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

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Introduction to an SMS Environment – Structure Summary

- Base Configuration – installation defaults

- DATACLAS – JCL defaults
- STORCLAS* – access requirements / required for SMS
- MGMTCLAS – migration / backup attributes
- STORGRP* – groups of volumes

- * at minimum, you need a storage class and storage group

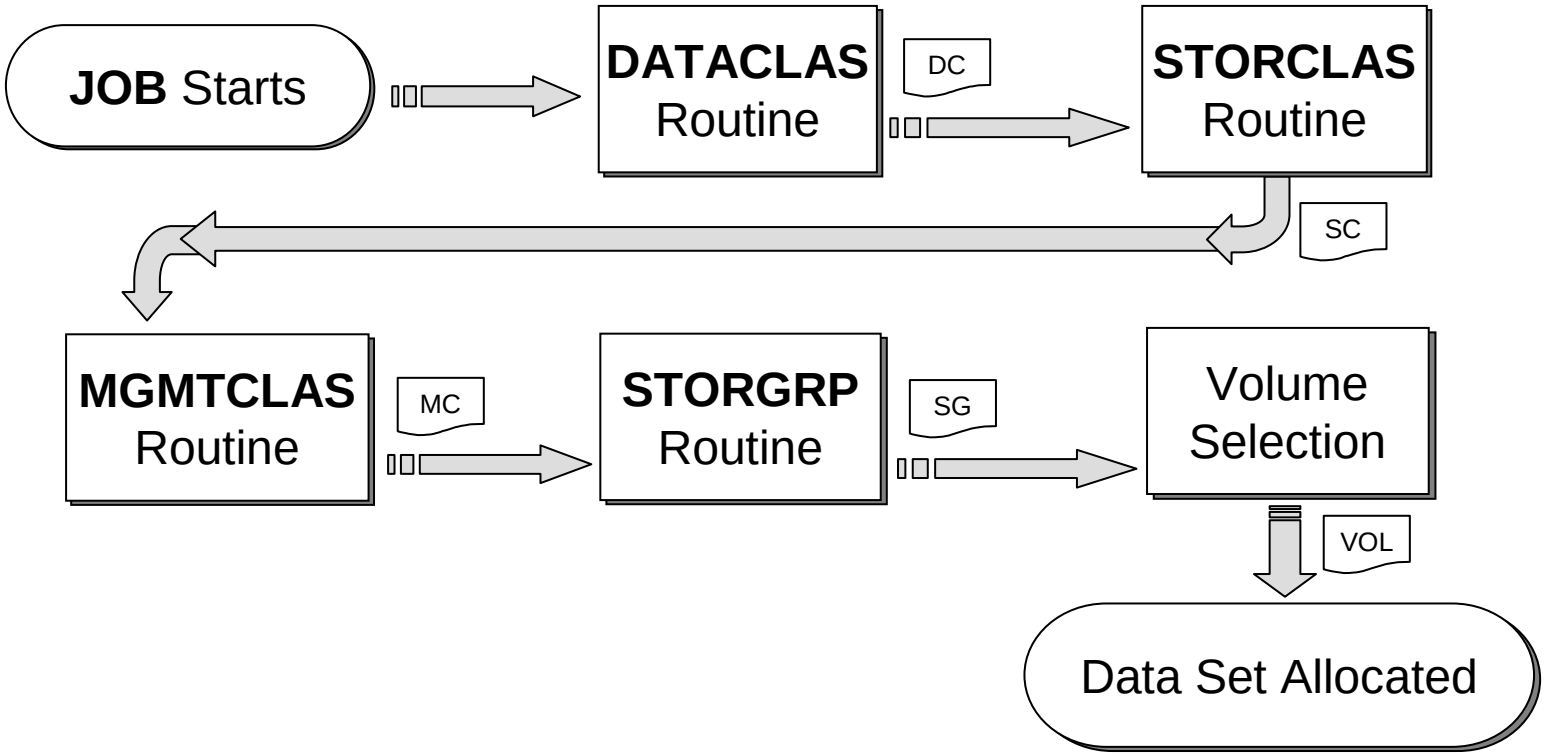
Introduction to ACS Environment

- **What is an ACS Routine?**
  - User written code
  - Determines which SMS classes and storage groups are assigned
  - Used for both data sets and objects
  - One per type of construct
  - They run at ALLOCATION time
  - Process in order:
    - DATACLAS
    - STORCLAS
    - MGMTCLAS
    - STORGRP
  - REQUIRED even if nothing is set

Introduction to ACS Environment (cont)

- **Write Your Routines**
  - Edit via your favorite editor
  - Saved in a PDS
  - Easy to read / review
- **Translating ACS Routines**
  - Done via ISMF
  - Checks for syntax errors
  - Converts (compiles) ACS source into object 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
- **Activating the SMS Configuration**
  - Loads the SCDS into the ACDS
  - 3 Methods
    - SETSMS SCDS(scdsname) operator command
    - ISMF option 8 (Control Data Set Application) then select option 5 (Activate)
    - Type ACTIVATE on the ISMF command line

ACS Routine Process Flow



Introduction to ACS Environment (cont)

- **ACS General Rules**
  - ***Know your logic before you code***
  - **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
  - **`/* COMMENT */`** - comments a line

Read Variables

- **READ ONLY Variables**
  - 47 different 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
- Examples:
  - `&DSORG`
  - `&DSNTYPE`
  - `&SIZE`
  - `&HLQ`

- **READ/WRITE Variables**
  - Used as values in comparisons (READ)
  - Used to assign values (WRITE)
  - 4 Read/Write variables
    - `&DATACLAS`
    - `&STORCLAS`
    - `&MGMTCLAS`
    - `&STORGRP`
- The PROC statement must identify which R/W variable it is setting

A Few “Gotchas”

- **Numeric constants are easy: just numbers**
  - *&NQUAL = 5*
- **Suffixes : sizes require KB or MB suffix**
  - *&MAXSIZE = 100MB*
- **String literals are in single quotes**
  - *&HLQ = ‘TEST’*
- **Masks are in NOT in quotes**
  - &DSN = SYS1.*LIB
- **&& is AND, | is OR**
- **Watch for fall-through logic in your IF and SELECT**

Introduction to ACS Environment (cont)

- **Write the ACS Routines**
  - Saved in a text format
- **Translate ACS Routines**
  - Converts to byte code and inserts into the SCDS
- **Validate the SMS Configuration**
  - Verifies your construct allocation (do they all exist?)
- **Activate the SMS Configuration**
- ***Note: translate / validate from the highest z/OS level in your PLEX***

Lab Time

See your handout and start the lab!