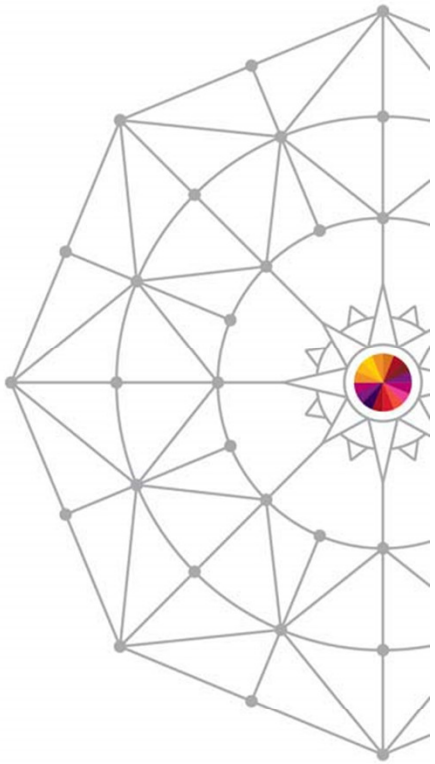
Easy Tier*ing* with DS8870

Nick Clayton
Solution Architect for DS8000
IBM Systems and Technology Group
claytonn@uk.ibm.com



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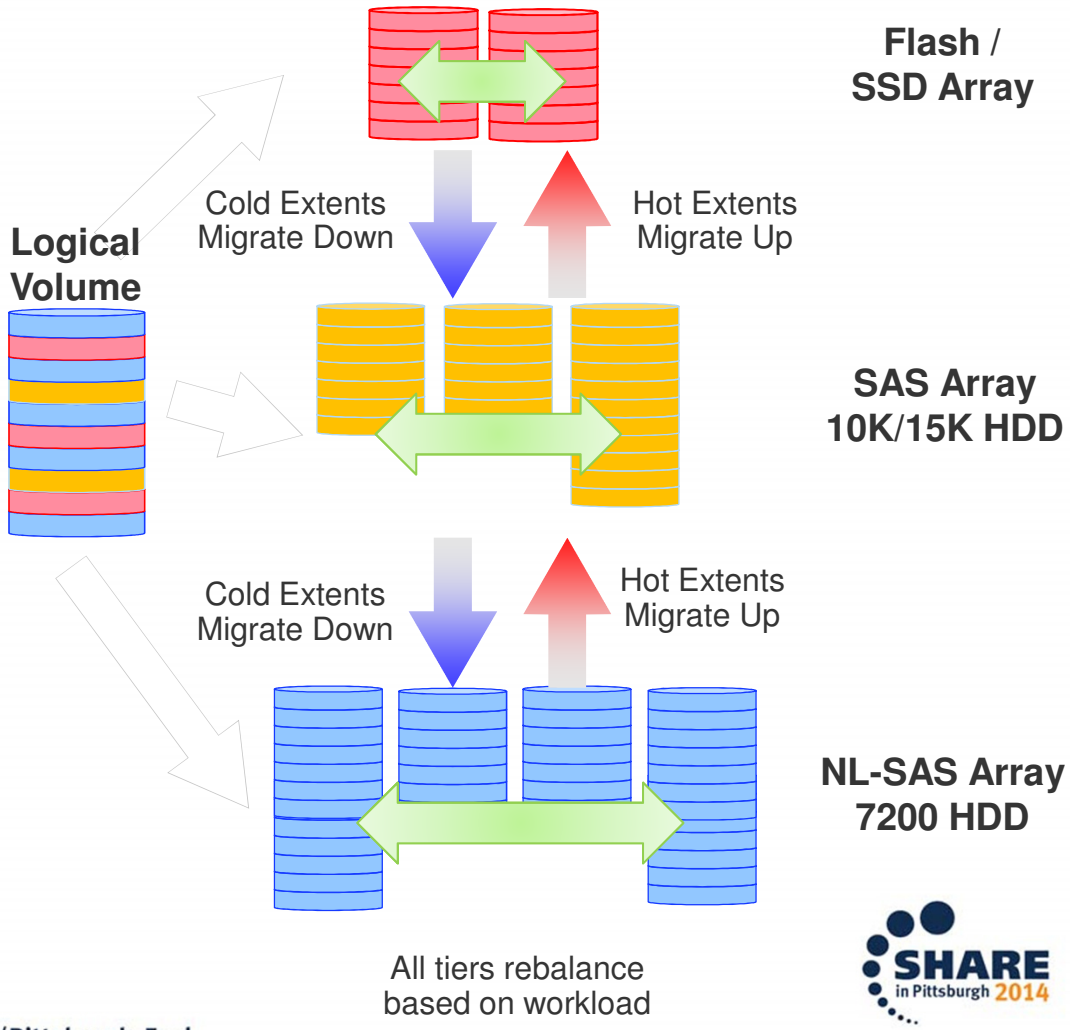
Easy Tier Review

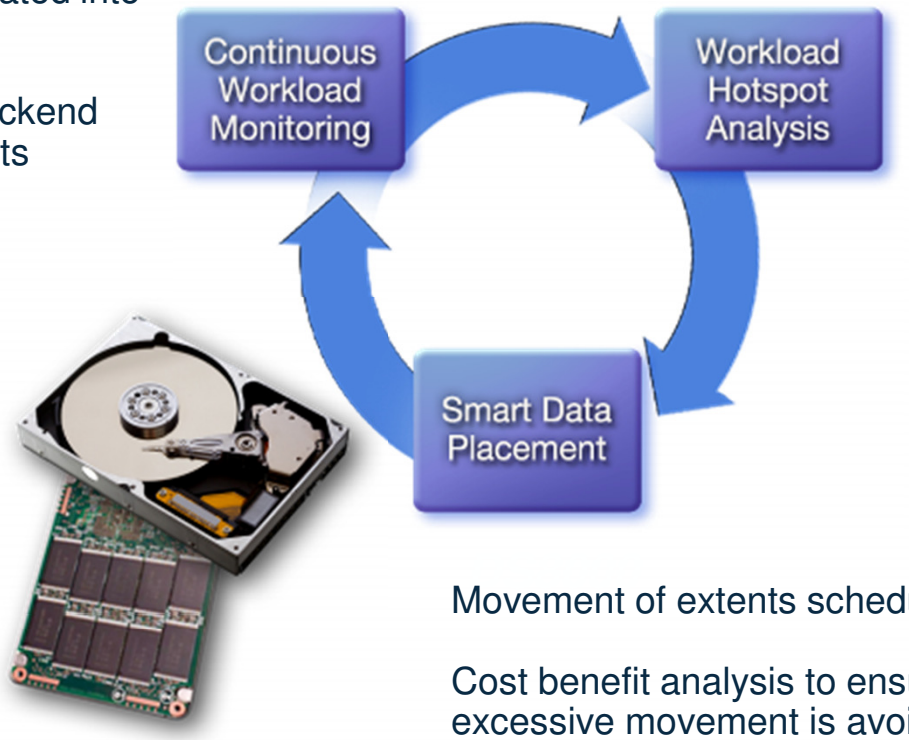
- Optimisation of backend storage resources based on historical performance data
- SubLUN granularity using native DS8000 extents for any volume type
- Flexible configurations with any combination of drives of any size and speed
- Easy Tier Application provides APIs for policy and proactive actions
-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



Easy Tier Processing Cycle

Performance data collected ever 5 minutes and incorporated into history

Data collected is for backend activity not IO from hosts



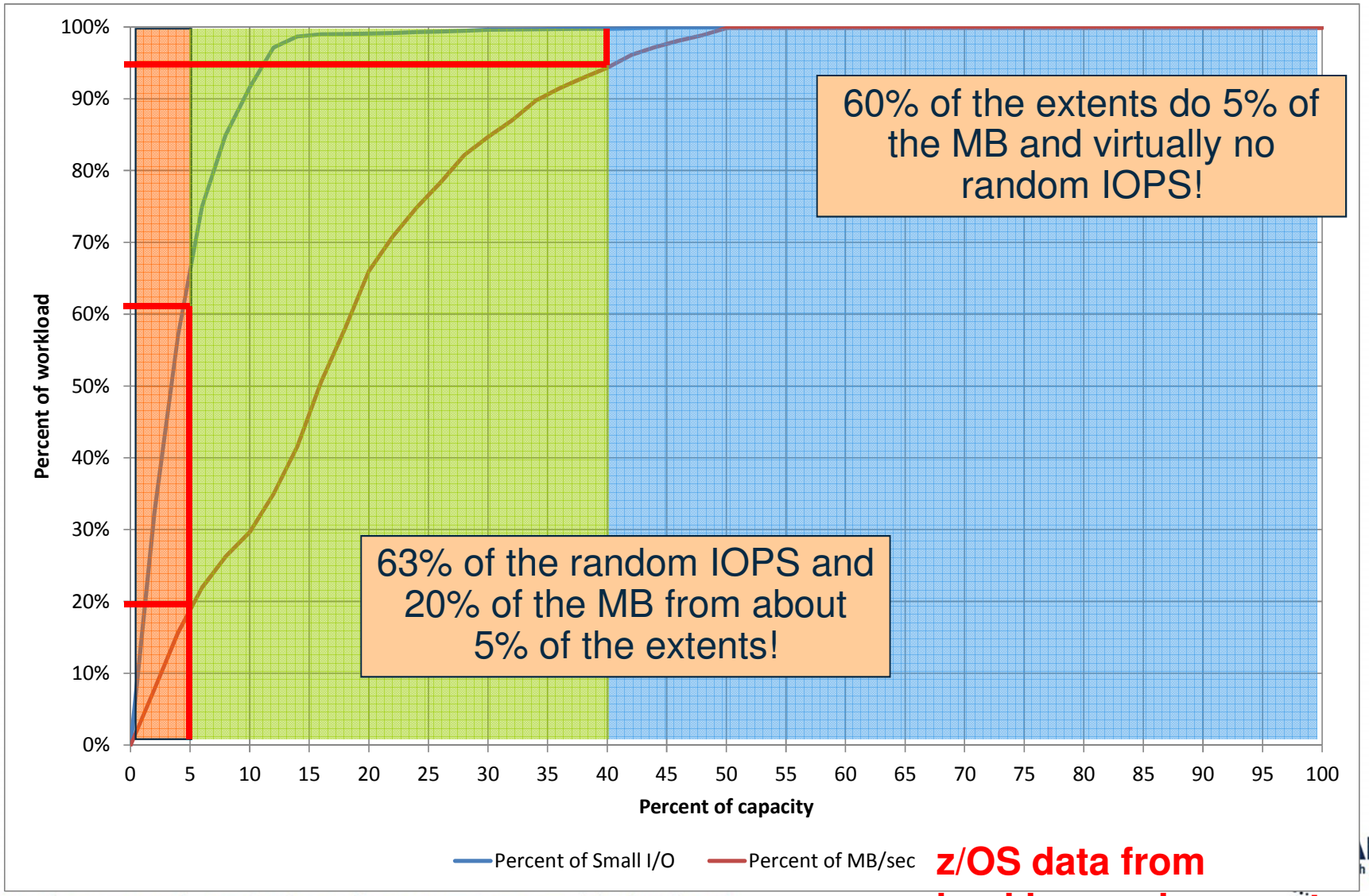
Workload analysis performed at various intervals – 5 minutes, ~6 hours and ~24 hours

Extent “heat” is categorised based on small and large IO activity

Movement of extents scheduled

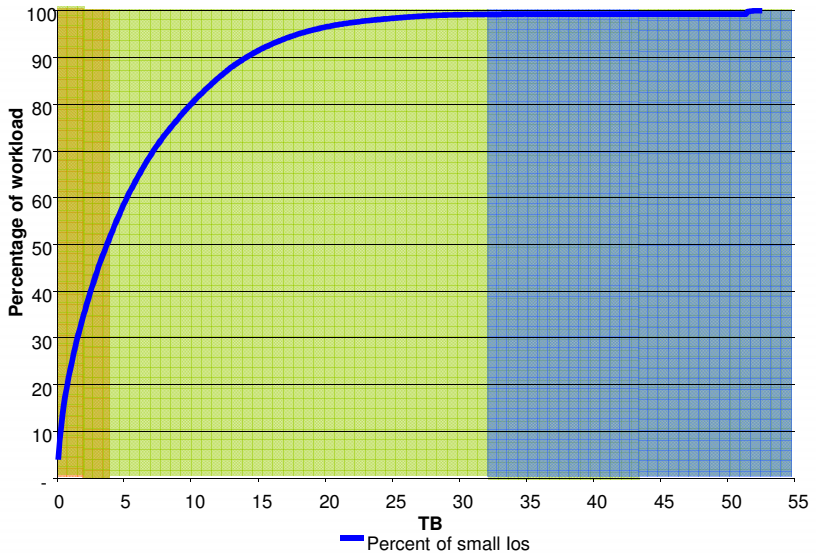
Cost benefit analysis to ensure excessive movement is avoided

Workload skew drives Easy Tier benefits



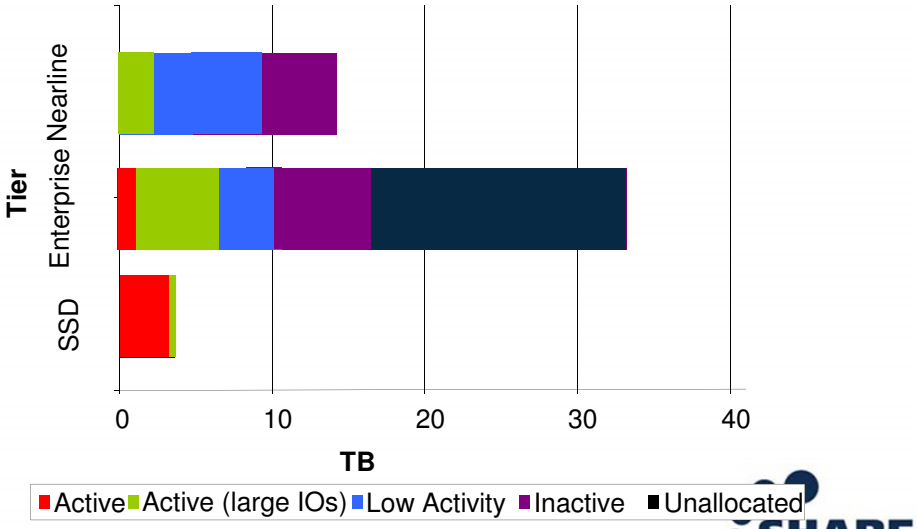
z/OS data from banking environment

Easy Tier Reporting Enhancements

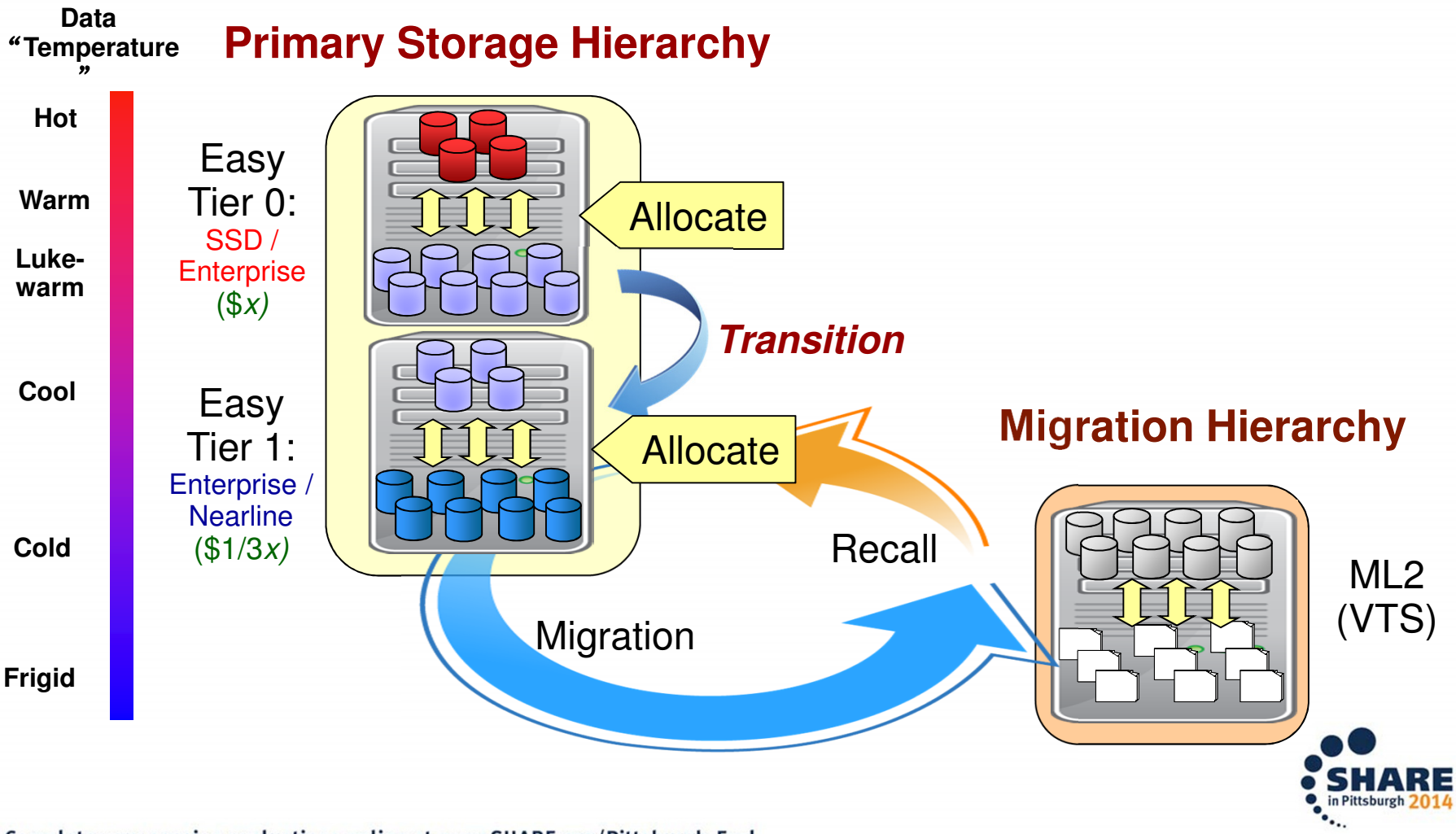


- Provide workload skew reports for Easy Tier capable DS8000s
- Choose optimal drive selection for both two and three tier configurations
- Generate input file for Disk Magic modelling using actual workload skew

- Provide tiering report for volumes and extent pools
- Compare workload activity between tiers and extent pools
- Show tiering effectiveness and opportunity for adding capacity to different storage tiers

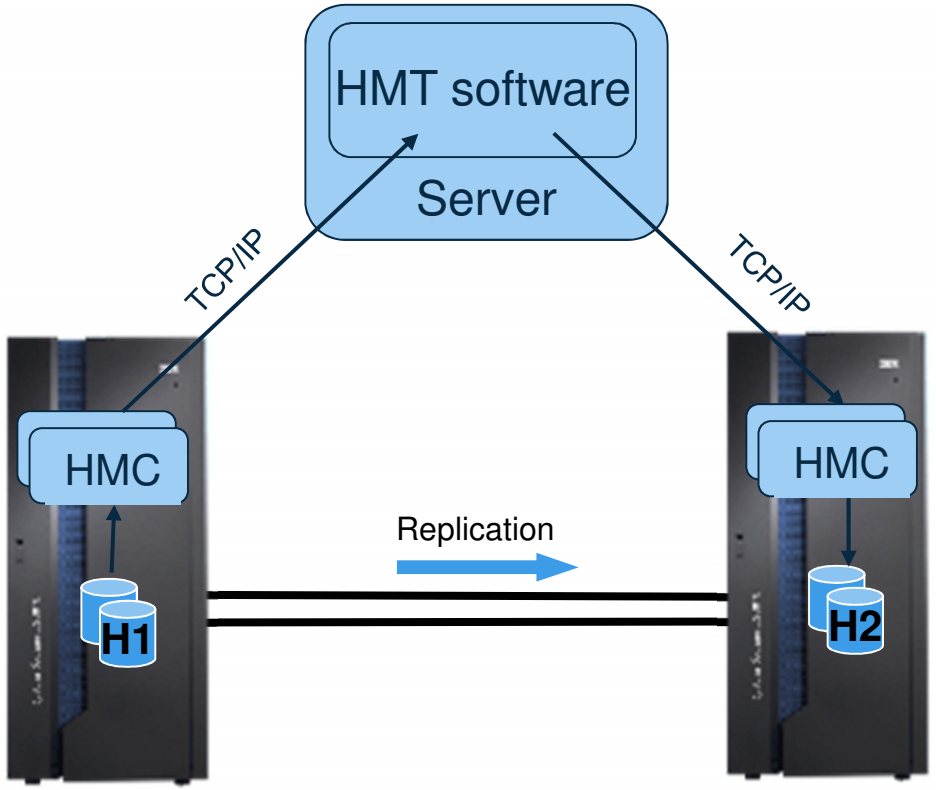


Storage Tiering for z/OS – Easy Tier, DFSMS and VTS



Easy Tier HeatMap Transfer

- Provide capability to transfer Easy Tier HeatMap information for a volume from one disk subsystem to another
- Ensures that replication target is being optimised based on source workload to avoid period of learning when workload is switched
- Primary and secondary configurations are not required to be identical as each will optimised based on configuration and overall workload (local and transferred)
- Out of band software implementation provides flexibility and common approach across different replication types
- TPC-R and GDPS support as well as standalone utility



Easy Tier Application Technology Demonstration

zEC12 + DB2 for z/OS + DS8000 Directive Data Placement

Use Case

- DB2 for z/OS integration of Directive Data Placement capability in REORG
- Demonstrate DB2 is able to control the data placement of a Shadow data set based on the storage tier of a REORG Target data set

Value: Performance Assurance On Demand

- Just-In-Time Data Placement
  - Based on unique knowledge about data processing task and data classification, application can timely choose data placement decision
  - Easy Tier function continues to manage the rest of data placement decisions in a coordinated fashion
- Storage Performance Assurance
  - Ensure a newly created Shadow dataset is placed at the same tier as the existing target dataset during a typical database operation such as REORG
  - Assure new dataset is performance optimized immediately after the reorganization

Demonstration Execution

- Apply special DB2 utility, DFSMS, and storage prototype support in demonstration environment
- Perform DB2 for z/OS REORG
- Confirm the storage tier assigned for a newly reorganized data matches original data storage tier