WHITE QUIZ
First question

- How does Sprite LFS recover its i-map after a crash?
First question

- How does Sprite LFS recover its i-node map after a crash?

  - *Sprite LFS recovers first the addresses of the i-node table blocks as they were recorded in the last checkpoint*
  - *It then scans through the log segments that were written after the last checkpoint and uses that information to update its i-node map*
Second question

- Why did the designers of NFS decide to make their *requests idempotent*?
Second question

Why did the designers of NFS decide to make their requests idempotent?

- Because it was necessary in order to have stateless servers.
- Because it allowed unlimited retries for NFS requests.
Third question

- Why do NFS servers implement a write-through policy?
Third question

- Why do NFS servers implement a write-through policy?

  - *It was the only choice that let the server remain stateless.*
Fourth question

Consider a distributed file system implementing close-to-open consistency. Assuming that

- Alice opens the file at 9:30 AM, modifies it and closes it at 10:45 AM,
- Bob opens the file at 10:00 AM, modifies it and closes it at 11:30 AM,
- Carol opens the file at 10:30 AM, modifies it and closes it at 11:00 AM,
Fourth question

Which of these three users would see his or her changes incorporated in the final version of the file?

- Alice
- Bob
- Carol

Bob
Fifth question

- What is the main drawback of the so-called *infinite leases*?
Fifth question

- What is the main drawback of the so-called *infinite leases*?
  - *They let servers break up leases when the client that hold the lease cannot be reached*
  - *They do not guarantee data consistency*
Sixth question

What should a server do when it tries to break a lease and gets no answer from the current lease holder?
Sixth question

- What should a server do when it tries to break a lease and gets no answer from the current lease holder?

  - *It waits until the lease expires before granting another lease*
Seventh question

- What is the purpose of dynamic subtree partitioning in the Ceph metadata server?
Seventh question

- What is the purpose of dynamic subtree partitioning in the Ceph metadata server?
  - To avoid hot spots
Eighth question

- What does Dynamo do to ensure that nearly all its users have a good user experience?
Eighth question

What does Dynamo do to ensure that nearly all its users have a good user experience?

- It specifies its service level agreements for very high quantiles (99.99%) of the user response time
First question

- How does Sprite LFS recover its i-map after a crash?
First question

- How does Sprite LFS recover its i-map after a crash?

- *Sprite LFS recovers first the addresses of the i-node table blocks as they were recorded in the last checkpoint.*

- *It then scans through the log segments that were written after the last checkpoint and uses that information to update its i-node map.*
Second question

- Why did the designers of NFS decide to make their servers **stateless**?
Second question

- Why did the designers of NFS decide to make their servers *stateless*?

  - *To make them more robust*
  - *To let them recover seamlessly from crashes*
Third question

- Why do NFS servers implement a write-through policy?
Third question

- Why do NFS servers implement a write-through policy?

  - It was the only choice that let the server remain stateless
Fourth question

- Consider a distributed file system implementing close-to-open consistency. Assuming that
  - Alice opens the file at 9:30 AM, modifies it and closes it at 11:00 AM,
  - Bob opens the file at 10:00 AM, modifies it and closes it at 10:45 AM,
  - Carol opens the file at 10:30 AM, modifies it and closes it at 11:30 AM,
Fourth question

Which of these three users would see his or her changes incorporated in the final version of the file?
Fifth question

- What does Dynamo do to ensure that nearly all its users have a good user experience?
Fifth question

- What does Dynamo do to ensure that nearly all its users have a good user experience?

  - *It specifies its service level agreements for very high quantiles (99.99%) of the user response time*
Sixth question

- What is the main advantage of long leases?
Sixth question

What is the main advantage of *long leases*?

- *Long leases reduces the lease renewal overhead*
- *Less frequent lease renewals*
Seventh question

- What should a client do when it learns that the server wants to break one of its leases?
Seventh question

- What should a client do when it learns that the server wants to break one of its leases?

  - It should acknowledge the request and invalidate the contents of its cache
Eighth question

- Why did the designers of Ceph decide *not to use* an existing local file system to manage low-level storage?
Why did the designers of Ceph decide not to use an existing local file system to manage low-level storage?

Because they wanted to know when object updates were safely committed on disk and journaling was deemed to be too costly.