DevOps Certification Training

TECHNOLOGY

Linux Refresher

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Learning Objectives

By the end of this lesson, you will be able to:

- Describe the Linux operating system and its workflow
- List popular Linux distributions
- Understand the importance of Linux in DevOps
- Execute basic commands of Linux

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Linux Introduction

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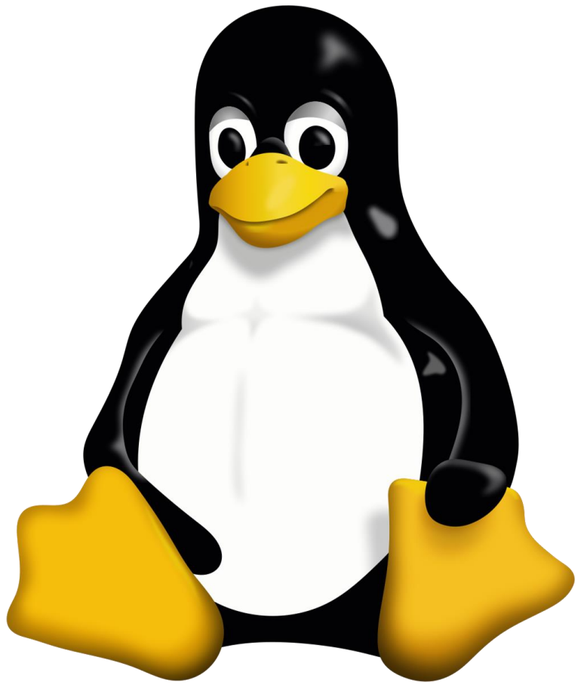
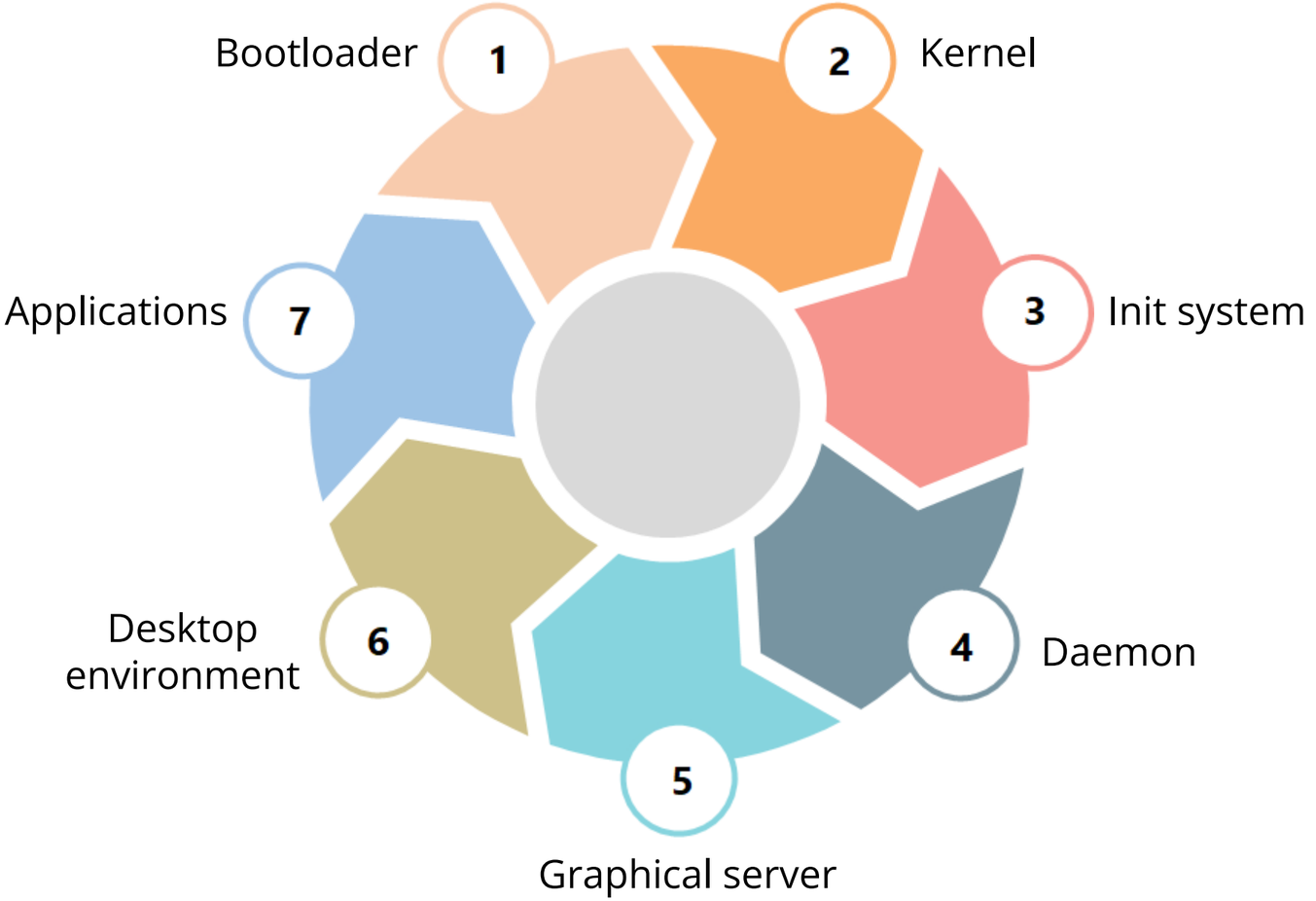
Linux OS Introduction

Linux is an operating system that manages the communication between software and hardware of a system. It is an open-source Unix-like OS, based on Linux kernel.



Components of Linux OS

Components of Linux OS



Components of Linux OS

Components of Linux OS

1. **Bootloader**: A software to manage the booting process of a computer that mostly comes as a splash screen to boot into an OS.

1. **Kernel**: The core of a system that manages CPU, memory, and the peripheral devices and is the basic level of an OS.

1. **Init system**: A sub-system that bootstraps the user space and is charged with controlling daemons.

1. **Daemons**: Background services such as printing, sound, and scheduling that either startup during a boot or after logging into a system/computer.

Components of Linux OS

Components of Linux OS

5. **Graphical server**: A subsystem to display graphics on the monitor, commonly referred to as X server or just X

5. **Desktop environment**: The component with which the users interact the most and includes built-in applications such as file managers, configuration tools, and web browsers

5. **Applications**: High-quality software applications can be easily found using App Store-like tools that centralize and simplify application installation

Linux Distributions

Linux distributions or **distros** are different versions of Linux OS offered to suit any type of users. These distros can be downloaded for free, burned onto disk, and installed on a system.

Popular Linux distributions

Ubuntu

Debian

CentOS

Fedora

Linux Mint

OpenSUSE

Archlinux

Elementary OS

Importance of Linux in DevOps

Crucial role of Linux in DevOps

- The main goal of DevOps is to deliver software at a faster pace, that means building on existing infrastructure. Linux is a huge part of that.
- Efficiency demands of DevOps can be easily met if a Linux environment is configured and the associated networking connectivity will minimize obstacles of development process
- Linux is highly flexible as it can be installed on any device and configured to fit any workflow
- Linux is highly scalable as it can process large amounts of data and can easily be configured to add processing power and storage capacity

Linux Administration

Introduction to Linux administration

Linux administration is about managing system operations such as:

- File backups and restores
- Disaster recovery
- New system builds
- Hardware, software, and user maintenance
- Filesystem housekeeping
- Application installation and configuration
- System security management and storage management

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Basic Linux Commands

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Basic Linux Commands

- ***ls:*** Command to list files and directories
- ***cd:*** Command to change the current or active directory
- ***sudo su:*** Command to change the current user as a super/root user
- ***mv:*** Command to move a file or rename a file
- ***rm:*** Command to remove files in a directory or the directory itself
- ***rm –r:*** Command to remove all the contents in a directory and the directory as well
- ***mkdir:*** Command to create a directory in the current directory

Basic Linux Commands

- ***chmod:*** Command to change a file mode to **r –** read, **w-** write, or **x-** execute
- ***chown:*** Command to change the ownership of a file/folder
- ***cat:*** Command to view contents of a file
- ***echo:*** Command to display a text or a string to the standard output or a file
- ***clear:*** Command to clear the terminal screen
- ***apt-get:*** A package manager to install, remove, and upgrade software packages
- ***history:*** Command to show previously used commands

Executing Basic Linux Commands

Duration: 30 Min.

Problem Statement:

You have been asked to execute the basic Linux commands.

ASSISTED PRACTICE

Assisted Practice: Guidelines

Steps to be followed:

1. Execute simple Linux commands

Key Takeaways

- Linux is an operating system that manages the communication between software and hardware in a system
- Bootloader, Kernel, Init system, Daemons, Desktop environment, and Applications are the main components of a Linux OS
- Linux distributions or distros are different versions of Linux OS offered to suit any type of user
- Ubuntu, CentOS, Debian, Fedora, and OpenSUSE are some of the most popular Linux distributions
- Some of the basic Linux commands are *ls, cd, sudo, mkdir, rm,* and *apt-get*