CISC 7310X

C08g Paging: OS Examples

Hui Chen

Department of Computer & Information Science

CUNY Brooklyn College

Acknowledgement

- These slides are a revision of the slides provided by the authors of the textbook via the publisher of the textbook

Outline

- Operating-System Examples
  - Windows
  - Solaris

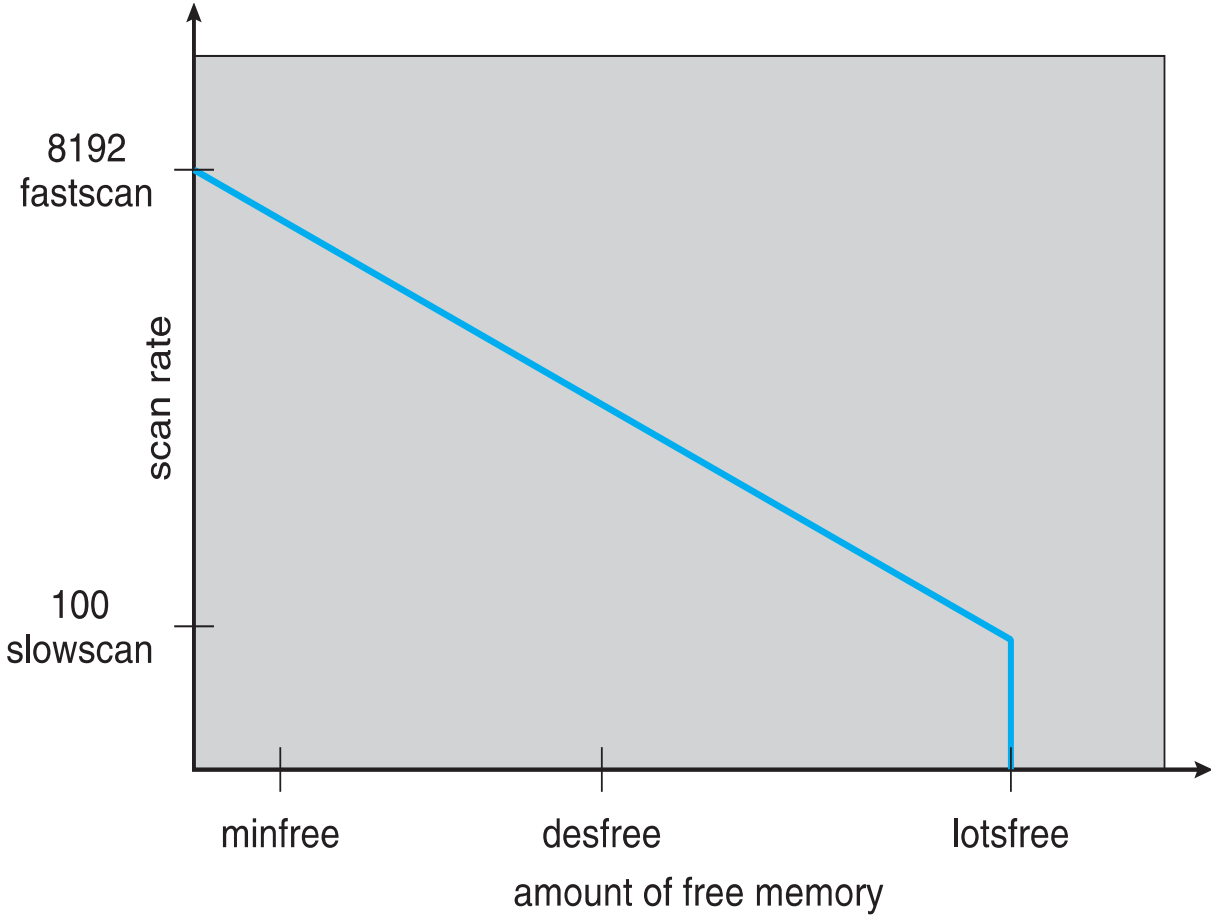
Windows

- Uses demand paging with **clustering**. Clustering brings in pages surrounding the faulting page
- Processes are assigned **working set minimum** and **working set maximum**
- Working set minimum is the minimum number of pages the process is guaranteed to have in memory
- A process may be assigned as many pages up to its working set maximum
- When the amount of free memory in the system falls below a threshold, **automatic working set trimming** is performed to restore the amount of free memory
- Working set trimming removes pages from processes that have pages in excess of their working set minimum

Solaris

- Maintains a list of free pages to assign faulting processes
- **`Lotsfree`** – threshold parameter (amount of free memory) to begin paging
- **`Desfree`** – threshold parameter to increasing paging
- **`Minfree`** – threshold parameter to being swapping
- Paging is performed by **`pageout`** process
- **`Pageout`** scans pages using modified clock algorithm
- **`Scanrate`** is the rate at which pages are scanned. This ranges from **`slowscan`** to **`fastscan`**
- **`Pageout`** is called more frequently depending upon the amount of free memory available
- **Priority paging** gives priority to process code pages

Solaris 2 Page Scanner



Questions?