Linux-Process-API-fork-wait-exec

Public

forked from gowriganeshns/Linux-Process-API-fork-wait-exec

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This branch is 1 commit ahead of gowriganeshns/Linux-Process-API-fork-wait-exec:main .

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ganeshprabhu2005 Update README.md

0c6cd72 · now

LICENSE	Initial commit	9 months ago
README.md	Update README.md	now
execcheck2.c	Create execcheck2.c	8 months ago
forkcheck.c	Create forkcheck.c	8 months ago
pidcheck.c	Create pidcheck.c	8 months ago

README License

Linux-Process-API-fork-wait-exec-

Ex02-Linux Process API-fork(), wait(), exec()

Ex02-OS-Linux-Process API - fork(), wait(), exec()

Operating systems Lab exercise

About

Ex02-Linux Process API-fork(), wait(), exec()

Readme

GPL-3.0 license

Activity

0 stars

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Releases

No releases published

Create a new release

Packages

No packages published

Publish your first package

Languages

C 100.0%

Suggested workflows

Based on your tech stack

CMake based, multi-platform projects

Configure

Build and test a CMake based project on multiple platforms.

AIM:

To write C Program that uses Linux Process API - fork(), wait(), exec()

DESIGN STEPS:

Step 1:

Navigate to any Linux environment installed on the system or installed inside a virtual environment like virtual box/vmware or online linux JSLinux (https://bellard.org/jslinux/vm.html?url=alpine-x86.cfg&mem=192) or docker.

Step 2:

Write the C Program using Linux Process API - fork(), wait(), exec()

Step 3:

Test the C Program for the desired output.

PROGRAM:

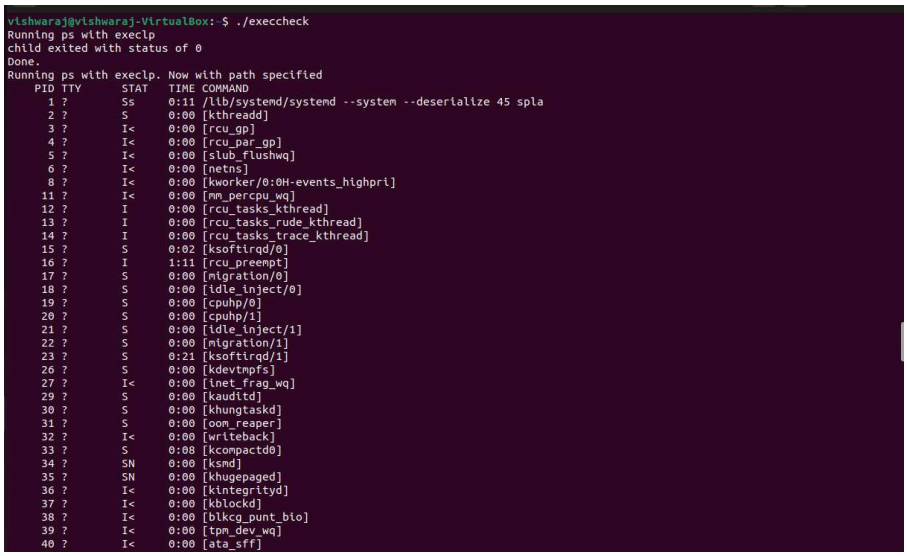
C Program to print process ID and parent Process ID using Linux API system calls

```
#include <stdio.h>
#include <sys/types.h>
#include <unistd.h>
int main(void)
{       //variable to store calling function's process
id
        pid_t process_id;
        //variable to store parent function's process
id
        pid_t p_process_id;
        //getpid() - will return process id of calling
function
        process_id = getpid();
        //getppid() - will return process id of parent
function
        p_process_id = getppid();
        //printing the process ids

//printing the process ids
```

```
        printf("The process id: %d\n",process_id);
        printf("The process id of parent function:
%d\n",p_process_id);
        return 0; }
```

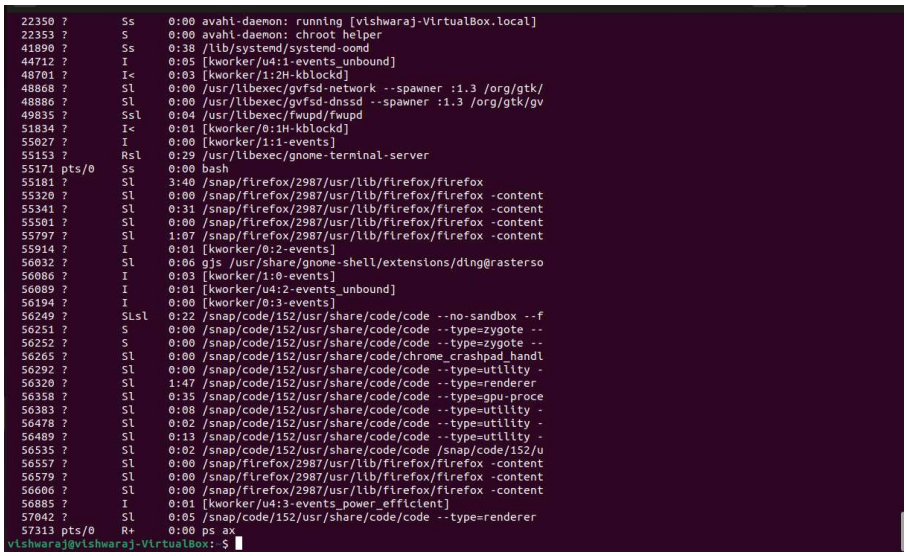
##OUTPUT



C Program to create new process using Linux API system calls fork() and exit()

```
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
int main() {
    int pid;
    pid = fork();
    if (pid == -1) {
        perror("fork");
        exit(EXIT_FAILURE);
    }
    else if (pid == 0) {
        printf("I am child, my pid is %d\n",
getpid());
        printf("My parent pid is: %d\n", getppid());
        exit(EXIT_SUCCESS);
    }
    else {
        printf("I am parent, my pid is %d\n",
getpid());
        sleep(100);
        exit(EXIT_SUCCESS);
    }
    return 0;
}
```

##OUTPUT



C Program to execute Linux system commands using Linux API system calls exec() family

```
#include <stdio.h>
#include <stdlib.h>
#include <sys/types.h>
#include <sys/wait.h>
#include <unistd.h>
int main() {
    pid_t pid = fork();
    if (pid < 0) {
        perror("Fork failed");
        exit(EXIT_FAILURE);
    } else if (pid == 0) {
        printf("This is the child process. Executing
'ls' command.\n");
        execl("/bin/ls", "ls", "-l", NULL); // Lists
files in long format
        perror("execl failed");
        exit(EXIT_FAILURE);
    } else {
        int status;
        waitpid(pid, &status, 0); // Wait for the
child to finish
        if (WIFEXITED(status)) {
            printf("Child process exited with status
%d.\n", WEXITSTATUS(status));
        } else {
            printf("Child process did not exit
normally.\n");
        }
        printf("Parent process is done.\n");
    }
```

```
    return 0;
}
```

##OUTPUT

RESULT:

The programs are executed successfully.