

Allocation of frames

Each process needs minimum no of pages

Equal frame allocation

M no. of frames

N no. of processes

$$\left\lceil \frac{M}{N} \right\rceil \rightarrow \text{no. of frames of each process}$$

Proportional allocation

→ 10 pages

If equal no. of frames are allocated to each process then fine.

$$N_1 = 31 \text{ frames}$$

$$N_2 = 127 \text{ pages per process}$$

$$\downarrow 31 \text{ frames}$$

$$27 \text{ pages}$$

But what if each process has more pages (eg. 127)

then we need to add more pages

$$127 + 10 = 137$$

no. of pages for a particular process
 $\sum \frac{P_i}{\sum P_i} \times M$

$$N_2 \Rightarrow \frac{127}{137} \times 62 \approx 57$$

$$N_1 \Rightarrow \frac{10}{137} \times 62 \approx 4$$

$$57 + 4 \rightarrow 61$$

→ 1 frame is free, can be used by N_1 or N_2 .

used as free-frame buffer pool

Global allocation

process selects a replacement frame from the set of all frames; one process can take a frame from another.

Local allocation

each process selects from only its own set of allocated frames.

Thrashing

If process doesn't have enough pages, the page fault rate is very high.

Thrashing means a process is busy swapping pages in and out.

