

# Myths and Truths About ABARS: Part I

*By Colleen Gordon*

Because Mainstar provides products that support DFSMSHsm and ABARS, we hear many myths about ABARS from all over the world. This series of Informational Documents is intended to dispel these myths and communicate some truths that may be of interest to potential users of the DFSMSHsm data mover, ABARS.

## **Myth #1: ABARS is difficult to use.**

ABARS is a feature of DFSMSHsm and therefore requires SETSYS parameters in the DFSMSHsm PARMLIB member to enable. There are about 16 SETSYS parameters provided in the DFSMSHsm PARMLIB member to customize ABARS for your environment. These parameters are not unlike the SETSYS parameters required for migration and automatic backup functions.

ABARS requires its own started task, as shown in Figure 1, and executes in its own address space. Depending on your data center's requirements, you may need to solicit assistance from your Security Administrator and/or System's Programmer to add a new started task in your environment. Once you've coded the SETSYS parameters in DFSMSHsm's PARMLIB and enabled your started task, you're ready to add an aggregate to DFSMS and use ABARS.

```
//DFHSMABR PROC
//DFHSMABR EXEC PGM=ARCWCTL,
//          REGION=5M,TIME=NOLIMIT
//MSYSOUT   DD SYSOUT=*
//MSYSIN    DD DUMMY
//SYSUDUMP  DD SYSOUT=*
```

**Figure 1. DFSMSHsm ABARS started task procedure.**

Unlike other data movers, ABARS does not require complicated JCL to code and execute. Instead, ABARS uses a Selection Data Set (SDS) to house the list of data sets to be backed up. This data set can be a sequential 80-byte file, a member of PDS, or a PDSE. ABARS uses DFSMSHsm commands, ABACKUP and ARECOVER, to initiate backup and recovery operations. These commands are not unlike other DFSMSHsm commands you issue every day.

ABARS uses DFSMSHsm management classes to manage retention and other attributes of the aggregate output file. How many backup versions to retain and how long to retain them is indicated in a management class. The options are very similar to setting automatic backup retention criteria in DFSMSHsm PARMLIB.

There are advantages in how ABARS manages the retention of backups over generation data groups (GDGs) and other methodologies. Similar to DFSMSHsm automatic backup, there are specifications in the management class for retaining the most current version, retaining "extra" versions, or retaining the only version. You can specify days, weeks, months, or years. These

## Myths and Truths About ABARS: Part I

retention options provide flexibility and longevity for backup retention not possible using a GDG with a limit of 255.

Using ABARS, you can automatically invoke Concurrent Copy or SnapShot during the backup operation if they are enabled on the hardware the data resides on. This may be desirable in situations when the opportunity to copy data for backup is brief.

To enable the use of this option, indicate your preference in the ABACKUP Copy Technique field of the DFSMS Management Class setup panel (page 5 of 5) as shown in the Figure 2. You can choose from the following Copy Techniques:

- *Preferred*: to use Concurrent Copy or SnapShot if either is enabled on the device that the data is resident on.
- *Required*: to require Concurrent Copy or SnapShot – the backup should fail if this feature is not available for any reason.
- *Standard*: to use the standard data mover, DFSMSdss, for backup.

```
MANAGEMENT CLASS DISPLAY          Page 5 of 5
Command ===>
CDS Name      . . . . . : SIS.SMS.SCDS
Management Class Name . . . : ABARS1

AGGREGATE Backup Attributes:
# Versions . . . . . :
Retain only Version . . :
  Unit . . . . . :
Retain extra Version . . :
  Unit . . . . . :
Copy Serialization . . :
ABackup Copy Technique : STANDARD
```

**Figure 2. DFSMS Management Class Display panel page 5 of 5.**

ABARS uses Aggregate Groups defined in option nine on the ISMF main menu to identify the name of the selection data set (SDS) identifying the data to be included in the backup. The name of the SDS is specified in the Aggregate Group definition panel, page 2 of 2, in the ISMF Aggregate Group Display panel shown in Figure 3. Once the aggregate is defined to DFSMS, the definition need not be maintained unless you desire to add an additional SDS or change the data set name.

## Myths and Truths About ABARS: Part I

```
AGGREGATE GROUP DISPLAY                               Page 2 of 2
Command ==>

CDS Name . . . . . : SIS.SMS.SCDS
Aggregate Group Name : AGTEST1
To Browse a Data Set, Specify Number . . . (1, 2, 3, 4, 5, or 6)
Selection Data Sets
 1 : ABARS.AGDS011.SDS
   Member Name :
 2 :
   Member Name :
 3 :
   Member Name :
 4 :
   Member Name :
 5 :
   Member Name :

Instruction Data Set
 6 :
Use UP Command to View previous Panel;
Use HELP Command for Help; Use END Command to Exit.
```

**Figure 3. DFSMS Aggregate Group Display panel, page 2 of 2.**

The SDS has three keywords, INCLUDE, ALLOCATE, and ACCOMPANY. The INCLUDE keyword identifies all of the data you want included in the backup. Disk, tape, and migrated data (ML1 and ML2) may be keyed or pasted into the INCLUDE list as shown in Figure 4. You'll notice that the INCLUDE keyword is immediately followed by an open parenthesis and the last data set name in the list is followed by a close parenthesis. These parentheses are required at the beginning and end of each keyword group.

```
INCLUDE(
P216.P312522.TUNLDITE(0)
P216.P312522.TUNLDITE(-1)
P216.P312522.TUNLDITM(0)
P216.P312522.TUNLDPID(0)
P216.P316444.**
P304.P2200008.DW220001(0)
P305.P0050010.TMIFOUT(0)
P305.P0050010.TMIFOUT(-1))
```

**Figure 4. Example of an SDS with INCLUDE statements.**

You have the option of allowing ABARS to simply allocate data sets empty, not copying the contents. This may be desirable for various reasons; for example, when applications are programmed to delete data sets and immediately re-create them with new data. To use the ALLOCATE keyword, key or paste data set names following the ALLOCATE keyword in the SDS as shown in Figure 5. ABARS requires that at least one data set be listed in the INCLUDE list of the SDS.

## Myths and Truths About ABARS: Part I

```
INCLUDE(  
P216.P312522.TUNLDITE(0))  
ALLOCATE(  
P216.P312522.TUNLDPID(0)  
P216.P316444.**  
P304.P2200008.DW220001(0))
```

Figure 5. Example of an SDS with INCLUDE and ALLOCATE statements.

The ACCOMPANY keyword is used only for tape data sets. Key or paste the tape data set name after the ACCOMPANY keyword as shown in Figure 6. ABARS copies only the ICF catalog information for the tape data to the aggregate output. At the DR site, ABARS re-creates the tape data set's catalog record. This feature is often used to re-catalog database log files brought to the DR site. When you want ABARS to copy the contents of the tape rather than just the catalog information, key or paste the data set name or data set name mask in the INCLUDE list.

```
INCLUDE(  
P216.P312522.TUNLDITE(0))  
ACCOMPANY(  
P216.DB2LOG.**)
```

Figure 6. Example of an SDS with INCLUDE and ACCOMPANY statements.

To execute an aggregate backup, simply key the DFSMSshm command into TSO option 6, the ISPF command shell, as shown in Figure 7, or key the statement into a batch job using program IKJEFT01 to submit.

```
ISPF Command Shell  
Enter TSO or Workstation commands below:  
  
====> HSEND AGGNAME EXECUT  
  
Place cursor on choice and press enter to Retrieve command  
  
=> hsend list ttoc select(both failedrecycle)  
=> hsend list ttoc select(both failedcreate)  
=> hlist dsn('VSP6.PMR11956.LDS1') mcds  
=> hsend query active  
=> listc ent('cg.ampasap.emc.entries') all
```

Figure 7. Example of an ABARS ABACKUP execute command issued in TSO Option 6.

The task that many ABARS users find most challenging is the identification and maintenance of the list of critical data sets. Mainstar provides complete automation for this daunting task in our ASAP product. ASAP tracks application's batch jobs, started tasks, and even jobs submitted by a userid, and identifies all of the data sets read as input and created as output. Using a combination of SMF records and information from the job's JCL, ASAP constructs a list of all of the critical data sets used in each execution of the batch cycle. Maintenance to the list is fully automated because ASAP re-creates the list of critical files each and every time the application executes. ASAP fully supports applications with daily, weekly, monthly, quarterly, and annual processing cycles as well as applications with on-request jobs or schedule changes that occur daily.

## Myths and Truths About ABARS: Part I

### Find out more.

Now that you know the truth about how easy it is to use ABARS, find out more about what it can offer you! Attend Mainstar's ABARS Made Simple webcast for information on how to manage today's ABARS environments. On our web site, [www.mainstar.com](http://www.mainstar.com), you can download numerous White Papers and Informational Documents on ABARS, ASAP, Backup & Recovery Manager and Incremental ABARS. Questions can be directed to [experts@mainstar.com](mailto:experts@mainstar.com), or you can contact Mainstar's Technical Support at [techsupport@mainstar.com](mailto:techsupport@mainstar.com).

Discover more truths about ABARS – stay tuned for the next part of our series!

**Colleen Gordon – Professional Services Manager and SE Manager for Mainstar Software Corporation.**  
*Colleen has an extensive background in Business Continuation and Storage Management and has worked with customers all over the world. Colleen is the co-author of the IBM Redbook, ABARS and Mainstar Solutions, and has written articles for Disaster Recovery Journal, Enterprise Systems Journal, and other industry magazines.*

Mainstar is a registered trademark of Mainstar Software Corporation.

SnapShot is a trademark of Storage Technology Corporation.

IBM is a registered trademark and Redbooks, DFSMSdss, and DFSMSHsm are trademarks of the International Business Machines Corporation.