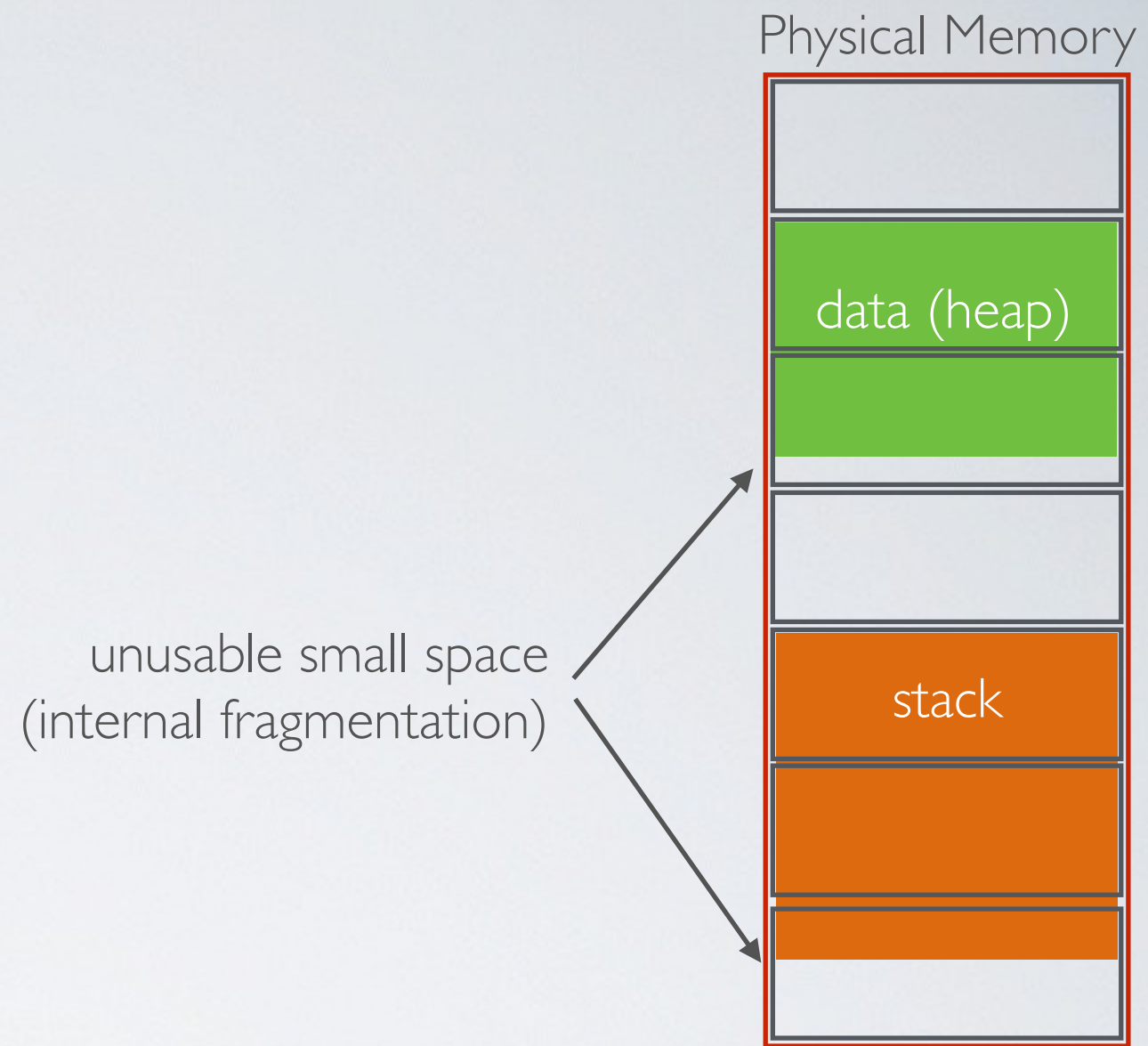


Paging Trade-offs



- ✓ Eliminates external fragmentation
- ✓ Simplifies allocation, free, and backing storage (swap)
- Average internal fragmentation of .5 pages per "segment"

Paging Data Structures

Pages are fixed size (e.g. 4K) so a virtual address has two parts:

- **virtual page number** : most significant bits
- and the **page offset** : least significant 12 bits ($\log_2 4k$)

The page table is a collection of **page table entry (PTE)** that maps

- a **virtual page number (VPN)**
i.e the index in the page table
- to **physical page numbers (PPN)** a.k.a frame number
- and includes bits for protection, validity, etc ...