Implementing the Syscalls : Modifications to the Original Shell

This document describes the changes made to each file of the original shell (https://github.com/mit-pdos/xv6-public) in order to implement the uint myV2p(uint va, int mode) and the int hasPages(int pid) system calls. Note: This document only presents required details & explanations where needed. For full descriptions on specific entries, refer to appropriate locations in the shell files (line numbers in red).

exec.c

codeTopAddress & stackTopAddress captured & saved in proc struct (16,68,75,109,110)

proc.h

codeTopAddress & stackTopAddress definitions in proc struct (52-53)
Function prototypes for myV2p & hasPages (56-57)

proc.c

Add implementation of myV2p with description & comments (536-582)
Add implementation of hasPages with description & comments (584-703)

syscall.h

Add syscall #22 & #23 → SYS_myV2p & SYS_hasPages (23-24)

syscall.c

Extern function prototypes for sys_myV2p & sys_hasPages (106-107)
Map syscall numbers to functions (131-132)

sysproc.c

Add implementation of sys_myV2p & sys_hasPages w/ description & comments (93-108)

user.h

Function prototypes for myV2p & hasPages system calls (26-27)

usys.S

Add entries for myV2p & hasPages (32-33)

test.c

Test driver to verify the functionality of myV2p & hasPages.