Disk Tiering Solutions from IBM

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SHARE in Seattle 2015

Agenda

Actions | Filter

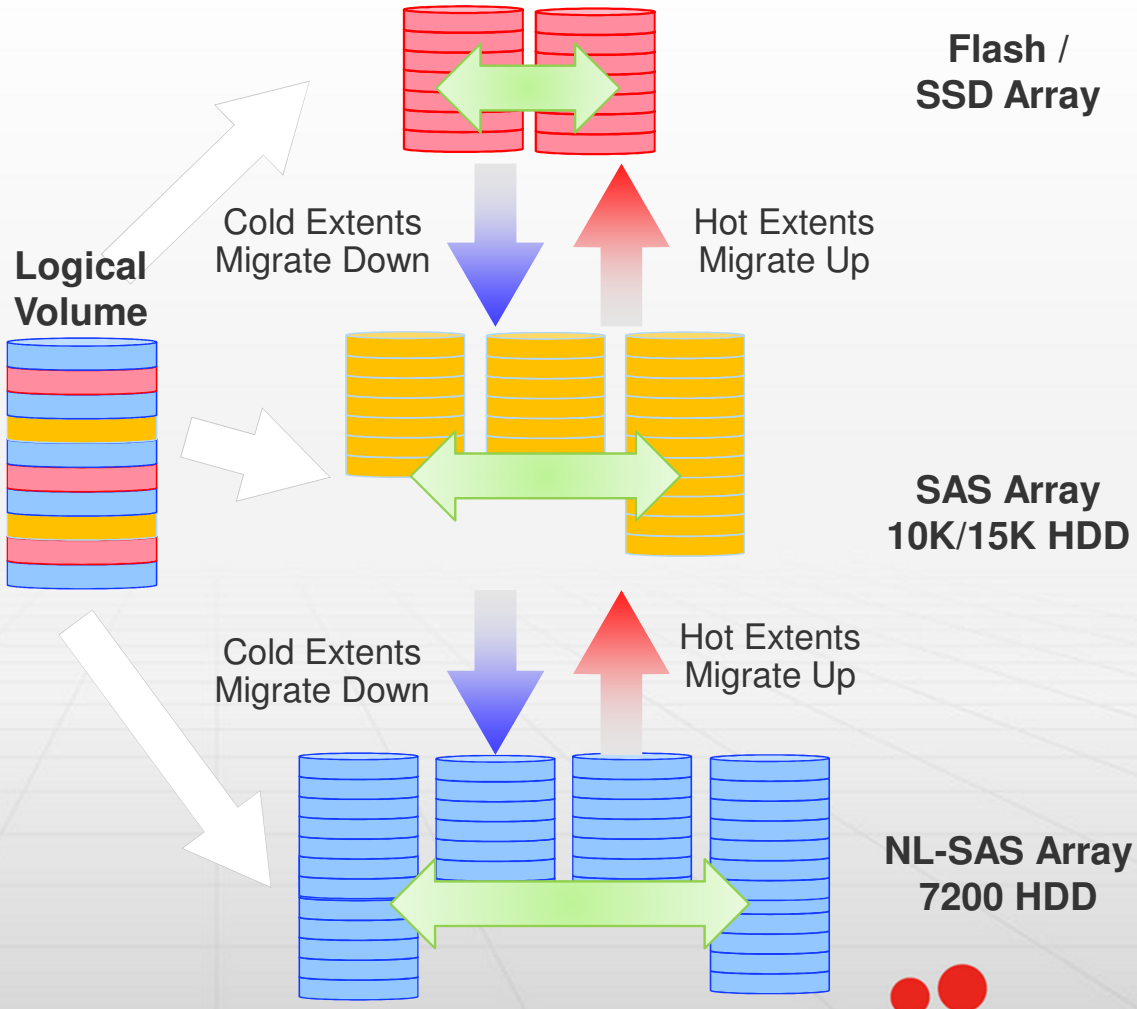
- Tiering Functionality for z/OS
- Easy Tier review
- New Easy Tier functionality
  - Easy Tier Policy and Controls
  - Easy Tier z/OS integration
- Summary

Tiering Functionality for z/OS

- DFSMS
  - Storage groups provide ability to assign a dataset to a group of volumes
  - Policy based criteria control allocation and management
  - Now available for distributed storage with Spectrum Scale functionality ☺
- DFHSM
  - DFHSM provides ability to migrate and recall data from offline storage
  - Migrated data is not accessible by user until recalled to primary storage
  - Storage Tiers functionality provides transition between multiple online tiers
- Disk Subsystem based tiering
  - Volume based tiering assigns volumes to distinct classes of storage
  - SubLUN based tiering (Easy Tier) allows a volume to reside on multiple tiers

Easy Tier automated tiering

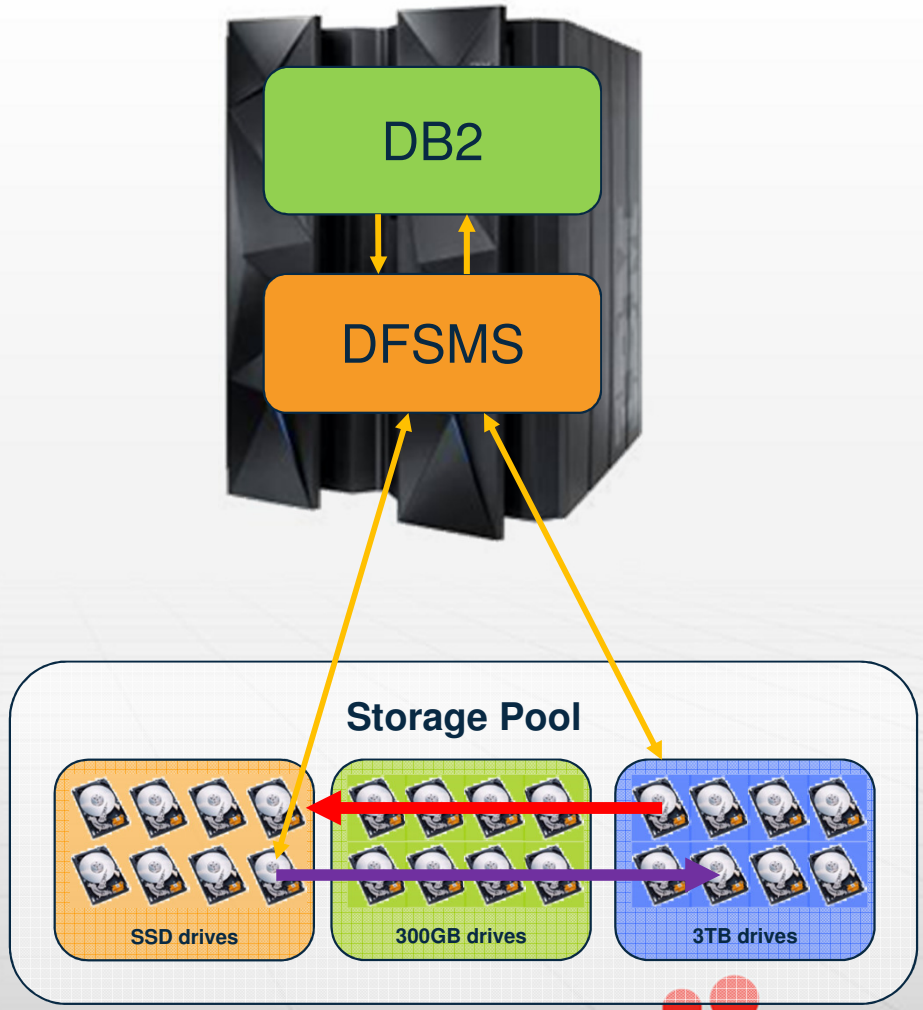
- Optimisation of backend storage resources based on historical performance data
- SubLUN granularity using native DS8000 extents for any volume type
- Flexible configurations with any combination of drives of any size and speed
- Easy Tier Application provides APIs for policy and proactive actions
- Easy Tier HeatMap transfer enables workload history to be transferred for replication scenarios (DR, migration etc)



Easy Tier Application

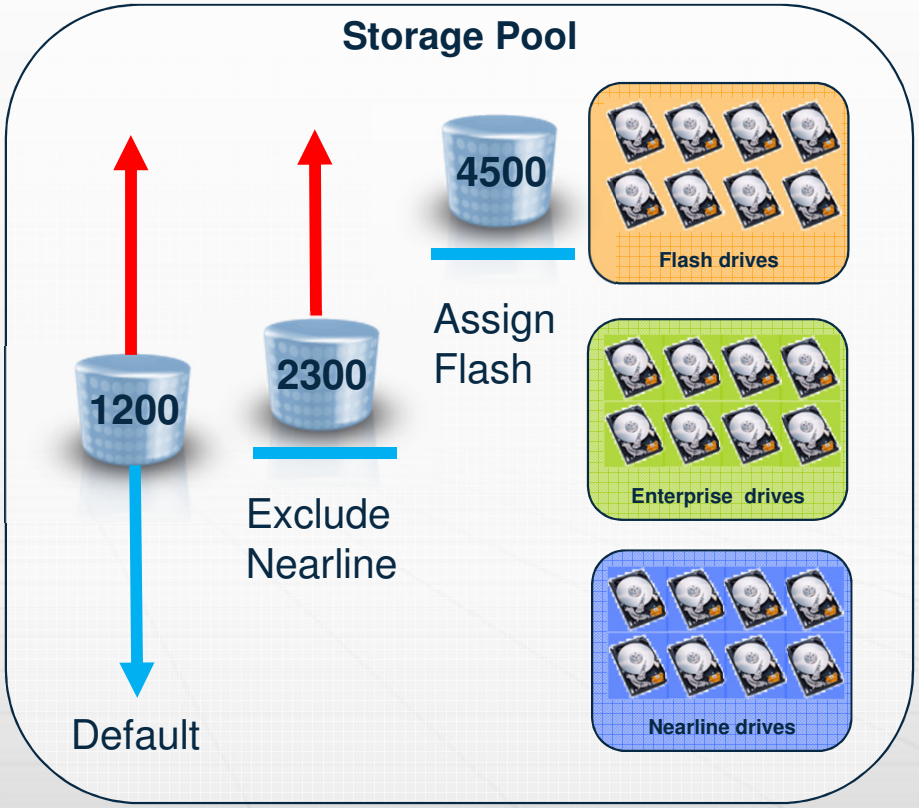
Integration with DFSMS and DB2

- Easy Tier currently optimises data placement and tiering based on workload history and this does not always reflect the future performance requirements of the data
- Easy Tier provides interfaces to enable software such as DFSMS and DB2 to provide hints when data has been created, moved or deleted
- This will avoid performance degradation following maintenance activities such as database reorganisation
- DB2 integration PTFs not yet available



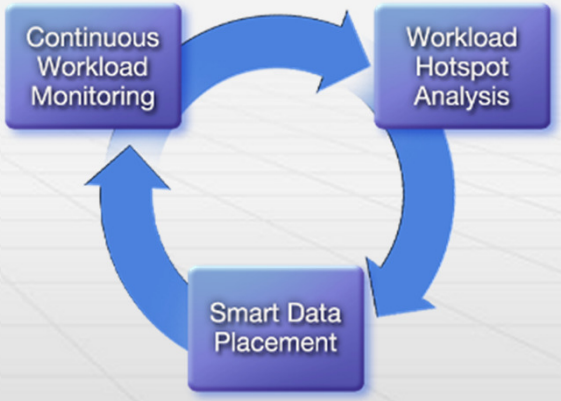
Easy Tier Policies

- New Exclude Nearline tier assignment policy
- Prevents the extents of a volume from being demoted to Nearline arrays
- If data is already on Nearline it will be promoted to Enterprise drives
- Three common use cases for Easy Tier Application policies
  - Default – optimise use of all tiers
  - Exclude Nearline – avoid potential low performance
  - Assign Flash – high performance guaranteed
- Also possible to assign to Enterprise or assign to Nearline but less common use cases



Easy Tier Controls

- In the majority of environments Easy Tier is able to successfully use the history of workload performance to predict the future requirements
  - There are however cases where this is not true
- Easy Tier Controls provide mechanisms for proactively and reactively modifying Easy Tier behaviour to handle these situations
- Controls include
  - Pause and Resume Easy Tier learning for volume or pool
  - Reset Easy Tier learning for volume or pool
  - Pause and Resume Easy Tier migration for a pool



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