EXEC System Call

execl

```
execl("/bin/ls", "ls", "-l", NULL);
```

execv

```
char *args[] = { "ls", "-l", NULL };
execv("/bin/ls", args);
```

execlp

```
execlp("ls", "ls", "-l", NULL);
```

execvp`

```
char *args[] = { "ls", "-l", NULL };
execvp("ls", args);
```

execle

```
char *envp[] = { "MY_VAR=Hello", NULL };
execle("/bin/ls", "ls", "-l", NULL, envp);
```

execve

```
char *args[] = { "ls", "-l", NULL };
char *envp[] = { "MY_VAR=Hello", NULL };
execve("/bin/ls", args, envp);
```

Key Differences in `exec` Variants

Function	Path Required?	Pass Arguments	Uses `PATH`?	Pass Environment?
`execl()`	Yes (`/bin/ls`)	List (`"ls", "-l", NULL`)	No	No
`execv()`	Yes (`/bin/ls`)	Array (`{"ls", "-l", NULL}`)	No	No
`execlp()`	No (`ls`)	List (`"ls", "-l", NULL`)	Yes	No
`execvp()`	No (`ls`)	Array (`{"ls", "-l", NULL}`)	Yes	No
`execle()`	Yes (`/bin/ls`)	List (`"ls", "-l", NULL`)	No	Yes (`envp`)
`execve()`	Yes (`/bin/ls`)	Array (`{"ls", "-l", NULL}`)	No	Yes (`envp`)