Swap

physical memory

Ox FF FF FF FF Ox FF FF FF FF stack B prog A heap B stack B prog B 0x 00 00 00 00 virtual memory stack A for program B prog B 0x FF FF FF FF 0x 00 00 00 00 stack A heap A heap A prog A 0x 00 00 00 00 heap B virtual memory for program A

hard drive

The need for a file system