



# Overview of System calls in Linux

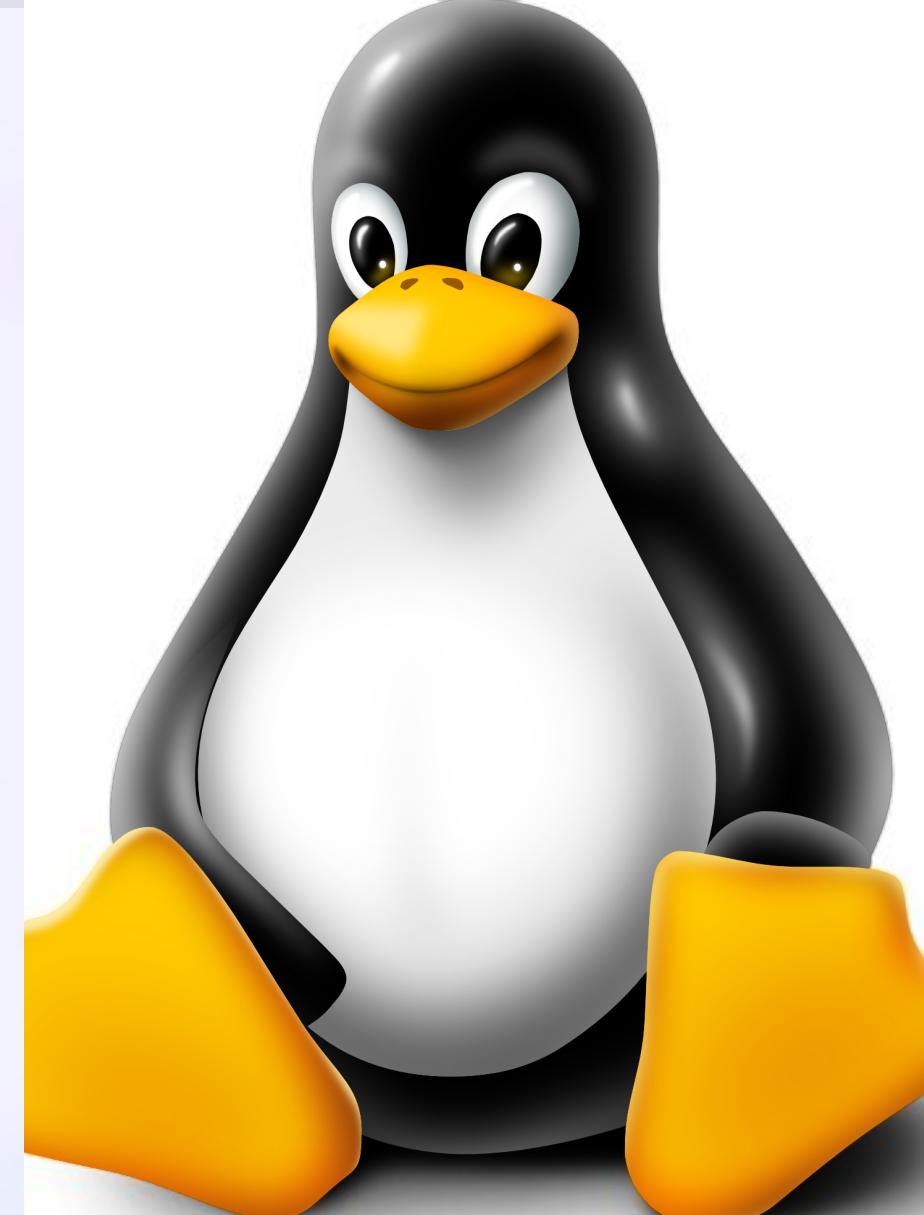
In this presentation, we will explore the world of system calls in Linux. Get ready to dive deep into the core mechanisms of the operating system!



by Abhi

# What are System Calls?

System calls are the interface between user-level applications and the kernel in an operating system. They allow applications to request services from the operating system.



# Types of System Calls in Linux

- Process Control System Calls
- File System System Calls
- I/O System Calls
- Memory Management System Calls
- Networking System Calls

# Process Control System Calls

## Create Process

Create a new process in the operating system, allowing for concurrent execution of multiple programs.

## Terminate Process

Terminate a running process and release the resources associated with it.

## Process Synchronization

Enable communication and synchronization between concurrent processes.

## Process Management

Manage the lifecycle of processes, including process IDs, priorities, and scheduling.

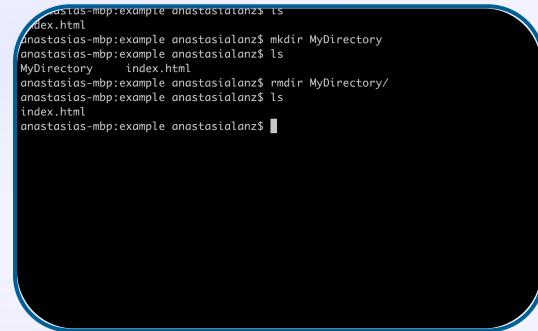


# File System System Calls



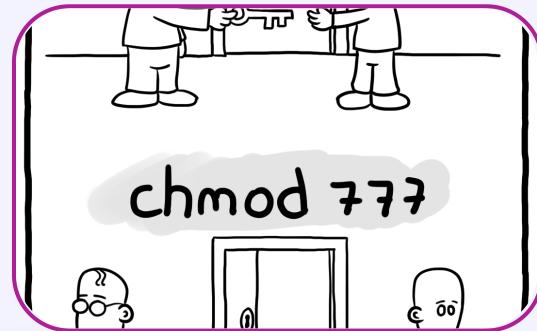
## File Creation

Create or open files in the file system for reading, writing, or modification.



## File Manipulation

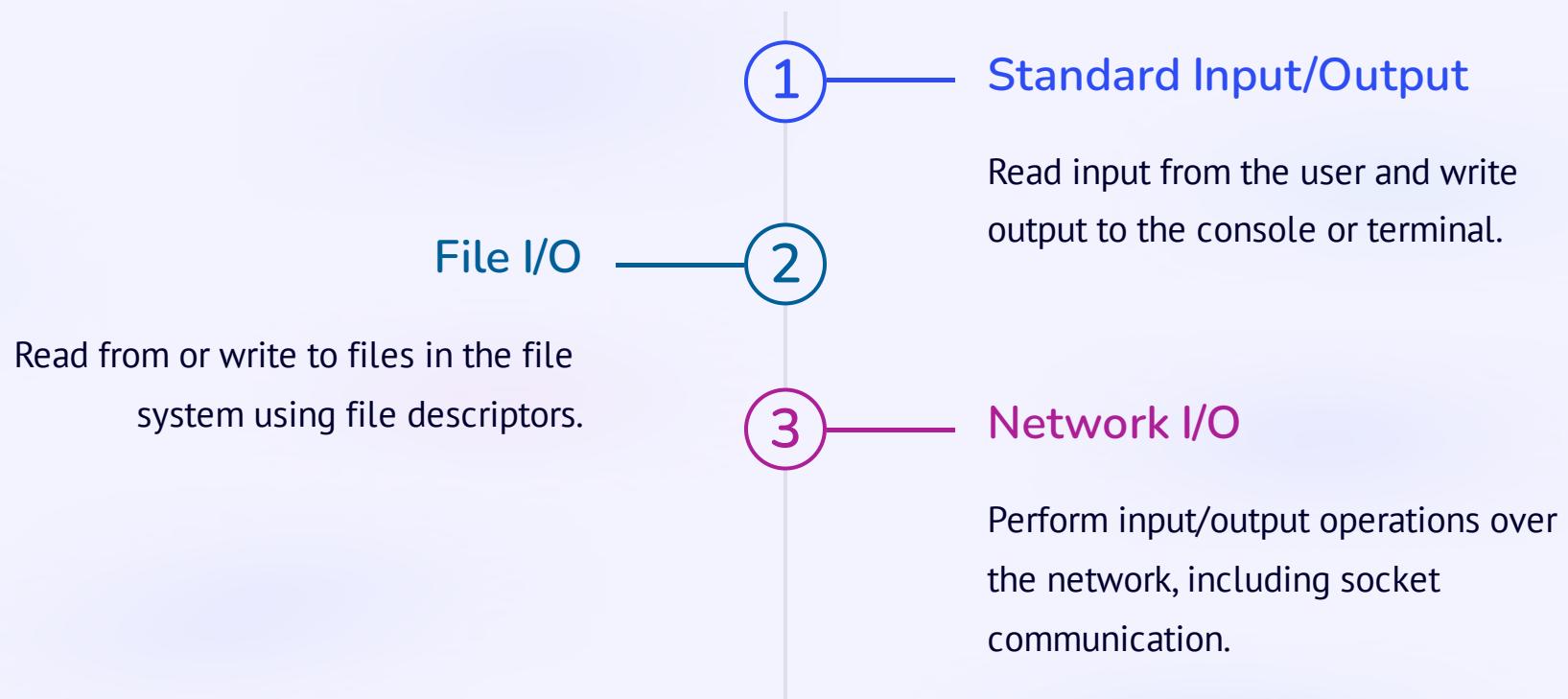
Manipulate files, such as renaming, moving, or deleting files.



## File Permissions

Manage file access permissions, including read, write, and execute permissions.

# I/O System Calls



# Memory Management System Calls

## ① Memory Allocation

Allocate memory dynamically to programs for data storage during runtime.

## ② Memory Mapping

Map files or devices into the virtual address space of a process for efficient access.

## ③ Process Address Space

Manage the virtual address space of a process, including stack, heap, and shared memory regions.

# Networking System Calls

## Socket Programming

Create, connect, and interact with network sockets for communication between processes.

## Protocol Handling

Handle network protocols like TCP/IP or UDP for reliable and efficient data transmission.

## Address Resolution

Resolve hostnames to IP addresses and vice versa for network communication.

