IBM Education Assistance for z/OS V2R3

Line Item Name: Dynamic Large Page Support
Element/Component: BCP/RSM

Agenda

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Trademarks

- See url http://www.ibm.com/legal/copytrade.shtml for a list of trademarks.
- Additional Trademarks: None

Session Objectives

- Learn about...
  - Changes to RSM frame management as it pertains to Large Pages
  - Changes to the Pageable Large Page pool
  - Changes to the IEASYSxx LFAREA INCLUDE1MAFC parameter
  - What all the changes mean to the IEASYSxx LFAREA parameter

Overview

- Problem Statement / Need Addressed
  - Managing large page resources is difficult
    - What to specify for IEASYSxx LFAREA parameter
    - Limited Pageable Large Pages - Pool capped at ~ 1/8 of memory
    - Difficulty coalescing 1M frames after using to satisfy 4K demand
- Solution
  - Management System that uses 1M (not 4K) frames as its building block
    - Frames are broken up as needed
  - More memory is available for large page requests (no ~ 1/8 cap)
  - 1M Coalescing is simplified as frames are naturally merged when frames are returned

Usage & Invocation

- IEASYSxx LFAREA
  - Externally unchanged except for INCLUDE1MAFC (see below)
    - Instead of defining the physical size of the 1M LFAREA, it defines the maximum number of fixed large pages that can be allocated
    - The same memory pools are used to satisfy both 4K and 1M page demand - which leads to RSM handling dynamic workloads more easily
- IEASYSxx LFAREA INCLUDE1MAFC
  - INCLUDE1MAFC(NO) is ignored – defaults to INCLUDE1MAFC(YES) behavior
    - With the changes to RSM frame management, specifying INCLUDE1MAFC(NO) makes no sense
    - New IAR051I message will be issued to indicate that the specification was ignored

Interactions & Dependencies

- Software Dependencies
  - None.
- Hardware Dependencies
  - None.
- Exploiters
  - Any large page exploiters.

Installation

- For customers that over-specify the LFAREA to create a larger pageable large page pool:
  - This is no longer needed as the ~ 1/8 limitation has been removed
    - All of preferred high storage is available as pageable large pages
  - Consider reducing your LFAREA specification
    - Not necessary – only if you want to cap your fixed large page utilization

Session Summary

- Frame Management based on 1M frame building block
  - Easier to perform 1M coalescing
  - More pageable large pages available to the system
  - Easier to react to dynamic workloads
- IEASYSxx LFAREA is unchanged (externally)
  - Internally, there is no physical area – LFAREA specifies the target cap
- LFAREA INCLUDE1MAFC(NO) unsupported
  - Obsolete with new frame management
  - IAR051I issued to indicate specification is ignored

Appendix

- Publication references
  - z/OS MVS Initialization and Tuning Reference
    - IEASYSxx (system parameter list)
      - LFAREA
  - z/OS MVS Initialization and Tuning Guide
    - Storage management overview
      - LFAREA parameter