

Abstract: Data replication is the creation and maintenance of multiple copies of the same data. Replication is used in Data Grid to enhance data availability and fault tolerance. In this paper, a framework for replication in the Data Grid is proposed. The framework is considered an environment that can be used to evaluate the performance of different replication strategies. An event-driven simulator written in Java is used to evaluate the performance of three replication strategies based on the new proposed framework. These strategies are No Replication, Plain Caching, and Fast Spread. The simulation results show that Plain Caching strategy achieved the best performance, while No Replication strategy achieved the worst performance in terms of number of requests served locally (NORSL).

