

INDEX VALUE REFERENCE FOR SHARED DATA STRUCTURES

ABSTRACT

A method and an apparatus for hardware and software interaction in data transfers of shared data structures in memory. The method and apparatus decreases the number of mutex lockings required to prevent conflict between different software attempting to access the same data and keeps the index value for each buffer in use in order to prevent conflicts between buffer replacement and packet arrival. In an exemplary implementation of the method and apparatus of the present invention, a receive hardware of a computer system keeps an index value for each buffer in use. This index value is placed in a completion ring protected by a mutex, and placed in a software queue protected by mutex. The mutexes assure that only one thread will possess a given index at a given time. No mutex locking is required for a buffer table containing software address and related information.