STCPOST Stand-Alone Executive

Reference Manual

FE-010-2 Version 3.0

Storage Technology Corporation

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SUMMARY OF CHANGES

FE-010-2, August 1984, is a new version that describes the STCPOST Stand-Alone Executive (SAE) Version 3.0A.

Differences between Version 2.0A and Version 3.0A are:

- Support for 3380 type devices as test devices.
- Support for DD card type 6 (for the STCPOST DISPLAY function).
- The addition of the Missing Interrupt Handler.
- The addition of I/O measurement.
- The addition of the READY and LOADBUF commands.
- The format of the ZAP control cards for the GENSAPGMS function has changed.
- The ability of the GENSAPGMS function to create IPL minidisks.
- Support for DOS and OS/VS Indexed VTOCs for DD Type 2.
- SAE operates in 370/XA mode with the ability to control the path to the test device.
- Support for four digit device addresses (over 16 channels).

This edition contains information about features of SAE not yet available for general use. The following information should be used for planning purposes only:

- All information about remote operation of STCPOST, including the SAE REMOTE command.
- All information about FBA DASD, including 3370 device definitions.

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PREFACE

SCOPE

This manual describes how to install and operate the STCPOST Stand-Alone Executive (SAE). The messages issued by SAE are described in this manual. SAE is installed by executing the STCPOST Generate Stand-Alone Programs (GENSAPGMS) function. This function and messages issued by this function are described in this manual.

Instructions for installing STCPOST and descriptions of the other functions are found in STCPOST REFERENCE MANUAL FE-001.

Message descriptions are found in STCPOST MESSAGES AND CODES FE-012.

The FRIEND function is described in STCPOST FRIEND FUNCTION REFERENCE MANUAL FE-013.

INTRODUCTION

STCPOST SAE is a small operating system designed to run STCPOST. SAE is used to execute STCPOST on an IBM 370 system, 370/XA system or on a VM/370 virtual machine. SAE is loaded from either a tape or a disk volume. It provides the services required by the OS/VS version of STCPOST including the equivalents of the OS/VS JCL statements, OS/VS operator commands, OS/VS I/O Supervisor and OS/VS Task Supervisor.

SAE is controlled by using operator commands similar to the OS/VS operator commands. The STCPOST printer output, normally output to the file SYSPRINT, can be routed to either the SAE operator's console or printer. The STCPOST control card input, normally read from the file SYSIN, is prepared using the STCPOST Control Card Editor or can be read from a card reader or tape device. The STCPOST Control Card Editor is described in the STCPOST REFERENCE MANUAL FE-001. The equivalent to the OS/VS test device DD cards are defined at the SAE operator's console.

When STCPOST is executed with SAE, all of the functions available in the OS/VS version of STCPOST can be used except the Generate Stand-Alone Programs (GENSAPGMS) function. Also, many diagnostic routines that run under the control of the DIAGNOSTIC function and are not available with the OS/VS or DOS/VSE versions of STCPOST can be executed.

The first file of a StorageTek FE SOFTWARE DISTRIBUTION TAPE can be used to IPL the STCPOST Stand-Alone Executive. It is also possible to IPL SAE from a tape or disk volume created by the STCPOST GENSAPGMS function. Normally the software distribution tape is used, however, the GENSAPGMS function can be used to generate an SAE IPL tape or disk if:

1. An SAE IPL tape with a pre-configured console is needed, or

2. An SAE IPL disk with or without a pre-configured console is needed, or

3. It is necessary to apply fixes (zaps) to SAE or to STCPOST.

To execute the GENSAPGMS function, STCPOST must be installed on an OS/VS1 or OS/VS2 operating system. The GENSAPGMS function can be installed and executed on a VM/370 CMS system. The GENSAPGMS function is described in Chapter 1.

RELATED DOCUMENTATION

This manual and the STCPOST manuals listed below can be ordered from:

StorageTek Literature Management Center
FE Documentation Subscription Service MD FH
2270 South 88th Street
Louisville, Colorado 80028

Phone: (303) 673-6789 or (303) 673-4840

This manual should be used with the following manuals:

STCPOST REFERENCE MANUAL	FE-001
STCPOST REFERENCE HANDBOOK	FE-009
STCPOST MESSAGES AND CODES	FE-012
STCPOST FRIEND FUNCTION REFERENCE MANUAL	FE-013

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CHAPTER 1

STCPOST STAND-ALONE EXECUTIVE INSTALLATION

This chapter describes the STCPOST Generate Stand-Alone Programs (GENSAPGMS) function. This function can be executed if STCPOST is installed on an OS/VS1 or OS/VS2 operating system or by using the VM/370 CMS execs on files 23 and 24 of the StorageTek FE SOFTWARE DISTRIBUTION TAPE. The GENSAPGMS function messages are described in Appendix A of this manual.

The first file on the StorageTek FE SOFTWARE DISTRIBUTION TAPE can be used to IPL SAE. There is no default console defined (SAE always enters the 333333 wait state when loaded) In addition, there are no fixes for problems discovered after this tape was distributed. The GENSAPGMS function of STCPOST is used to create an SAE IPL tape or disk. In addition, when the SAE IPL tape or disk is created, the following updates may be made:

1. A default console can be defined (so the 333333 wait state is not entered).

2. Any problems fixed after the distribution of the tape can be fixed (zapped) when the SAE IPL tape or disk is created. See the FE SOFTWARE NEWSLETTER SE-016 for information concerning zaps for program problems.

3. Ten Default Control Card sets may be defined for use by the STCPOST Control Card Editor.

SAE IPL TAPE GENERATION ON OS/VS SYSTEMS

To generate an SAE IPL tape containing SAE and STCPOST, the following is required:

1. STCPOST version 3.0A installed on an OS/VS system,

2. A copy of the StorageTek FE SOFTWARE DISTRIBUTION TAPE containing STCPOST version 3.0A.

3. A scratch tape which will become the SAE IPL tape.

The scratch tape which will become the SAE tape must be mounted on a 9-track 1600 BPI or 6250 BPI tape drive. SAE does not support 7-track or 9-track 800 BPI IPL devices.

Using these materials, run the job in Table 1-1.

Table 1-1. JCL to Create an SAE IPL Tape

```
 1    //jobname  JOB  acct-info,name,...
 2    //stepname EXEC PGM=STCPOST
 3    //SYSPRINT DD   SYSOUT=A
 4    //POSTDIST DD   DSN=STCPSAE,DISP=(OLD,KEEP),
      //               UNIT=TAPE,
      //               VOL=SER=STCSDT,LABEL=(25,NL)
 5    //POSTIPLT DD   DSN=SAEIPL,DISP=(,KEEP),UNIT=TAPE,
      //               VOL=SER=IPLPST,LABEL=(1,NL)
 6    //POSTDEF  DD   ...
 7    //SYSIN    DD   *
 8    GENSAPGMS,DEVTYPE=TAPE  < ,CONSOLE=aaaatttt >
 9    //POSTZAP  DD   *
10     < ZAP CONTROL CARDS >
11    //
```

Following is a description of each card in the job described in Table 1-1.

1. The JOB card is installation dependent.

2. The EXEC card requests the program STCPOST be executed.

3. The SYSPRINT DD card defines the printer output data set as class A output.

4. The POSTDIST DD card defines the file on the FE SOFTWARE DISTRIBUTION TAPE to be input to STCPOST. This file contains the programs for the SAE IPL tape being created.

5. The POSTIPLT DD card defines the output tape to become the SAE IPL Tape.

6. The POSTDEF DD card describes the STCPOST default control card input data set (see the section on Defining Default Control Card Sets, in this chapter).

7. The SYSIN DD card describes the control card input data set.

8. This STCPOST control card indicates that the GENSAPGMS function is to be executed to create an SAE IPL tape. The CONSOLE=aaaatttt is optional and defines the default console address (aaaa) and type (tttt). Both aaaa and tttt are four

hexadecimal characters (see SAE Console Configuration, Chapter 2).

9. The POSTZAP DD card describes the STCPOST ZAP control card input data set.

10. The ZAP control cards are inserted here (see the section on How to Apply Fixes, in this chapter).

11. This card indicates the end of the job JCL deck.

Upon successful completion of this job, the tape may be used to IPL SAE.

SAE IPL DISK GENERATION ON OS/VS SYSTEMS

To generate an SAE IPL disk containing SAE and STCPOST, the following is required:

1. STCPOST version 3.0A or higher installed on an OS/VS system.

2. A copy of the StorageTek FE SOFTWARE DISTRIBUTION TAPE containing STCPOST version 3.0A or higher.

3. The address and the volume serial number of an OS/VS formatted disk volume (3330-1, 3330-11, 3350, or 3380 type device) to contain the IPL data set for SAE.

The OS/VS volume to be used must either have no IPL text or have SAE IPL text. The.GENSAPGMS function does not replace the IPL text (cylinder zero, head zero, records 1, 2 and 4) if the volume contains IPL text of any program other than SAE.

Using these materials, run the job in Table 1-2.

Following is a description of each card in the job described in Table 1-2.

1. The JOB card is installation dependent.

2. The EXEC card requests the program STCPOST be executed.

3. The SYSPRINT DD card defines the printer output data set as class A output.

4. The POSTDIST DD card defines the file on the StorageTek FE SOFTWARE DISTRIBUTION TAPE to be input to STCPOST. This file contains the programs for the SAE IPL disk being created.

Table 1-2. JCL to Create an SAE IPL Disk

```
 1    //jobname  JOB  acct-info,name,...
 2    //stepname EXEC PGM=STCPOST,REGION=256K
 3    //SYSPRINT DD   SYSOUT=A
 4    //POSTDIST DD   DSN=STCPSAE,DISP=(OLD,KEEP),
      //              UNIT=TAPE,
      //              VOL=SER=STCSDT,LABEL=(25,NL)
 5    //POSTIPLD DD   DSN=SAEIPL,DISP=(,KEEP),UNIT=SYSDA,
      //              VOL=SER=vvvvvv,SPACE=(CYL,5,,CONTIG)
 6    //POSTDEF  DD   ...
 7    //SYSIN    DD   *
 8    GENSAPGMS,DEVTYPE=DISK  < ,CONSOLE=aaaatttt >
 9    //POSTZAP  DD   *
10     < ZAP CONTROL CARDS >
11    //
```

5. The POSTIPLD DD card defines the output disk which will contain the SAE IPL data set as a disk volume with volume serial vvvvvv.

6. The POSTDEF DD card describes the STCPOST default control card input data set (see the section on Defining Default Control Card Sets, in this chapter).

7. The SYSIN DD card describes the control card input data set.

8. This STCPOST control card indicates that the GENSAPGMS function is to be executed to create an SAE IPL disk. The CONSOLE=aaaatttt is optional and defines the default console address (aaaa) and type (tttt). Both aaaa and tttt are four hexadecimal characters (see SAE Console Configuration, Chapter 2).

9. The POSTZAP DD card describes the STCPOST ZAP control card input data set.

10. The ZAP control cards are inserted here (see the section on How to Apply Fixes, in this chapter).

11. This card indicates the end of the job JCL deck.

Upon successful completion of this job the disk may be used to IPL SAE.

SAE IPL TAPE AND MINIDISK GENERATION ON VM/370 CMS

The VM/370 version of STCPOST can be used to create SAE IPL tapes or minidisks of SAE/STCPOST. No other STCPOST functions are available.

NOTE

These instructions and CMS EXECs are intended for use with VM/SP EXEC2. They are not supported if used on other than standard IBM VM/SP systems with the CMS EXEC2 processor.

To generate an SAE IPL tape or minidisk containing SAE and STCPOST on a VM/370 CMS system the following is required:

1. One tape drive attached to the users virtual machine as TAP1 (181). The tape drive must be 9-track 1600 or 6250 BPI.

2. If an SAE IPL tape is to be made, a second tape drive must be attached to the users virtual machine as TAP2 (182). The tape drive must be 9-track 1600 BPI or 6250 BPI. SAE does not support 7-track or 9-track 800 BPI IPL devices.

3. If an SAE IPL minidisk is to be made, a 15 cylinder 3330, a 6 cylinder 3350, or a 6 cylinder 3380 minidisk or attached (dedicated) device must be defined at address x4FE. If an attached device is used, the device can only be used as an SAE IPL disk. It can not contain a volume label or a VTOC.

4. Approximately 200 blocks of CMS disk space on the users A-disk.

5. A copy of the StorageTek FE SOFTWARE DISTRIBUTION TAPE that contains STCPOST version 3.0A or higher. This tape MUST be mounted on TAP1 (181).

Step 1

Using these materials, enter the following CMS commands:

```
FI INMOVE TAP1 NL 23 ( RECFM FB BLKSIZE 3200 LRECL 80
FI OUTMOVE DISK COPY24 EXEC ( RECFM F BLKSIZE 80 LRECL 80
MOVE
```

The contents of file 23 are moved to the users A-disk. This file is an EXEC called COPY24 EXEC and is used to load the files needed to create an IPL tape or minidisk under VM.

Step 2

Enter the following CMS command:

```
COPY24
```

This executes the COPY24 EXEC to move files from file 24 to the users A-disk. After completion, the following files should be on the users A-disk:

```
STCPOST0 TEXT     B1
STCPST0D TEXT     B1
STCPST01 TEXT     B1
STCPST02 TEXT     B1
STCPST03 TEXT     B1
STCPST07 TEXT     B1
STCPST09 TEXT     B1
STCPOSTZ TEXT     B1
CMSPOST  EXEC     B1
CMSPOSTD EXEC     B1
CMSPOSTT EXEC     B1
CMSPOST  POSTDEF  B1
CMSPOST  POSTZAP  B1
CMSPOST  SYSIN    B1
```

The CMSPOSTT EXEC is used to run the STCPOST GENSAPGMS function to make an SAE IPL tape of SAE and STCPOST. The CMSPOSTD EXEC is used to run the STCPOST GENSAPGMS function to make an SAE IPL minidisk of SAE and STCPOST. Use these EXECs only with STCPOST version 3.0A.

Step 3

Before running the CMSPOSTT or CMSPOSTD EXECs, the following input data sets to STCPOST should be modified:

CMSPOST SYSIN A -- This file contains the single STCPOST control card for executing the GENSAPGMS function. If the CMSPOSTT EXEC is to be used, the DEVTYPE parameter of this control card must be changed to DEVTYPE=TAPE. If the CMSPOSTD EXEC is to be used, the DEVTYPE parameter of this control card must be changed to DEVTYPE=MDISK. The CONSOLE parameter on this control card should be modified to specify the default address and type of the SAE console. (Refer to SAE Console Configuration, Chapter 2.)

CMSPOST POSTZAP A -- This file contains any ZAP information for SAE and/or STCPOST. See the FE SOFTWARE NEWSLETTER SE-016 for this information. See the section on How to Apply Fixes, in this chapter. If no ZAP information is used, this file MUST contain a single card with an * in column 1.

CMSPOST POSTDEF A -- This file contains the user defined default control card sets 0 - 9. If no control card sets are defined, this file must contain a single card with ## in columns 1 and 2. See the section on Defining Default Control Card Sets, in this chapter.

These files MUST have record format F and record length 80. After editing any of these files, verify that the editor did not change the record format or the record length.

Step 4

After the SYSIN, POSTZAP, and POSTDEF files are modified, enter the following CMS command:

```
CMSPOSTT - to make an SAE IPL tape
-or-
CMSPOSTD - to make an SAE IPL minidisk
```

This executes the CMSPOSTT or CMSPOSTD EXEC. The EXEC prompts the user to mount the required tape(s) and then executes the GENSAPGMS to create an SAE IPL tape on TAP2 (182) or an SAE IPL minidisk on virtual disk address x4FE.

The STCPOST printer output is directed to the users virtual card reader. This output must be reviewed to determine if the GENSAPGMS function executed properly. If the function was successful, the tape or minidisk may be used to IPL SAE.

HOW TO APPLY FIXES TO SAE/STCPOST

Fixes for problems in SAE and STCPOST are distributed in the FE SOFTWARE NEWSLETTER SE-016. These fixes can be applied to SAE and STCPOST at the time an SAE IPL tape or disk is generated.

For OS/VS, this is done by including the

```
//POSTZAP DD *
```

DD card in the OS JCL. This card is followed by one or more ZAP Control Cards.

For VM/370 CMS, the ZAP Control Cards are contained in the file CMSPOST POSTZAP A. If no ZAP information is used, this file MUST contain a single record with an * in column 1.

ZAP Control Cards have the following format:

Column(s)	Contents
1-3	VER or REP
4	blank
5-12	csect name
13	blank
14-19	relative address (hex)
20	blank
21-80	2 to 32 hex characters (1 to 16 bytes of data) followed by a blank and any comments. The 1st hex character must be in column 21.

It is not necessary to verify (VER) the data before replacing (REP) it.

ZAP Control Cards with an * in column 1 are comments and are ignored.

DEFINING DEFAULT CONTROL CARD SETS

The STCPOST Control Card Editor can be directed to use any one of ten sets of pre-defined control cards. These control card sets may be included on the SAE IPL tape or disk at the time the tape or disk is created.

For OS/VS, this is done by including the

```
//POSTDEF DD DSN=POST.DEFAULT,DISP=SHR

          or

//POSTDEF DD *
```

DD card in the OS JCL.

If the //POSTDEF DD DSN=... card is included, the specified data set MUST contain the default control card set definitions. See the OS/VS installation instructions in the STCPOST REFERENCE MANUAL FE-001.

If the //POSTDEF DD * card is included, this card MUST be followed by one or more control card set definitions.

For VM/370 CMS, the Default Control Card Set definitions are contained in the file CMSPOST POSTDEF A.

The control card set definitions MUST be created as follows:

1. The first card of each default control card set contains a # (pound sign) in column 1 and a digit (0 to 9) in column 2. This card identifies this default control card set.

2. Following this card may be 0 - 16 STCPOST control cards. Refer to the STCPOST REFERENCE MANUAL FE-001 for the control card format.

3. Each control card set is preceded by a number card as described above.

4. The last (or only) card in the default control card file MUST have ## in columns 1 and 2.

Here is an example defining default control card sets 0, 1, 2 and 9:

```
#0
     WRTREAD SUMMARY
     VOLSCAN SUMMARY
#1
     WRTREAD SUMMARY
#2
     DIAGNOSTIC OPERATOR
#9
     WRTAPE NPASS=5 DENSITY=800
##
```

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CHAPTER 2

STCPOST STAND-ALONE EXECUTIVE OPERATION

This chapter describes the STCPOST Stand-Alone Executive. The material in this chapter is reference information. It is not a detailed step-by-step procedure for SAE operation. Chapter 5 is a step-by-step operation procedure and example and may be more useful for some readers.

STCPOST SAE has three phases of operation:

1. Program load and console configuration,

2. Test device definition, and

3. STCPOST execution.

SAE operates on VM/370 virtual machines, 370 Uniprocessor (UP), 370 Multiprocessor (MP), 370 Attached processor (AP), and 370/XA systems.

When operating on a VM/370 virtual machine or a 370 UP system, SAE assumes the CPU address is zero. SAE ignores the CPU address in any command or data input. For example, the CPU address portion of a device definition entry is ignored if specified.

When operating on a 370 MP or AP system, the CPU on which SAE is loaded is known as the primary CPU. The other CPU(s) are known as secondary CPU(s). The IPL device MUST be attached to one of the channels of the primary CPU. The SAE console, printer, SYSIN, and REMOTE devices may be attached to any channel of any CPU. The only requirement is that one path to the device MUST be online. SAE automatically selects a CPU and channel for the device at the time the device is defined. Whenever a test device is defined during the device definition phase, the CPU address should be specified. If not specified, SAE asks which CPU should be used to perform I/O to the test devices.

When operating on a single processor 370/XA system, SAE ignores the CPU address in any command or data input.

When operating on a multiple processor 370/XA system, the primary CPU is the one on which SAE is loaded. The other CPU(s) are known as secondary CPU(s). The secondary CPU(s) are kept in wait state and are not used to perform any functions of SAE. All SAE

functions are performed on the primary processor. SAE ignores the CPU address in any command or data input. The CPU address always defaults to the primary CPU address.

PROGRAM LOAD AND CONSOLE CONFIGURATION

The first file of a StorageTek FE SOFTWARE DISTRIBUTION TAPE can be used to IPL SAE. Is is also possible to IPL SAE from a tape or disk volume created by the STCPOST GENSAPGMS function.

IPL SAE ON STAND-ALONE CPU

To IPL SAE on a stand-alone CPU, the following are required:

1. a 370 system (UP, AP, or MP) or a 370/XA system (single or multiple processor),
2. a 3215 or 3066 console or local 3277/3278/3279 display terminal (includes 138, 148, 158, 303x and 43xx display consoles),
3. a 1403, 3203, 3211, 3213, 3286, or equivalent printer (a printer is optional),
4. a tape or disk drive to load SAE from, and
5. one or more devices to test with STCPOST.

To load SAE on a stand-alone CPU, perform an IPL CLEAR of the SAE tape or disk. During the loading phase, SAE verifies that the default console is online and ready. If it is not, or if no default console is defined, SAE enters a wait state with the instruction counter equal to 333333. At this point an online and ready console must be configured for SAE to use.

IPL SAE ON VM/370 VIRTUAL MACHINE

To IPL SAE on a VM/370 virtual machine, the following are required:

1. a VM/370 logon id,
2. a VM/370 virtual machine with a console and printer defined (a printer is optional),
3. a tape or disk drive to load SAE from attached to the VM/370 virtual machine, and

4. the devices to test with STCPOST attached to the VM/370 virtual machine.

NOTE

SAE is not supported on modified VM/370 systems or VM/370 look-alike systems if these systems operate differently than the standard IBM VM/370 system.

To load SAE on a VM/370 virtual machine, enter the CP commands SET ECMODE ON and IPL aaaa CLEAR where aaaa is the virtual address of the tape or disk. During the loading phase, SAE verifies that the default console is online and ready. If it is not, or if no default console is defined, SAE enters a wait state with the instruction counter equal to 333333. At this point an online and ready console must be configured for SAE to use. Use the VM/370 CP command DISPLAY PSW to determine if SAE has entered the 333333 wait state.

SAE CONSOLE CONFIGURATION

The console description is stored in main storage locations hex 0A00-0A03. The console address is stored in 0A00-0A01 in the format aaaa where aaaa is the console address. The console type is stored in 0A02-0A03. Valid console types are:

Console model	Display size	Console type	Notes
3215	N/A	0834	less than 120 print positions
3215	N/A	0835	120 or more print positions
3066	N/A	1007	168 console
3278-1	12 x 80	1028	
3278-2A	20 x 80	1018	43xx console
3277-2	24 x 80	1008	also 138, 148, 158, and
3278-2	24 x 80	1008	303x consoles
3278-3	32 x 80	1038	

NOTE

The 3279-x is equivalent to a 3278-x. The 3279-2C is equivalent to a 3278-2A. On an MP or AP system, SAE automatically determines which CPU to use for I/O to the console device. The consoles of a 308x system cannot be used for the SAE console. A local 327x MUST be used. The console of a VM/370 virtual machine is a virtual 3215, even if the real console is a 327x or a terminal connected to the system by a telephone line.

On a stand-alone CPU, follow the appropriate alter memory procedures for the CPU. On a VM/370 virtual machine, enter the CP command STORE 0A00 aaaatttt where aaaa is the address of the console device and tttt is the console type. After storing the data, perform a system restart or start and interrupt. On a stand-alone CPU, follow the appropriate procedures. On a VM/370 virtual machine, enter the CP command SYSTEM RESTART or EXTERNAL.

A default console can be specified when an SAE IPL tape or disk is generated. (Refer to Chapter 1.) If the console was specified, IPL CLEAR SAE. If the default console is not available at IPL, SAE enters the 333333 wait state. If the default console is online and ready, or if SAE entered the 333333 wait state and a console is properly configured, SAE completes loading and begins operation.

SAE CONSOLE MESSAGE FORMAT

The first two characters of each line displayed on the console identify the type of message being displayed:

blank blank -- message only,
digit blank -- reply message, and
blank dash -- continuation of previous line.

Console input (reply message responses and commands) are displayed at the left margin of the console line.

COMMANDS AND REPLY MESSAGE RESPONSES

To enter a command or a reply message response at a 3215 console, press the REQUEST key, type the input and press the END key. At a 3066 or 3277/3278/3279 console, type the command or the reply message response on the bottom line of the screen and press the ENTER key.

For example, when SAE displays the reply message:

```
3 SAE304 CHANGE DEVICE DEFINITIONS--E OR P OR Y OR N
```

one of the following responses must be entered at the SAE operator's console:

```
3,E          3,P          3,Y          3,N
```

For this example, 3 is the reply message number and E, P, Y or N is the reply. The comma following the 3 is optional and may be omitted.

327X CONSOLE OPERATIONS

A 327x console operates in two modes: ROLL and FRAME.

In ROLL mode, new messages appear at the bottom of the screen and roll up and off the top of the screen (except outstanding reply messages, which roll up to the top of the screen and remain there until answered).

FRAME mode operates in the same manner, except that when the screen is full, the word MORE is displayed in the lower right corner. SAE enters a wait state until the screen is cleared by using the PA1, PA2, PF1, or PF2 key.

The PA1 or PF1 key is used to switch between the FRAME and ROLL modes.

The PA2 or PF2 key is used to clear the screen when operating in FRAME mode.

The current mode is displayed in the lower right corner of the screen. The default mode is ROLL.

TIME OF DAY (TOD) CLOCK AND INTERVAL TIMER SETTING

If the TOD clock is not set, SAE issues a message and loops until the TOD clock is set. In 370 mode, if the interval timer is disabled, SAE issues a reply message and waits until the interval timer is enabled and a reply is given to the message. Follow the appropriate procedures for the CPU to set the TOD clock or enable the interval timer.

DEFINING THE TEST DEVICES

The devices to be tested with STCPOST must be defined to SAE. Enter a START (S) command to enter the device definition phase.

Upon entering the device definiton phase, SAE lists the current device definitions (if any), and allows the following operations to be performed:

1. Retain the device definitions as listed,

2. delete the current device definitions and enter a new list of device definitions,

3. edit the device definitions (delete or add device definitions without impacting the other device definitions), or

4. enter a prompt facility where the user is prompted for each step of the device definition.

After all modifications to the device definition list are made, SAE lists the new device definitions and again allows the above operations to be performed.

A maximum of eight test devices may be defined to SAE.

The following must be supplied for each test device in the order listed:

1. The ddname that STCPOST is to use for the device.

   The ddname for the device is six to eight alphanumeric characters. The first five characters must be 'SYSUT'. The remaining three characters must be numeric. The following ddnames are not equivalent (but are valid): SYSUT1, SYSUT01, and SYSUT001. SYSUT1 is the normal STCPOST default.

2. The address of the device.

   On a 370 system, the device address is defined as p.aaaa where p is the CPU address (a single digit from 0 - 3) and aaaa is the device address (a 3 or 4 digit hexadecimal address). If the system is a 370 UP only the device address is required, for example: 18A or 018A. If the system is a 370 AP or MP, both the CPU and device address should be specified, for example: 0.18A or 2.018A. If the CPU address is omitted, SAE lists the CPUs on which the device can be accessed. SAE then prompts the user for the CPU address to use.

   On a 370/XA system, the device address is defined as pp.aaaa where pp is the CHPID (two hex digits and aaaa is the binary device number (a 3 or 4 digit hexadecimal number). Both the CHPID and device address should be specified, for example: 02.18A or 25.018A. If the CHPID is omitted, SAE lists the CHPIDs on which the device can be accessed. SAE then prompts the user for the CHPID to use.

3. The type of device.

   The device type of the test device is:

   a) 1403 for all Model 2 printers,

   b) 2305-2 for 2305-2 type devices (4305 in 2305 mode),

   c) 3203 for all Model 7 printers,

d) 3211 for all Model 1 printers,

e) 3330-1 for 3330 Model 1 devices (3335, 8100, 8800), or 3350 devices in Model 1 compatability mode (8350),

f) 3330-11 for 3330 Model 11 devices (8800), or 3350 devices in Model 11 compatability mode (8350, 8360, 8650),

g) 3350 for 3350 type devices in native mode (8350, 8360, 8650),

h) 3380 for 3380 type devices (8380, 4305 in 3380 mode),

i) 3800 for 6100 laser printers,

j) TAPE for all tape devices (3400, 3600, 4500, 4600, and 4800), or

k) UNKN for unknown devices (do not use this device type unless an STCPOST function requires it).

4. The type of DD card to be used for the device.

The DD card type is a single digit from 0 to 6 and is defined as follows:

DD Card Type	Definition
0	no DD card, used with MODE-CHANGE, FORMAT-4305, and RE-CREATE VOLUME LABEL functions
1	read only DD card, i.e., SPACE=(TRK,0)
2	temporary dataset, i.e., SPACE=(TRK,n) where n>0
3	the existing dataset STC.WRITE.READ
4	the existing dataset STC.DEFECT.TRACK
5	a scratch tape volume, printer or an UNKN (unknown) device type
6	any existing disk dataset for read-only access

For detailed information on DD card types, see the STCPOST REFERENCE MANUAL FE-001.

Upon exiting the device definition phase, SAE loads and executes STCPOST.

DEVICE DEFINITION EXAMPLES

The following are examples of valid device definitions:

```
SYSUT1 191 3350 1
XYZ 0.230 2305-2 0
DISK   5A8   3330-11   2
SYSUT8 2.183 TAPE 5
SYSUT2 00F 1403 5
```

STCPOST EXECUTION

After the test devices are successfully defined, SAE loads and executes STCPOST.

The STCPOST control cards are normally defined now by using the STCPOST Control Card Editor.

STCPOST executes exactly as if it were executing under an OS/VS operating system.

While STCPOST is executing, SAE continues to accept commands entered at the SAE operator's console.

PRINTER OPERATION

If a printer is configured, the UCS and FCB may be loaded using the LOADBUF command.

If a printer is not configured, all printer output is displayed on the console.

If a tape is configured as the printer device, the tape drive MUST be a 9-track tape drive with an unlabeled scratch tape mounted on it. When the vary printer on command is entered, the tape is positioned to load point. A tape mark is written when a vary printer off command is entered. The tape can be listed on an OS/VS system by using a utility program such as IEBGENER. The JCL DD card parameters for the tape are:

```
LABEL=(1,NL)
DCB=(RECFM=UA,BLKSIZE=121)
```

The tape can also be printed on a VM/370 CMS virtual machine. The CMS commands to print the tape are:

```
FILEDEF INMOVE TAP1 NL 1 (RECFM UA BLKSIZE 121
FILEDEF OUTMOVE PRINTER (RECFM UA
MOVEFILE
```

The 3286 (or equivalent) is the printer that attaches to a 3272 or 3274 control unit (the same control unit to which local 3277/3278/3279 display devices attach).

The 3213 is the printer that is part of the 158 and other CPU consoles. If a 158 CPU console is operated in display mode, the 3213 can be used as the SAE printer device.

All printer output is buffered in main storage before it is output to the printer device. The buffer holds approximately one page of output. If the printer device is not ready for excessive periods of time, the buffer becomes full. While the buffer is full, logging of console messages to the printer is suspended. STCPOST output is not lost because STCPOST suspends execution until the printer buffer is no longer full.

MISSING INTERRUPT CHECKER

The SAE Missing Interrupt Checker (MIC) issues the SAE117 message every minute (two minutes for tape) for I/O operations that appear to be hung. An I/O operation can appear to be hung for several reasons:

- a channel that is busy for excessive periods of time,
- a control unit that is busy for excessive periods of time (usually due to missing control unit end status),
- a device that is busy for excessive periods of time (usually due to missing device end status),
- a CCW chain that was successfully started has not ended (missing channel end and/or device end status).

MIC does not alter the status of any I/O operation. MIC is active for all SAE devices and I/O operations at all times.

MISSING INTERRUPT HANDLER

The SAE Missing Interrupt Handler (MIH) generates a fake I/O interrupt so that a hung I/O operation is completed with status

of Interface Control Check (IFCC) and Channel Control Check (CCC). MIH generates the fake interrupt if all of the following conditions are met:

- MIC has issued message SAE117,
- The hung I/O operation is to a test device (a device defined by the SAE START command),
- The condition causing the hang is not intervention required, and
- MIH is enabled.

MIH does not issue any I/O operation to the hung device. It only posts the I/O operation as completed. If MIH does post the operation completed, SAE message SAE118 immediately follows message SAE117. Under certain conditions message SAE111 follows message SAE118.

Note that channels do not normally indicate both Interface Control Check and Channel Control Check simultaneously.

The fake I/O interrupt generated by MIH uses the following CSW:

```
CSW Key and FLAGS    = x'F0'
CSW Command Address = c'MIH' = x'D4C9C8'
CSW Status           = x'0006'
CSW Byte Count       = x'0000'
```

MIH is controlled by the SAE MIH command.

I/O MEASUREMENT

If 1000 or more I/O operations are done to a test device, SAE reports I/O measurement data when the device is closed by STCPOST. STCPOST closes a test device at the end of each STCPOST function. The I/O measruement data reported by SAE includes:

- the number of I/O operations done,
- the average, low, and high operation times,
- the average, low, and high queue times,
- the average, low, and high CCW chain execution times,
- the number of SIO, SIOF or SSCH instructions required,

- the percent of SIO and SIOF instructions that were unsuccessful because of channel busy, control unit busy, and device busy.

The number of I/O operations is the number of CCW chains completed. This number does not include the sense operations issued following the receipt of unit check status.

The operation time is the time required to schedule, start, and execute a CCW chain. This time includes the SAE overhead, the queue time (because of a busy condition), and the CCW chain execution time.

The queue time is the time required for a busy condition to clear.

The CCW chain execution time is the time from the last SIO, SIOF, or SSCH until Channel End is received for the CCW chain.

If SAE is running on a VM/370 virtual machine, the VM Control Program (CP) overhead influences the time measurements.

This information is reported in message SAE020.

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CHAPTER 3

CONSOLE OPERATION AND COMMANDS

This chapter describes the SAE operator's console operation and the format of the messages SAE displays on the console. All SAE messages are described in Appendix C of this manual. SAE accepts two types of input from the SAE operator's console:

1. responses to outstanding reply messages, and

2. commands.

SAE CONSOLE MESSAGE FORMAT

The first two characters of each line displayed on the console identify the type of message being displayed:

```
blank blank -- message only,
digit blank -- reply message, and
blank dash  -- continuation of previous line.
```

Console input (reply message responses and commands) are displayed at the left margin of the console line.

SAE REPLY MESSAGES

Reply messages are messages that ask a question or request data input. These messages have a single digit reply id number at the left margin of the console line. This number must precede the response to the reply message. For example, if the message

```
3 SAE304 CHANGE DEVICE DEFINITIONS--E OR P OR Y OR N
```

appears on the console, the response is either E (edit), P (prompt), Y (yes) or N (no) in any of these formats:

3E	3P	3Y	3N
3 E	3 P	3 Y	3 N
3,E	3,P	3,Y	3,N

The blank or comma between the reply number and the response is optional and may be omitted.

To enter a reply message response at a 3215 console, press the REQUEST key, type the reply response and press the END key. At a 3066 or 3277/3278/3279 console, type the reply response on the bottom line of the screen and press the ENTER key.

327X CONSOLE OPERATIONS

A 327x console may be operated in two modes: ROLL and FRAME.

In ROLL mode, new messages appear at the bottom of the screen and roll up and off the top of the screen (except outstanding reply messages, which roll up to the top of the screen and remain there until they are answered).

FRAME mode operates in the same manner, except when the screen is full, the word MORE is displayed in the lower right corner. SAE enters a wait state until the screen is cleared by using the PA1, PA2, PF1 or PF2 key.

The PA1 or PF1 keys are used to switch between the FRAME and ROLL modes. The current screen is cleared when the mode is changed.

The PA2 or PF2 keys are used to clear the screen when in FRAME mode.

The current mode is displayed in the lower right corner of the screen. The default mode is ROLL.

SAE COMMANDS

SAE accepts the following commands:

Command	Abbr.	Page Ref.
STOP	P	3-22
SYSIN	SIN	3-23
VARY	V	3-24

These commands can be entered at any time except as noted in the command descriptions. If a command is entered at an invalid time, SAE accepts the command, issues a message indicating the command is invalid at that time, and does not process the command.

To enter a command at a 3215 console, press the REQUEST key, type the command and press the END key. At a 3066 or 3277/3278/3279 console, type the command on the bottom line of the screen and press the ENTER key.

The console of a VM/370 virtual machine is a virtual 3215 even if the real terminal is a 3277/3278/3279 or a terminal connected to the system by a telephone line.

COMMAND SYNTAX CONVENTIONS

SAE console commands can be entered in uppercase or lowercase. Lowercase letters are converted to uppercase.

The command format is as follows:

Command	Required Parameters	Optional Parameters

The first column lists the command name; the second column, the required parameter(s); and the third column, the optional parameter(s).

The parameter(s) used are separated from the command name and each other by one or more spaces.

The following symbols must be coded as they appear in the syntax format:

- Equal Sign =
- Parenthesis ( )
- Single Quote '
  If a single quote is to be used within a parameter surrounded by quotes, then two quotes must be used:

  Example: 'this is a ''quote'' within'

The following symbols define the syntax presented in this manual:

NOTATION	DESCRIPTION
Abbreviations	Where abbreviation of a name is permitted, the abbreviated version is represented by uppercase letters. If the abbreviation is not a truncation, it appears on a separate line under the fully spelled parameter. Example: KEYword KEY and KEYWORD are acceptable. Example: PARAMETER PRM PRM and PARAMETER are acceptable.
Bar |	Separates mutually exclusive parameters or alternative parameter values. Example: a|b Selection of a or b is required.
Brackets [ ]	Indicate an option which may be omitted entirely. Example: [A|B|C] Select A, B, or C or omit the choices altogether.
Ellipsis ...	Indicates that entries may be repeated as often as necessary. Example: SOMETHING=aaa1,aaa2...
Lower Case Letters	Indicate a parameter must be substituted. The parameter may be entered in either upper or lower case. Example: XX=yyyyy A value must be supplied for yyyyy.
Quotes	A parameter containing blanks, commas, dashes, or asterisks must be contained within single quotes. If a quote is included as

NOTATION	DESCRIPTION
	part of the parameter two quotes must be used. Example: 'THIS CONTAINS A QUOTE '' MARK'
Upper Case Letters	Indicate that the entry must be spelled exactly as shown. The parameter may be entered in either upper or lowercase. Example: ACTIVE The word 'active' must be spelled out.
Underscore	Indicates the system default. If no parameter is entered, the system supplies the underscored value. Example: A|B|C If neither A,B, nor C is selected, C will be the default.

BLKMUX

The BLKMUX command allows the user to display, enable or disable block-multiplexing in 370 mode.

Command	Required Parameters	Optional Parameters
BLKMUX		ON|OFF

Required Parameters

There are no required parameters. If no parameters are used, the current status of block multiplexing is displayed.

Optional Parameters

ON
The ON parameter is used to enable block multiplexing.

OFF
The OFF parameter is used to disable block multiplexing.

The initial status of block-multiplexing is ON. This command is only valid in 370 mode.

CANCEL

The CANCEL command is used to cancel STCPOST.

Command	Required Parameters	Optional Parameters
Cancel		DUMP

Required Parameters

There are no required parameters.

Optional Parameters

DUMP
The DUMP parameter forces an abend and causes the program to cancel with a dump if the SAE printer is defined.

The CANCEL command simulates the operating system CANCEL command. The CANCEL command terminates STCPOST immediately. This command can only be entered while STCPOST is running.

CP

The CP command allows the user to enter a VM/370 CP command.

Command	Required Parameters	Optional Parameters
CP		any VM/370 CP command

Required Parameters

There are no required parameters.

Optional Parameters

The CP command allows the user to enter CP commands while executing SAE on a VM/370 virtual machine.

Example

```
CP MSG OP IS MY TAPE READY?
```

DISPLAY

The DISPLAY command allows the user to display activity, devices, processors, storage, replies, or date/time.

Command	Required Parameters	Optional Parameters
Display	A|P|R|S|T|Z M n|M END| BDN xxxx| SCH xxxxxxxx| SID xxxxxxxx|	
DISPLAY	U	ALL

Required Parameters

A
Displays whether or not STCPOST is running. In addition, if STCPOST is running, the status of the current test device(s) is shown.

P
Displays the number of processors configured by SAE. In addition the CPU address, CPU id, CPU flags, and prefix area address of each processor is displayed.

R
Lists any outstanding reply ids and the associated message numbers.

S
Displays the size of main storage, the SAE dynamic area, and the areas used by the SAE tasks.

T
Displays the current setting of the SAE date and time.

Z
Displays the current ZAP data for STCPOST and SAE.

M n
Starts a monitor function that issues a DISPLAY A command every n minutes. The value of n may be a decimal number between 1 and 99.

M END
Terminates the display monitor.

BDN xxxx
Displays the Subchannel ID (SID) assigned to the Binary Device Number (BDN) xxxx. xxxx is a 4 digit hexadecimal number. NOTE: The leading zero may be omitted when xxxx is specified. This parameter is only valid in 370/XA mode.

SCH xxxxxxxx
Displays the information in the Subchannel Information Block (SCHIB) for Subchannel ID (SID) xxxxxxxx. xxxxxxxx must be an 8 digit hexadecimal number. This parameter is only valid in 370/XA mode.

SID xxxxxxxx
Displays the Binary Device Number (BDN) assigned to the Subchannel ID (SID) xxxxxxxx. xxxxxxxx must be an 8 digit hexadecimal number. This parameter is only valid in 370/XA mode.

U
Displays the current test device definitions.

Optional Parameters

ALL
If U is specified as the first parameter, ALL may be specified as the second.

Displays the SAE device definitions in addition to the test device definitions.

HELP

The HELP command provides a brief description of the SAE commands, device definition information, or control card definition information.

Command	Required Parameters	Optional Parameters
Help		n

Required Parameters

There are no required parameters. If n is omitted, SAE displays the valid options for this command and requests the number of the option to be displayed.

Optional Parameters

n

A decimal number between one and nine. Help is displayed depending on the value of n as follows:

1 - START, STOP, OR CANCEL STCPOST
2 - VARY PRINTER DEVICE AND PRINT OPTIONS
3 - SYSIN AND REMOTE DEVICES
4 - DISPLAY COMMANDS
5 - SET DATE/TIME AND SAE OPTIONS
6 - GENERATE A DEVICE END FOR A TEST DEVICE
7 - SAE DEBUGGING AND VM/370 CP COMMANDS
8 - TEST DEVICE DEFINITION
9 - CONTROL CARD DEFINITION

LOADBUF

The LOADBUF command allows the user to display or load the SAE printer character set (UCS) buffer and forms control buffer (FCB).

Command	Required Parameters	Optional Parameters
LOADBUF LB		ucs [lpi]

Required Parameters

There are no required parameters. If LOADBUF is entered without parameters, the current data in the UCS and FCB buffers will be read and the type of UCS and number of lines per inch will be displayed.

Optional Parameters

ucs
Specifies the name of the universal character set (UCS).

[lpi]
If ucs is specified as the first parameter, the number of lines per inch for the forms control buffer (FCB) must be specified for 3203 and 3211 printers. lpi may be either 6 or 8.

Table 3-1 shows the valid UCS names for 1403, 3203 and 3211 printers:

Table 3-1. Valid UCS names for 1403, 3203 and 3211

1403	3203	3211
AN	AN	A11
PN	PN	G11
QN	QN	H11
SN	SN	P11
TN	TN	T11

NOTE

The SAE printer must be defined using the SAE VARY command before the LOADBUF command can be used. The LOADBUF command is ignored if STCPOST is running.

MAP

The MAP command is used for program debugging. It lists various SAE control blocks and their addresses.

Command	Required Parameters	Optional Parameters
Map		SAE aaaaaa

Required Parameters

There are no required parameters. If MAP is entered without parameters aaaaaa defaults to the address of the byte which follows the last byte displayed by the last MAP command. The next 128 bytes of main storage are displayed.

Optional Parameters

SAE
Displays the SAE control block information.

aaaaaa
Displays 128 bytes of main storage starting at address aaaaaa. Address aaaaaa is rounded down to the nearest sixteen byte boundary before the data is displayed. NOTE: Leading zeros may be omitted when aaaaaa is specified.

MIH

The MIH command allows the user to display, enable or disable the Missing Interrupt Handler.

Command	Required Parameters	Optional Parameters
MIH		ON|OFF

Required Parameters

There are no required parameters. If no parameters are entered, the current status of MIH is displayed.

Optional Parameters

ON
Enables the handler.

OFF
Disables the handler.

The initial status for the Missing Interrupt Handler is ON.

READY

The READY command allows the user to generate a Device End interrupt for a not ready device.

Command	Required Parameters	Optional Parameters
READY	aaaa	

Required Parameters

aaaa
Specifies the four character (hex) device address of the not ready device. NOTE: The leading zero may be omitted when aaaa is specified.

The READY command can only be issued for devices defined to SAE for which the current status is intervention required. This command generates a Device End interrupt for the specified device.

REMOTE

The REMOTE command allows the user to display a REMOTE communications device or vary it on or off.

Command	Required Parameters	Optional Parameters
REMOTE RMT		aaaa tttt|OFF

Required Parameters

There are no required parameters. If no parameters are entered, the current status of the REMOTE device is displayed.

Optional Parameters

aaaa tttt
aaaa specifies the four character (hex) device address. NOTE: The leading zero may be omitted when aaaa is specified.

tttt specifies the device type and MUST be 3370 to specify an STC 8370 device.

OFF
The REMOTE OFF command is used to remove the REMOTE device.

The device must be online or attached to the VM/370 virtual machine.

This remote communications device is used by the STCPOST REMOTE function.

RESTART

The RESTART command is used to restart STCPOST.

Command	Required Parameters	Optional Parameters
Restart		TEST=*|x|n

Required Parameters

There are no required parameters. If RESTART is entered without parameters, the Control Card Editor is invoked to display the active control cards, if any, and accept new control cards. If the SYSIN reader device is defined, the Control Card Editor is not used and the control cards are read from the device.

Optional Parameters

TEST=*|x|n

*
If the TEST=* parameter is used, control cards from the previous run are executed.

x
If the TEST=x parameter is used, the STCPOST Control Card Editor uses the control card set defined by x where x is the name of the control card set. Refer to the Control Card Editor Prompt facility description in the STCPOST REFERENCE MANUAL FE-001.

n
If the TEST=n parameter is used, the STCPOST Control Card Editor uses the default control card set defined by n where n is the number (0-9) of the default set to use.

The RESTART command causes SAE to load and execute STCPOST. The device definition phase is bypassed, and the same device definitions are used as in the previous run.

SET

The SET command is used to set the date and time.

Command	Required Parameters	Optional Parameters
SET T	yy.ddd hh.mm.ss	

Required Parameters

yy.ddd hh.mm.ss

yy.ddd
yy is the year, ddd is the Julian day.

hh.mm.ss
The current time in hours.minutes.seconds.

The date and time appear in the STCPOST page heading and in other messages. If not set, the date and time defaults to the current value in the CPU TOD clock.

NOTE

The SET command does **NOT** change the CPU Time-of-Day (TOD) clock.

SIOF

The SIOF command allows the user to display, enable or disable the START I/O FAST option in 370 mode.

Command	Required Parameters	Optional Parameters
SIOF		ON|OFF

Required Parameters

There are no required parameters. If no parameters are entered, the current status of the Start I/O Fast use is displayed.

Optional Parameters

ON
The ON parameter is used to enable the Start I/O Fast instruction for initiating all CCW chains executed by STCPOST and SAE.

OFF
The OFF parameter is used to disable the Start I/O Fast instruction.

The initial status for Start I/O Fast is ON. SIOF OFF disables channel I/O queueing. This command is only valid in 370 mode.

START

The START command is used to start STCPOST.

Command	Required Parameters	Optional Parameters
Start		TEST=*|x|n

Required Parameters

There are no required parameters. If START is entered without parameters, the Control Card Editor is invoked to display the active control cards, if any, and accept new control cards. If the SYSIN reader device is defined, the Control Card Editor is not used and the control cards are read from the device.

Optional Parameters

TEST=*|x|n

*
If the TEST=* parameter is used, control cards from the previous run are executed.

x
If the TEST=x parameter is used, the STCPOST Control Card Editor uses the control card set defined by x where x is the name of the control card set. Refer to the Control Card Editor Prompt facility description in the STCPOST REFERENCE MANUAL SE-001.

n
If the TEST=n parameter is used, the STCPOST Control Card Editor uses the default control card set defined by n where n is the number (0-9) of the default set to use.

The START command causes SAE to load and execute STCPOST. This command performs the following functions:

1. displays the current device definitions, if any, and accepts new device definitions if required or requested.

2. loads and begins execution of STCPOST.

STOP

The STOP command is used to stop STCPOST.

Command	Required Parameters	Optional Parameters
STOP P		

There are no parameters for the STOP command.

The STOP command simulates the operating system STOP (P) command. STCPOST monitors for this command (see the STCPOST REFERENCE MANUAL FE-001). When STOP is detected, STCPOST terminates.

SYSIN

The SYSIN command allows the user to display or vary a SYSIN reader device on or offline.

Command	Required Parameters	Optional Parameters
SYSIN SIN		aaaa CARD|aaaa TAPE [nn]|OFF

Required Parameters

There are no required parameters. If no parameters are entered, the current status of the SYSIN device is displayed.

Optional Parameters

aaaa CARD
The CARD parameter is used to vary a card reader online to SAE where aaaa specifies the four character (hex) device address. NOTE: The leading zero may be omitted when aaaa is specified. The device must be online or attached to the VM/370 virtual machine. A real or virtual card reader may be defined.

aaaa TAPE [nn]
The TAPE parameter is used to vary a tape device online where aaaa is the device address. NOTE: The leading zero may be omitted when aaaa is specified. nn is the file to be read as input. The device must be online or attached to the VM/370 virtual machine. nn may range from 1 to 99, and defaults to 1 if not specified.

OFF
The SYSIN OFF command is used to remove the SYSIN device.

VARY

The VARY command is used to display or vary printer options on or off.

Command	Required Parameters	Optional Parameters
Vary		aaaa tttt|aaaa OFF CP ON|CP OFF NP ON|NP OFF PP ON|PP OFF OFF

Required Parameters

There are no required parameters. If VARY is entered without parameters the current settings of the printer, parallel print, console print, and noprint options are displayed.

Optional Parameters

aaaa tttt
Defines the device to be used for the STCPOST SYSPRINT output file. aaaa specifies the four character (hex) device address. NOTE: The leading zero may be omitted when aaaa is specified. This parameter cannot be entered when STCPOST is running.

tttt specifies type of the printer. Valid values for tttt are: 1403, 3203, 3211, 3213, 3286 and TAPE.

aaaa OFF
Removes the printer device. aaaa specifies the four character (hex) device address. NOTE: The leading zero may be omitted when aaaa is specified. This parameter cannot be entered when STCPOST is running.

CP ON
Causes all console output to be printed on the printer if a printer is defined.

CP OFF
Terminates the printing of console output on the printer.

NP ON
Supresses all printer output if a printer device is defined. The noprint option is set off at the beginning of STCPOST execution.

NP OFF
Printer output resumes. The noprint option is set off at the beginning of STCPOST execution.

PP ON
Causes all printer output to be displayed at the console as well as printed on the printer.

PP OFF
Terminates the display of printer output at the console.

OFF
Deletes the printer device definition and sets console print off, parallel print off, and noprint off. This parameter cannot be entered when STCPOST is running.

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CHAPTER 4

OPERATION RESTRICTIONS

This chapter discusses the restrictions and other considerations that must be observed when SAE is used.

RESTRICTIONS ON A REAL MACHINE

The following restrictions must be observed when SAE is run on a stand-alone CPU:

1. **DD type 0**
   DD type 0 must only be used with the MODE-CHANGE, FORMAT-4305 and RE-CREATE VOLUME LABEL functions.

2. **DD type 2**
   DD type 2 is used to allocate space on a volume for write testing. If the volume has a valid OS/VS VTOC, an OS/VS INDEXED VTOC, or a DOS/VSE VTOC, only tracks in the free space areas can be allocated. If the volume has no Label or no VTOC, any tracks may be allocated. In either case, the tracks are selected by specifying the number of cylinders, number of tracks or the absolute track address of the track(s) needed.

   DD type 2 is not allowed if the VTOC indicates no free space or if errors are encountered reading the VTOC.

3. **DD types 3 and 4**
   If DD types 3 or 4 are used, the data set STC.WRITE.READ or STC.DEFECT.TRACK, must be allocated by an OS/VS or DOS/VSE operating system prior to the SAE run.

4. **DD types 6**
   If DD type 6 is used, the data set must be allocated by an OS/VS or DOS/VSE operating system prior to the SAE run.

RESTRICTIONS ON A VIRTUAL MACHINE

The following restrictions must be observed when SAE is run on a VM/370 virtual machine:

1. **DD type 0**

DD type 0 must only be used with the MODE-CHANGE, FORMAT-4305 and RE-CREATE VOLUME LABEL functions. The volume (device) to be used must be attached (dedicated) to the SAE/STCPOST virtual machine as a full volume device.

2. **DD type 1**
   The read-only functions such as VOLSCAN must be limited to the cylinder limits of the minidisk by using parameters such as the CLIMIT parameter. To test the CE tracks, the volume must be a full volume minidisk or an attached DASD volume.

3. **DD type 2**
   Do not use DD type 2 on minidisks containing CMS data. Mini-disks not formatted for use with CMS may be used with DD type 2, however, the cylinders available for testing must be restricted to be within the cylinder limits of the minidisk. To test the CE tracks, the volume must be an attached DASD volume.

4. **DD types 3, 4 and 6**
   DD types 3, 4 and 6 cannot be used unless the volume to be tested is an OS/VS or DOS/VSE formatted volume attached as a full volume minidisk.

5. **Home Address and Record Zero records**
   The Home Address and Record Zero records of a VM/370 minidisk cannot be altered. When running on a VM/370 virtual machine, changing these records using the MODECHG, FORMAT, ASSIGN, UNASSIGN or ASSIGNDS functions requires that the device be attached (dedicated) to the SAE/STCPOST virtual machine as a full volume device.

RESTRICTIONS WITH SHARED DASD DEVICES

The following restrictions must be observed when SAE is run on a shared DASD device:

1. Do not use DD type 0 on a volume online to any other system or VM/370 virtual machine.

2. Do not use DD type 2 on a shared volume. SAE does not reserve the device during testing and the other system(s) may allocate data set(s) within the area being used by SAE/STCPOST for write testing.

3. DD types 3, 4 and 6 may be used on a volume that is shared and online to other system(s) provided the other system(s) do not access or delete the STC.WRITE.READ or STC.DEFECT.TRACK data set while SAE/STCPOST is running.

4. Do not use DD type 5 for a device online to any other system or VM/370 virtual machine.

5. Any disk volume (minidisk) attached to more than one VM/370 virtual machine at a time is, in effect, operating in a shared DASD environment.

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CHAPTER 5

OPERATION EXAMPLE

This chapter is a detailed step-by-step procedure for and example of SAE/STCPOST operation and does not contain reference information (refer to Chapters 2, 3, and 4). Using this chapter, the first time user of SAE should be able to IPL and operate SAE. This example shows how to execute the STCPOST Volume-Scan (VOLSCAN) function on a single DASD device.

SAE CONSOLE MESSAGES

The first two characters of each line displayed on the console identify the type of message being displayed:

blank blank -- message only,
digit blank -- reply message, and
blank dash -- continuation of previous line.

Console input (reply message responses and commands) are displayed at the left margin of the console line.

COMMANDS AND REPLY MESSAGE RESPONSES

To enter a command or a reply message response at a 3215 console, press the REQUEST key, type the input and press the END key. At a 3066 or 3277/3278/3279 console, type the command or the reply message response on the bottom line of the screen and press the ENTER key.

For example, when SAE displays the reply message:

```
3 SAE304 CHANGE DEVICE DEFINITIONS--E OR P OR Y OR N
```

one of the following responses must be entered at the SAE operator's console:

```
3,E          3,P          3,Y          3,N
```

For this example, 3 is the reply message number and E, P, Y or N is the reply. The comma following the 3 is optional and may be omitted.

To run SAE, follow these steps:

1. IPL SAE.
   To load SAE on a stand-alone CPU, do an IPL CLEAR of the SAE IPL tape or disk. To load SAE on a VM/370 virtual machine, enter the CP commands SET ECMODE ON, and IPL aaaa CLEAR where aaaa is the virtual address of the tape or disk.

2. SAE may enter a wait state with the instruction counter equal to 333333.

   If SAE does not enter this wait state but instead completes loading and issues its initial messages proceed to step 4. The 333333 wait state indicates there is no console device configured or, the console device configured is not online. The device address and the device type of an online console device must be stored at main storage address hex 0A00-0A03. If stand-alone, follow the appropriate alter memory procedure for the CPU being used. If VM/370, enter the CP command STORE 0A00 aaaatttt where aaaa is the address of the console device and tttt is the console type.

   Store one of the following values:

   a) for a 3215 or for a VM/370 console store:

      aaaa0834

      where aaaa is the device address of the console and 0834 is the device type for a 3215.

   b) for a 138, 148 or 158 console or for a local 3277/3278/3279 or equivalent store:

      aaaa1008

      where aaaa is the device address of the console and 1008 is the device type for a local 327x-2.

   c) for a 43xx CPU console store:

      aaaa1018

      where aaaa is the device address of the console and 1018 is the device type for a 43xx console.

   d) for a 168 CPU console store:

      aaaa1007

where aaaa is the device address of the console and 1007 is the device type for a 3066 console.

3. Restart the CPU or VM/370 virtual machine.

   If stand-alone, either perform SYSTEM RESTART or press START and INTERRUPT. If VM/370, enter the CP command SYSTEM RESTART or EXTERNAL. If SAE re-enters the 333333 wait state, repeat step 2. If the console configuration is accepted, SAE completes loading and issues its initial messages.

4. Configure a printer (this step is optional).

   If a printer is to be used, enter one of the following commands:

```
VARY aaaa 1403
VARY aaaa 3203
VARY aaaa 3211
VARY aaaa 3213
VARY aaaa 3286
VARY aaaa TAPE
```

   where aaaa is the printer address and 1403, 3203, 3211, 3213, 3286 or TAPE is the printer type.

5. Start execution of STCPOST.

   Enter the following command:

```
START
```

   The START command starts execution of STCPOST.

   a) First, SAE asks for the definitions of one or more test devices.

   b) Second, it loads and begins execution of STCPOST. STCPOST executes exactly as if it were running under an OS/VS system.

6. SAE displays the current device definitions.

   SAE allows up to eight devices to be configured. This example assumes only the VOLSCAN function is to be run on one 3350 type device.

   SAE indicates there are no device definitions and asks if they are to be changed. Reply Y. SAE now asks for a device definition.

To configure a test device four items must be supplied:

a) The ddname STCPOST is to use,

b) The device address,

c) The device type, and

d) The DD card type.

For example:

```
SYSUT1 4FF 3350 1
```

where SYSUT1 is the ddname, 4FF is the device address, 3350 is the device type, and 1 is the DD card type. If this device is online and ready, SAE asks for the next device definition.

Enter the device definition for the device to be used:

```
SYSUT1 p.aaaa yyyy 1
```

where p.aaaa is the device address and yyyy is the device type.

When SAE asks for the next device definition, enter:

```
END
```

SAE lists the device definitions and asks if they are to be changed. If the reply is Y, SAE repeats this step. If the reply is N, proceed to the next step.

7. STCPOST now loads and begins execution.

8. The STCPOST Control Card Editor now displays the current control cards.

   STCPOST allows up to 16 control cards to be defined. This example assumes only the VOLSCAN function is to be executed.

   After listing the active control card set, STCPOST asks if they are to be changed. In this example, reply Y and STCPOST asks for the new control cards to be entered. Enter a single control card:

```
VOLSCAN SUMMARY
```

   When STCPOST asks for the next control card, enter:

```
END
```

The Online Control Card Editor now lists the new control cards and again asks if they are to be changed. If the reply is Y, STCPOST repeats this step. If the reply is N, proceed to the next step.

9. Relax and watch STCPOST run. It runs the same as if it were running under an OS/VS system.

10. When STCPOST ends ...

    To run STCPOST again, go back to step 5.

EXAMPLE CONSOLE PRINTOUT

An * to left of line indicates an action performed or a line entered at the SAE operator's console:

```
*  (Perform IPL procedure to load SAE)
   (SAE enters the 333333 wait state)
*  (Store the console address and type
*   at main storage address A00)
*  (Perform System Restart or press the External key)
     SAE000 STCPOST STAND-ALONE EXECUTIVE
            COPYRIGHT 1983 STORAGE TECHNOLOGY CORPORATION
            RELEASE 2.0H - 3380, 4305E, AND XA FIELD TEST
     SAE*** FIELD TEST -- REPORT PROBLEMS TO
            FE SOFTWARE SUPPORT
     SAE002 SAE IS RUNNING ON A VM/370 VIRTUAL MACHINE
     SAE261 DATE 84.041 TIME 09.44.34
     SAE009 M/S 01664K, D/A 01616K, H/A 001A0000
     SAE001 SAE READY -- ENTER COMMAND(S) --
            TO CONFIGURE A PRINTER ENTER A 'VARY' COMMAND,
            TO START STCPOST ENTER A 'START' COMMAND,
            FOR HELP ENTER A 'HELP' COMMAND.
*  v 00e 1403
     SAE256 VARY COMMAND COMPLETED--
            000E 1403, PP OFF, NP OFF, CP OFF
*  s
     SAE381 START TEST DEVICE DEFINITION
     SAE302 NO DEVICE DEFINITIONS
   0 SAE304 CHANGE DEVICE DEFINITIONS--E OR P OR Y OR N
*  0y
     SAE305 DEVICE DEFINITION FORMAT--
            'DDNAME  P.AAAA  DEVICE-TYPE  DD-TYPE'
   1 SAE306 ENTER DEVICE DEFINITION 01 OR 'END'
*  1sysut1 4ff 3350 1
     SAE321 CPU 0 DEVICE 04FF CC 0 STATUS 0C00 SENSE 0000
     SAE499 SENSE ID = FF 3880 01 3350 00
```

```
     SAE498 VOLUME SERIAL NUMBER = VS1RES
            VTOC LOCATION =   277.00000.001 (0115.0000.01)
     SAE308 DD 01 ACCEPTED
   2 SAE306 ENTER DEVICE DEFINITION 02 OR 'END'
*  2end
     SAE303 DEVICE DEFINITIONS--
            DDNAME    P.AAAA  DEVTYPE   DDTYPE  VOLSER
                              D/S-START   D/S-END D/S-SIZE
            SYSUT1    0.04FF  3350        1     VS1RES
                              FFFF.FFFF 0000.0000        0
   3 SAE304 CHANGE DEVICE DEFINITIONS--E OR P OR Y OR N
*  3n
     SAE382 END TEST DEVICE DEFINITION
     SAE391 STCPOST STARTED AT 09.46.38
     STCPOST - STC#00 START STCPOST CONTROL CARD EDITOR
     STCPOST - STC#21 NO ACTIVE CONTROL CARDS
     STCPOST - STC#27 NO ALTERNATE CONTROL CARDS SAVED
   4 STCPOST - STC#23 CHANGE CONTROL CARDS--E OR P OR Y OR N
*  4y
   5 STCPOST - STC#24 ENTER CONTROL CARD 01 OR 'END'
*  5volscan summary
     STCPOST - STC#25 CC 01 ACCEPTED
   6 STCPOST - STC#24 ENTER CONTROL CARD 02 OR 'END'
*  6end
     STCPOST - STC#22 ACTIVE CONTROL CARDS--
     STCPOST -        01 VOLSCAN SUMMARY
     STCPOST - STC#27 NO ALTERNATE CONTROL CARDS SAVED
   7 STCPOST - STC#23 CHANGE CONTROL CARDS--E OR P OR Y OR N
*  7n
     STCPOST - STC#99 END STCPOST CONTROL CARD EDITOR
   (The VOLSCAN function of STCPOST executes)
     SAE020 DEVICE 04FF I/O MEASUREMENT TIMES --
            NUMBER OF I/O'S          =    16654
            AVERAGE OPERATION TIME   =     39.8 MS
            LOW OPERATION TIME       =      4.8 MS
            HIGH OPERATION TIME      =   4668.6 MS
            AVERAGE QUEUE TIME       =      3.7 MS
            LOW QUEUE TIME           =      2.3 MS
            HIGH QUEUE TIME          =   1081.5 MS
            AVERAGE CCW TIME         =     36.1 MS
            LOW CCW TIME             =      1.1 MS
            HIGH CCW TIME            =   4664.7 MS
            NUMBER OF SIO'S          =    16654
            PERCENT SIO/CHAN BUSY    =   0
            PERCENT SIO/CU BUSY      =   0
            PERCENT SIO/DEV BUSY     =   0
     SAE392 STCPOST ENDED AT 10.02.16
```

APPENDIX A

GENSAPGMS FUNCTION MESSAGES

STCZ00 GENERATE STAND-ALONE PROGRAMS

Indicates the GENSAPGMS function of STCPOST is being executed.

STCZ01 PARAMETER ERROR (xxxxx)

The parameter xxxxx is either coded incorrectly or is invalid for the GENSAPGMS function.

STCZ02 AN IPL xxxx WILL BE GENERATED

Indicates whether an SAE IPL tape, disk, or minidisk will be generated.

STCZ03 FILE xxxxxxxx FAILED TO OPEN

Indicates an open for the file with ddname xxxxxxxx was unsuccessful. Check the JCL (OS) or the EXECs (VM/SP) for the job and verify that the data sets or files referenced exist.

STCZ04 I/O ERROR ...

This standard STCPOST error message indicates a temporary error occurred while attempting to read the Home Address (HA), Record Zero (R0), IPL Records One (R1) and Two (R2), and the Volume Label Record (R3) on the volume to become the SAE IPL disk.

STCZ05 I/O ERROR ...

This standard STCPOST error message indicates a temporary error occurred while attempting to write the IPL Records One (R1) and Two (R2), and the IPL program (R4) on the SAE IPL disk volume.

STCZ06 IPL RECORDS CANNOT BE PLACED ON VOLUME

IPL text (other than SAE IPL text) already exists on the volume that is to become the SAE IPL disk. GENSAPGMS does not replace existing IPL text unless it is SAE IPL text.

STCZ07 UNABLE TO READ OR WRITE IPL RECORDS

The error indicated by message STCZ04 or STCZ05 could not be retried successfully and is considered a permanent error.

STCZ08 ZAP DATA--

This zap data (taken from the POSTZAP DD data or CMAPOST POSTZAP) was placed on the SAE IPL disk, tape, or minidisk that was created.

STCZ09 INVALID ZAP DATA

The data contained on the last Zap Control Card printed is invalid. Either the format of the card is incorrect or the data for a field is invalid.

STCZ10 GENERATE STAND-ALONE PROGRAMS SUCCESSFUL

The GENSAPGMS function completed successfully. An SAE IPL tape, disk, or minidisk was created.

STCZ11 GENERATE STAND-ALONE PROGRAMS NOT SUCCESSFUL

The GENSAPGMS function did not complete successfully. An SAE IPL tape or disk was not created. A previous message should have been issued to indicate why the function was unsuccessful.

STCZ12 OUTPUT DEVICE IS NOT A 3330, 3350, or 3380

The DEVTYPE=DISK parameter was specified but the device defined by the POSTIPLD DD card is not a 3330-1, 3330-11, 3350 or 3380 type device.

STCZ13 DEFAULT CONTROL CARD DATA --
(control card data)
-- DEFAULT CONTROL CARD SET x CREATED
or
-- DEFAULT CONTROL CARD SET x CONTAINS NO CARDS

The default control card set has just been created or contains no cards. x is the number of the default control card set.

STCZ14 INVALID DEFAULT CONTROL CARD DATA

The default control card set just defined had invalid format. Refer to Chapter 1 in this manual for correct default control card data format.

STCZ15 ERROR ON WRITE TO DEVICE 4FE -- cc rc sns
SEEK/SEARCH/COUNT -- seek/search/count

A write to the IPL minidisk (device address 4FE) failed. The possible values of cc and rc are:

cc	rc	description
1	01	Device 4FE is not attached
1	05	Device 4FE is busy or has an interrupt pending.
2	02	Unit Status contained Unit Exception.
2	03	Channel status contained Incorrect Length.
3	0D	A permanent I/O error occurred, or an unsupported device was specified.

When cc=3 and rc=0D, sns is sense bytes 0 and 1.

seek is the last seek address (BBCCHH), search is the last Search ID Equal argument (CCHHR), and count is the count field of the record that could not be written (CCHHRKDD).

For cc=1/rc=01, ensure that device 4FE is defined (a 6-cylinder 3350 minidisk) and re-try GENSAPGMS.

For cc=1/rc=05, re-try GENSAPGMS.

For cc=2/rc=02 or cc=2/rc=03, report this error to FE Software Support.

For cc=3/rc=0D - If the sense data is zero, report the error to FE Software Support.

If the sense data indicates a device error (such as data check or equipment check), re-try GENSAPGMS.

If the sense data indicates a programming problem (such as command reject or no record found), report the error to FE Software Support.

STCZ16 DATA IN FILE POSTDIST IS NOT VALID

The input data set defined by the POSTDIST DD card or FILEDEF does not contain valid input for STCPOST GENSAPGMS or is for the wrong version of STCPOST. Check the POSTDIST DD card or FILEDEF. Ensure that the correct tape was mounted.

APPENDIX B

WAIT STATE CODES

Whenever SAE enters a wait state the instruction counter of the current PSW contains a code:

000000 -- SAE is waiting for I/O to complete or for an operator command or reply to be entered. Use the DISPLAY R and DISPLAY A commands to determine the status of SAE and STCPOST.

00aaaa -- Device aaaa is not ready. If this is the IPL or console device, SAE waits until it is made ready. If this is the printer or a test device, SAE may continue to accept commands but STCPOST may not be running.

222222 -- An I/O operation in XA mode ended with unit check but a sense operation on the same subchannel received condition code 3. General purpose register 1 contains the subchannel number.

333333 -- The console device is not configured or the configured console is not online and ready. Store the address of an online console at main storage address hex 0A00-0A01 and console device type at main storage address hex 0A02-0A03, and then perform a system restart or press start and interrupt.

4444xx -- An IPL loader error, an error loading SAE, or a ZAP verify failed and console communications have not been established. Check the IPL device, try a different IPL device, or check the ZAP data. xx is a two digit error code and describes the failure.

888888 -- Communications error between the processors of multiple processor system. Record the contents of general purpose registers 1, 2 and 3 and report this information to FE Software Support.

BBBBBB -- The Time of Day (TOD) clock is not operational. SAE MUST be reloaded.

CCCCCC -- The communications task is not running. Report this wait state to FE Software Support.

DDDDDD -- An invalid SVC request was made, or there is an error in the SAE control blocks. Report this wait state to FE Software Support.

EEEEEE -- A program check interrupt has occurred in an SAE task. Report this wait state to FE Software Support.

FFFFFF -- A machine check has occurred. Check the machine check interrupt code at main storage address hex E8.

APPENDIX C

MESSAGES

SAE messages appear as shown here according to the following conditions:

- Uppercase letters indicate the message appears exactly as shown.
- Lowercase letters are substituted for in the message.
- Brackets [ ] indicate a message which appears only when appropriate.

Many of the SAE reply messages ask for a single character response. The meanings of the possible responses shown in the messages are:

C -- cancel
E -- enter Device Definition Editor
I -- ignore
N -- no
P -- enter the prompt facility of the Device Definition Editor
R -- retry
Y -- yes

SAE000 STCPOST STAND-ALONE EXECUTIVE
COPYRIGHT 1983 STORAGE TECHNOLOGY CORPORATION
RELEASE ...

The first message issued by SAE after successfull loading.

SAE001 SAE READY -- ENTER COMMAND(S) --
TO CONFIGURE A PRINTER ENTER A VARY COMMAND
TO START STCPOST ENTER A START COMMAND
FOR HELP ENTER A HELP COMMAND

SAE has been loaded and is ready to process commands.

SAE002 SAE IS RUNNING ON A VM/370 VIRTUAL MACHINE

SAE is executing on a VM/370 virtual machine.

SAE003 SAE IS IN AP/MP MODE USING n PROCESSORS

SAE is executing on an AP/MP system where n is the number of processors configured.

SAE004 UNABLE TO DETERMINE BCT COUNT

SAE is unable to determine the one second BCT instruction count for the CPU. Time dependent testing cannot be performed.

SAE005 TOD CLOCK ERROR OR NOT OPERATIONAL

The CPU time-of-day clock is not correct or is not working. The time-of-day clock must be set to continue.

SAE006 PRESS TOD CLOCK ENABLE SWITCH TO CONTINUE

The TOD clock must be enabled by pressing the appropriate switch on the CPU console to continue SAE operation.

SAE007 INTERVAL TIMER NOT RUNNING

The CPU Interval Timer is not operational.

SAE008 ENABLE THE INTERVAL TIMER -- REPLY ANY CHARACTER

The Interval Timer must be enabled. Follow the appropriate procedure to enable the Interval Timer. After the interval timer is enabled, reply by entering any character to continue SAE operation.

SAE009 M/S nnnnnk, D/A nnnnnk, H/A xxxxxxxx

Storage Areas being used by SAE are:

```
M/S nnnnnk    - the size of main storage
D/A nnnnnk    - the size of the STCPOST
                dynamic area
H/A xxxxxxxx - the high address
                used by SAE
```

SAE010 SAE IS IN XA MODE

STCPOST SAE is operating in XA mode. Commands which require XA mode can be executed.

SAE013 ABEND IN task-id

SAE task task-id has abended. This message is displayed if CANCEL DUMP is used to cancel STCPOST. Any other occurrence indicates a program error in SAE or STCPOST and, should be reported to FE Software Support. This message is followed by various SAE information. If a printer is currently defined a dump of main storage prints.

SAE017 I/O ERROR --
CPU n DEVICE aaaa ECB xx CC c CSW ssss-bbbb
SEEK ADDR cccc.hhhh.rr
SENSE ss...ss

An I/O error has occurred where:

- aaaa - device address
- xx - ECB completion code
- c - SIO condition code
- ssss - CSW unit and channel status
- bbbb - CSW residual byte count
- cccc - cylinder address
- hhhh - head address
- rr - record number (if DASD)
- ss...ss - sense data (if Unit Check is on in the unit status).

SAE018 I/O ERROR ON NOP -- I OR R OR C

An I/O error occurred when SAE attempted to do a NOP command to a device. This message is preceded by message SAE017 describing the error. Reply I to ignore the error. Reply R to retry the operation. Reply C to cancel the SAE or STCPOST function attempting to use the device.

SAE019 dddddddd DD CARD MISSING

STCPOST attempted to OPEN an undefined DD card with ddname dddddddd. Check the current test device definitions or the STCPOST OPTION control card(s).

```
SAE020 DEVICE aaaa I/O MEASUREMENT TIMES --
       NUMBER OF I/O'S          = aaaaaaaa
       AVERAGE OPERATION TIME   = bbbbbb.b MS
       LOW OPERATION TIME       = cccccc.c MS
       HIGH OPERATION TIME      = dddddd.d MS
       AVERAGE QUEUE TIME       = eeeeee.e MS
       LOW QUEUE TIME           = ffffff.f MS
       HIGH QUEUE TIME          = gggggg.g MS
       AVERAGE CCW TIME         = hhhhhh.h MS
       LOW CCW TIME             = iiiiii.i MS
       HIGH CCW TIME            = jjjjjj.j MS
       NUMBER OF SIO'S          = kkkkkkkk
       PERCENT SIO/CHAN BUSY    = mmm
       PERCENT SIO/CU BUSY      = nnn
       PERCENT SIO/DEV BUSY     = ppp
```

If STCPOST does more than 1000 I/O operations to a test device, this message is issued when the test device is closed (normally at completion of each STCPOST function).

aaaaaaaa - the total number of I/O operations (CCW chains) executed on the device.
bbbbbb.b - the average operation time in milliseconds
cccccc.c - the low operation time in milliseconds
dddddd.d - the high operation time in milliseconds
eeeeee.e - the average queue time in milliseconds
ffffff.f - the low queue time in milliseconds
gggggg.g - the high queue time in milliseconds
hhhhhh.h - the average CCW time in milliseconds
iiiiii.i - the low CCW time in milliseconds
jjjjjj.j - the low CCW time in milliseconds
kkkkkkkk - the total number of SIO, SIOF or SSCH instructions required.
mmm - The percent of all the SIO or SIOF instructions that received Channel Busy
nnn - The percent of all the SIO or SIOF instructions that received Control Unit Busy
ppp - The percent of all the SIO or SIOF instructions that received Device Busy

The operation time is the time between when STCPOST requests an I/O operation (time of EXCP) and when the operation is posted as completed (time the ECB is posted). The queue time is the time an I/O operation remains queued by the I/O supervisor due to a Channel, Control Unit or Device Busy condition. The CCW time is the time from the last SIO, SIOF, or SSCH instruction to the time Channel End is received for the CCW chain. When SAE is run on a VM/370 virtual machine, most of the VM Control Program (CP) overhead is included in the CCW values.

SAE097 mmmmmmmm ZAP VERIFY +aaaaaa failed

A zap verify at offset aaaaaa in module mmmmmmmm failed. The SAE task loading module mmmmmmmm will abend. Check the current SAE zap data using the DISPLAY Z command. A new IPL tape or disk must be made to change any incorrect zap information.

SAE098 I/O ERROR--
DEVICE aaaa ECB xx CC c CSW ssss-bbbb
SEEK ADDR cccc.hhhh.rr
SENSE ss...ss

An error occurred on the SAE IPL device, where:.

aaaa - device address
xx - ECB completion code
c - SIO condition code
ssss - CSW unit and channel status
bbbb - CSW residual byte count
cccc - cylinder address
hhhh - head address
rr - record number (if DASD)
ss...ss - sense data (if Unit Check is on in the unit status).

SAE099 mod-name NOT FOUND

The program module mod-name cannot be found on the IPL device. This message should be reported to FE Software Support.

SAE110 ENVIRONMENTAL SENSE, CPU n DEVICE aaaa
SENSE ss..ss

Device aaaa on CPU n has reported environmental sense data. The sense data could be statistical data or logging mode data.

SAE111 I/O, CPU n DEVICE aaaa, STATUS xxyy
[SENSE ss...ss]

An unexpected I/O interrupt was received from CPU n, device aaaa, where xxyy is the CSW unit status and channel status, and ss...ss is the sense data (if Unit Check is on in the unit status).

SAE112 2305 BUFFERED LOG DATA, CPU n DEVICE aaaa, STATUS xxyy -, xxxxxxxxxxxxxxx

Buffered log full status was received from the 4305 device at address aaaa on CPU n. Each of the eight 8-byte buffered log entries, xxxxxxxxxxxxxxx, is printed following the first line of the message.

SAE113 MACHINE CHECK, CPU n, CODE xxxxxxxx xxxxxxxx

A recoverable machine check interrupt from CPU n was received and ignored by SAE. xxxxxxxx xxxxxxxx is bits 0 - 64 of the machine check interrupt code from main storage address hex E8.

SAE114 EXTERNAL, CPU n, CODE xxxx

An external interrupt from CPU n was received and ignored by SAE. xxxx is the external interrupt code from main storage address hex 86.

SAE115 INTERVENTION REQUIRED, CPU n DEVICE aaaa SENSE ss..ss

Device aaaa on CPU n is not ready. ss..ss is the sense data.

SAE116 SIO, CPU n, DEVICE aaaa, CSW STATUS xxyy

Unexpected status was received when a SIO was done to the device at address aaaa on CPU n. xxyy is the unit and channel status bytes of the stored CSW.

SAE117 MISSING I/O, CPU n, DEVICE aaaa, STATUS state

The device at address aaaa has failed to present device-end, control-unit end or channel-end status within the SAE timeout period. For tape devices the timeout period is two minutes. For all other devices the timeout period is one minute. state is the last status received by SAE for the device:

NRDY = the device is not ready.
CH-B = channel busy (CC=2) on last SIO.
CU-B = control unit busy (CC=1 with STM and BUSY) on last SIO.
BUSY = device busy (CC=1 with BUSY) on last SIO.
CCW = an I/O operation was started and channel-end and/or device-end status has not been received.
IDLE = no I/O operation is in progress or pending.

SAE118 I/O INTERRUPT GENERATED BY MIH

The SAE Missing Interrupt Handler has generated a fake I/O interrupt for a hung I/O operation. The fake I/O interrupt has both Interface Control Check and Channel Control Check set in the channel status byte of the Channel Status Word. This message is always preceeded by message SAE117 which describes the hung I/O operation.

SAE119 UNKNOWN MESSAGE QUEUED

Report this error to FE Software Support.

SAE151 REMOTE DEVICE NOT ONLINE

The remote device that was being defined did not respond. The device should be made ready and the REMOTE command re-issued.

SAE152 REMOTE COMMAND COMPLETED
RMT xxxx tttt

REMOTE command just issued has completed. If the remote device is successfully accessed, xxxx is the device address and tttt is the device type. If the remote device has been varied off, xxxx is OFF.

SAE153 REMOTE COMMAND IGNORED, REMOTE IS DEFINED NOW

The REMOTE command just issued was ignored because the device was already configured.

SAE154 REMOTE COMMAND IGNORED, STCPOST IS RUNNING

The REMOTE command just issued was ignored because STCPOST is running. To issue this command STCPOST must be stopped.

SAE161 SYSIN DEVICE NOT ONLINE

The sysin device being configured has no physical paths enabled. Enable a path to the device and reissue the SYSIN command.

SAE162 SYSIN COMMAND COMPLETED
xxxx tttt [nn]

The SYSIN command just issued has completed. If the sysin device is successfully accessed then xxxx is the device address, tttt is the device type and nn is the file number (if tape). If the sysin device has been varied off, xxxx tttt is RDR OFF.

SAE163 SYSIN COMMAND IGNORED, SYSIN IS DEFINED NOW

The SYSIN command just issued was ignored because a SYSIN device was already defined.

SAE164 SYSIN COMMAND IGNORED, STCPOST IS RUNNING

The SYSIN command just issued was ignored because STCPOST is running. To issue this command STCPOST must not be running.

SAE171 SIOF xx..xx

The status of the Start I/O Fast option is displayed where xx..xx is ENABLED or DISABLED.

SAE172 MIH ENABLED|DISABLED

This message is the response to a MIH command. The current state of the Missing Interrupt Handler is either ENABLED or DISABLED.

SAE173 BLOCK MULTIPLEXING ENABLED|DISABLED

This message is the response to a BLKMUX command. If block multiplexing is enabled then Control Register 0 bit 0 is set to one. If block multiplexing is disabled then Control Register 0 bit 0 is set to zero.

SAE201 START COMMAND IGNORED, STCPOST IS RUNNING

START was issued with STCPOST running. The command is ignored.

SAE211 SET COMMAND IGNORED, STCPOST IS RUNNING

A SET command was issued while STCPOST is running. The command is ignored.

SAE225 LOADBUF COMMAND IGNORED, STCPOST IS RUNNING

A LOADBUF command was issued while STCPOST is running. The command is ignored.

SAE226 LOADBUF COMMAND IGNORED, NO PRINTER CONFIGURED

A LOADBUF command was issued but no printer is configured. Use VARY to assign a printer before using the LOADBUF command.

SAE227 LOADBUF COMMAND IGNORED, LOADBUF IS PENDING

A LOADBUF command was previously issued, but has not completed processing. The second command is ignored.

SAE228 LOADBUF COMMAND IGNORED, INVALID PRINTER TYPE

A LOADBUF command was issued, but the printer device assigned using the VARY command is not valid for the LOADBUF command. To use LOADBUF, the printer type must be a 1403, 3203, or 3211.

SAE231 STOP COMMAND IGNORED, STCPOST IS NOT RUNNING

A STOP command was entered while STCPOST was not running. The command was ignored.

SAE232 STOP IS PENDING

A STOP command was issued while STCPOST was running. STCPOST terminates as soon as the command is detected. The exact time STCPOST terminates depends on the function currently executing.

SAE233 STOP COMMAND IGNORED, STOP IS PENDING

A second STOP command was entered while STCPOST is running. It was ignored.

SAE241 CANCEL COMMAND IGNORED, STCPOST IS NOT RUNNING

A CANCEL command was entered when STCPOST was not running. The command was ignored.

SAE242 STCPOST CANCELLED AT hh:mm:ss

STCPOST was cancelled by either a CANCEL command or by SAE abend processing.

SAE245 SID xxxxxxxx = BDN yyyy
CHPID(S) = pp ...

This message is the response to a DISPLAY SID command. yyyy is the Binary Device Number (BDN) assigned to Subchannel ID (SID) xxxxxxxx. pp are the CHPIDs defined for this SID.

SAE246 SCH xxxxxxxx CC y

This is the response to a DISPLAY SCH command. xxxxxxxx is the Subchannel ID and y is the condition code for the Store Subchannel (STSCH) instruction. If y is 0, the Subchannel Information Block is displayed following this message.

SAE247 BDN yyyy = SID xxxxxxxx

This message is the response to a DISPLAY BDN command. xxxxxxxx is the Subchannel ID (SID) assigned to Binary Device Number (BDN) yyyy.

SAE251 VARY COMMAND IGNORED, STCPOST IS RUNNING

A VARY printer on or off command was entered while STCPOST was running. The command was ignored. To use the VARY printer ON or OFF command, STCPOST must not be running.

SAE252 VARY COMMAND IGNORED, PRINTER IS DEFINED NOW

The VARY printer ON command was entered but the printer was already defined.

SAE253 I/O ERROR ON PRINTER DEVICE --
DEVICE aaaa ECB xx CC c CSW ssss-bbbb
[SENSE ss...ss]

An I/O error has occurred during printer definition.

aaaa	- device address
xx	- ECB completion code
c	- SIO condition code
ssss	- CSW unit and channel status
bbbb	- CSW residual byte count
cccc	- cylinder address
hhhh	- head address
rr	- record number (if DASD)
ss...ss	- sense data (if Unit Check is on in the unit status).

SAE254 PRINTER NOT DEFINED

While attempting to process a VARY printer ON command, an I/O error occurred while verifying that the printer device was operational. The VARY command fails.

SAE255 PRINTER DEVICE NOT ONLINE

The printer device is offline (CC=3). Correct this problem and re-issue the VARY command.

SAE256 VARY COMMAND COMPLETED --
aaaa tttt, PP xxx, NP xxx, CP xxx
[LOADBUF OR VARY PRINTER OFF COMMAND PENDING]

The last VARY command was successfully processed. If the printer device is successfully accessed then aaaa is the device address and tttt is the device type. If the printer device has been varied off then aaaa tttt is PRT OFF.

The PP displays the current status of the parallel print option (ON or OFF).

The NP displays the current status of the noprint option (ON or OFF).

The CP displays the current status of the console print option (ON or OFF).

If the third line of the message appears, a VARY OFF or LOADBUF command has been processed. However, the action being performed by the VARY or LOADBUF command is not yet complete. Check to make sure the printer device is ready.

SAE261 DATE yy.ddd TIME hh.mm.ss

The response to a DISPLAY T command. The current date is yy.ddd (julian) and the current time is hh.mm.ss.

SAE262 STCPOST IS NOT RUNNING, TIME hh.mm.ss

The response to a DISPLAY A command when STCPOST is not running.

SAE263 STCPOST IS RUNNING, TIME HH.MM.SS --
ACTIVE TEST DEVICE(S)--
ADDR VOLSER I/O SIO SIO/CHB SIO/CUB SIO/BSY STATUS
aaaa vvvvvv bbbbbbbb cccccccc dddddddd eeeeeeee ffffffff state

This message is the response to a DISPLAY A command or the result of the DISPLAY M command. STCPOST is currently running. If any test devices are opened by STCPOST, the current state of each is shown.

aaaa - the device address
vvvvvv - the volume serial number
bbbbbbbb - the number of I/O operations completed on the device
cccccccc - the number of SIO, SIOF, or SSCH instructions done to the device
dddddddd - the number of SIO or SIOF instructions that received Channel Busy
eeeeeeee - the number of SIO or SIOF instructions that received Control Unit Busy
ffffffff - the number SIO or SIOF instructions that received Device Busy.
state - the last status received by SAE for the device:
NRDY = the device is not ready.
CH-B = channel busy (CC=2) on last SIO.
CU-B = control unit busy (CC=1 with STM and BUSY) on last SIO.
BUSY = device busy (CC=1 with BUSY) on last SIO.
CCW = an I/O operation was started and channel-end and/or device-end status has not been received.
IDLE = no I/O operation is in progress or pending.

SAE264 REPLY IDS/MESSAGES OUTSTANDING--

The response to a DISPLAY R command. If any reply messages are outstanding, the reply id (number) and the text of the message are displayed.

SAE267 DISPLAY MONITOR STARTED

The display monitor has started.

SAE268 DISPLAY MONITOR ENDED

The display monitor has been stopped.

SAE271 MAP DATA --

This is the response to an SAE MAP command. This command is used for program debugging activities and is not explained in detail here.

SAE272 ZAP DATA --
ttt xxxxxxxx AT yyyyyy
zzz ... zzz

This message is the response to a DISPLAY Z command. ttt is either VER or REP, xxxxxxxx is the CSECT name, yyyyyy is the offset into the CSECT, and zzz is the verify or replace data.

SAE274 +aaaaaaa xxx ... xxx *ccc ... ccc*

where aaaaaaa is the address of the main storage data, xx ... xx is the data in hex, and ccc ... ccc is the data in printable format.

SAE275 NO DEVICE DEFINITIONS

This is the response to the DISPLAY U command when there are no devices defined.

SAE276 DEVICE DEFINITIONS

DDNAME	P.AAAA	DEVTYPE	DDTYPE	VOLSER
		D/S-START	D/S-END	D/S-SIZE
dddddddd	p.aaaa	tttttttt	t	vvvvvv
		d/s-start	d/s-end	d/s-size

Displayed in response to the DISPLAY U command. The current test device definition(s) are listed in this message. The meaning of the data in each column is:

dddddddd = the ddname for this device definition.
p.aaaa = the processor p and device aaaa address
tttttttt = the device type.
t = the DD card type.
d/s-start = the first track of the test data set (if DASD) cccc.hhhh.
d/s-end = the last track of the test data set (if DASD) cccc.hhhh.
d/s-size = the number of tracks in the test data set.
vvvvvv = the volume serial number of the DASD volume or tape volume mounted on the device.

SAE281 xxxxxxxx COMMAND INVALID, ENTER HELP FOR HELP

An invalid command, xxxxxxxx, was entered. The command was ignored.

SAE282 HELP COMMAND SELECTIONS -

A HELP command was entered without a selection parameter. The menu for help information follows the first line of this message. This message is followed by message SAE283.

SAE283 ENTER HELP SELECTION (1 TO 9) OR END

A HELP command was entered without a selection parameter. Reply with a single digit (1 to 9) to see the desired HELP selection (see message SAE282). Reply END to terminate the HELP command.

SAE284 HELP SELECTION n -

HELP command selection n is displayed following this message.

SAE289 HELP COMMAND IGNORED--
HELP COMMAND IN PROGRESS NOW--
ENTER DISPLAY R COMMAND

The HELP command just issued was ignored, because a previous HELP command is still being processed. The DISPLAY R command displays the outstanding HELP selection reply message.

SAE291 xxxxxxxxx PARAMETER INVALID, ENTER HELP FOR HELP

An invalid parameter, xxxxxxxx, was entered or a required parameter was ommitted with the last SAE command. The command was ignored.

SAE295 n PROCESSOR(S) CONFIGURED
ONE SECOND BCT COUNT iiiiiiii
CPU ADDRESS j, ID kkkkkkkk kkkkkkkk,
FLAGS llll, PREFIX mmmmmmmm

The response to a DISPLAY P command where:
n is the number of CPUs
iiiiiiii is the one second BCT count in hex
j is the CPU address in hex
kkkkkkkk kkkkkkkk is the CPU ID data
llll is internal SAE flags
mmmmmmmm is the address of the prefix storage area (PSA) for that CPU

An entry for each CPU configured is displayed.

SAE297 MAIN STORAGE SIZE nnnnnK
DYNAMIC AREA SIZE nnnnnK
D/A START xxxxxxxx, D/A END xxxxxxxx
TASK n SIZE xxxxxxxx

The response to a DISPLAY S command. The main storage size is the size of the CPU real memory and the dynamic area is the area STCPOST uses. D/A start and D/A end are the boundaries of this area. In addition the size of each fixed task area is displayed.

SAE299 CP RETURN CODE xxxx

Displays the return code from the CP command entered while running under VM/370.

SAE302 NO DEVICE DEFINITIONS

Displayed during the device definition phase of the START command processing. There are currently no test devices defined.

SAE303 DEVICE DEFINITIONS--

```
DDNAME    P.AAAA   DEVTYPE      DDTYPE    VOLSER
                   D/S-START    D/S-END   D/S-SIZE
ddddddddd p.aaaa   ttttttttt      t       vvvvvv
                   d/s-start    d/s-end   d/s-size
```

Displayed during the device definition phase of the START command processing. The current test device definition(s) are listed in this message. The meaning of the data in each column is:

```
ddddddddd  = the ddname for this device definition.
p.aaaa     = the processor p and device aaaa address
ttttttttt  = the device type.
t          = the DD card type.
d/s-start  = the first track of the test data set (if DASD)
             cccc.hhhh.
d/s-end    = the last track of the test data set (if DASD)
             cccc.hhhh.
d/s-size   = the number of tracks in the test data set.
vvvvvv     = the volume serial number of the DASD volume or
             tape volume mounted on the device.
```

SAE304 CHANGE DEVICE DEFINITIONS--E OR P OR Y OR N

Follows either message SAE302 or SAE303. To use the current test device definitions as is, reply N. To delete all of the current test device definitions and enter new ones, reply Y. To edit individual test device definitions (add one or delete one), reply E. The P reply causes the operator to be prompted for each entry.

SAE305 DEVICE DEFINITION FORMAT--

```
DDNAME   P.AAAA   DEVICE-TYPE   DD-TYPE
```

Displays the format in which a test device definition is entered.

SAE306 ENTER DEVICE DEFINITION nn OR END

Reply to this message with either test device definition nn or with the word END (to terminate device definition entry).

SAE307 DEVICE DEFINITION NOT ACCEPTED, ENTER HELP FOR HELP

The last test device definition was rejected. The reason(s) for rejection is described in the message(s) immediately prior to this message.

SAE308 DD nn ACCEPTED

Test device definition nn was accepted by SAE.

SAE310 INVALID DDNAME

The last test device definition contained an invalid ddname. The DD name is one to eight characters, starting with an alphabetic character.

SAE311 INVALID I/O ADDRESS

The last test device definition contained an invalid device address. The device address must be three or four hexadecimal digits. The processor address MUST be 0 - 3.

SAE312 INVALID DEVICE TYPE

The last test device defintion contained an invalid device type. The device type must be one of the following: 3350, 3330-1, 3330-11, 3380, 2305-2, TAPE, 1403, 3211, 3203 or UNKN.

SAE313 INVALID DD TYPE

The last test device definition contained an invalid DD card type. The DD card type must be a single digit, 0 to 6.

SAE314 DUPLICATE DDNAME

The last test device definition contained a duplicate ddname from a previously defined DD card or device. The ddname can NOT be SYSPRINT, SYSIN, SYSRMT, SYSCCLIB, or SYSCCDEF.

SAE315 DUPLICATE DEVICE ADDRESS

A duplicate device address was specified during the device definition phase. The device address can NOT be the address of the SAE IPL, console, SYSIN, REMOTE, or printer device.

SAE321 CPU n DEVICE aaaa CC c STATUS xxyy SENSE ssss

A SENSE command was issued for the device during device definition. The results of that operation are displayed where;

```
   n - CPU address
aaaa - device address
   c - SIO condition code
xxyy - unit and channel status from the CSW
ssss - sense data
```

This line is displayed for each configured processor of a multiprocessor system.

SAE322 ENTER CPU ADDRESS--0, 1, 2, 3 OR R OR C

SAE is running on a multiprocessor system and the CPU address has not been specified for a test device definition. Reply with the CPU address to use (0 - 3), or R to request the sense command (message SAE321), or C to cancel the device definition.

SAE323 BDN yyyy = SID xxxxxxxx

Binary Device Number (BDN) yyyy is assigned to Subcahnnel ID (SID) xxxxxxxx. This message is issued during device cofiguration when SAE is operating in XA mode.

SAE324 CHPID pp DEVICE yyyy CC c STATUS xxyy SENSE ssss

A SENSE command was issued to the device yyyy during device configuration. The results of the operation are displayed where;

```
  pp - the CHPID
yyyy - the binary device number
   c - the SSCH condition code
xxyy - unit and channel status from the ECSW
ssss - sense data
```

This line is displayed for each configured CHPID for the device when SAE is operating in XA mode.

SAE325 ENTER CHPID OR ALL OR R OR C

SAE is operating in XA mode and the CHPID was not specified for a test device definition. Reply with the CHPID to use (it must be one of the ones displayed in message SAE324) or ALL to use all defined CHPIDs, or R to request the sense operation be repeated (message SAE324), or C to cancel the device definition.

SAE331 DD EDIT -- ENTER ADD OR DEL OR END

The Device Definition Editor is active. Reply ADD to add an additional device definition to the existing set of test device definitions. Reply DEL to delete a current test device definition. Reply END to terminate the Device Definition Editor.

SAE332 DD SET FULL

The maximum of 8 test devices are defined. No additional test device definitions are allowed until one or more are deleted.

SAE333 ENTER DEVICE DEFINITION

Reply with the new test device definition to be added to the current set of test device definitions.

SAE334 DEVICE DEFINITION ACCEPTED

The test device definition added using the Device Definition Editor was accepted.

SAE335 DEVICE DEFINITION NOT ADDED, ENTER HELP FOR HELP

The test device definition to be added by the Device Definition Editor was rejected. The reason for rejection is described in the message(s) immediately prior to this message.

SAE336 ENTER DDNAME OR DEVICE ADDRESS TO DELETE

Enter the ddname or device address of the test device the Device Definition Editor is to delete.

SAE337 DDNAME OR DEVICE ADDRESS NOT FOUND

The ddname or device address entered in response to message SAE336 is not currently defined. No test device definition was deleted.

SAE338 DEFINITION FOR DEVICE ddddddd aaaa DELETED

The test device definition for the ddname ddddddd device aaaa was deleted from the currently defined test devices.

SAE381 DEVICE CONFIGURATION STARTED

The device definition phase of SAE START command processing has started.

SAE382 DEVICE CONFIGURATION ENDED

The device definition phase of SAE START command processing has ended.

SAE391 STCPOST STARTED AT hh.mm.ss

STCPOST began execution at time hh.mm.ss.

SAE392 STCPOST ENDED AT hh.mm.ss, RETURN CODE nnn

STCPOST completed execution at time hh.mm.ss with return code nnn.

SAE400 GETMAIN FOR SPACE MAPS FAILED

Insufficient main storage was available for tables associated with processing type 2 DDs. If running SAE under VM/370, increase the storage size of your virtual machine.

SAE401 INVALID DSCB AT cccc.hhhh.rr

An invalid extent description was found in the DSCB at the cccc.hhhh.rr listed while processing a type 2 DD. SAE treats this pack as if no free space was available.

SAE402 I/O ERROR READING LABEL--I OR R OR C

An I/O error occurred when SAE attempted to read the volume label of a CKD DASD test device. The volume label is cylinder zero head zero record three. This message is preceded by message SAE493 describing the error. Reply I to ignore the error. Reply R to retry the I/O operation. Reply C to cancel the test device definition in progress.

SAE403 VOLUME LABEL NOT FOUND ON CYL 0 HEAD 0 REC 3

The volume mounted on the CKD DASD device being configured does not contain a volume label record. This record is on cylinder 0 head 0 record 3. The label record must have a 4 byte key field containing 'VOL1' and an 80-byte data field starting with 'VOL1'.

SAE404 VTOC FORMAT 4 DSCB NOT FOUND OR INVALID

The volume mounted on the CKD DASD device being configured does not contain a valid VTOC format 4 DSCB. The format 4 DSCB is the first record of the VTOC.

SAE405 INVALID CYLINDER OR HEAD LIMITS

SAE has determined that the test data set extent limits are invalid. The starting track and the size of the test data set must be re-defined to be within valid cylinder and head limits for the test device type.

SAE406 ERROR READING VTOC

An I/O error occurred reading the VTOC. Allocation of the device fails.

SAE407 OLD DATASET HAS ZERO TRACKS ALLOCATED

The DD type 3, 4 or 6 old data set has zero tracks allocated to it. SAE requires a DD type 3 or 4 data set to have one or more tracks allocated to it.

SAE408 OLD DATASET NOT FOUND OR FORMAT 1 DSCB INVALID

The DD type 3, 4 or 6 old data set does not exist or the Format 1 data set control block (DSCB) for the data set is invalid.

SAE409 DD TYPE 3, 4 or 6 REQUIRES LABEL AND VTOC

The volume mounted on the test device must have a valid VTOC to locate a DD type 3, 4 or 6 data set.

SAE410 NO FREE SPACE AVAILABLE

The CKD DASD volume being configured does not have any unallocated tracks. If the volume has a valid label and VTOC, only DD types 0, 1, 3, 4, and 6 are allowed. If the volume does not contain a valid label or VTOC, all DD types except 5 are allowed.

SAE411 ENTER TYPE OF SPACE ALLOC--CYL OR TRK OR ABSTR OR LIST OR CANCEL

If a DD type 2 is used, the reply to this message determines the type and amount of space allocated by SAE to the test data set. Reply CYL to allocate one or more full cylinders of space. Reply TRK to allocate one or more tracks of space. Reply ABSTR to allocate one or more specific tracks. Reply LIST to have SAE display a list of the free space available. Reply CANCEL to cancel the device definition in progress.

SAE412 ENTER NUMBER OF CYLINDERS OR ALL

If the reply to message SAE411 was CYL, the reply to this message is the number of cylinders to allocate, 1 to 99999. If the reply is ALL the entire volume is allocated (only if there is no VTOC).

SAE413 ENTER NUMBER OF TRACKS

If the reply to message SAE411 was TRK or ABSTR, the reply to this message is the number of tracks to allocate, 1 to 99999.

SAE414 ENTER CCC.HH OF THE FIRST TRACK

If the reply to message SAE411 was ABSTR, this message follows message SAE413. The reply to this message is the starting cylinder and head number for the space requested. ccc.hh are in hex.

SAE415 REQUESTED SPACE NOT AVAILABLE

The requested DASD space is not available. If the volume mounted on the test device has a valid VTOC, message SAE411 is repeated. If the volume does not have a valid VTOC, message SAE416 is displayed.

SAE416 FORCE ALLOCATION OF SPACE--Y OR N

To force the allocation of the space requested, reply Y. To cancel the test device definition in progress, reply N.

> **WARNING**
>
> The Y reply to this message allows a test data set to be allocated anywhere on the volume. This may destroy customer data.

SAE417 ENTER CCC.HH OF FIRST TRACK

If the reply to message SAE416 is Y, the reply to this message is the starting cylinder and head number for the space requested. ccc.hh are in hex.

SAE420 LIST MORE FREE SPACE ENTRIES--Y OR N

In response to the reply LIST to message SAE411, 14 extents of free space are listed. Reply Y to list the next 14 extents of free space, or reply N to reissue message SAE411.

SAE421 I/O ERROR READING TAPE VOLUME LABEL--I OR R OR C

An I/O error occurred when SAE attempted to read the volume label of a tape test device. The volume label is the first record on a standard labeled (SL) tape (either IBM or ASCII). This message is preceded by message SAE493 describing the error. Reply I to ignore the error. Reply R to retry the I/O operation. Reply C to cancel the test device definition in progress.

SAE422 WARNING -- CUSTOMER DATA MAY BE DESTROYED

WARNING -- Any customer data on the test device may be destroyed.

SAE423 REPLY OKTOWRITE TO CONTINUE

In order to write on the test device, the reply to this message must be OKTOWRITE. Any other reply cancels the test device definition.

SAE424 DD TYPE 2 NOT ALLOWED - ERRORS IN THE VTOC

The VTOC of the CKD DASD volume being configured contains errors. DD type 2 is not allowed unless the VTOC can be read without error.

SAE425 DD TYPE 2 NOT ALLOWED - NO FREE SPACE

The VTOC of the CKD DASD volume being configured indicates that there are no unallocated tracks. DD type 2 is not allowed unless there is at least one unalloced track.

SAE426 SEARCHING VTOC FOR FREE SPACE ...

The VTOC of the CKD DASD volume being configured is being scanned to determine the location and quantity of free space (unallocated tracks) on the volume. The amount of time scanning takes is determined by the size of the VTOC.

SAE439 INVALID DATASET NAME - DSN MUST BEGIN STC.WRITE.READ
or
INVALID DATASET NAME - DSN MUST BEGIN STC.DEFECT.TRACK

The reply to the previous SAE441 message did not begin with STC.WRITE.READ for a type 3 DD or STC.DEFECT.TRACK for a type 4 DD. It is followed by another SAE441 message.

SAE441 ENTER DATASET NAME STC.WRITE.READ... OR NULL FOR DEFAULT
or
ENTER DATASET NAME STC.DEFECT.TRACK... OR NULL FOR DEFAULT

SAE is asking for the data set name of a previously allocated data set to test. The data set name must begin with STC.WRITE.READ for a type 3 DD or STC.DEFECT.TRACK for a type 4 DD. The defaults are:

Type 3: STC.WRITE.READ

Type 4: STC.DEFECT.TRACK

SAE451 ENTER DATASET NAME

A type 6 DD has been allocated. Enter the full data set name of any previously allocated data set. Only read access is allowed.

SAE461 ARE xxxx AND yyyy THE SAME VOLUME--Y OR N

If xxxx and yyyy are the same volume, the same space on the same disk volume has been allocated from two different paths, causing overlapping space allocations. If the reply is Y, the device definition is not accepted. If the reply is N, the device definition is accepted.

> **WARNING**
>
> If the space allocations are overlapping the results of such testing are unpredictable.

SAE462 OVERLAPPING SPACE ALLOCATION

The same space on the same disk volume has been allocated. The test device definition is not accepted. Refer to SAE461 for further explaination.

SAE491 WARNING -- DD TYPES 0, 2 AND 5 REQUIRE THAT THE DEVICE TO BE USED MUST BE OFFLINE TO ALL OTHER SYSTEMS AND VIRTUAL MACHINES

Test device definitions using DD types 0, 2 and 5 require that the test device be online only to the system (or VM/370 virtual machine) on which SAE is executing. If the test device is online to more than one system, customer data can be destroyed since more than one system may attempt to write/read data at the same time to the same DASD cylinder and head locations or to the same tape volume.

SAE492 CONFIRM THE DEVICE IS OFFLINE--Y OR N

If the test device being defined is known to be offline to all other systems (and VM/370 virtual machines), reply Y. If the test device is known to be online to any other system (or VM/370 virtual machine), reply N.

> **WARNING**
>
> If the test device is online to any other system and the reply to this message is Y, customer data may be destroyed.

SAE493 I/O ERROR --
DEVICE aaaa ECB xx CC c CSW ssss-bbbb
[SEEK ADDR cccc.hhhh.rr]
[SENSE ss...ss]

An I/O error has occurred during SAE test device definition.

aaaa - device address
xx - ECB completion code
c - SIO condition code
ssss - CSW unit and channel status
bbbb - CSW residual byte count
cccc - cylinder address
hhhh - head address
rr - record number (if DASD)
ss...ss - sense data (if Unit Check is on in the unit status).

SAE494 I/O ERROR READING DSCB--I OR R OR C

An I/O error occurred when SAE attempted to read a Data set Control Block (DSCB) on the volume mounted on a CKD DASD test device. This message is preceded by message SAE493 describing the error. Reply I to ignore the error. Reply R to retry the I/O operation. Reply C to cancel the test device definition in progress.

SAE498 VOLSER = xxxxxx, VTOC LOCATION = cccc.hhhh.rr

Displays the volume serial number (VOLSER) xxxxxx and the location of the volume table of contents (VTOC) cccc.hhhh.rr (cylinder, head, and record number) for the configured device.

SAE497 I/O ERROR ON NOP -- I OR R OR C

An I/O error occurred when SAE attempted to do a NOP command to the test device. This message is preceded by message SAE493 describing the error. Reply I to ignore the error. Reply R to retry the I/O operation. Reply C to cancel the test device definition in progress.

SAE499 SENSE ID = FF cccc mm dddd gg
or
SAE499 SENSE ID = NOT AVAILABLE

A Sense ID command (xE4) is issued to each SAE test device during test device definition. The data, if any, returned by this command is displayed in this message. If the test device command rejects this command, the first byte of data returned is not FF (hex), the number of bytes returned is other than seven, or an I/O error occurs, then the sense ID is not available. If an I/O error (other than command reject) occurs, it is reported by message SAE493, which describes the error. The SENSE ID data is printed where:

cccc - control unit type.
mm - control unit model.
dddd - device type.
gg - device model.

SAE801 INVALID INPUT DEVICE

Indicates a program error in SAE or STCPOST. Report this message to FE Software Support.

SAE802 INVALID OUTPUT DEVICE

Indicates a program error in SAE or STCPOST. Report this message to FE Software Support.

SAE803 INVALID DCB PARAMETERS

Indicates a program error in SAE or STCPOST. Report this message to FE Software Support.

SAE804 DEVICE aaaa NOT ONLINE--R OR C

SAE or STCPOST is attempting to use the device at address aaaa and the device is not online. Correct this problem and reply R to retry or reply C to cancel the SAE or STCPOST operation.

SAE805 GETMAIN FOR I/O BUFFER FAILED

There is insufficent main storage available to do I/O to a device. If possible, increase the amount of main storage available to SAE or run SAE on a larger system.

SAE806 INVALID TAPE FILE NUMBER

An SAE or STCPOST function is attempting to access a tape device and an invalid file number was specified. If the tape file number was obtained from an SAE reply message or from an STCPOST function control card, re-execute the function and specify a valid tape file number. Normally tape file numbers are a number between 1 and 99. Otherwise, report this message to FE Software Support.

SAE808 UNRECOVERABLE I/O ERROR

A permanent I/O error has occurred. This message is preceded by message SAE809 describing the error. The SAE or STCPOST function using the failing device is cancelled.

SAE809 I/O ERROR--
CPU n DEVICE aaaa ECB xx CC c CSW ssss-bbbb
SEEK ADDR cccc.hhhh.rr
SENSE ss...ss

An I/O error has occurred where:

aaaa	- device address
xx	- ECB completion code
c	- SIO condition code
ssss	- CSW unit and channel status
bbbb	- CSW residual byte count
cccc	- cylinder address
hhhh	- head address
rr	- record number (if DASD)
ss...ss	- sense data (if Unit Check is on in the unit status).

SAE810 QSAM NOT SUPPORTED

Indicates a program error in SAE or STCPOST. Report this message to FE Software Support.

SAE811 GET AFTER END-OF-FILE

Indicates a program error in SAE or STCPOST. Report this message to FE Software Support.

SAE901 USE PA1/PF1 TO SWITCH BETWEEN ROLL AND FRAME MODE

Appears on the input line of a 3277, 3278 or 3279 console device. A PA or PF key other than PA1, PA2, PF1 or PF2 was used. Use the correct PA or PF key or type an SAE command over this message.

SAE902 USE PA2/PF2 TO CLEAR SCREEN

Appears on the input line of a 3277, 3278 or 3279 console device. The 3277, 3278 or 3279 console device screen is in FRAME mode, the screen is full and there are one or more messages waiting to be displayed. If the PA2 or PF2 key is used, SAE clears the screen, leaves the console in FRAME mode and continues. If the PA1 or PF1 key is used, SAE clears the screen, places the console into ROLL mode and continues.

SAE903 REPLY n IGNORED -- NOT OUTSTANDING

The first non-blank character of the last SAE command entered was the number n, and that reply number is not currently outstanding. Use the DISPLAY R command to display the reply number(s) currently outstanding.

SAE904 COMMAND x IGNORED -- COMMAND QUEUE FULL

The last SAE command entered, whose first non-blank character was x, was ignored because the SAE internal command buffer is full. Re-issue the rejected command after SAE has processed the queued commands in the internal buffer.

SAE950 PRINT LINE(S) LOST -- PRINT QUEUE FULL

The print queue is full and at least one console message has been lost. No STCPOST output is lost. The probable cause is a problem with the printer.

SAE951 INVALID OUTPUT DEVICE

An invalid device type is configured as the printer device. Report this problem to FE Software Support.

SAE952 I/O ERROR--
CPU n DEVICE aaaa ECB xx CC c CSW ssss-bbbb
SENSE ss...ss

An I/O error has occurred on the printer device.

```
        n - CPU id
     aaaa - printer device address
       xx - ECB completion code
        c - SIO condition code
     ssss - CSW unit and channel status
     bbbb - CSW residual byte count
  ss...ss - sense data (if Unit Check is on in the unit
            status).
```

SAE953 PRINTER DEVICE STOPPED DUE TO FATAL I/O ERROR.
OUTPUT ROUTED TO CONSOLE

An unrecoverable I/O error has occurred on the SAE printer device. This message is preceded by message SAE952 which describes the error. The SAE print task has turned on parallel print to route all output to the console device. To restart a hardcopy printing, correct the problem with the printer device or use another printer device. NOTE: The printer device cannot be varied on more than once unless it is first varied off.

SAE954 TOP OF FORM - xxx -
THIS LINE IS SINGLE SPACED

THIS LINE IS DOUBLE SPACED

THIS LINE IS TRIPLE SPACED

A LOADBUF command was issued. This message prints the UCS loaded (xxx) and tests the ability of the printer to properly skip to top of form, and to space properly for single, double, and triple space.

SAE955 LOADBUF COMMAND COMPLETED--
UCS LOADED = xxxxxx
[LINES PER INCH = n]

A LOADBUF command was processed. For 1403 printers, the UCS name loaded replaces xxxxxx. The third line is not printed. For 3211/3203 printers, the message is in response to either 1) LOADBUF with no parameters (used to display current buffer contents), or 2) LOADBUF loading the values displayed into the buffers.

APPENDIX D

SAE COMMAND SUMMARY

Command	Required Parameters	Optional Parameters
BLKMUX		ON|OFF
Cancel		DUMP
CP		any VM/370 CP command
Display	A|P|R|S|T|Z M n|M END| BDN xxxx| SCH xxxxxxxx| SID xxxxxxxx|	
DISPLAY	U	ALL
Help		n
LOADBUF LB		ucs [lpi]
Map		SAE aaaaaa
MIH		ON|OFF
READY	aaaa	
REMOTE RMT		aaaa tttt|OFF
Restart		TEST=*|x|n
SET T	yy.ddd hh.mm.ss	
SIOF		ON|OFF
Start		TEST=*|x|n

Command	Required Parameters	Optional Parameters
STOP P		
SYSIN SIN		aaaa CARD|aaaa TAPE [nn]|OFF
Vary		aaaa tttt|aaaa OFF CP ON|CP OFF NP ON|NP OFF PP ON|PP OFF OFF

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INDEX CONT.

INDEX CONT.

READER'S COMMENT FORM

Please check or fill in the items; adding explanations / comments in the space provided.

Which of the following terms best describes your job?

[] Field Engineer
[] Systems Analyst
[] Sales Representative
[] Operator
[] Systems Support Representative
[] Manager
[] Engineer
[] Systems Engineer
[] Student/Trainee
[] Programmer
[] Systems Programmer
[] Instructor
[] Other (explain below)

How did you use this publication?

[] Introductory text [] Reference manual [] Student/[] Instructor text

[] Other (explain)_____

Did you find the material easy to read and understand?

[] Yes [] No (explain below)

Did you find the material organized for convenient use?

[] Yes [] No (explain below)

Specific criticisms (explain below)

Clarifications on pages _____

Additions on pages _____

Deletions of pages _____

Errors on pages _____

Explanations and other comments:

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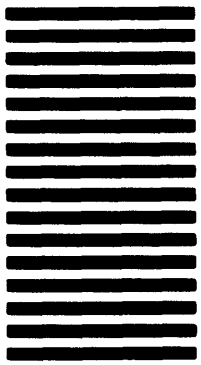

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