6.033 Computer System Engineering

Spring 2009

Preparation for Recitation 15

Read *A Case for Redundant Arrays of Inexpensive Disks (RAID)*, by Patterson et al. (Proceedings of the ACM SIGMOD Conference, 1988). Read the paper and think of an answer to the following question:

Modern RAID arrays use parity information and standby disks to provide a highly reliable storage medium even in the face of hardware failures. A highly reliable *system*, however, requires more than just a highly reliable *storage medium*. Consider a networked server handling network transactions (a web server or bank central computer, perhaps). Think about other components of this system whose failure could result in a loss of service. Pick out a few of these and explain how they might be made more reliable in the same way that RAID made disks more reliable. For example, multiple power supplies can be arranged in parallel to power a machine even if one fails. For your examples consider at least one hardware component and one software component of the system.