

$NoOrphanFiles \triangleq$

There does not exist a key

$\neg \exists k \in UUIDS :$

That is in the block store

$\wedge blobStoreState[k] \neq \text{"UNSET"}$

And not in database

$\wedge \forall u \in USERIDS :$

$databaseState[u].imageId \neq k$

$AlwaysNoOrphanFiles \triangleq \Box NoOrphanFiles$

At some point in the future there will be no orphan files

If it's true ever, it is True

$EventuallyNoOrphanFiles \triangleq \Diamond NoOrphanFiles$

Always, at some point in the future, there will be no orphan files

This is how we test eventual consistency. It can't just happen once

It must always happen

$AlwaysEventuallyNoOrphanFiles \triangleq \Box EventuallyNoOrphanFiles$