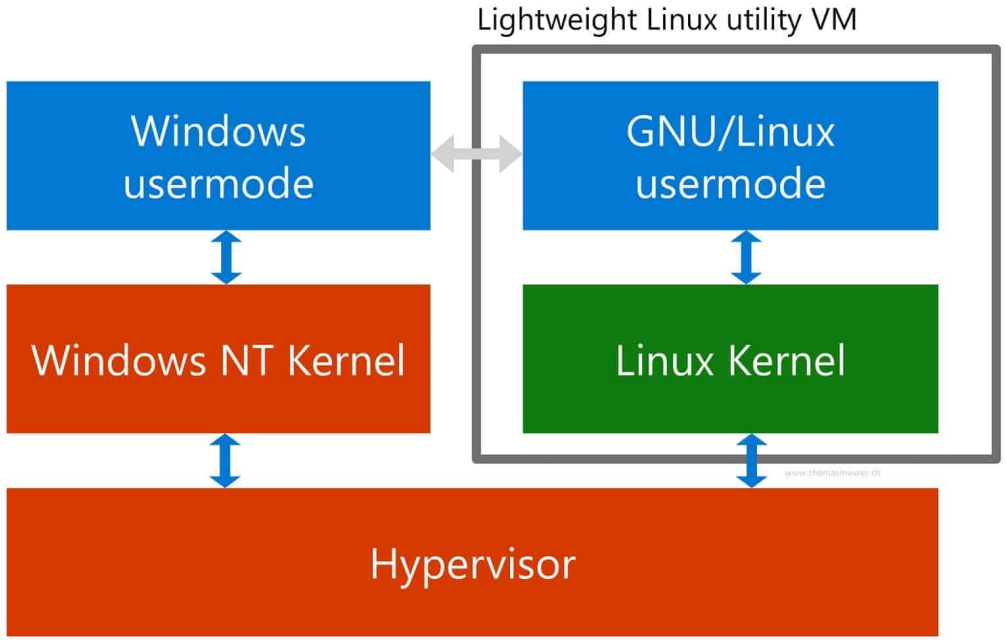
Even your phones..

Differences between Linux, Windows, and macOS

- **User Interface**: Linux is primarily command-line based, although graphical user interfaces like GNOME and KDE are available. Windows and macOS, on the other hand, are heavily GUI-oriented.
- **Software Availability**: Most software is readily available for Windows and macOS, while Linux has a smaller software ecosystem. However, many open-source and scientific tools are readily available and often first developed for Linux.
- **Customization**: Linux is highly customizable, with users able to modify virtually any part of the system. Windows and macOS offer less customization.
- **Cost**: Linux is free and open-source, while Windows and macOS are commercial products.
- **Security**: Linux is generally considered more secure than Windows and macOS due to its open-source nature, which allows for broad peer review of the code.
- **Performance**: Linux is often faster and more efficient than Windows and macOS, especially on older hardware.

Windows Subsystem for Linux (WSL)

WSL 2 architecture overview



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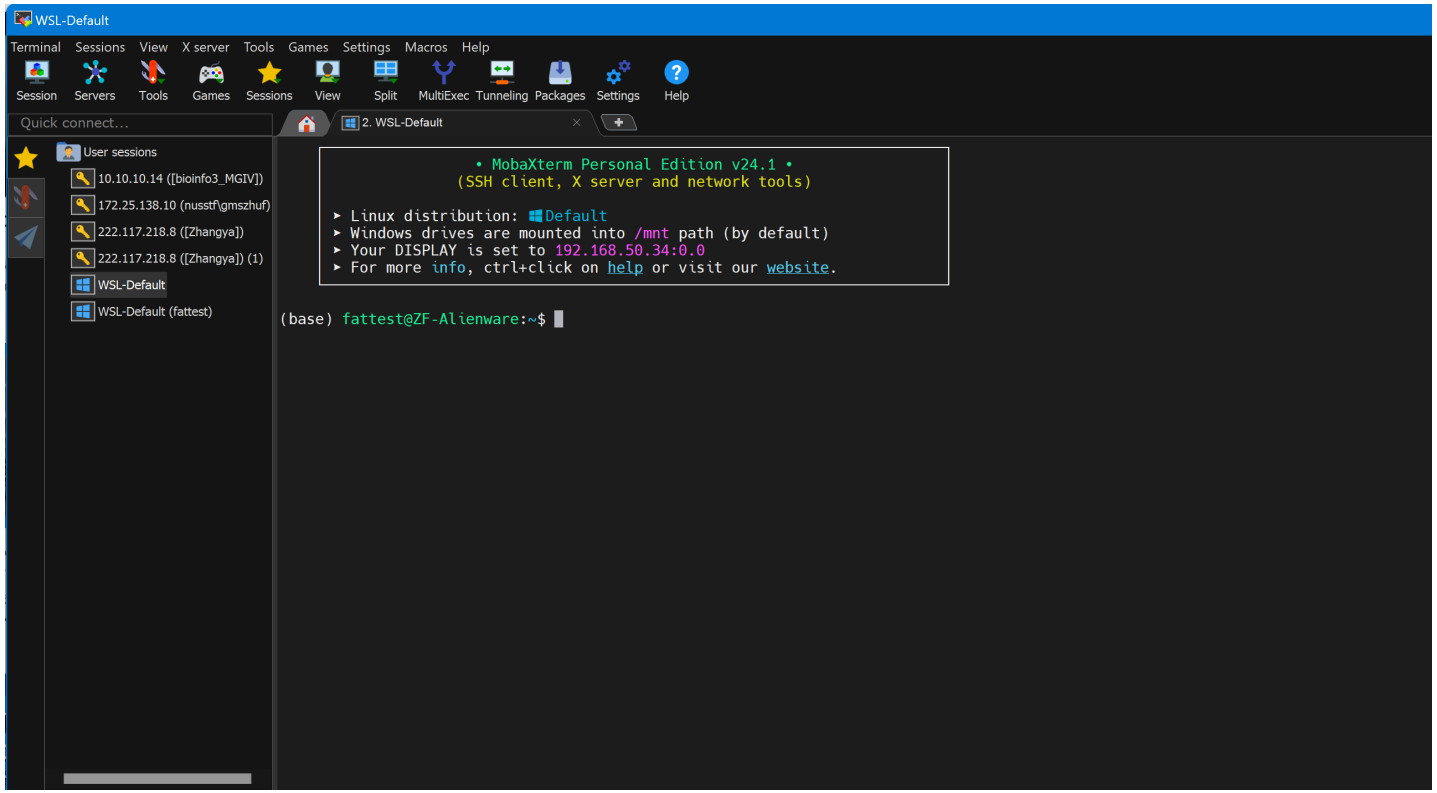
Say hello to your terminal



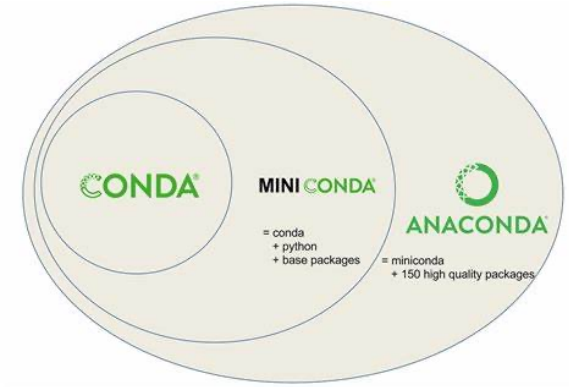
Tutorial

What is Conda?

Conda is an open-source package management and environment management system

Here are some key features and aspects of Conda:

- **Cross-Platform Compatibility**: Conda works on Windows, macOS, and Linux, making it a versatile tool for developers and researchers across different operating systems.
- **Package Management**: Conda allows users to easily install, update, and remove software packages. It supports a wide range of software, including Python packages, R packages, and even non-Python libraries and tools.
- **Environment Management**: Conda enables the creation of isolated environments. This means you can create separate environments for different projects, each with its own specific set of packages and dependencies. This isolation helps prevent conflicts between packages and makes it easier to manage project-specific requirements.
- **Version Control**: By using Conda environments, you can ensure that your projects are using specific versions of packages, which helps in maintaining reproducibility and consistency in your work.
- **Dependency Management**: Conda automatically handles package dependencies, ensuring that all required packages are installed and compatible with each other.



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