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Answers to FDS Quiz

CS 6963

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1.1) According to the section 3.2, it order of entries of the TLT will be changed to a random order

1.2) Because it has to return deterministic address for reads and writes. As it said in the paper, “Readers and writers rendezvous because tractserver lookup is deterministic: as long as a reader has the same TLT the writer had when it wrote a tract, a reader’s TLT lookup will point to the same tractserver.”. In my opinion, if it generates the whole TLT randomly, it would not be deterministic anymore.

1.3) At first glance, I could not tell that there is a contradiction. But after seeing this question and reading the corresponding sections more precisely, I think there is contradiction. Even if there is only one disk failure, the tractserver that would seat in the spot of dead tractserver is picked out randomly and deny the concept of deterministic address returns.

2) In my opinion, I believe that they may receive *A, B* or *I*. Here is the issue of replicas. I think the key of this question is the last paragraph of section 3.5 where it says, “A tractserver recently assigned to a TLT entry will not have the same state as the entry’s other replicas until data copying is complete. While in this state, tractservers reject read requests; clients use other replicas instead.”

Both clients *A* and *B* receives ACK that they write was successful but nobody knows about the process of copying the data to the replicas of the tract/blob. And as it is mentioned in the key paragraph, while in this state, tractservers reject read requests and redirect the clients to other replicas which could have any of *A, B* or *I* values.

3) As a matter of fact, it was my first time studying different methods of managing data on large clusters which recovery from failure is a big deal. As long as I understand this paper, it has some novel idea about metadata server comparing to traditional metadata. Also in case of efficiency, it looks more time efficient. The failure recovery sections does not look simple but I might use the idea if I supposed to design such a thing.