UNIT 9

SMS

SMS (Storage Management Subsystem)

- Objectives
- Introduction
- Advantages of SMS
- New JCL Parameters
- SMS Constructs
- Specifying Constructs

Objectives

- Understand basic SMS Concepts
- Understand the Advantages of SMS
- Understand Overriding Attributes (New JCL PARM)
- Understand SMS Constructs
- Understand Migration and Backup with SMS

Why Use SMS (Storage Management Subsystem)

Storage Management Subsystem (SMS) is an optional feature of MVS, which is used to improve the management of available disk space in the data center.

In JCL, normally the developer must specify allocation attributes of datasets, such as the size and location about the data sets, to the operating systems. If they don't allocate files correctly, this can lead to wasted disk space, and makes it difficult to manage the DASD in the data center.

ADVANTAGES OF SMS

SMS managed data sets have several advantages:

- Users are relieved of making decisions about the resource allocation of datasets, since it is handled by SMS.
- SMS provides the capability of concatenating data sets of unlike devices.
- SMS Managed data sets cannot be deleted unless they are first uncataloged. Due to this extra step, erroneous deletion of data sets is minimized.
- Additional features are available in the use of IDCAMS in the SMS environment.
- VSAM data sets created in an SMS environment offer more flexibility than those created through JCL in a non–SMS environment.

With SMS, the system obtains information about the attributes of a data set from the data class for the data set. In many cases, the attributes defined in the data class, selected by an installation-written automatic class selection (ACS) routine, are sufficient for the data sets you create with DD statements.

Additional JCL PARAMETERS

* RECFM	(record format)
* LRECL	(record length)
* SPACE	(average record length, primary, secondary, and directory quantity)
*VOLUME	(volume-count)

The above parameters were already discussed.

RECORG	(record organization) or
KEYLEN	(key length)
KEYOFF	(key offset
AVGREC	(record request and space quantity)
RETPD	(retention period) or
EXPDT	(expiration date)
DSNTYPE	(data set type, PDS or PDSE

The above parameters are also JCL parameters, but which are used in VSAM.

The storage administrator at your installation defines the names of data classes and their data set attributes. To view a list of data class names and their attributes, use the Interactive Storage Management Facility (ISMF).

SMS Constructs

With SMS, a new data set can have one or more of the following three constructs:

- **Data class** - contains the data set attributes related to the allocation of the data set.
- **Management class** - contains the data set attributes related to the migration and backup of the data set. A management class can only be assigned to a data set that also has a storage class assigned.
- **Storage class** - contains the data set attributes related to the storage occupied by the data set. A data set that has a storage class assigned is defined as an "SMS-managed data set".

The storage administrator at your installation writes the automatic class selection (ACS) routines that SMS uses to assign the constructs to a new data set.

For example, with SMS you can code the DDNAME, DSNAME, and DISP parameters to define a new data set:

```
//SMSDS0   DD   DSNAME=MYDS0.PGM,DISP=(NEW,KEEP)
```

and retrieve the data set with:

```
//SMSDSR   DD   DSNAME=MYDS0.PGM,DISP=MOD
```

In the example, installation-written ACS routines (possibly based on the data set name and information from your JOB, EXEC, and DD statements) can select a data class, management class, and storage class appropriate for the data set.

You code only the ddname, dsname, and disposition of the data set. The constructs selected by the ACS routines contain all the other attributes needed to manage the data set.

Specifying Constructs

In many cases, the constructs selected by the installation-written ACS routines are sufficient for your data sets.

However, when defining a new data set, you can select a data class, management class, or storage class by coding one or more of the following DD parameters:

- DATACLAS - specifies the data class
- MGMTCLAS - specifies the management class
- STORCLAS - specifies the storage class

The storage administrator has defined the names of the classes you can specify. You can view the names and attributes defined in each of the named classes by using ISMF

Unit 9 Exercises

1. **SMS stands for _____ _____ _____.**

2. **_____ contains allocation attributes that describe the logical data format.**

3. **_____ contains desired performance and availability objectives.**

4. **_____ defines a list of volumes for data allocation.**

True or False (Circle One)

5. **(T / F) With SMS, you are still required to specify all of the dataset allocation parameters (i.e., SPACE, DCB, etc.) in your JCL.**

Notes