A Comparative Analysis of Disk Scheduling Policies

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Five well-known scheduling policies for movable head disks are compared using the performance criteria of expected seek time (system oriented) and expected waiting time (individual I/O request oriented). Both analytical and simulation results are obtained. The variance of waiting time is introduced as another meaningful measure of performance, showing possible discrimination against individual requests. Then the choice of a utility function to measure total performance including system oriented and individual request oriented measures is described. Such a function allows one to differentiate among the scheduling policies over a wide range of input loading conditions. The selection and implementation of a maximum performance two-policy algorithm are discussed.

(Pages 115 through 121 omitted)