LINUX WITH SCRIPTING

BY Mr. RAM

REDHAT & CLOUD CERTIFIED ENGINEER

➢ OPERATING SYSTEM:

- An operating system is the software that directly manages a system's hardware and resources, like CPU, memory, and storage.
- Operating System acts as a communication bridge (interface) between the **user** and **computer h/w.**
- The OS sits between applications and hardware and makes the connections between all of your software and the physical resources that do the work.
- It is classified into **two types:**
  - GUI (Graphical User Interfaces)
  - CLI (Command Line Interfaces)

GRAPHICAL USER INTERFACE (GUI):

- GUI is a User-friendly Operating System.
- It is a type of user interface through which users interact with electronic devices via visual indicator representations.
- It uses icons, menus and a mouse (to click on the icon or pull down the menus) to manage interaction with the system.

COMMAND LINE INTERFACE (CLI):

- CLI is a text-based interface, it means non-user-friendly OS.
- CLI permits users to put in writing commands associate degree exceedingly in terminal or console window to interact with an operating system.
- It consumes low memory and faster than GUI.

FUNCTIONS OF OS:

- Security
- Error Detection
- Job Controlling
- Memory Management
- Process Management
- Device Management
- File Management

➢ **WHAT IS LINUX:**

- Linux is an **Open-Source Operating System** (OS) and **IT Infrastructure Platform**.
- It was developed by **Linus Torvalds** in 1991. First version released in 1994.
- Linux include Kernel, System User Space, and Applications.
- The heart of the OS is the **Linux Kernel**.
- The User space consists of all processes running outside the kernel. This includes the shell, daemons, processes.
- Linux can be used as a **Server** or a **Desktop**.

OPEN SOURCE:

- Linux is a free and released under the **GNU General Public License (GPL).**
- It means anyone can run, study, share, and modify the software. The modified code can also be redistributed, and even sold, but must be done so under the same license.
- The **Lesser Public License** is a free software license published by the **Free Software Foundation (FSF).**

WHY LINUX IS BETTER:

- Linux Protects your computer
- Freedom!
- Enjoy Free and Unlimited Support
- Don't Pay $100 for your OS
- Annoying crashes & Reboots
- Too many Windows? Use Workspaces
- Pre-installed Powerful Tools
- Privacy
- Portability
- Hardware Support
- System Performance
- Free source Code

LINUX IN CLOUD:

- Sharing resources through hardwired connections is quickly being replaced with a delivery method that provides infrastructure, services, platforms, and applications on demand, across networks.
- Cloud computing is an act - the function of running a workload in a cloud.
- Clouds are environments - places where applications run.
- When it comes to Cloud, even on **Microsoft's Azure**, more than **60%** of the images are **Linux-based**.
- **AWS, GCP** & **Oracle** Platform offer up multiple distributions of Linux in their publicly available images.

LINUX INNOVATION:

- Web 2.0 built on top of Linux.
- The Cloud revolution was founded on Linux.
- Big data solutions, software-based storage appliances, Microservices, Containerized applications and software enabled networking are Linux based.
- The innovations of the future will be built using Linux.

LINUX FUTURE EXTENSIBILITY:

- Linux continues to be the operating system of the future, with more and more systems depending on its **Stability** and **Extensibility**.

LINUX DISTRIBUTIONS:

- A Linux distribution, or distro, is an installable operating system built from the **Linux kernel**, supporting **user programs**, and **libraries**. Each vendor or community's version is a distro.
- Different Linux distributions with different goals and criteria for selecting and supporting the software. Simply Linux Kernel plus Additional software.
- Each distribution can have a different focus.

- **Popular Linux Distributions are:**

RED HAT	**CENTOS**
FEDORA	**OEL**
UBUNTU	**LINUX MINT**
OPEN SUSE	**ARCH LINUX**
KALI LINUX	**MANDRIVA**
ANDROID	**GENTOO LINUX**
MX LINUX	**PUPPY LINUX**

➢ HOW TO CHOOSE A LINUX DISTRO:

- The right Linux distribution depends on your use case and tool requirements.
- Certain Linux distros work better for different purposes.
- Some distros are designed as desktop environments while others are designed to support backend IT systems (like enterprise or web servers).

ENTERPRISE VS. COMMUNITY LINUX DISTROS

COMMUNITY DISTRO:

- A community distro is a free Linux distro primarily supported and maintained by the open-source community.
- A community distro's direction is set by contributors, who choose and maintain packages from the wide variety of open-source options.

ENTERPRISE OR COMMERCIAL:

- Linux distro is available through a subscription from a vendor and does not rely solely on community support.
- The direction of an enterprise distro is set by a vendor, based on the needs of their customers.

BENEFITS:

- Enterprise distros are designed to meet business needs and concerns.
- For Example, Red Hat Enterprise Linux offers 10-year life cycle support, so you can better support long-term apps.
- an enterprise distro, you get patches, updates, upgrades, expert technical support, and access to training and resources.
- A community distro relies on forum-based support from its community members, and release cycles aren't always on a regular cadence.

➢ WHAT IS REDHAT LINUX:

- Red Hat, Inc. is an **American Multinational** software company providing **Open-Source** software products to the enterprise community.
- Founded in 1993, Red Hat has its corporate headquarters in **Raleigh, North Carolina**, with other offices worldwide.

RED HAT POPULARITY:

- **BANKS**
- **AIRLINES**
- **TELECOMS**
- **HEALTHCARE**

➤ WHY RED HAT ENTERPRICE LINUX (RHEL):

- RHEL is the world's leading enterprise Linux platform. It's an open-source Operating System (OS).
- Long-term support is an important feature.
- Vendors engage with Red Hat to ensure that RHEL can use the latest hardware and their software.
- It's the foundation from which you can scale existing apps—and roll out emerging technologies—across bare-metal, virtual, container, and all types of cloud environments.

  SUBSCRIPTION: You're paying for Expertise, Commitment, Assistance, and Engagement. Not the software License.

RED HAT ENTERPRICE LINUX (RHEL 9):

- Modern IT is Hybrid IT. But turning a sprawling ecosystem into a true hybrid environment requires an intelligent OS that makes those things possible. That OS is Red Hat Enterprise Linux 9.
- Traditional datacentres to public cloud services—into a true hybrid environment requires a few things. Scaling as needed. Moving workloads seamlessly. Developing and managing applications that run anywhere. There's an operating system that makes those things possible.
- Any Cloud and any workload only one OS are RHEL9.
- It is an intelligent OS for Hybrid cloud.

CERTIFIED IN THE CLOUD:

Certified in the cloud

Run your enterprise workloads on a certified cloud and service provider with support from Red Hat.