The Power of Software and Flash

Håkan Söderbom

Director Alliances

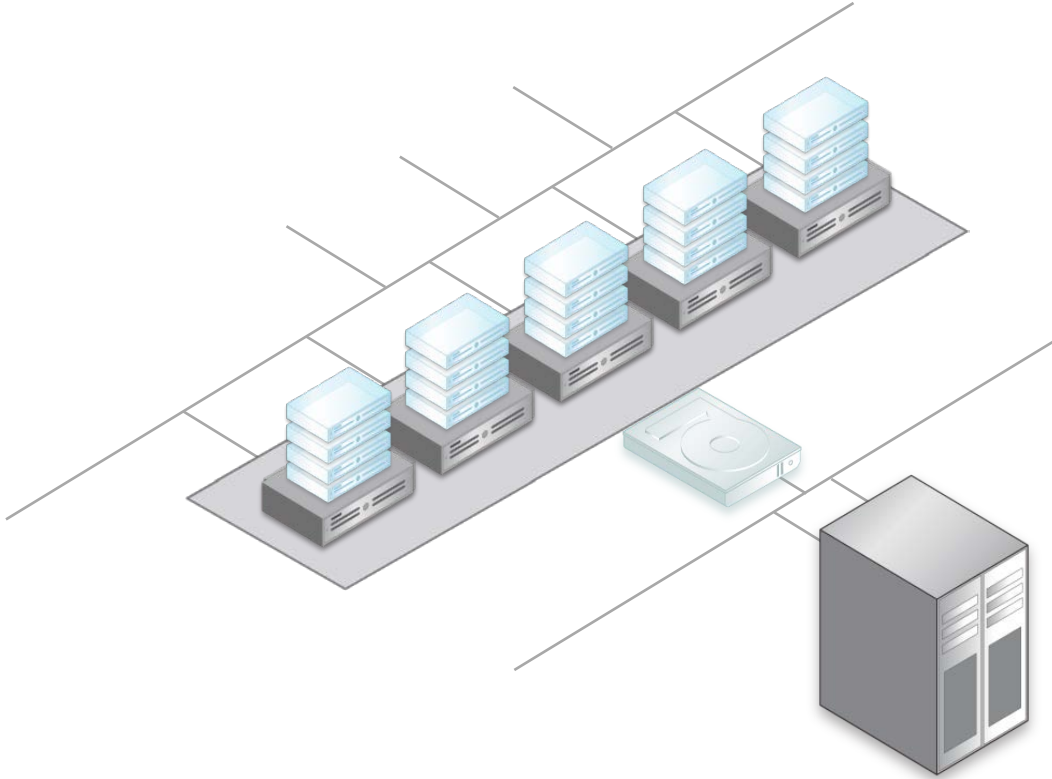Håkan Söderbom
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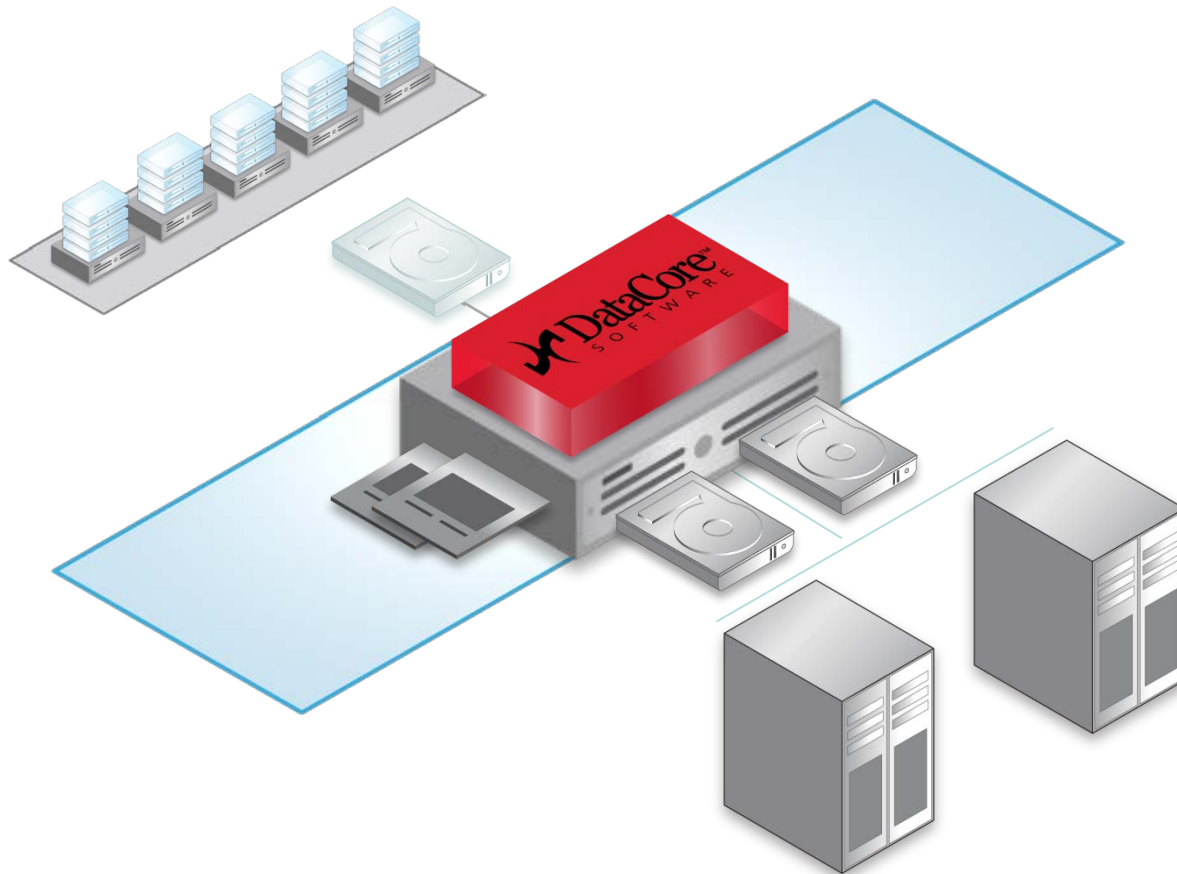
The Power of Software
Software-Defined Storage

Traditional

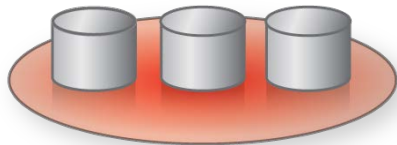# Base Architecture
Abstraction through Storage Virtualization

Traditional: Virtual Disk Assigned to Tier

- Best practice: Don't mix disks of different performance characteristics and/or sizes within one pool
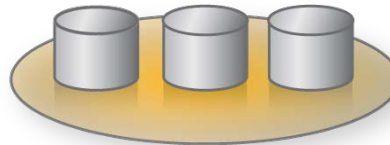
Tier 1
Fastest Performance

- ERP
- Transactional workloads
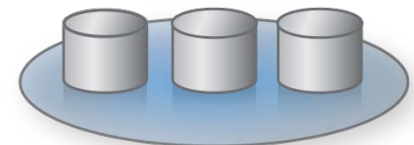- Databases

Tier 2
Balanced performance/costs
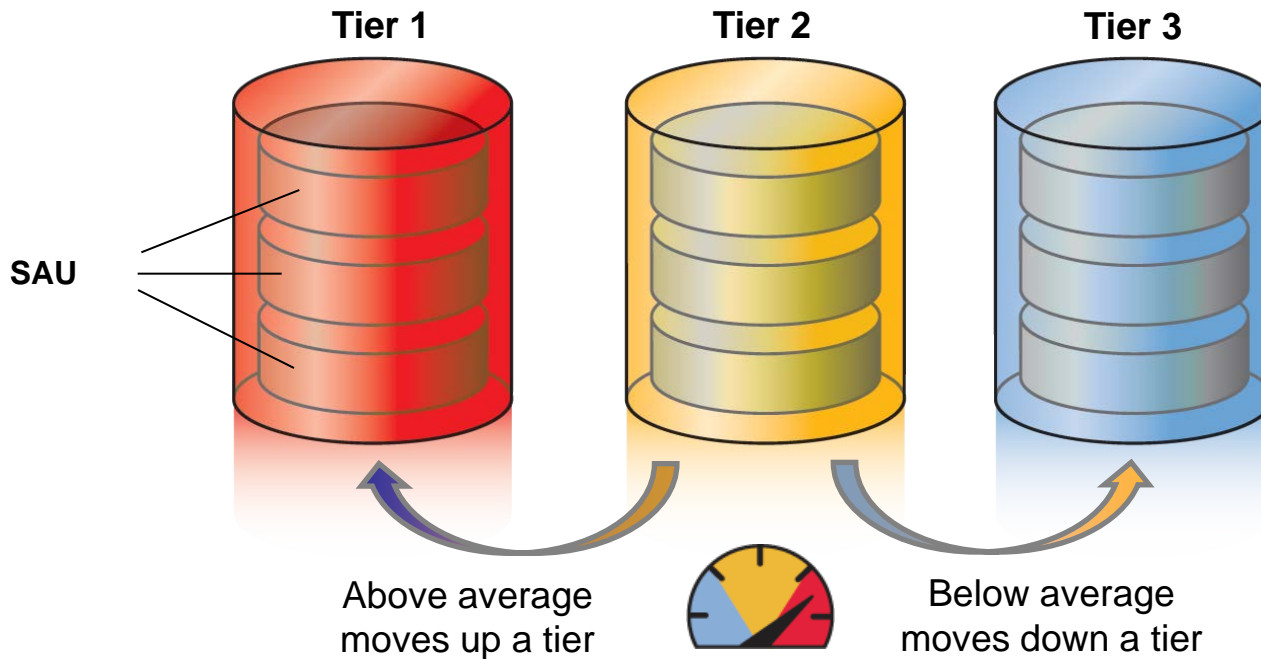
- File
- Email
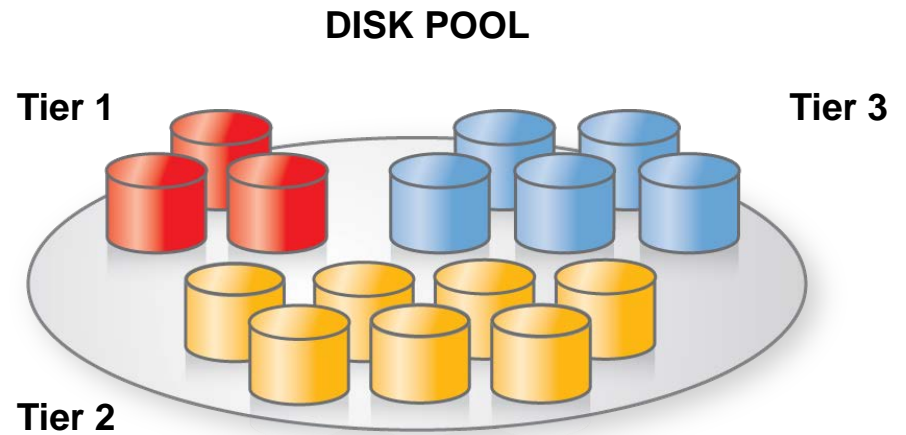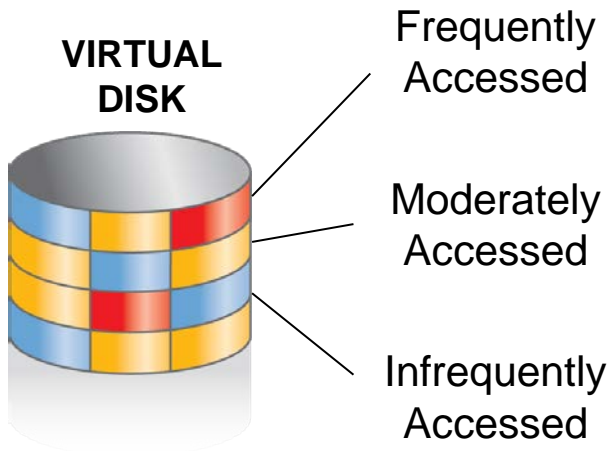- User home directory

Tier 3
High capacity/Low Cost

- Archive
- Backup-to-disk
- Scratch files

Auto Tiering – How it works

- Monitor sustained I/O behavior across storage units
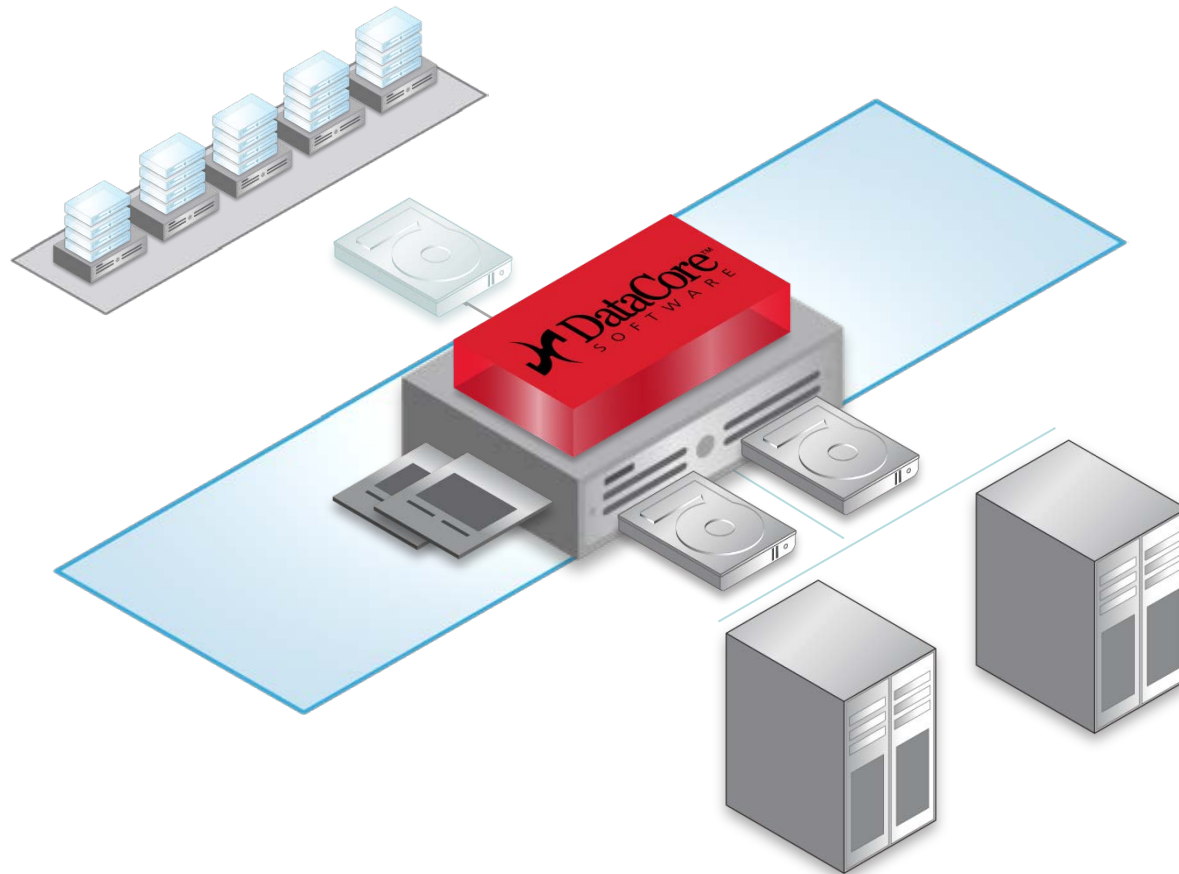- Promote or demote storage units to most suitable tier

Tier 1   **Tier 2**   **Tier 3**

SAU

Above average
moves up a tier

Below average
moves down a tier

Sensing Hot Spots within a Virtual Disk

VIRTUAL DISK

Frequently Accessed

Moderately Accessed

Infrequently Accessed

DISK POOL

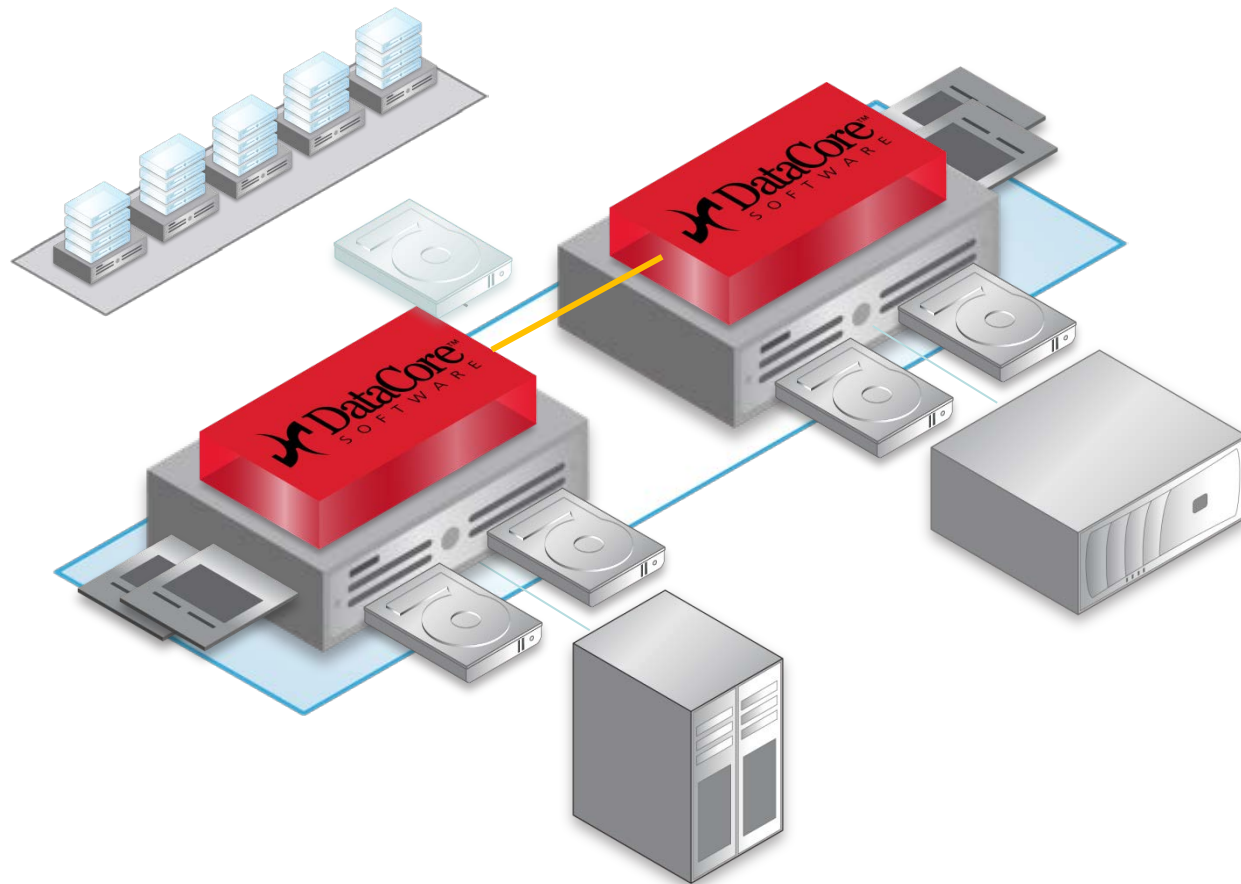**Tier 1**

Tier 3

Tier 2

Base Architecture
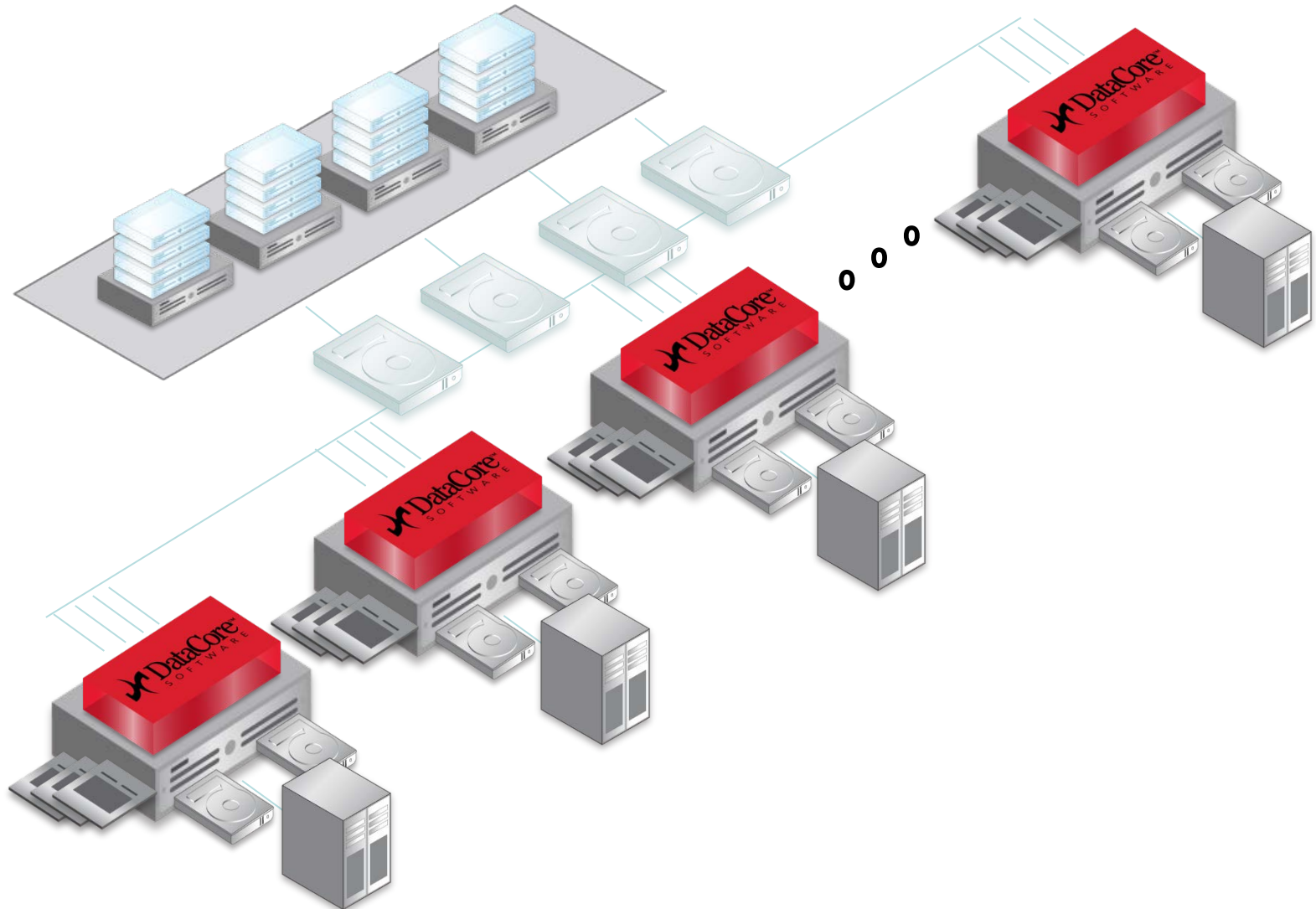## Non-disruptive insertion of Flash

Base Architecture
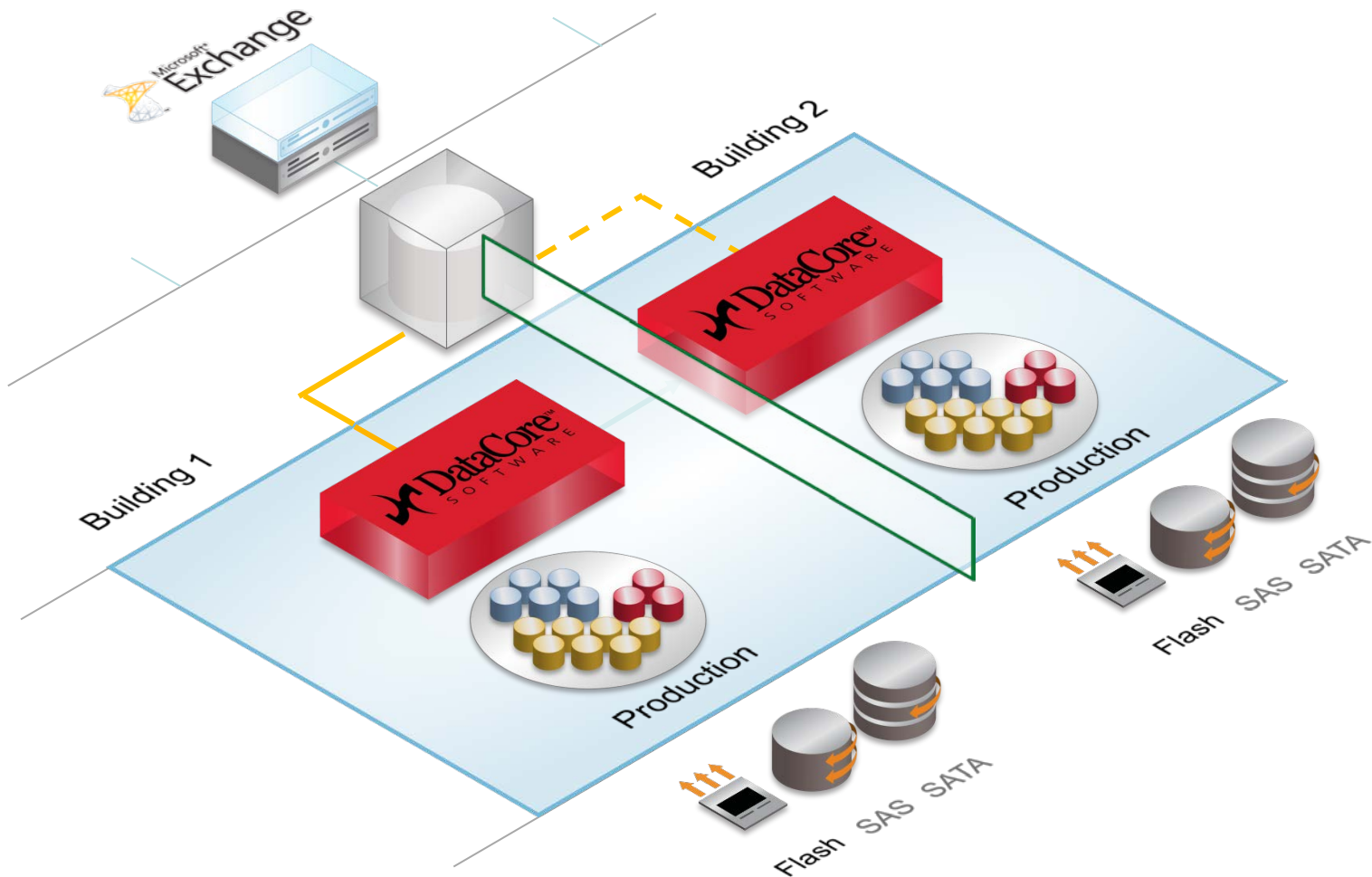## High Availability and High Performance

Base Architecture
Scale out performance

Separation of Resources
No single point of failure

Thank You …

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