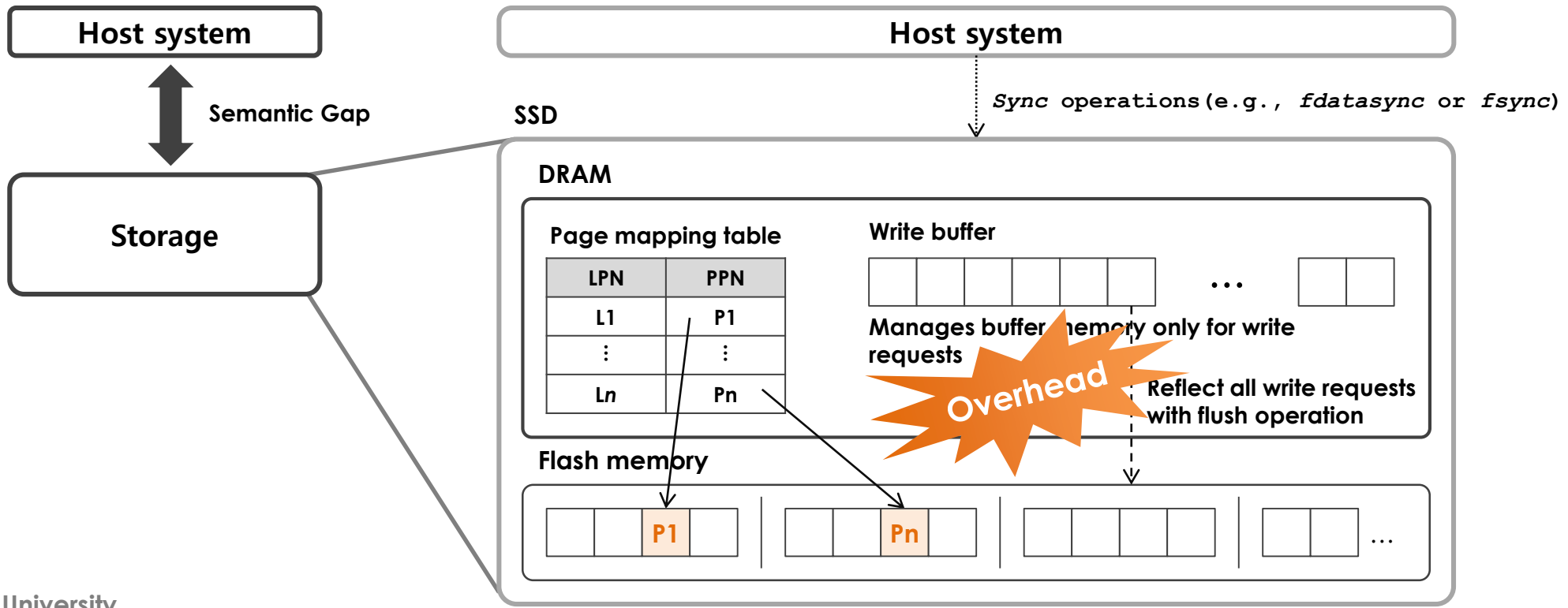
Mitigating FLUSH Command Overhead in Flash Memory based Storage

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What is FLUSH command?

- Most storage devices employ DRAM as a internal write buffer
- Disk cache flush command flushes all the entries in the buffer



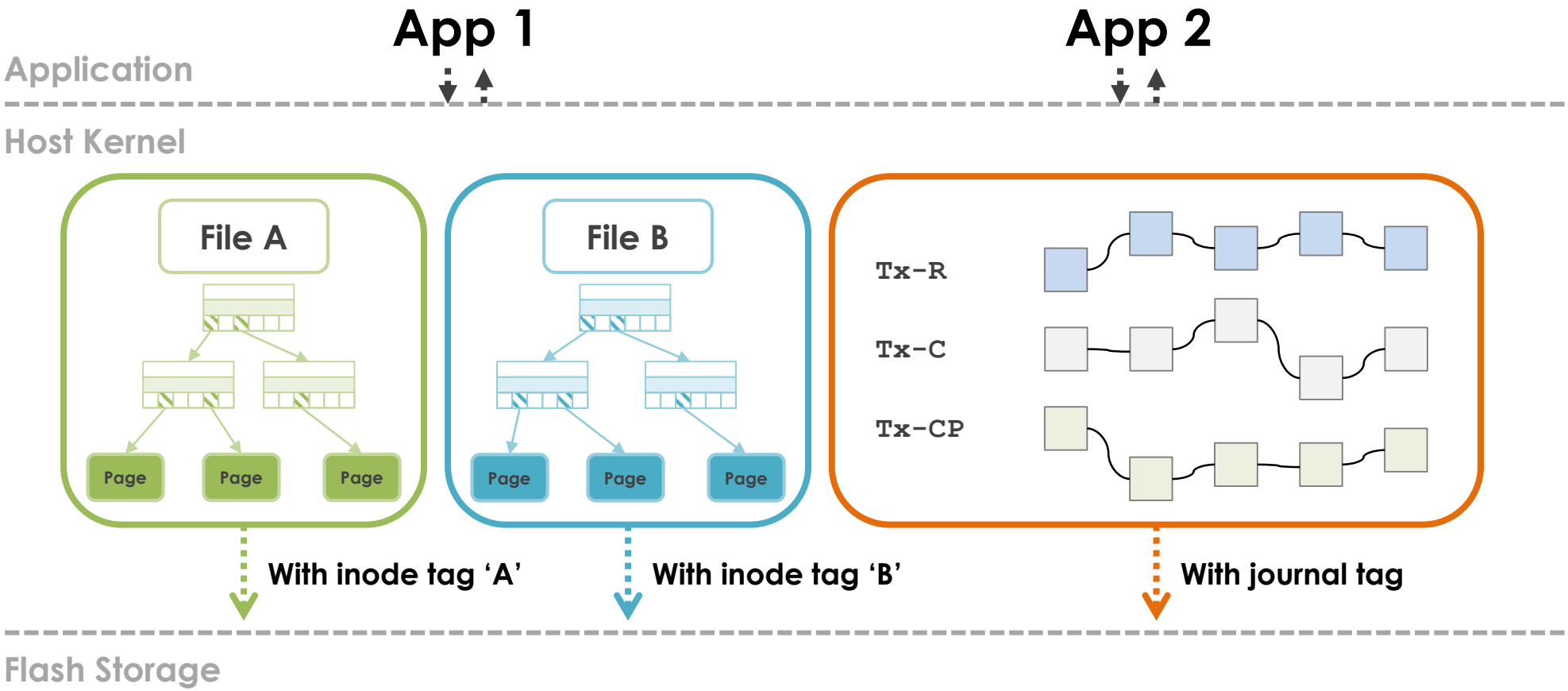
Our Goal

Reduce the latency of sync operations by handling disk cache flush commands

- Selectively reflects the pages related to each sync operations
- We have to resolve two technical challenges

Mitigating a semantic gap

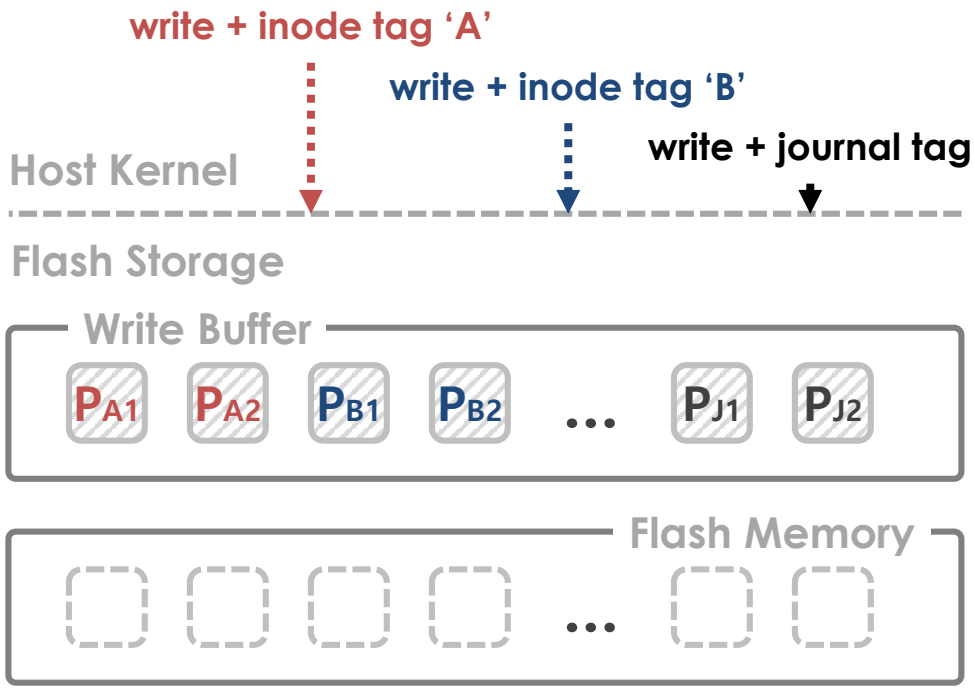
- For f-flush, additional information is needed
  → Extends existing write & flush interface



All requests are transmitted with journal tag or inode tag

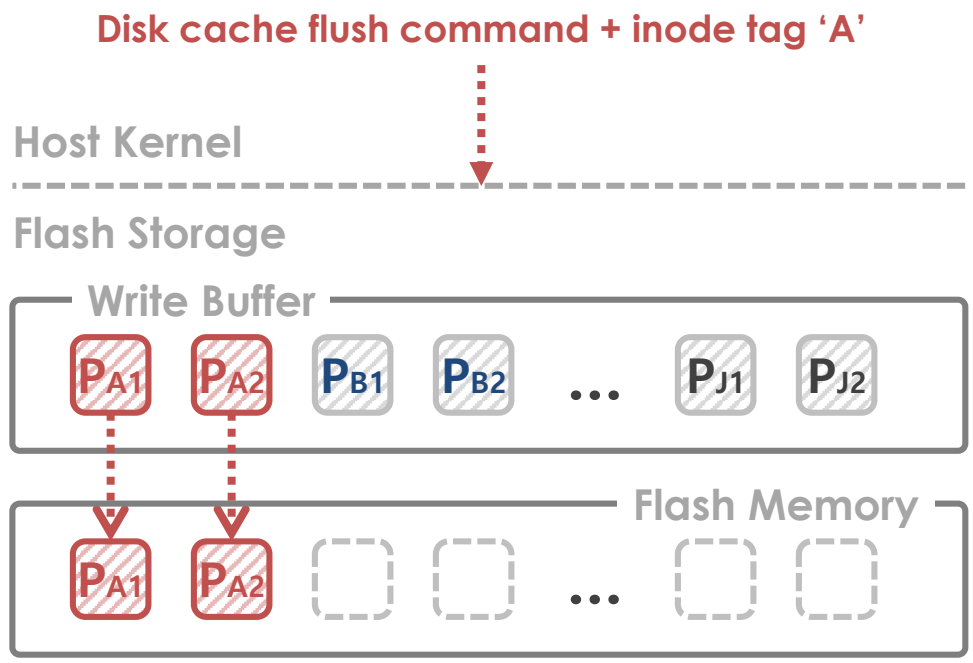
Write Buffer Scheme

- Selectively reflects the pages along with tag value



Normal write requests

- Tag should be handled appropriately in the write buffer



Disk cache flush command

- Check the tag value passed with the command
- **Reflect only the data pages with same tag value**

QnA