

EMC SYMMETRIX VMAX FULLY AUTOMATED STORAGE TIERING (FAST) VIRTUAL POOLS (VP) FOR MAINFRAME COUNT KEY DATA (CKD)

FAST maximizes business investments in a tiered storage environment

ESSENTIALS

FAST automates the process of moving the right data to the right place at the right time, maximizing business investments in a tiered storage environment.



EMC Symmetrix VMAX

The Challenge

EMC E-Lab™ performed numerous tests using an EMC® VMAX™ storage system running EMC Enginuity™ 5876, with Fully Automated Storage Tiering (FAST) Virtual Pools™ (VP) for mainframe Count Key Data (CKD) to identify, automate, and relocate application data across different performance/capacity tiers within an array.

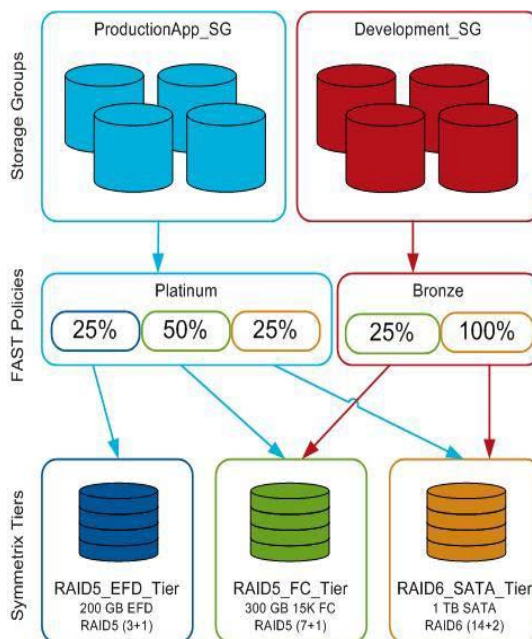
EMC Symmetrix VMAX

Based on the Virtual Matrix™ Architecture and Enginuity capabilities, Symmetrix VMAX systems deliver scalable performance that meets the most demanding access, protection, and distribution requirements. VMAX delivers non-disruptive operations and greatly simplifies and automates the management and protection of information.

Full Automated Storage Tiering for Virtual Pools (FAST VP for CKD)

FAST VP for CKD is a feature that provides automatic storage tiering on the VMAX 20K and VMAX 40K models with Enginuity 5876. This feature is not available on the VMAX 10K.

For FAST VP for CKD to operate on a Symmetrix VMAX, there are three types of components that need to be configured: Storage Groups, FAST VP Policies, and Symmetrix Tiers. The following figure shows two storage groups, ProductionApp_SG and Development_SG. Each storage group is associated with one policy, Platinum and Bronze, respectively. These policies associate the storage groups with up to three Symmetrix tiers.



Benefits

Benefits of implementing FAST VP for CKD include:

- Eliminating manually tiering applications when performance objectives change over time.
- Automating the process of identifying volumes that can benefit from Enterprise Flash Drives or that can be kept on higher capacity, less expensive SATA drives without impacting performance.
- Improving application performance at the same cost, or providing the same application performance at lower cost. Cost is defined as acquisition (both HW and SW), space/energy, and management expenses.
- Optimizing and prioritizing business applications by allowing customers to dynamically allocate resources within a single array.
- Delivering greater flexibility in order to meet different price/performance ratios throughout the lifecycle of the information store.

Testing

FAST VP for CKD uses three distinct algorithms to determine the appropriate tier a device should belong to. The algorithms, in order of priority, are:

- EFD promotion/demotion
- Capacity-based
- FC/SATA cross-tier

There are two types of movement. A *compliance* movement moves devices / extents to a different Tier in order to enforce compliance with FAST Policy Tier usage.

A *performance* movement moves devices / extents to a different tier in order to improve the performance of those devices.

Proven Results

FAST VP for CKD monitored and moved data in response to specified policies and workload interaction with the Symmetrix automatically. This active tiering solution resulted in the movement of frequently used data from FC drives to EFD devices. This solution moved the right data to the right place at the right time, maximizing business investments in a tiered storage environment.

More Details

The following TechNote on EMC Powerlink (www.powerlink.emc.com) provides more details:

Implementing Fully Automated Storage Tiering for Virtual Pools (FAST VP) for EMC Symmetrix VMAX Series Arrays

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