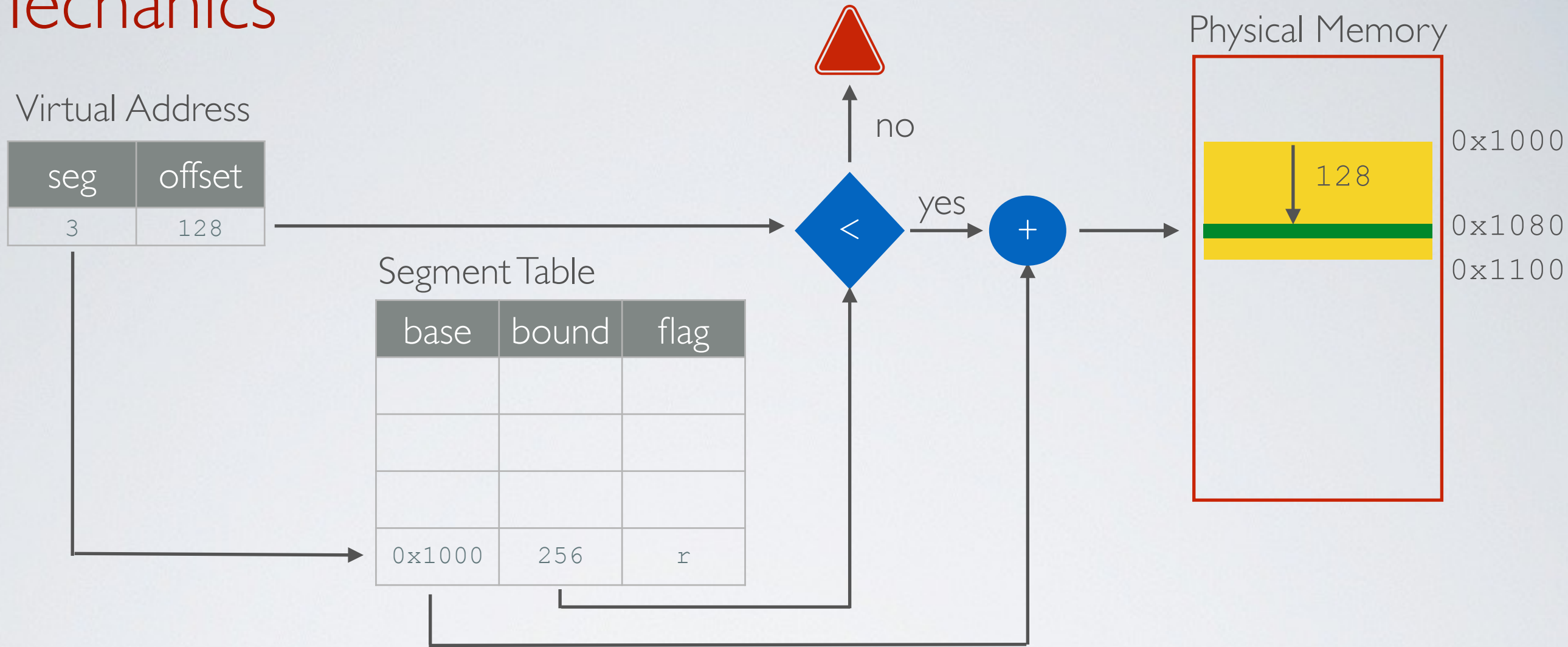


# Mechanics

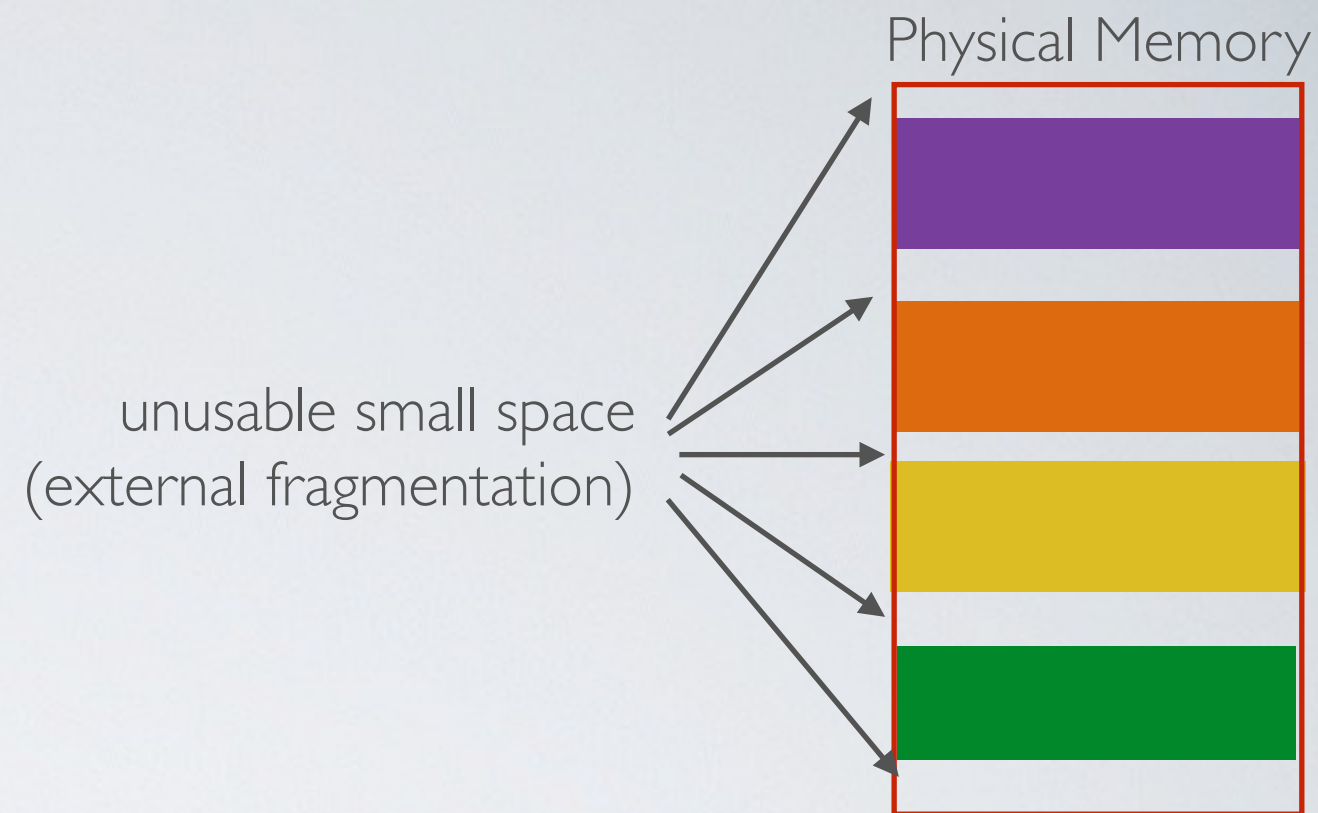


Each virtual address indicates

- a segment index in the table (top bits)
- and an offset (low bits)

➔ x86 stores segment #s in registers (CS, DS, SS, ES, FS, GS)

# Segmentation Trade-offs



## Advantages

- ✓ Multiple segments per process (sparse memory)
- ✓ Can easily share memory
- ✓ Do not need entire process in memory (swap)

## Disadvantages

- ⦿ Requires translation, which could limit performance
- ⦿ Makes external **fragmentation** a real problem