

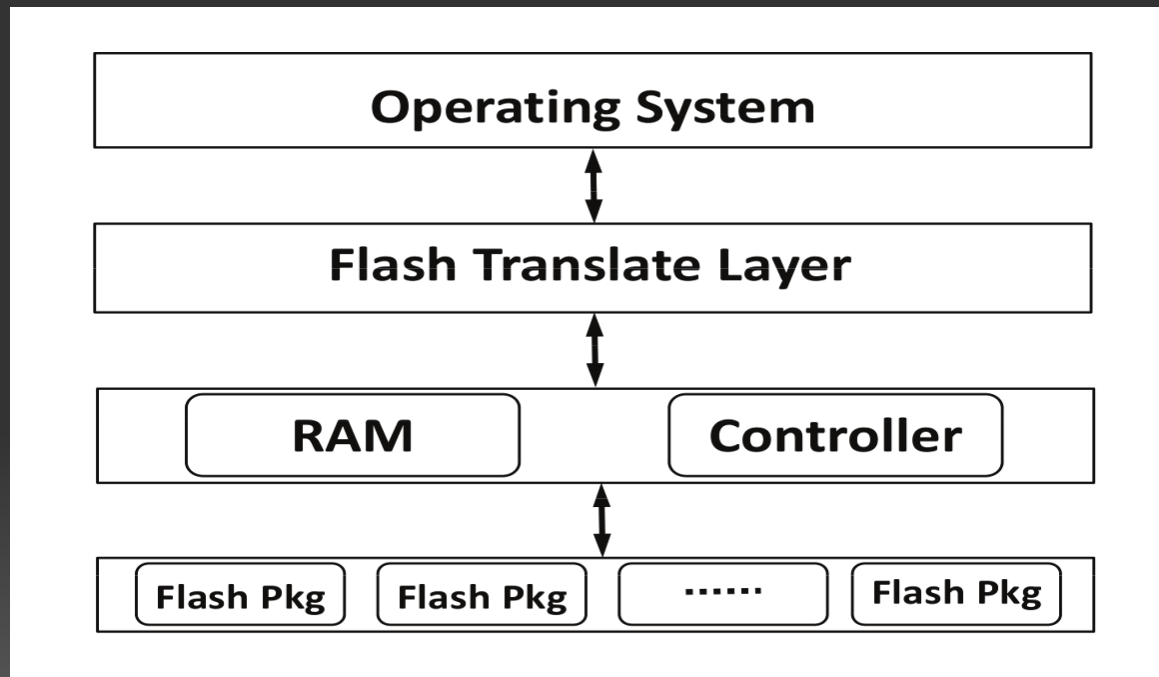
Flash based Storage Devices

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Performance Modeling and Analysis

Huang et al.

- Asymmetric read and write performance.
- Very good for random reads, not that good for random writes.
- Limited erase cycles, need to spread the erases.



Performance Modeling and Analysis (Continued)

Huang et al.

- Take different SSD's and hard-disks, treat them as black-box, and try to characterize the performance.
- Use Machine learning for characterizing performance of synthetic and real-world workloads.
- Better black-box modelling possible for SSD than HDD.
- Early stages of SSD era: too much variance even among SSD from different vendors.

Future of Storage (Discussion)

- Capacity issues
- Cost per unit storage
- Software stack for SSD
- Personal Computing vs Datacenter storage

For the Datacenters:

- Distributed storage vs Centralized storage
- Cheap storage vs expensive storage