



3. [10 pt] Given a processor array containing eight processing elements, each capable of performing 10 million integer operations per second, determine the performance in millions of operations per second of this processor array adding two integer vectors, for vectors of size 1, 8, and 50.

4. [10 pt] A directory-based protocol is a popular way to implement cache coherence on a distributed multiprocessor.

(a) Why should the directory be distributed among the multiprocessor's local memories?

(b) Why are the contents of directory not replicated?