**操作系统 虚存编程题**

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#include <unistd.h>

#include <signal.h>

#include <stdio.h>

#include <stdlib.h>

#include <errno.h>

#include <stdint.h>

#include <sys/mman.h>

int handler(int signum, siginfo\_t \* info, void \* nouse)

{

    //printf("si\_signo:%d\n",info->si\_signo);

    printf("si\_addr:0x%lx\n",(uint64\_t)info->si\_addr);

    if(mprotect((void\*)((uint64\_t)info->si\_addr&~4095),4096,PROT\_READ|PROT\_WRITE)<0){

        printf("error handler mprotect\n");

        return 0;

    }

    return 0;

}

int main()

{

    struct sigaction sig;

    sig.sa\_flags = SA\_SIGINFO;

    sig.sa\_sigaction = (void\*)handler;

    sigaction(SIGSEGV, &sig, NULL);

    uint32\_t \* buf = (uint32\_t\*)malloc(65536\*sizeof(uint32\_t));

    if(buf==NULL)

        return 0;

    if(mprotect((void\*)((uint64\_t)buf&~4095),65536\*sizeof(uint32\_t),PROT\_READ)<0){

        printf("error mprotect\n");

        return 0;

    }

    for(int i=0;i<64;i++){

        buf[i\*1024] = i+1;

    }

    return 0;

}

运行结果：

si\_addr:0x7efd9f446010

si\_addr:0x7efd9f447010

si\_addr:0x7efd9f448010

si\_addr:0x7efd9f449010

si\_addr:0x7efd9f44a010

si\_addr:0x7efd9f44b010

si\_addr:0x7efd9f44c010

si\_addr:0x7efd9f44d010

si\_addr:0x7efd9f44e010

si\_addr:0x7efd9f44f010

si\_addr:0x7efd9f450010

si\_addr:0x7efd9f451010

si\_addr:0x7efd9f452010

si\_addr:0x7efd9f453010

si\_addr:0x7efd9f454010

si\_addr:0x7efd9f455010

si\_addr:0x7efd9f456010

si\_addr:0x7efd9f457010

si\_addr:0x7efd9f458010

si\_addr:0x7efd9f459010

si\_addr:0x7efd9f45a010

si\_addr:0x7efd9f45b010

si\_addr:0x7efd9f45c010

si\_addr:0x7efd9f45d010

si\_addr:0x7efd9f45e010

si\_addr:0x7efd9f45f010

si\_addr:0x7efd9f460010

si\_addr:0x7efd9f461010

si\_addr:0x7efd9f462010

si\_addr:0x7efd9f463010

si\_addr:0x7efd9f464010

si\_addr:0x7efd9f465010

si\_addr:0x7efd9f466010

si\_addr:0x7efd9f467010

si\_addr:0x7efd9f468010

si\_addr:0x7efd9f469010

si\_addr:0x7efd9f46a010

si\_addr:0x7efd9f46b010

si\_addr:0x7efd9f46c010

si\_addr:0x7efd9f46d010

si\_addr:0x7efd9f46e010

si\_addr:0x7efd9f46f010

si\_addr:0x7efd9f470010

si\_addr:0x7efd9f471010

si\_addr:0x7efd9f472010

si\_addr:0x7efd9f473010

si\_addr:0x7efd9f474010

si\_addr:0x7efd9f475010

si\_addr:0x7efd9f476010

si\_addr:0x7efd9f477010

si\_addr:0x7efd9f478010

si\_addr:0x7efd9f479010

si\_addr:0x7efd9f47a010

si\_addr:0x7efd9f47b010

si\_addr:0x7efd9f47c010

si\_addr:0x7efd9f47d010

si\_addr:0x7efd9f47e010

si\_addr:0x7efd9f47f010

si\_addr:0x7efd9f480010

si\_addr:0x7efd9f481010

si\_addr:0x7efd9f482010

si\_addr:0x7efd9f483010

si\_addr:0x7efd9f484010

si\_addr:0x7efd9f485010