System call and why system call in shell

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Section 1

What are system calls?

Definition

- Linux manual page:

  "The system call is the fundamental interface between an application and the Linux kernel."

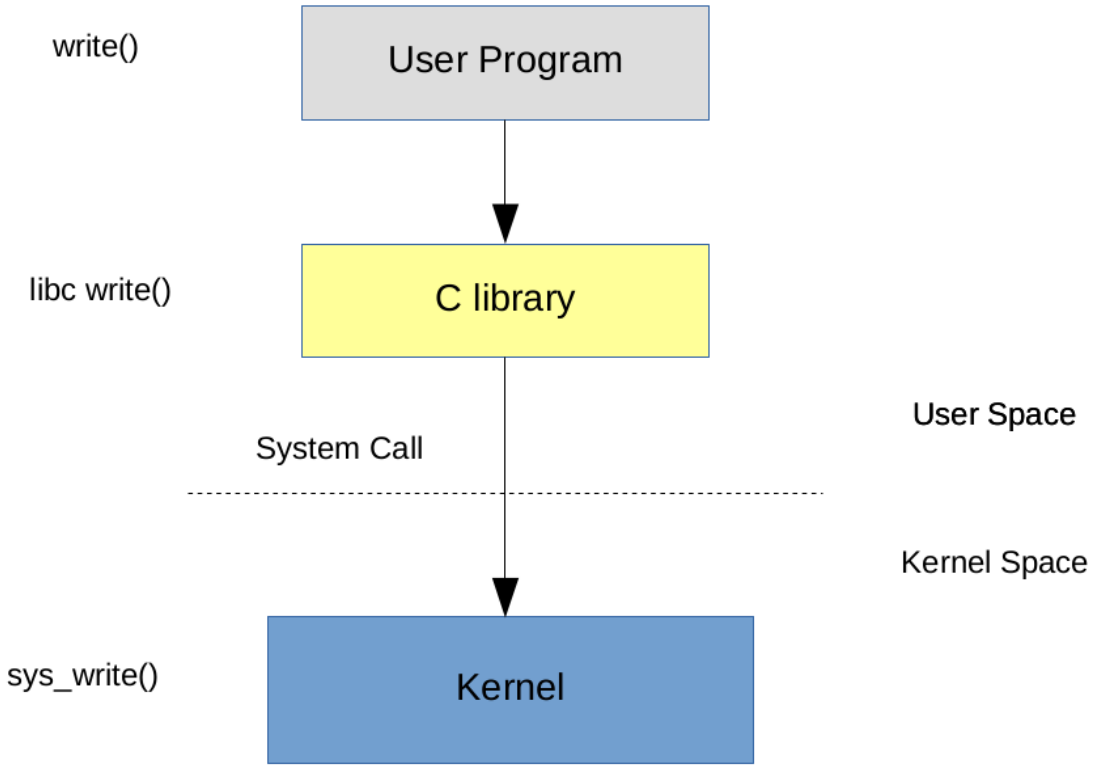
- More general:

  The system call is the programmatic way in which a **computer program** requests a service from **the kernal of the operating system**

- Common system calls:
  - `fork()`: create a child process
  - `execvp()`: execute a file

System Call via Libc

- Most user applications do not call a system call directly. For convenience, most implementations of standard C library provide a wrapper around the system call.



Section 2

Why do we need system calls for shell?

Shell

- Definition

  Shell is a **user-level program** that exposes an **operating system's services** to a human user or other program.

- Tasks

  Typically, launching, suspending, and killing other programs with **system calls**.

- Common shells

  sh, bash, csh, tcsh, zsh, ksh...

Why system call in shell

1. User want to do the job regarding OS sercices

   i.e. create a child process, call other program
2. Shell provide user a command-line interface to do the job
3. Shell requests a service to kernal of OS by **system call**
4. Kernal of OS do the job

Thanks for your atthention!