

CS543 Distributed Systems QE, 2017

1. Rapid growing network and computing technologies have enabled users to ubiquitously store and retrieve their data wherever they go. To provide a highly available storage service, there have been several research efforts to build a distributed storage system where storage servers are replicated across multiple places, support users at proximity, and propagate updates to other replicas.
 - a) To support such a system, there exists a critical challenge of keeping consistency but maintaining high performance. Is it possible to achieve both together? Justify your answer.
 - b) Discuss what kind of a naming scheme should be designed to support the target service (i.e. a user's data (i.e. file) can be accessed regardless of its current location)
 - c) Discuss what kind of a data consistency protocol can implement the target service and why the protocol provides no guarantee of fault tolerance if implemented as a non-blocking.