HSM, Data Movement, Tiering and more

LAD 2019

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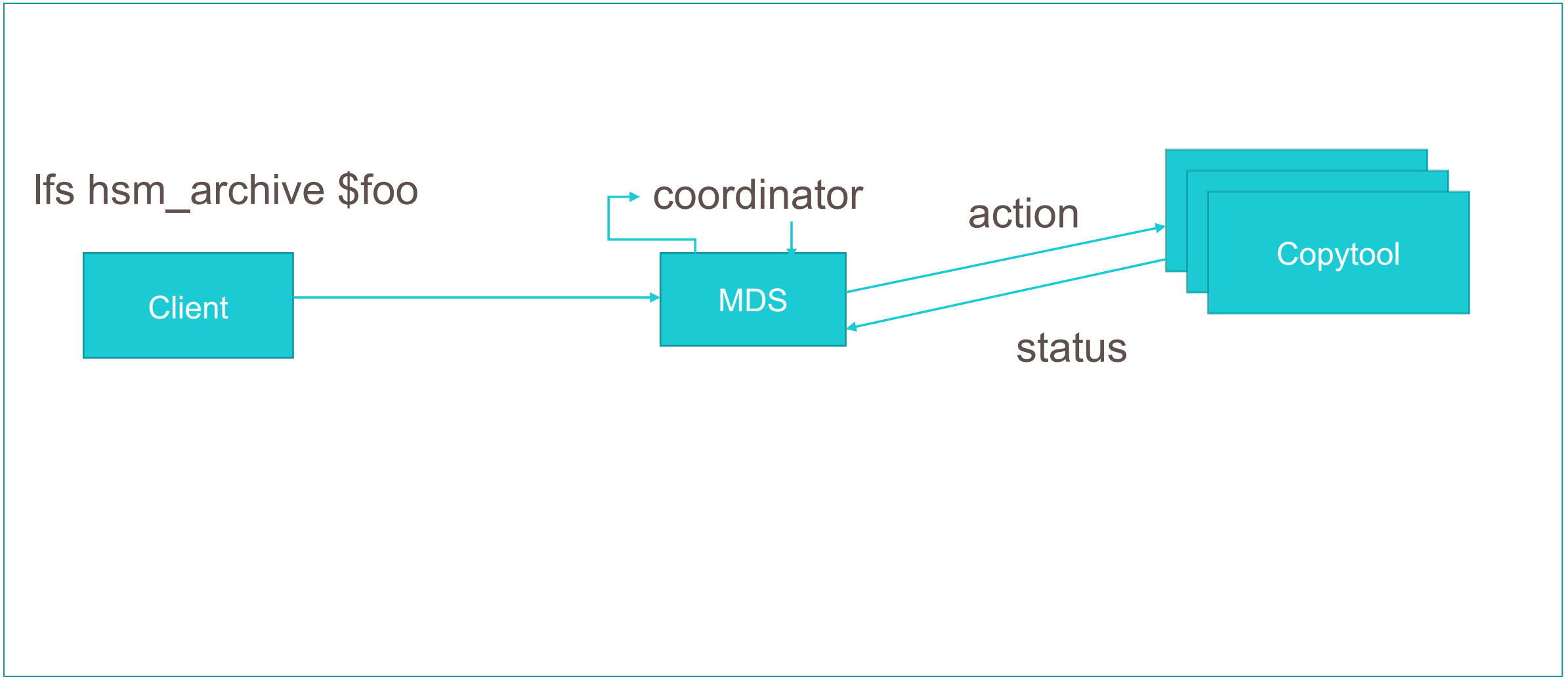
HSM – Current Status



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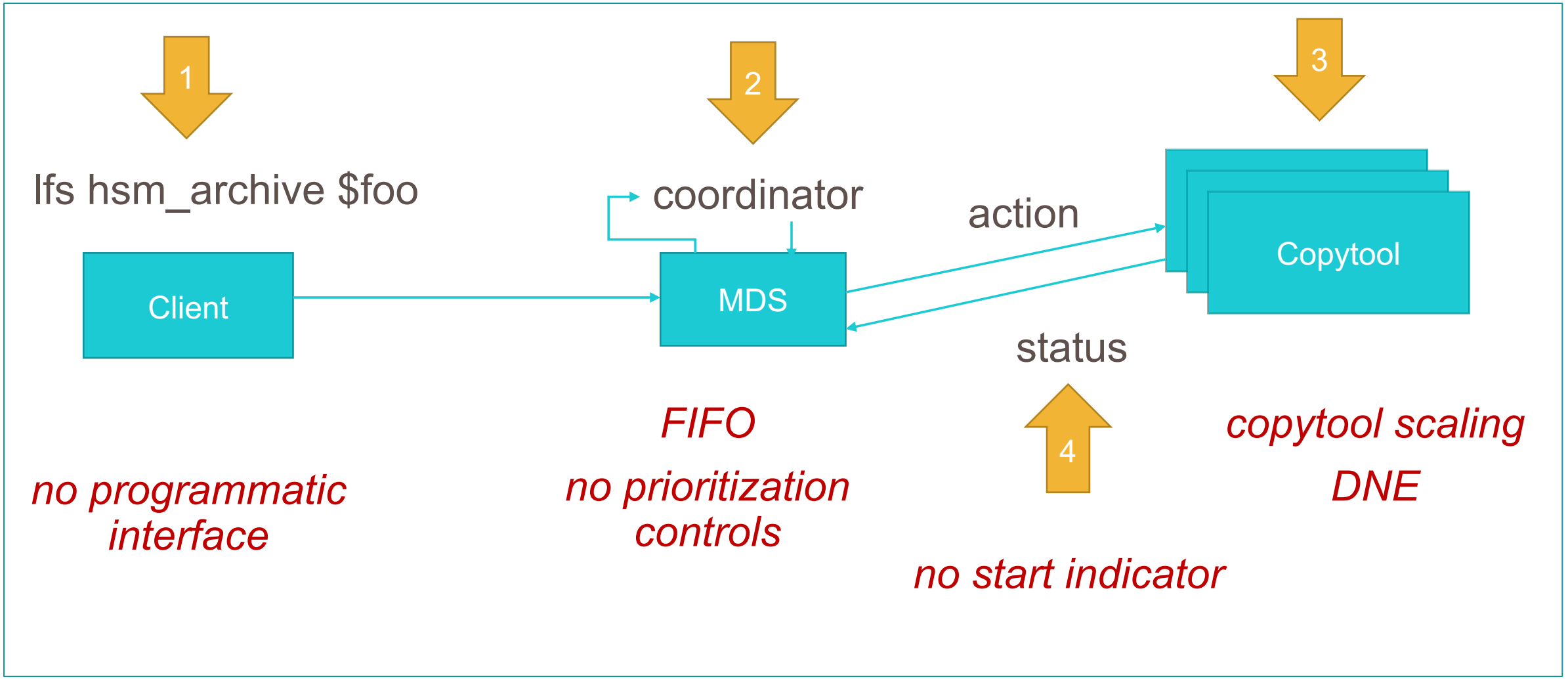
What's Wrong with this Picture



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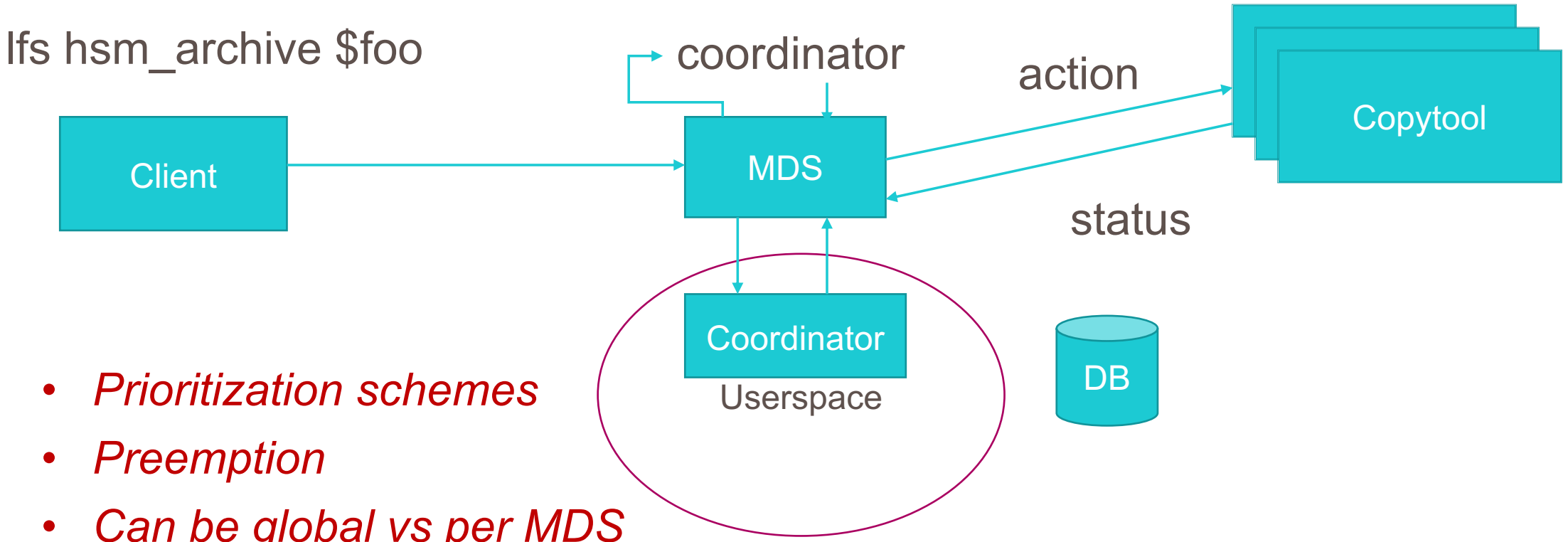
Externalize the Coordinator LU-10986



- *Prioritization schemes*
- *Preemption*
- *Can be global vs per MDS*

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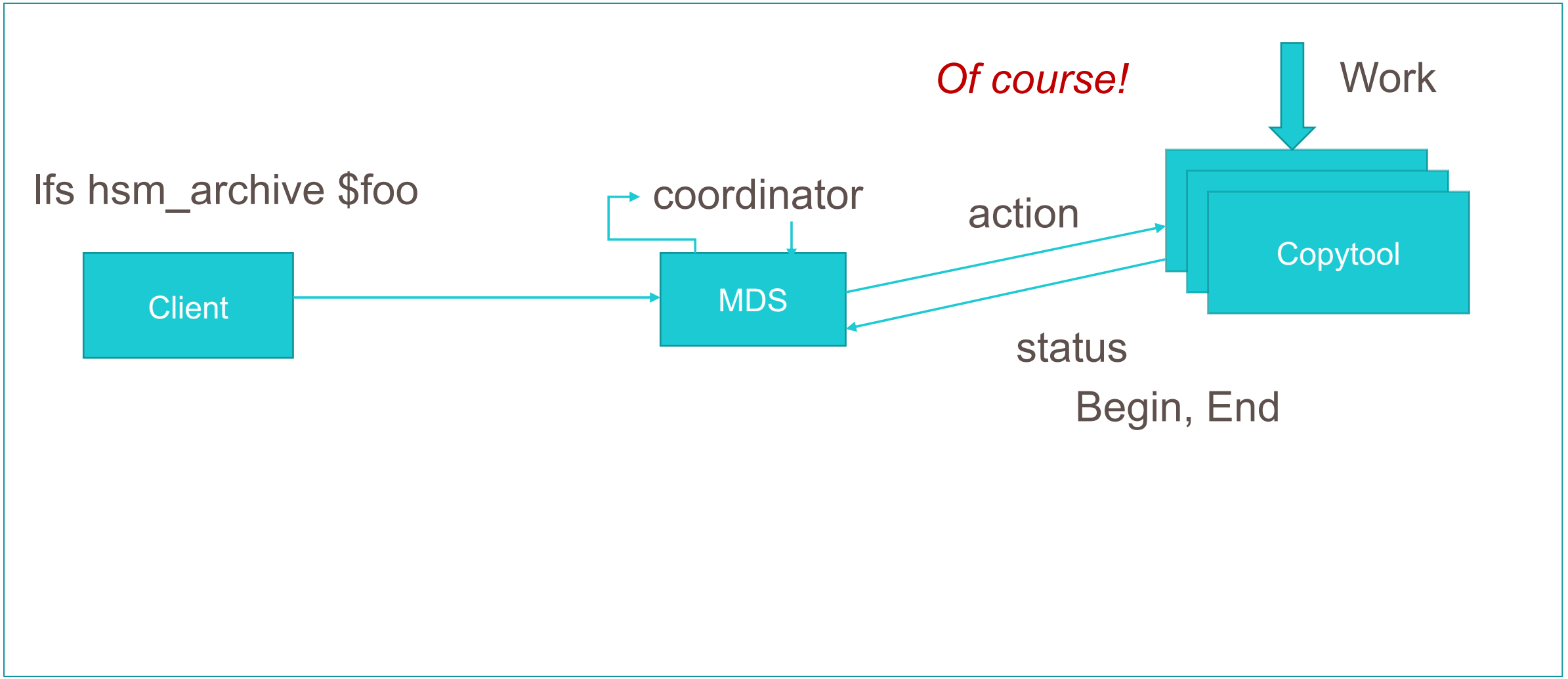
Initiate a Request from a Copytool?



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Archive (New Interface)

- Can be handled entirely by the data mover
  - Only HSM xattr info needs to be set (ARCHIVED, etc.)
  - Need to check data versions to make sure nothing changed
  - Failovers? Not a problem
  - Locks? Not a problem
  - Multiple backups? All userspace
  - But wait, there's more!

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Restore (New Interface)

- Can be handled entirely by the data mover
  - Need to check that it can be restored (basically the ARCHIVED flag)
  - Restore data to a temp file, then do a layout swap
  - Remove RELEASED flag
  - Failovers? Not a problem
  - Locks? Not a problem (kind of)

- Implicit restores obviously need to be given to a copytool
  - MDS still takes layout lock
  - Reacquires lock after failover (lock replay)

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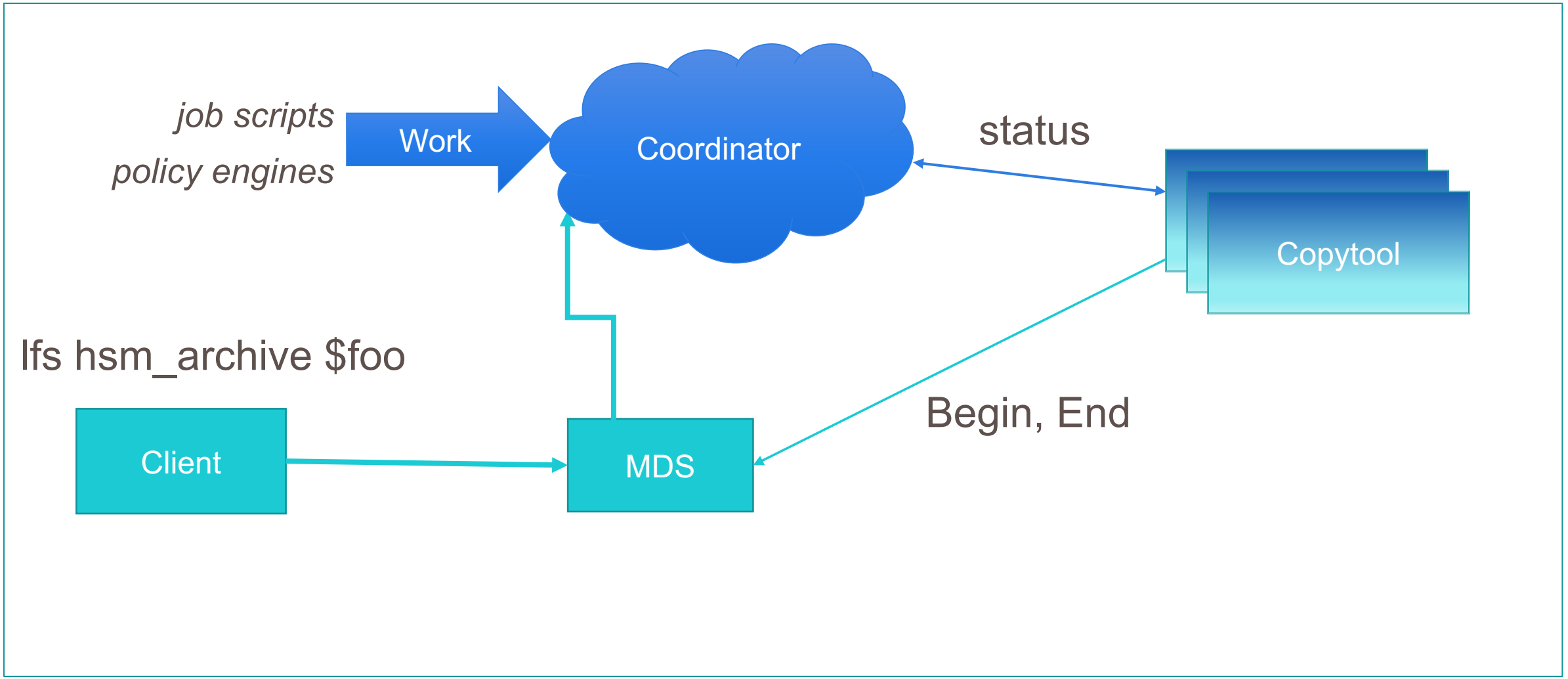
New Picture



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“HSM” Migrate LU-9855

- Use current lfs migrate to create a temp file with new striping info
  - Add it to the HSM queue
  - Copytool copies data from the file to the temp file
  - Layout swap
  - Delete the old temp file
- No real coordinator changes needed (internal or external)
- Use your efficient parallel copytools instead of local single lfs thread
- Use your coordinator to prioritize and schedule

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“HSM” Mirror Sync

- Use current lfs mirror to set up mirrored layout
  - Mirror sync adds it to the HSM queue
  - Copytool syncs mirrors
  - Copytool updates mirror status
- No real coordinator changes needed (internal or external)
- Use your efficient parallel copytools instead of local single lfs thread
- Use your coordinator to prioritize and schedule

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THANK YOU

QUESTIONS?

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