System Maintenance Aid

Using SMA Under z/OS

Version 2.1.2

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This document applies to System Maintenance Aid Version 2.1.2.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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Preface

This section contains information relevant when using SMA under z/OS.

1 Prepare z/OS Parameters

This section describes the parameters relevant for SMA usage under z/OS.

Note: In this section, the term "tape" represents any installation media (e.g. tape and CD-ROM) supported by Software AG. The information provided here applies to the use of any of these media.

Adapt Global SMA Parameters

Global SMA Parameters Used For Commit, Tabload, Generate

These parameters are used in **commit steps**, tabload job and generate job only.

Parameter Name	Default Value	Function
MVS-DB-DEVICE	3390	DB device type
MVS-DSN-ADA-LOAD	SAG.ADABAS.LOAD	Name of Adabas load library
MVS-DSN-USER-LOAD	SAG.USER.LOAD	Name of load library containing the batch-mode Natural nucleus module
MVS-JOB-CLASS	1	Default tape job class
MVS-JOB-CLASS-2	G	Default job class
MVS-JOB-PREFIX	SMA	Default job prefix (first 4 characters of the job name)
MVS-NAT-BATCH	NATBATCH	Name of the executable batch-mode Natural module
MVS-OUTPUT-CLASS	X	Default output class
MVS-SVC	249	SVC number for Adabas to be used in batch-mode job ADARUN statements
MVS-TAPE-DEVICE	3490	Tape device used

Global SMA Parameters Used For Copy Jobs

These parameters are used in copy jobs generated from the Tape menu within SMA.

Parameter Name	Default Value	Function
MVS-LIB-ALLOC-TYPE	TRK	Type of the default allocation type used (see description for `MVS-LIB-GROUP`)
MVS-LIB-GROUP	SAG	Name of the lib group used as default, when generating the tape copy job from the Tape menu in SMA (T). If the copy job is generated from the user environment, the `LIB-GROUP` parm from the user environment is used instead.

Parameter Name	Default Value	Function
MVS-LIB-GROUP-UNIT	3390	Name of the default unit used (see description for `MVS-LIB-GROUP`)
MVS-LIB-GROUP-VOL	VVVVVV	Name of the default volume used (see description for `MVS-LIB-GROUP`)

Adapt SMA Parameters for Your Environment

You may need to adapt the following SMA parameters to meet your site's requirements. Find the following parameters in your SMA environment (Groups BASIC and OPTION). You can change these parameters in the OS/MVS default environment if you want to use them as default values for all other user environments.

- Library Group Parameters
- SMA Parameters
- z/OS Parameters
- Job Parameters
- CICS Parameters
- VSAM Parameters

Library Group Parameters

Parameter Name	Default Value	Group	Function
LIB-GROUP	SAGLIB	LIBGRP	Library group. Used as default Hi-Level-Qualifier for new data set copies.
LIB-GROUP-UNIT	3390	LIBGRP	Default device for new data set copies
LIB-GROUP-VOL	VVVVVV	LIBGRP	Default volume for new data set copies

SMA Parameters

These parameters are related to SMA library usage. See also the section Concepts, Library Organization.

Parameter Name	Default Value	Group	Function
DSN-SMALOAD	#V-LIB-GROUP#.#S-ENV#.SMALOAD	BASIC	Name of load library for results of LINK jobs generated by SMA
DSN-SMASRCE	#V-LIB-GROUP#.#S-ENV#.SMASRCE	BASIC	Name of source library for source members generated by SMA
SMA-FIRST-INSTALL	Y	OPTION	Set according to first or migration installation

z/OS Parameters

Parameter Name	Default Value	Group	Function
ASMBLR	IEV90	BASIC	Assembler program name
DSN-APFLIB	SYS1.APFLIB	BASIC	Name of APF-authorized library
DSN-CEEMACLIB	SYS1.CEE.MACLIB	BASIC	Name of LE370 macro library
DSN-LE-SCEERUN	SYS1.LE.SCEERUN	BASIC	Name of language-edition support library
DSN-SYSLINKLIB	SYS1.LINKLIB	BASIC	Name of OS system link library
DSN-SYSLPALIB	SYS1.LPALIB	BASIC	Name of OS system LPS library
DSN-SYSMODGEN	SYS1.MODGEN	BASIC	Name of OS system library
DSN-SYSPARMLIB	SYS1.PARMLIB	BASIC	Name of OS parameter library
DSN-USERPROCLIB	USER.PROCLIB	BASIC	Name of the OS user proclib where started tasks are located
LKED	IEWL	BASIC	Linkage editor program name
TCPIP-DATA	TCPIP.TCPIP.DATA	BASIC	Name of the IBM TCP/IP data file
TCPIP-JOBNAME	blank	BASIC	Job name for IBM TCPIP

Job Parameters

Parameter Name	Default Value	Group	Function
EXPIRATION	00365	BASIC	Expiration date used in all DD statements for tape data sets
JOB-PREFIX	SMA	BASIC	First 4 characters of job names
JOBACCOUNT	SMA	BASIC	Job account information
JOBCLASS	G	BASIC	Job class
JOBMSGCL	X	BASIC	Value of the `MSGCLASS` parameter
LE370	NO	BASIC	Set to YES if LE370 is used and to NO if not. (support of LE370 calling conventions for 3GL subprograms)
SMS	N	OPTION	Set to Y if you want SMS-managed data sets for the database
SMSCLASS	SMS	BASIC	SMS class name
SYSOUT	*	BASIC	SYSOUT parameter for DD SYSOUT statements
TAPEUNIT	TAPE	BASIC	`UNIT` parameter for all DD statements when reading from tape
TEMPUNIT	3390	BASIC	Disk unit for work data sets

CICS Parameters

Parameter Name	Default Value	Group	Function
DSN-CICSDFHCSD	CICS.SDFHCSD	BASIC	Name of the CICS CSD data set
DSN-CICSLOADLIB	CICS.SDFHLOAD	BASIC	Name of the load library containing CICS system programs
DSN-CICSMACLIB	CICS.SDFHMAC	BASIC	Name of the CICS macro library
DSN-CICSUSERLIB	DSN-CICSUSERLIB	BASIC	Name of the load library containing CICS user programs (RPLLIB)
RDO-GROUP	#V-LIB-GROUP#GRP	NCI	Name of CICS RDO group (for DFHCSDUP utility)

VSAM Parameters

Parameter Name	Default Value	Group	Function
SMS-VSAMALLOC	blank	OPTION	Set to Y if you want to allocate VSAM files on SMS
VS-EXPIRATION	2000365	BASIC	Expiration date for VSAM clusters

2 Important JCL Skeletons

This section describes the most important JCL skeletons related to z/OS usage.

Caution: Be aware that if you change skeletons in the default environment, they will no longer be overwritten by Software AG.

Note: In this section, the term "tape" represents any installation media (e.g. tape and CD-ROM) supported by Software AG. The information provided here applies to the use of any of these media.

Copy Steps

Skeleton Name	Function
COPY-PS	Copy a sequential data set from tape to disk
COPY-PO	Copy a PO data set from tape to disk
COPY-POE	Copy a POE data set from tape to disk
COPY-PS2	From CD: Restore sequential, PO or POE data set

Commit Steps

Skeleton Name	Function
SMA-COMMIT	The final installation step, which informs SMA that all jobs have been completed successfully, runs in an existing Natural environment and not necessarily in an environment created by SMA. Therefore, it is usually necessary to adapt the skeleton SMA-COMMIT to the existing environment. Ensure that only global parameters (see Global Parameters in section Menus and Line Commands) are used in this skeleton.
ZAP-COMMIT	The JCL skeleton ZAP-COMMIT is used to generate the last step in the jobs which apply or undo Zaps. This skeleton must be modified for the default environment OS/MVS. Ensure that only global parameters (see Global Parameters in section Menus and Line Commands) are used in this skeleton.

Other Steps

Skeleton Name	Function
JOB-CARD	This skeleton is used as job card for all jobs generated and submitted by SMA
ADA-FILES	This skeleton contains the DD statements for the files of the Adabas databases
TABLOAD2	This skeleton contains JCL used for the Tabload function in SMA
SMA-GENERATE-JCL	The JCL skeleton SMA-GENERATE-JCL is used to generate the installation JCL in batch mode using the line command `JB` in the Environment menu. It may be modified in a user environment.

3 Sequence of Generated Jobs

This section describes the sequence of SMA-generated jobs.

Four groups of jobs are generated (*xxx* represents a three-digit number):

- T*xxx*: Tape copy jobs. These jobs copy the libraries and the marked data sets. One job is generated per tape.
- P*xxx*: Preparatory jobs. These jobs perform preparatory tasks for the installation.
- I*xxx*: Installation jobs. The last I*xxx* job changes the status of products and parameters from status *to be installed* to *installed*.
- Other jobs are example jobs, which might be useful to the user, but are not part of the product installation.

Job Name	Description
P010	Create the SAGLIB
P020	Define/Restore libraries/sublibraries
P040	Catalog procedures
P060	Preparation instructions
P080	Delete/Define VSAM clusters
I003	Create conversion jobs
I005	Update CICS tables
I006	Update CICS tables with utility
I008	Allocate data sets
I009	Copy data sets
I010	Install permanent ADASVC
I011	Install temporary ADASVC
I015	Create sample jobs/source

Job Name	Description
I017	Stop/Start jobs (i.e. global bufferpool)
I020	Adabas IOR parameters and defaults
I025	Com-plete installation steps
I026	Com-plete migration steps
I030	Define and format the Adabas database
I040	Start the Adabas nucleus
I050	Load Adabas files into database
I051	Migration job
I052	Define VSAM data sets
I053	IMS PSB/DBD/ACB generation
I054	Assemble the Natural parameter module if common for batch/online
I055	Preparations for linking batch-mode Natural
I056	Auxiliary assembly jobs
I060	Assemble the Natural parameter module and link batch-mode Natural
I061	Load Natural applications with INPL
I065	Example jobs to test NATBAT
I070	Preparations for linking online-mode Natural
I075	Auxiliary jobs for online-mode Natural
I080	Assemble the Natural parameter module and link online-mode Natural
I081	Initialize VSAM roll files
I082	Migration job
I088	Link the Adabas Link modules
I090	Catalog thread part into Com-plete
I100	Setup and installation verification
I200	Setup jobs
I500	Migration jobs
I999	SMA: commit environment, tapes and/or library corrections; generate Environment Report
E100	Load example jobs
E600	Predict migration steps
Z010	Apply Zaps
Z020	Load corrections with INPL

Note: The above table does not contain the complete list of jobs. New jobs may be introduced as needed.

4 Load SMA Tables from a Tape and Copy Data Sets to Disk

This section provides an overview of the parameters used during loading of SMA tables and copy steps.

Loading the SMA Tables from a Tape (Tabload)

During the loading of SMA tables from a tape (Tabload), the library group definition is taken from the global variable MVS-LIB-GROUP and is stored into the field Library Grp for each data set on the tape (see Copy Parameters screen below).

```
08:31:54              ***  SYSTEM MAINTENANCE AID  ***              2005-10-10
User:  SAG                     - Copy Parameters -                    TPCDSM11
Volser .....  T78063
Name on tape  NAT414.JOBS
Description .........  MVS Example jobs for installation
Symbolic Dataset Name  NAT414.JOBS
Dataset Organization   PO
Size (Kilo byte) ....  1204

Dataset created on ..  2005-10-07  08:01:50
Dataset copied on....

Library Grp   SAGLIB_______________
Name on Disk  ____________________________________________________________________
Disk .......  _______
Device Type   _________
Command ===>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
     Help  Menu  Exit                                                    Canc
```

To change the library group after loading the SMA tables from a tape, go to each data set (`T(ape) > DA(taset) > MO(dify)`) and change the Library Grp field.

Note: A change of the global variable MVS-LIB-GROUP after loading from a tape will have no effect on the data set entries or copy steps.

Mark a Data Set for Copy

Enter the tape menu and the line command `MA` for a specific tape.

```
09:07:18              ***  SYSTEM MAINTENANCE AID  ***              2005-10-10
User:  SAG                     - Datasets On Tape -                    TPPDSM11
Page:  3   sorted by   Volser: T78063                                  Rec: 0062
     ---->
Code Dataset Name      Description                      On Disk As             C
     *_______________  *________________________________ *____________________ *
 __    *      COPY IN  GROUP: PROD3LIB                  PROD3LIB.BTE421.LD01
 __  BTE421.LS01       MVS S01.LOAD CORRECTION
 __    *      COPY IN  GROUP: PROD3LIB                  PROD3LIB.BTE421.LS01
 __  NAT414.ERRN       ERROR MESSAGES FILE
 __  NAT414.EXPL       EXAMPLE INPL FILE
 __  NAT414.INPL       INPL DATASET                     SAGLIB.NAT414.INPL
 __  NAT414.IS01       S01.INPL CORRECTION
 MA  NAT414.JOBS       MVS EXAMPLE JOBS FOR INSTALLAT   SAGLIB.NAT414.JOBS
 __  NAT414.LOAD       MVS LOAD DATASET                 SAGLIB.NAT414.LOAD
 __  NAT414.SRCE       MVS SOURCE DATASET               SAGLIB.NAT414.SRCE
 __  NAT414.SYSF       SYSTEM FILE                      SAGLIB.NAT414.SYSF
 __  NCF414.LOAD       MVS LOAD DATASET                 SAGLIB.NCF414.LOAD
 __  NCF414.SRCE       MVS SOURCE DATASET               SAGLIB.NCF414.SRCE
 __  SMA131.ERRN       ERROR MESSAGES FILE
 Command ===>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
     Help  Menu  Exit  Sort  Prnt  --    -     +     ++          >     Canc
```

If you mark (MA) a data set for copy, the data set fields Disk and Device Type (see below) will be filled from the global parameters MVS-LIB-GROUP-VOL and MVS-LIB-GROUP-UNIT. The field Library Grp has already been stored at load time (Tabload). A mark for copy will also be performed automatically by SMA, if a JCL generation from a user environment is performed. All data sets that are needed more than once during installation or operation of the product, (i.e. LOAD or SRCE data sets) will be marked for copy by SMA, before the job generation starts. Other data sets that are needed only once (i.e. INPL or ERRN data sets) will always be loaded directly from tape, unless the user marked them for copy manually (T > DA > MA).

Enter the line command MO for a specific data set on tape.

```
08:31:54              ***  SYSTEM MAINTENANCE AID  ***              2005-10-10
User:  SAG                     - Copy Parameters -                    TPCDSM11
Volser .....  T78063
Name on tape  NAT414.JOBS
Description .........  MVS Example jobs for installation
Symbolic Dataset Name  NAT414.JOBS
Dataset Organization   PO
Size (Kilo byte) ....  1204

Dataset created on ..  2005-10-07  08:01:50
Dataset copied on....  2005-10-10  08:38:54

Library Grp   SAGLIB_______________
Name on Disk  SAGLIB.NAT414.JOBS_____________________________________________
Disk .......  SAGVOL
Device Type   3390___
Command ===>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Menu  Exit                                                  Canc
```

Generate Copy Job from the Tape Menu

Enter the tape menu and the line command `JC (Generate JCL)`.

```
09:10:29              ***  SYSTEM MAINTENANCE AID  ***              2005-10-10
User:  SAG                     - Archived Tapes -                     TPVOLM11
Page:  1   sorted by                                                  Rec: 0001
     ---->
Code Volser   Description                                 Add Date
     *______  *_____________________________________      *__________
 JC  T78063   SMA211                                      2005-10-07









 Command ===>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Menu  Exit  Sort  Prnt  --    -     +     ++          Prod  Canc
```

The copy job will be generated.

```
10:09:03                *** SYSTEM MAINTENANCE AID ***              2005-10-10
User:  SAG                 - Generated Tape Jobs -                   TPJOBM11
Reposition to Job: ________                   Tape: T78063
  Cmd        Job             Description                        Status
   __        T063            COPY DATASETS FROM TAPE            Open









 Command ===>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Menu  Exit  --    ++          -     +     Print             Canc
```

The involved skeletons for copy data sets all start with COPY-* (i.e. COPY-PO, COPY-POE, COPY-PS...). Depending on the Dataset Organization in the data set parameters the corresponding skeleton will be selected. (i.e. if the Dataset Organization parameter is PO, then the skeleton COPY-PO is selected). The Library Group, Unit and Volume will be taken from the corresponding fields on the Copy-Parameters screen for the data set. Other values such as Expiration Date and Tape Unit will be taken from the default environment (OS/MVS).

Generate Copy Job from User Environment

Enter the environment menu and the line command `JC (Generate JCL)`.

```
 07:31:52           ***     SYSTEM MAINTENANCE AID     ***           2005-09-27
 User:  SAG               - Environment Maintenance -                  ENMENM11
 Page: 1                                                              Rec: 0007
 Code Environment    Description
      *_______       *_____________________________________________________
  __  OS/MVS         DEFAULT-ENVIRONMENT FOR OS/MVS
 JC   PROD1          PRODUCTION 1
  __  PROD2          PRODUCTION 2
  __  SMA            SMA INSTALLATION
  __  TDEV           DEVELOPMENT
  __  TEST1          TEST INSTALLATION 1
  __  TEST2          TEST INSTALLATION 2









 Command ===>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Menu  Exit  Sort  Prnt  --    -     +     ++                Canc
```

The copy job will be generated.

```
07:51:23           ***     SYSTEM MAINTENANCE AID     ***           2005-09-28
 User:  SAG               - Generated Environment Jobs -                 ENJOBM11
 Page: 1                     Environment: PROD1                         Rec: 0021
 Code     Job           Description                          Status
          *_________    *____________________________________*__________
  __      Report        Installation Guide                   Open
  __      T955          COPY DATASETS FROM TAPE              Open
  __      P060          READ ME; DO NOT SUBMIT               Open
  __      I005          CREATE TABLES FOR TP MONITOR         Open
  __      I008          ALLOCATE DATASETS                    Open
  __      I009          COPY DATASETS                        Open
  __      I010          INSTALL PERMANENT ADASVC             Open
  __      I011          INSTALL TEMPORARY ADASVC             Open
  __      I030          DEFINE AND FORMAT DATABASE           Open
  __      I040          ADABAS NUCLEUS                       Open
  __      I050          CREATE ADABAS FILES                  Open
  __      I055          ASSEMBLIES OF BATCH NATURAL          Open
  __      I056          AUXILIARY ASSEMBLIES                 Open
  __      I060          PARM + LINK BATCH NATURAL            Open
 Command ===>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Menu  Exit        Prnt  --    -     +     ++    Refr        Canc
```

The involved skeletons for copying data sets all start with COPY- (i.e. COPY-PO, COPY-POE, COPY-PS...). If the `LIBGROUP` parameter in the user environment differs from the Library Grp field in the data set entry:

- the generated job will first copy the data set from the tape to the original Library Group (Library Grp field) if the data set has not been copied yet to that location and is set to *mark for copy* (manually or automatically by SMA)
- afterwards a copy step will copy the data set from that original location to a data set with the LIBGROUP setting of the user environment.

Other values such as Expiration Date and Tape Unit will be taken from the values of the user environment.