IBM Education Assistance for z/OS V2R1

Item: Exploit Cluster & Extent Pool in SMS Volume Selection
Element/Component: DFSMSdfp

Material is current as of March 2013

Agenda

- Trademarks
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- Overview
- Usage & Invocation
- Presentation Summary
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Trademarks

- See url http://www.ibm.com/legal/copytrade.shtml for a list of trademarks.

Presentation Objectives

- Explain the purpose of working on this item
- Define the functional content and benefit
- Explain how the function is invoked
- Explain any migration issues or concerns

Overview

- Existing SMS volume selection:
  - Prefer to allocate or extend a multi-volume data set to volumes that are in the same Storage Facility Image (SFI) when Storage Class Accessibility = Continuous or Continuous Preferred
  - Prefer to allocate the target data set in the same SFI as the source data set for DSS Data Set Fast Replication operation
  - Attempt to allocate stripes of a striped data set across logical control units (LCUs)
- Problem Statement / Need Addressed
  - Data Set Fast Replication is more efficient when all pieces of a multi-volume data set reside on one cluster
  - Data Set Fast Replication is more efficient when the source and target data sets are in the same cluster
  - Allocating stripes across LCUs isn't ideal as stripes from different LCUs may map onto same physical drives and affect I/O performance

Overview

- Solution
  - Prefer to allocate a multi-volume data set to candidate volumes that are in the same Cluster when Storage Class Accessibility = Continuous or Continuous Preferred
    - If allocation to the same Cluster is not feasible, SMS will continue to prefer allocation to the same SFI
  - Prefer to allocate the target data set in the same Cluster as the source data set for DSS Data Set Fast Replication operation
    - If allocation to the same Cluster is not feasible, SMS will continue to prefer allocation to the same SFI as the source data set
  - Prefer to allocate stripes of a striped data set across Extent Pools for better uniform performance
    - If allocation of stripes across Extent Pools is not feasible, SMS will continue to allocate stripes across LCUs as it is today

Overview

- Benefit / Value
  - Provide data set allocation synergy between SMS and DFSMSdss to improve performance on Data Set Fast Replication operation
  - Allocate stripes across Extent Pools to achieve uniform performance on striped data set

Usage & Invocation

- Use a storage class that specifies Accessibility = Continuous or Continuous Preferred to direct SMS volume selection to prefer volumes in the same Cluster and SFI when allocating/extending a multi-volume data set

Presentation Summary

- Provide data set allocation synergy between SMS and DSS to improve performance in Data Set Fast Replication operation
- Allocate stripes across Extent Pools to achieve uniform performance on striped data set

Appendix

- Publication references:
  - z/OS DFSMSdfp Storage Administration Reference
  - IBM DS8000 publications