DFSMS Basics: How to Write ACS Routines Part 2 - Hands-on Lab (Section 1)

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Introduction to ACS Environment

- **What is an ACS Routine?**
  - **User written code to affect an allocation**
  - **Used to determine SMS classes and storage groups**
  - **Used for both data sets and objects**
  - **Can override specifications of SMS classes and groups on:**
    - **JCL DD statements**
    - **Dynamic allocation requests**
    - **DFSMSdssCOPY, RESTORE & CONVERTV**
    - **DFSMShsm RECALL & RECOVER**
    - **IDCAMS DEFINE, ALTER & IMPORT**
    - **OAM STORE, CHANGE & class transition**

Introduction to ACS Environment (cont)

- 4 ACS Routines
  - Data Class
  - Storage Class
  - Management Class
  - Storage Group
    - Run in this order
    - Provides the default allocation values
- Set the Class or Group for a given allocation
- The ACS routine can over-ride specified values

Introduction to ACS Environment (cont)

- What is a Data Class?
  - RECORG or RECFM
  - LRECL
  - Space
  - DSNTYPE
  - Volume count
  - VSAM attributes
  - RETPD or EXPDT
  - Compaction

Introduction to ACS Environment (cont)

- What is a Storage Class?
  - This IS the attribute that makes a data set SMS managed
  - Performance attributes
    - Direct & sequential millisecond response
    - Direct & sequential bias
    - Initial access response time
  - Availability
  - Accessibility
  - Guaranteed space
  - Guaranteed synchronous write

Introduction to ACS Environment (cont)

- What is a Management Class?
  - **Space management attributes**
    - **Expiration & retention attributes**
    - **Migration attributes**
    - **GDG management attributes**
  - **Backup attributes**
    - **Backup frequency**
    - **Backup versions**
    - **Backup retention**
  - **Class transition attributes**
  - **Aggregate backup attributes**

Introduction to ACS Environment (cont)

- What is a Storage Group?
  - Physical storage managed by SMS
    - Collection of DASD volumes
    - Volumes in tape libraries
    - Volumes in optical libraries
    - Virtual I/O storage
  - Can be enabled, quiesced, quiesced new, disabled or disabled new
  - Can be set to auto migrate, auto backup and/or auto dump

Introduction to ACS Environment (cont)

- ACS General Rules
  - Keep them simple and straightforward
    - Minimize exceptions
    - Maximize FILTLIST usage
  - Keep them easy to maintain and understand
    - Use SELECT instead of IF when possible
    - EXIT the routine as soon as possible
    - Use OTHERWISE whenever possible
    - Comments, comments, comments

Introduction to ACS Environment (cont)

- ACS Language Statements
  - PROC - beginning of routine
  - FILTLIST – defines filter criteria
  - DO – start of statement group
  - SELECT – defines a set of conditional statements
  - IF – conditional statement
  - SET – assigns a read/write variable
  - WRITE – sends message to end user
  - EXIT – immediately terminates ACS routine
  - END – end of statement group
- More info can be found in the pub hand-out

Introduction to ACS Environment (cont)

- ACS Read Only Variables
  - Majority of the ACS variables
  - Contain data and system information
  - Reflect what is known at the time of the request
  - Can only be used for comparison
- More info can be found in the pub handouts

Introduction to ACS Environment (cont)

- ACS Read/Write Variables
  - Used as values in comparisons (READ)
  - Used to assign values (WRITE)
  - 4 Read/Write variables
    - &DATACLAS
    - &STORCLAS
    - &MGMTCLAS
    - &STORGRP
- The ACS PROC statement must identify which R/W variable it is setting
- More info can be found in the pub handouts

Introduction to ACS Environment (cont)

- Translating and Validating the ACS Routines
  - Translating ACS Routines
    - Done via ISMF
    - Checks for syntax errors
    - Converts ACS routine into object code and stores it into the SCDS
  - Validating the SMS Configuration
    - Also done through ISMF
    - Verifies that all classes/groups assigned in the ACS routines exist