



SMS/DEBUG

SMS/Debug

DTS Software's SMS/Debug allows installations to Debug three different areas of DFSMS. The ACS Trace Routine facility can trace the current ACS routines and help find logic errors before they become critical. SMS Volume tracing shows all of the volumes considered for SMS controlled allocations, threshold values and which volume was selected. DADSM Exit tracing shows each volume considered for allocation and each DADSM reason code and description that was issued. All of these components assist installations in getting the most out of their SMS environment.

ACS Routine Tracing

Have you ever tried to implement an ACS routine change and found it difficult to determine why it did not do what you intended or tried to figure out how a certain DATACLASS was assigned to a data set? Wouldn't it be great if you could see the logic flow of your ACS routines and the value of each variable. With the ACS Routine Tracing facility of SMS/Debug, ACS routines become more powerful because they are easier to test and debug. Installations can trace individual allocations using JCL extensions to identify the allocations to be traced and define trace parameters. The next page shows an abbreviated sample of the output of this facility.

SMS Volume Tracing

Have you ever tried to figure out why DFSMS picked volume SMS102 or maybe why it never seems to pick volume SMS212? This can be especially difficult when the allocation occurs at 3 AM. With SMS Volume Tracing, SMS/Debug will show all of the volumes DFSMS considered for allocation, the value of key threshold variables and storage group. The volumes placement in the Primary, Secondary and Tertiary group are also displayed. The next page contains sample output of a Volume Trace.

How productive would you be if there was no Trace Facility for COBOL or C++?

DADSM Exit Tracing

DFSMS messages only reflect the last DADSM return code but there are times where it would be helpful to see all of the return codes that were posted. Even if the allocation was successful, it could be very useful to know that a volume was skipped because the VTOC was full. SMS/Debug will display ALL of the DADSM post-processing exit return codes and optionally, the DADSM preprocessing codes as well. The next page contains some sample output of the DADSM Exit Tracing facility.

Installation

SMS/Debug installs in less than 30 minutes from a CD, tape or web download. It does not require SMP/E or an IPL. SMS/Debug does not make any permanent changes to OS/390 or z/OS load libraries. If the product is shutdown, all interfaces are dynamically removed. There is no selection language to tailor. All trace facilities are initiated using JCL extensions. All trace output is written to the JOBLIST.

New Features

SMS/Debug can now trace compiled ACS routines in a SCSD or under ISMF. SMS/Debug also has a batch testing tool called ACSQA that will allow installations to test a large number of predefined cases. If any of the ACS classes don't match a predefined result, the test case is highlighted and optionally, a trace is generated. ACSQA is similar to the IBM NAVIQUEST product only much faster and easier to read.



Volume Selection Tracing

```
// EXEC PGM=IEFBF14
//DD1 DD DSN=DON.DD1,SPACE=(TRK,1),STORCLAS=STC1,SMSDEBUG=(NOACS,VOL)
//DD2 DD DSN=DON.DD2,SPACE=(TRK,1),STORCLAS=STC1,SMSDEBUG=(NOACS,VOLA)
SMSTRACE=VOLUME
ACC00510-* STARTING TRACE FOR SMS_TRACE-VOLUME, DSN=DON.DD1, VOL=, DD=DD1
ACC03750-* VOLSER STORGRP FLAGS LIST FREE CAP THRESH
ACC03751-* SMS002 STG1 EE9B9BA6 PRI 9 14 6
ACC03751-* SMS004 STG1 649B9BA2 SEC 2 14 0
ACC03751-* SMS001 STG1 649B9BA2 SEC 1 34 0
ACC03751-* SMS003 STG1 649B9BA2 SEC 0 14 0
ACC03752-* SMS SELECTED VOLUME SMS002
```

DADSM Exit Tracing

```
// EXEC PGM=IEFBF14
//DD1 DD DSN=DON.DD1,SPACE=(TRK,1),SMSDEBUG=(NOACS,NOVOL,DADSM)
ACC00510-* STARTING TRACE FOR POST_DADSM-ALLOCATE, DSN=DON.DD1, VOL=SMS001, DD=DD1
ACC05201-* ALLOCATE FOR 1 TRACKS EXTENT 0 RC=8 - VTOC IS FULL
ACC00510-* STARTING TRACE FOR POST_DADSM-ALLOCATE, DSN=DON.DD1, VOL=SMS002, DD=DD1
ACC05201-* ALLOCATE FOR 1 TRACKS EXTENT 0 RC=0 - SUCCESSFUL
```

ACS Routine Tracing

```
1 //DONR JOB
2 // EXEC PGM=IEFBF14
3 //DD1 DD DSN=DTS.TEST,UNIT=3380,SPACE=(TRK,(1)),
SMSDEBUG=ACSA
ACC00510-* STARTING TRACE FOR SMSACS_TRACE-, DSN=DTS.TEST,
VOL=, DD=DD1
ACC08100-* ..SMSACS VARIABLES BEFORE ACS ROUTINES
ACC08120-* ...DSN (TEST)
ACC08120-* ...DATACLAS ()
ACC08120-* ...STORCLAS ()
ACC08120-* ...MGMTCLAS ()
ACC08120-* ...STORGRP ()
ACC08120-* ...HLQ (DTS)
ACC08120-* ...LLQ (TEST)
ACC08120-* ...JOB (DONR)
ACC08120-* ...PGM (IEFBF14)
ACC08120-* ...USER (DON)
ACC08120-* ...GROUP (DTS)
ACC08120-* ...DD (DD1)
ACC08121-* ...NVOL (1)
```

```
...
ACC08120-* ...* SPACE (TRK)
ACC08121-* ...* PSPACE (1)
ACC08121-* ...* SSPACE (0)
ACC08110-* ..TRACE FOR ACS ROUTINE STORCLAS
ACC08111-* ...COMPARE DSN (DTS.TEST) = LITERAL(*.*.C.C%%V*)
ACC08111-* ...COMPARE DSN (DTS.TEST) = LITERAL(*.*.D.C%%V*)
ACC08111-* ...COMPARE DSN (DTS.TEST) = LITERAL(*.*.I.C%%V*)
ACC08111-* ...COMPARE DSN (DTS.TEST) = LITERAL(*.*.O.C%%V*)
ACC08111-* ...COMPARE DSN (DTS.TEST) = LITERAL(*.*.*.C.C%%V*)
ACC08111-* ...COMPARE DSN (DTS.TEST) = LITERAL(*.*.*.D.C%%V*)
ACC08111-* ...COMPARE DSN (DTS.TEST) = LITERAL(*.*.*.I.C%%V*)
ACC08111-* ...COMPARE DSN (DTS.TEST) = LITERAL(*.*.*.O.C%%V*)
ACC08114-* ...BRANCH
ACC08111-* ...COMPARE DSN (DTS) = LITERAL(HFS)
ACC08111-* ...COMPARE DSN (DTS) = LITERAL(SYS1)
ACC08111-* ...COMPARE DSN (DTS) = LITERAL(SYS2)
ACC08111-* ...COMPARE DD (DD1) = LITERAL(STC1)
ACC08111-* ...COMPARE DD (DD1) = LITERAL(SMS)
ACC08111-* ...COMPARE DD (DD1) = LITERAL(TAPEX)
ACC08111-* ...COMPARE STORCLAS (*NULL*) = LITERAL(*NULL*)
ACC08113-* ...SET STORCLAS = *NULL*
ACC08114-* ...WRITE
ACC08114-* ...EXIT
ACC08100-* ..SMSACS VARIABLES AFTER CALL TO ACS ROUTINES
ACC08120-* ...DATACLAS ()
ACC08120-* ...STORCLAS ()
ACC08120-* ...MGMTCLAS ()
ACC08120-* ...STORGRP ()
ACC08120-* ...* STORGRP_TYPE (POOL)
```

Note: This example only shows the STORCLAS routine but all of the ACS Routines are traced

SCC



ACSQA Batch Test Utility Sample Output

ACS ROUTINE RESULTS FOR: TESTAA5

***** C D S 1 ***** / ***** C D S 2 *****

EX	CONSTRUCTS	EXITCODE	#MSG	/	CONSTRUCTS	EXITCODE	#MSG
*	DC=DCTEST	0	0	/	DC=DCTEST	0	2
*	SC=NULL	0	1	/	SC=NULL	0	0
	MC=NOTRUN	0	0	/	MC=NOTRUN	0	0
	SG=NOTRUN	0	0	/	SG=NOTRUN	0	0
	DATACLASS EXIT RET=		0	/	DATACLASS EXIT RET=		0
		RSN=	0	/		RSN=	0
	STORCLASS EXIT RET=		0	/	STORCLASS EXIT RET=		0
		RSN=	0	/		RSN=	0
	MGMTCLASS EXIT RET=		0	/	MGMTCLASS EXIT RET=		0
		RSN=	0	/		RSN=	0

DATACLAS MESSAGES FOR CDS1:

*

DATACLAS MESSAGES FOR CDS2:

TEST MESSAGE 1
TEST MESSAGE 2

Note: This example shows a member in two different CDSs being compared. Note the Dataclass and the Storage Class routines got the same return code but put out different messages

ACSQA Batch Test Utility Sample Summary Output

MEMBER	CDS	DATACLAS	CODE	STORCLAS	CODE	MGMTCLAS	CODE	STORGRP	CODE
TESTAA5	1	DCTEST	0	NULL	0	NOTRUN	0	NOTRUN	0
TESTAA5	2	DCTEST	0	NULL	0	NOTRUN	0	NOTRUN	0
* TESTERR8	1	NULL	3647	NOTRUN	0	NOTRUN	0	NOTRUN	0
* TESTERR8	2	DCTEST	0	NULL	0	NOTRUN	0	NOTRUN	0
TESTRNAM	1	NOTRUN	0	NOTRUN	0	NULL	0	NOTRUN	0
TESTRNAM	2	NOTRUN	0	NOTRUN	0	NULL	0	NOTRUN	0
* TESTX	1	DCTEST	0	STC1	0	NULL	0	STG1	0
* TESTX	2	DCTEST	0	STC1	0	NULL	0	STG1	0
								STG2	
								STG3	

Note: This example shows a member in two different CDSs being compared. Note the Dataclass and the Storage Class routines got the same return code but put out different messages



SOFTWARE, INC.

1818 Lakefield Court SE
Conyers, GA 30013

Phone

770-922-2444

Fax

770-860-0831

Email

info@DTSsoftware.com
www.DTSsoftware.com

NOTE: This document contains proprietary information/trade secrets of DTS Software, and its use is intended solely for its customers and prospects. Unauthorized use, reproduction, or distribution is strictly prohibited.

Rev. 25-09/22/08