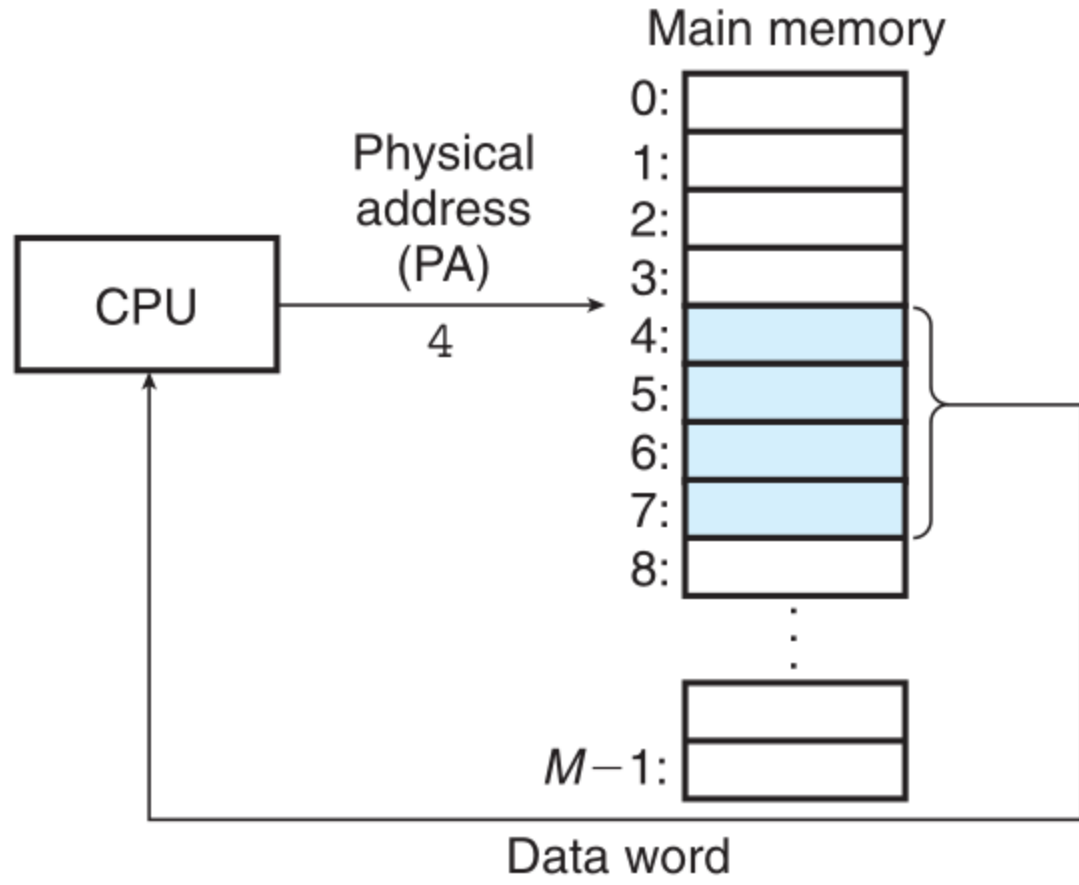


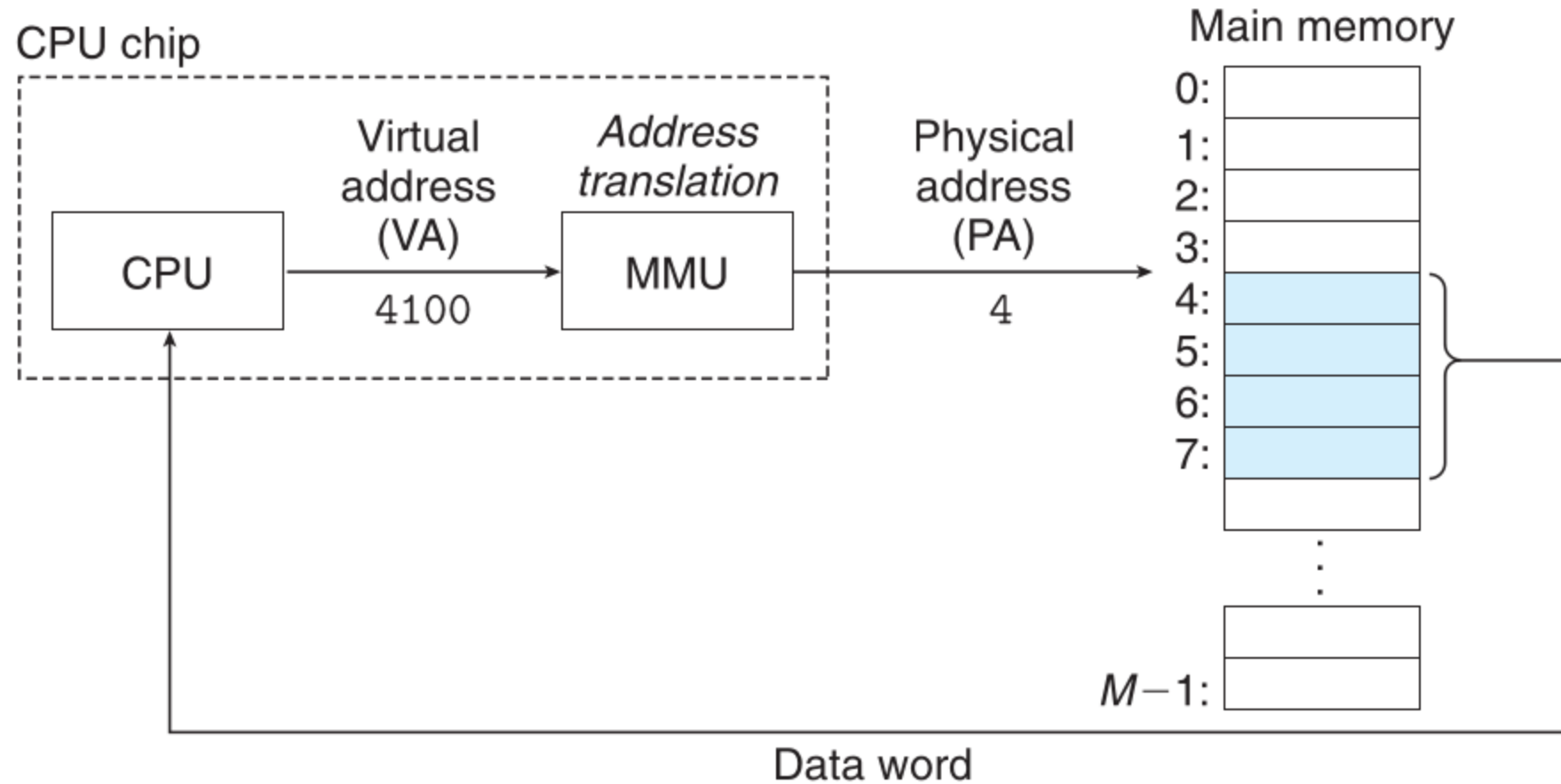
Virtual Memory

- uses main memory efficiently by treating it as a cache for an address space stored on disk, keeping only the active areas in main memory, and transferring data back and forth between disk and memory as needed.
- simplifies memory management by providing each process with a uniform address space.
- protects the address space of each process from corruption by other processes.

Physical Addressing

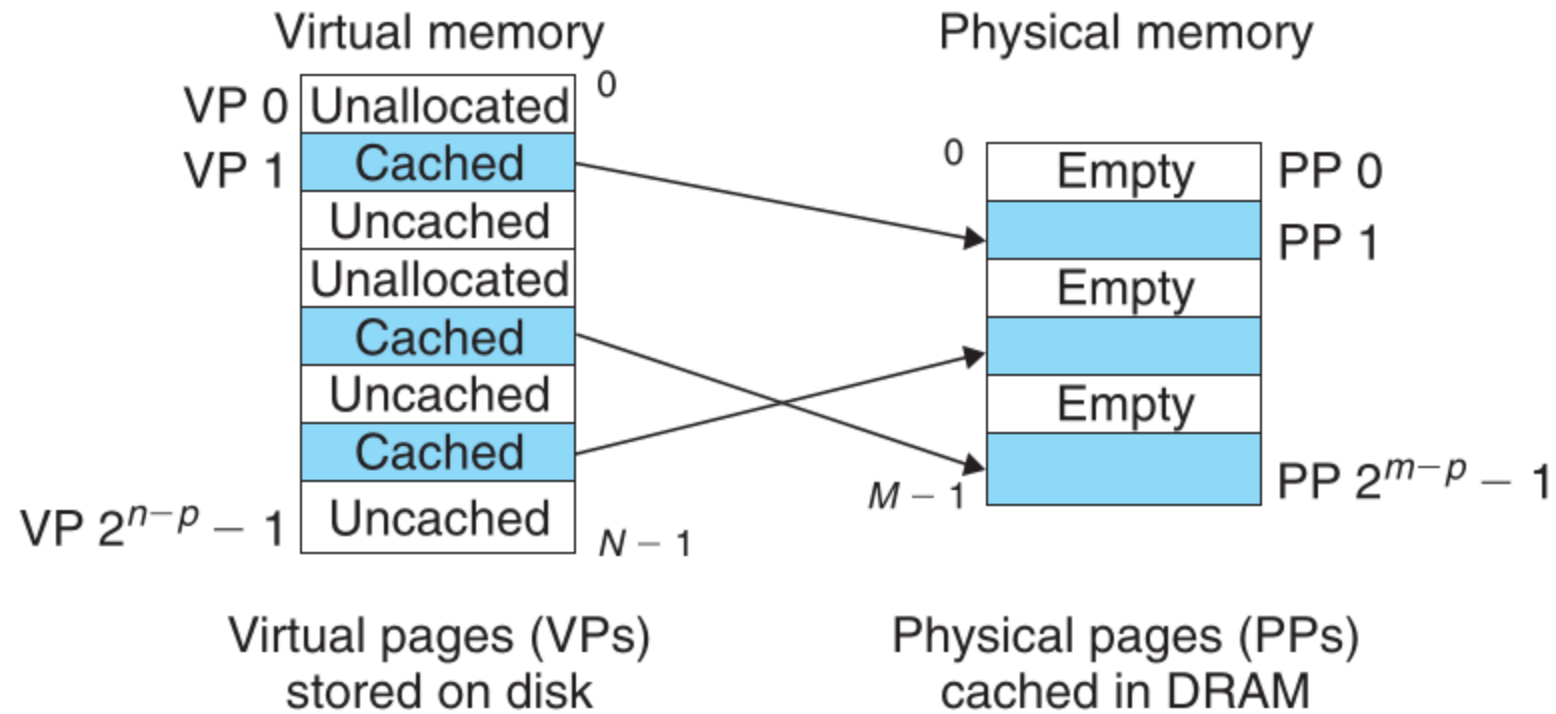


Virtual Addressing

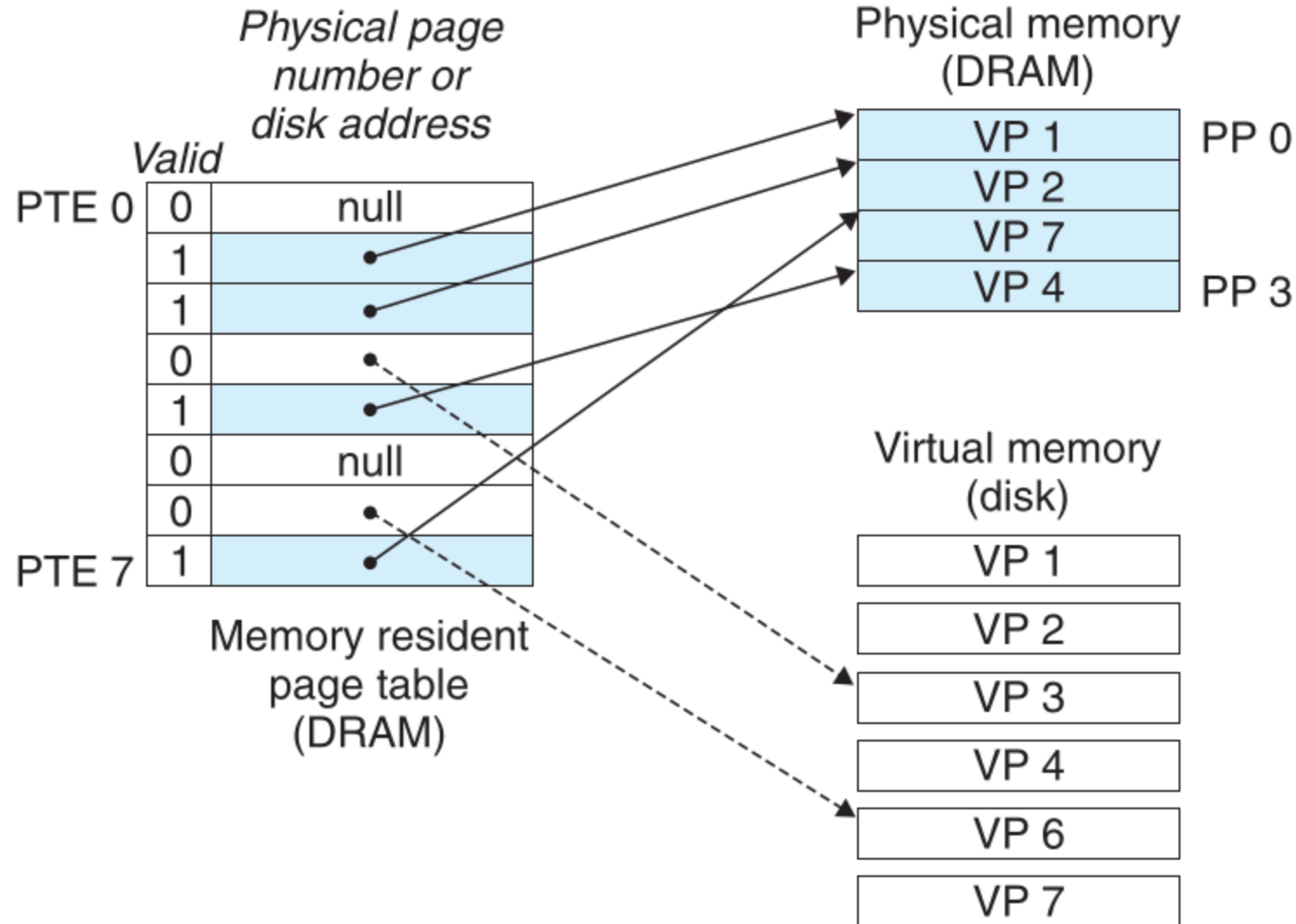


Address Space

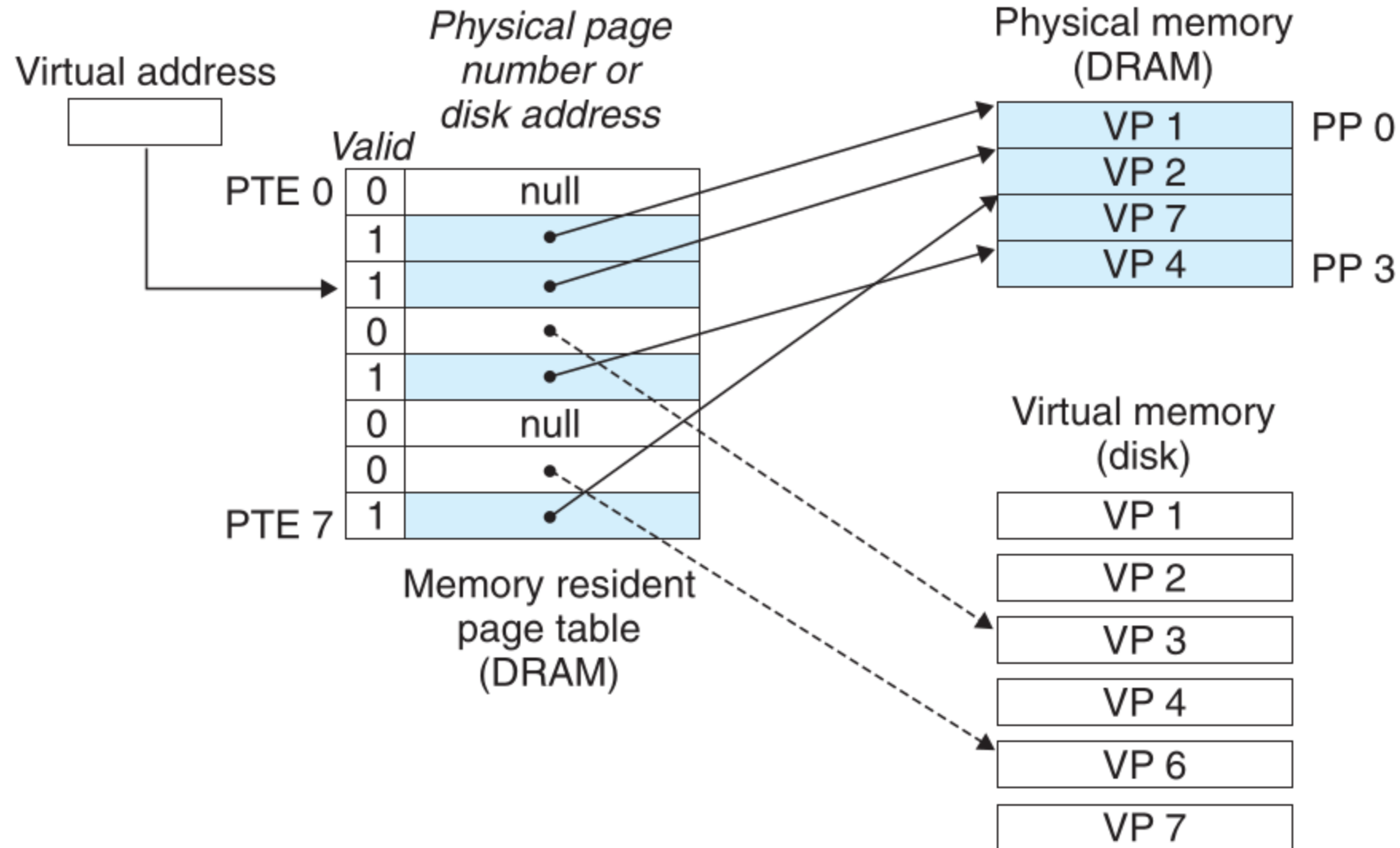
VM as a Cache for Disk



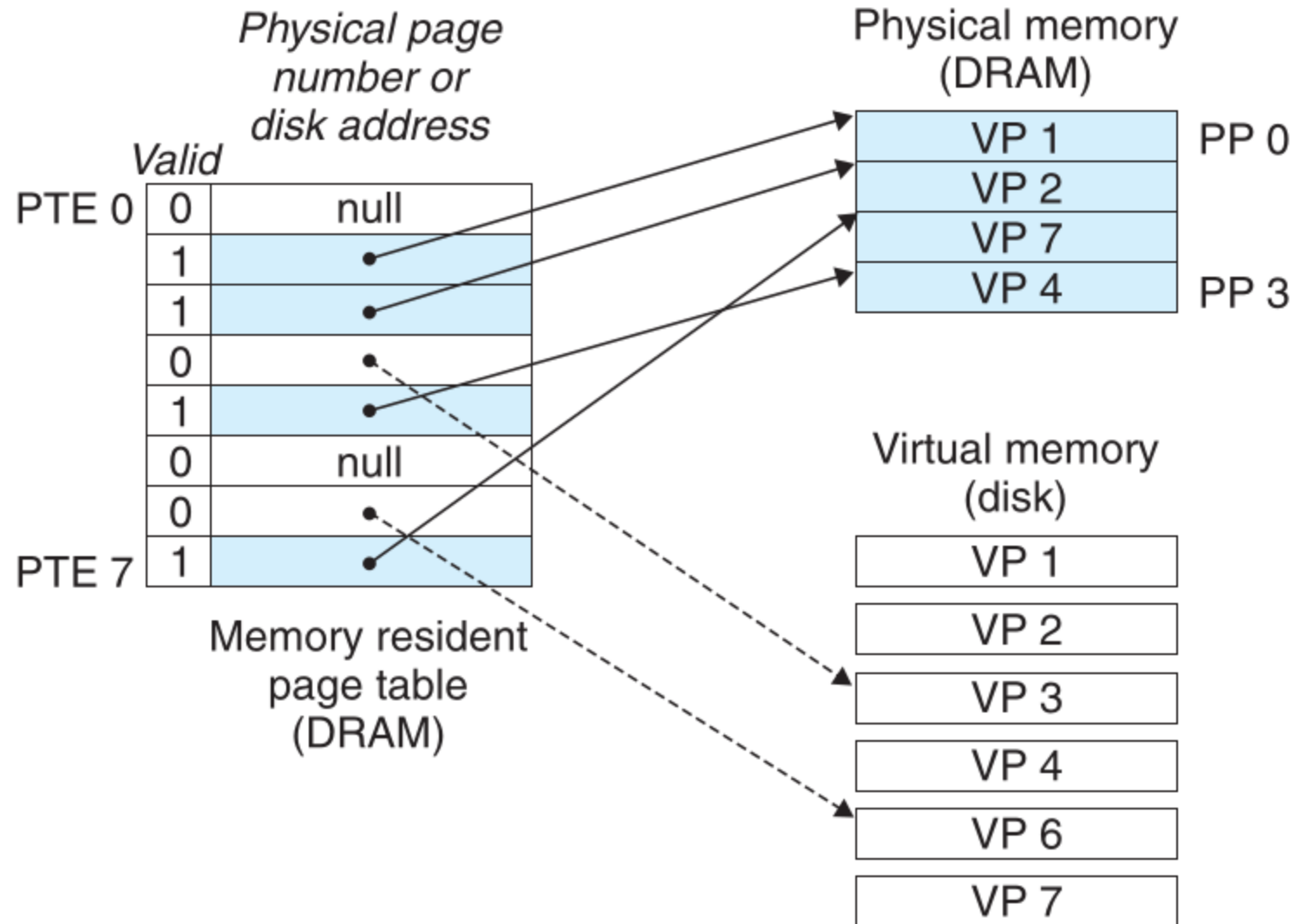
Page Table



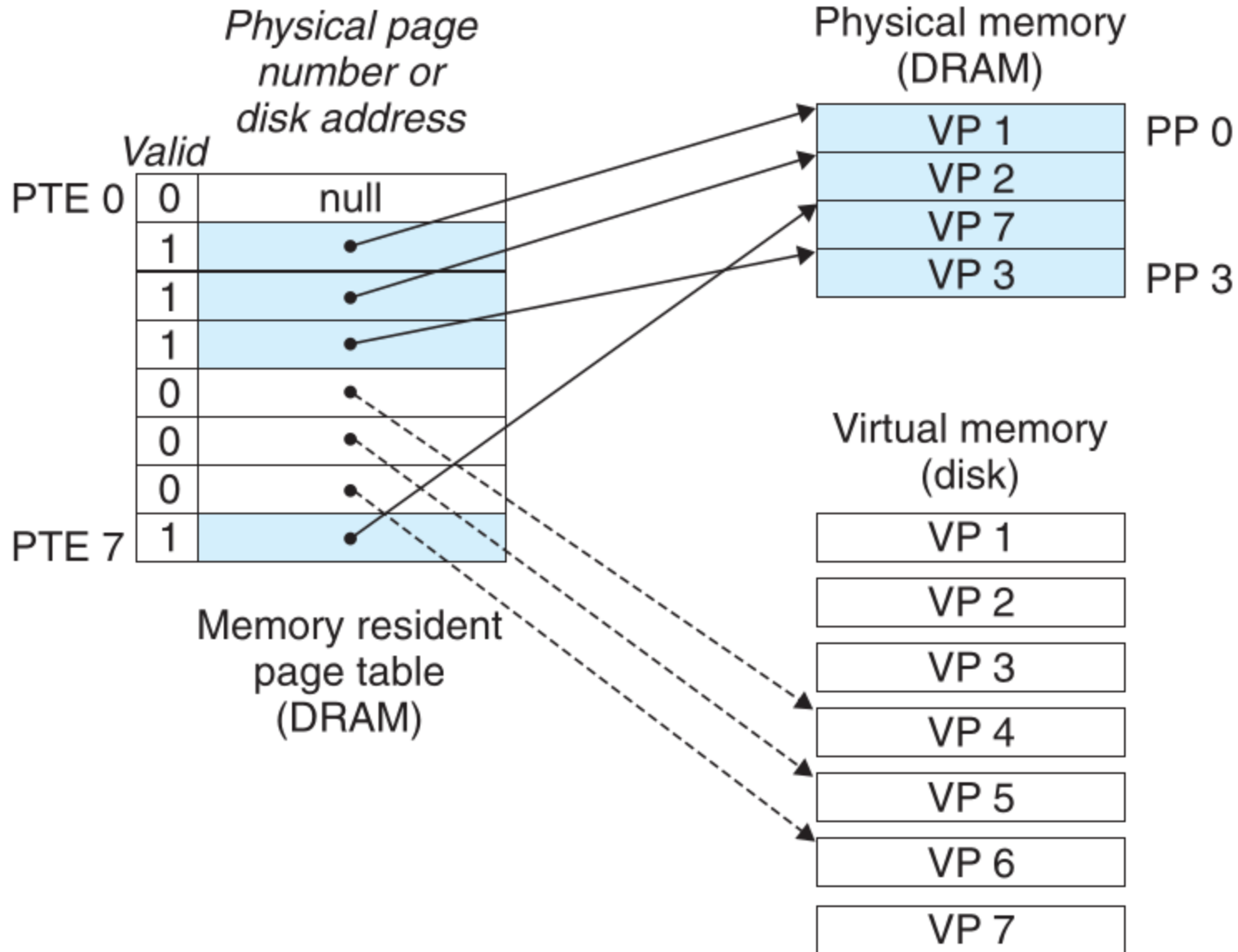
Page Hit



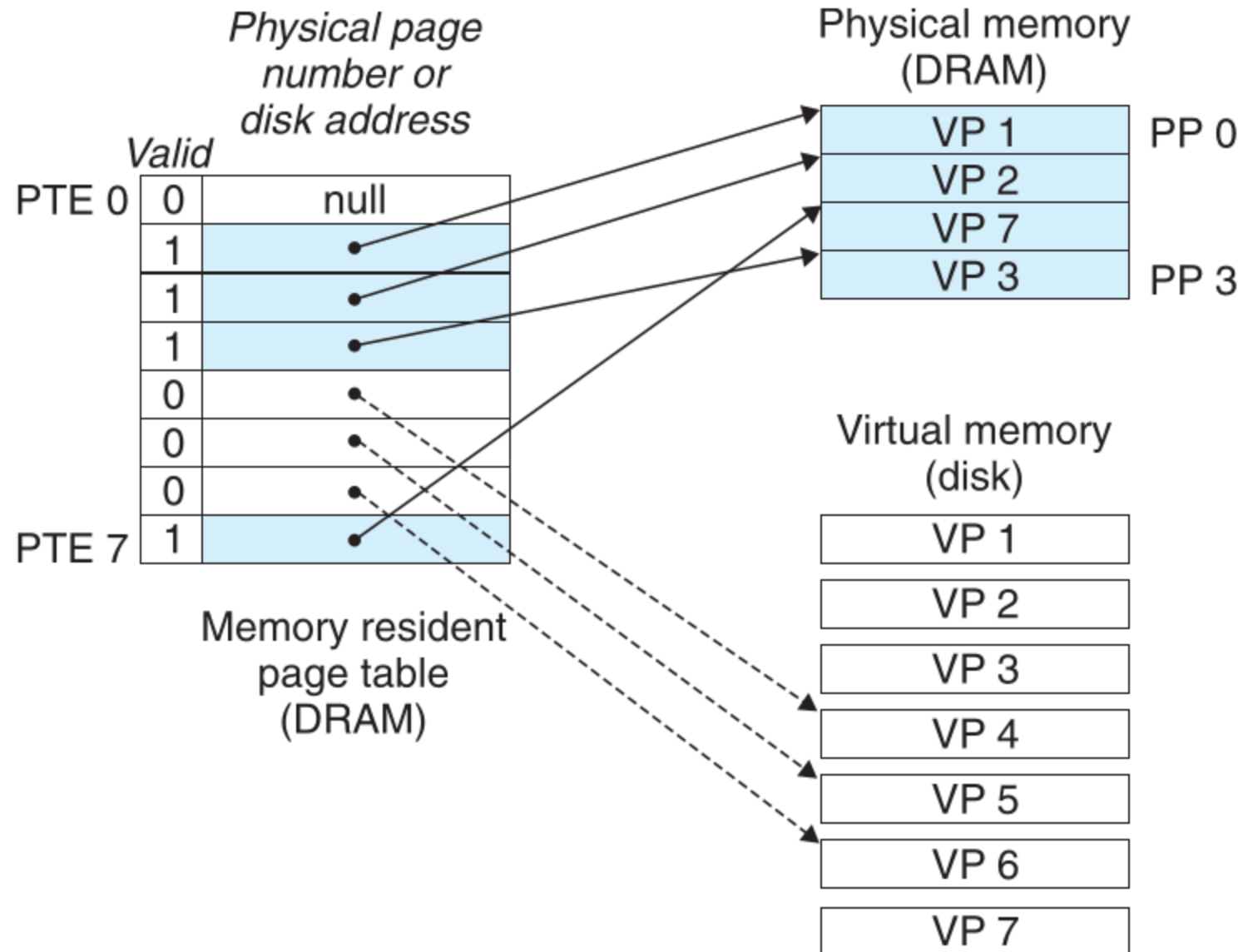
Page Miss / Page Fault



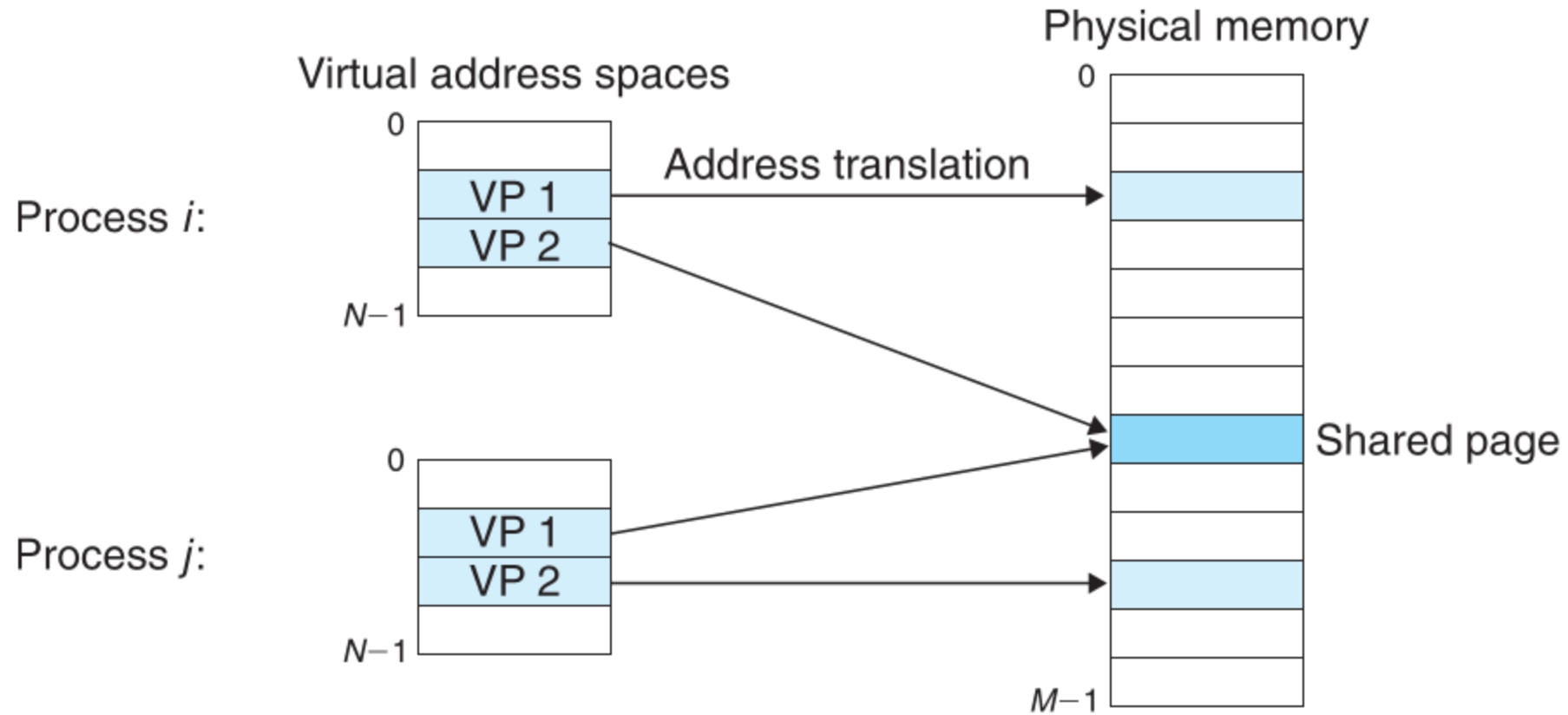
Page Miss / Page Fault



Allocating Pages



Sharing memory between processes



Memory Protection

