Operating Systems Lab

Assignment 9

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I already have a separate /home file system of type 'mfs'.

1. File Created

I have modified the file open.c at /minix/servers/vfs/open.c. This file contains a function common_open() where I added the following line to print the statement whenever a file is created.

```
if (r == OK)
{
    exist = FALSE;
    struct vmnt *vmpPath;
    vmpPath = find_vmnt(vp->v_fs_e);
    if (strcmp(vmpPath->m_mount_path, "/home") == 0)
        printf("file created: %llu\n", vp->v_inode_nr);
}
```



```
minix os [Running] - Oracle VM VirtualBox
Minix: PID 223 exited
# touch hello.txt
Minix: PID 224 created
file created: 2
Minix: PID 224 exited
#
```
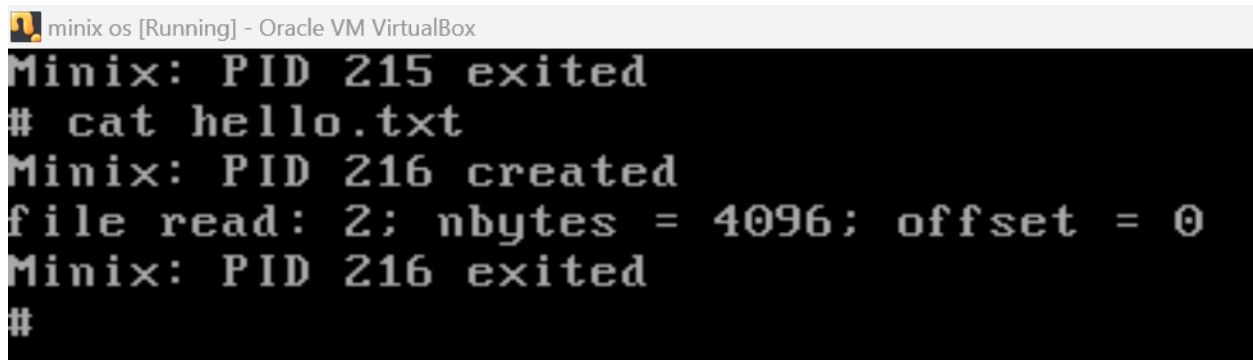
2. **File Read**

I have modified the file read.c at /minix/servers/vfs/read.c. This file contains a function read_write() where I added the following line to print the statement whenever a file is read.

```
// Update for printing inode number when file is read and written
struct vmnt *vmp;
vmp = find_vmnt(vp->v_fs_e);
if (rw_flag == WRITING && strcmp(vmp->m_mount_path, "/home") == 0)
    printf("file write: %llu; nbytes = %zu; offset = %llu\n", vp->v_inode_nr, size, f->filp_pos);

if (rw_flag == READING && strcmp(vmp->m_mount_path, "/home") == 0)
    printf("file read: %llu; nbytes = %zu; offset = %llu\n", vp->v_inode_nr, size, f->filp_pos);
// -- Until here
```

We can see the statement being printed

```
minix os [Running] - Oracle VM VirtualBox
Minix: PID 215 exited
# cat hello.txt
Minix: PID 216 created
file read: 2; nbytes = 4096; offset = 0
Minix: PID 216 exited
#
```
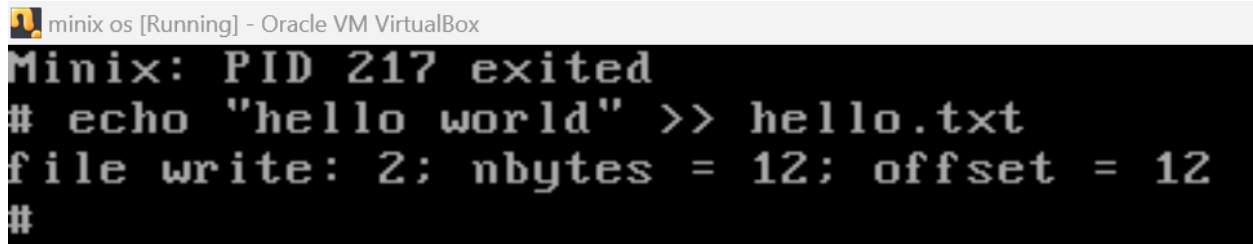
3. <u>File Written</u>

I have modified the file read.c at /minix/servers/vfs/read.c. This file contains a function read_write() where I added the following line to print the statement whenever a file is written.

```
// Update for printing inode number when file is read and written
struct vmnt *vmp;
vmp = find_vmnt(vp->v_fs_e);
if (rw_flag == WRITING && strcmp(vmp->m_mount_path, "/home") == 0)
    printf("file write: %llu; nbytes = %zu; offset = %llu\n", vp->v_inode_nr, size, f->filp_pos);

if (rw_flag == READING && strcmp(vmp->m_mount_path, "/home") == 0)
    printf("file read: %llu; nbytes = %zu; offset = %llu\n", vp->v_inode_nr, size, f->filp_pos);
// -- Until here
```

We can see the statement being printed

4. **File Deleted**

I have modified the file link.c at /minix/servers/vfs/link.c. This file contains a function do_unlink() where I added the following line to print the statement whenever a file is deleted.

```
if (strcmp(vmp->m_mount_path, "/home") == 0)
  printf("file deleted: %llu\n", vp->v_inode_nr);
```

We can see the statement being printed


```
minix os [Running] - Oracle VM VirtualBox
Minix: PID 219 exited
# rm hello.txt
Minix: PID 220 created
file deleted: 2
Minix: PID 220 exited
#
```