

Skybird Test Facility
Version 5, Release 0.2
User Guide

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About this guide

This document describes how to install and use Skybird Test Facility. It does not provide a complete description of all available commands as this information is provided by the STF online Help facility. STF Version 4 was developed for the MVS/XA, RACF and ACF/VTAM environment. STF Version 5 is a retrofitted version of STF Version 4, modified to run in the MVS 3.8, RAKF and VTAM2 environment. The documentation has been updated accordingly, but it is possible that some references to STF Version 4 functionality not available with STF Version 5 may still be present in the document.

Change history

Version 5.02

STF Version 5.02 contains multiple bug fixes and minor enhancements (see also: <https://www.skybird.net/stf/help/bug.php>).

- 3D Logo in logon screen;
- DATE (YY/MM/DD) has been changed to ISO DATE (YYYY-MM-DD);
- DATE/TIME/DAY command replaced by 'LIST DATE|TIME|DAY';
- Query Reply data added to PING ID="";
- <,ALL> added to 'LIST TASK|USER|APPL|SESS';
- Screens renamed from STF@@xxx to SCRN@xxx;
- Special Characters (Symbols) screen added(SCRN@SYM);
- STFTEST: Full screen TEST command support for STFACQ / STFISC screens;
- STFEDIT: major update, functionality from RPFEDIT added;

Version 5.01

- STF3270: implements a screen buffer. Use PF7/8 to scroll, use 'K' to clear.
- STFANL: the SIMLOGON problem has been fixed.
- STFCALC: Calculator for hexadecimal, decimal and text.
- STFEDIT: CHANGE and FIND command improved.
- STFKUSP: CUSP has been renamed into KUSP with additional functionality.
- STFCKDS: Full screen interface for CKDS maintenance.
- STFLST: LIST DATE replaces the DATE command.

This document was last updated on February 10, 2026. Updates for this guide will be published at the STF website: <https://www.skybird.net/stf/>

Introduction

Skybird Test Facility was developed to assist VTAM Systems Programmers and Network Operators in monitoring and testing an SNA network. Functions available include:

- Interface to MVS, VTAM, TSO and other applications
- Network Solicitor service (STFNSOL)
- Analysis of network performance (STFANL)
- Testing of network components (STFISC, PING, STATUS)
- Testing 3270 emulators for compatibility (ECHO, TEST)
- Connecting terminals to applications (PASS, STFACQ)
- Interface to RAKF (SAF)
- Debugging tool (DEBUG)
- Calculate with hexadecimal and decimal numbers (CALC)
- Cryptographic interface (KUSP)
- Interpretation of ACB and RPL error codes (SHOW)
- Convert between Row/Col and SBA v.v. (SHOW)
- Comprehensive Logging (STFLOG)
- Integrated Help facility (HELP)

Installing STF

STF is pre-installed in TK5 Update 5 or later systems so for users running TK5 Update 5 or later then this chapter can be bypassed.

To install STF the following steps are required:

- Upload the distribution file INSTALL.STF.XMI to a sequential data set in the target MVS-TK5 system with a DCB of RECFM(FB) LRECL(80) BLKSIZE(27920) and DSORG(PS)
- Issue the TSO RECEIVE Command
RECEIVE INDS('INSTALL.STF.XMI') NOPROMPT DSN('INSTALL.STF') -VOL(TK5002)
- Customize and submit member \$INSTALL in the data set INSTALL.STF. This job will install STF for MVS 3.8 on the target MVS-TK5 system.
- STF.CNTL contains two members that are PDF documentation files:
- 1. \$CUSTGDE - STF Customization Guide
- 2. \$USERGDE - STF Users Guide
- Download these members to a PC with filename suffix “.pdf” using the binary file transfer option to view the PDF format manuals. Note: do not EDIT the contents of members \$CUSTGDE and \$USERGDE.
- Authorize STF by adding an entry in SYS1.PARMLIB(IEAAPFxx) for STF.LINKLIB with volume TK5002 if not already present in the APF list.
- The STF application has to be identified to VTAM by placing the STF application major node definition, member name ASTF, in

SYS1.VTAMLST(ATCCONxx). This is performed as part of the \$INSTALL JCL stream.

- If STF is being installed for the first time then re IPL the system to refresh VTAM and the APF data set list IEAAPFxx.
- Delete data sets INSTALL.STF and INSTALL.STF.XMI as they are no longer needed.

Optional steps depending on how STF is used

If devices other than locally connected 3270 compatible terminals are going to logon to STF then the USS table specified on their VTAM definition should be updated to support a logon to STF. A sample USS table entry for an STF Logon using BAL format is listed below:

```
STF      USSCMD  CMD=STF,REP=LOGON,FORMAT=BAL
         USSPARM  PARM=APPLID,DEFAULT=STF
         USSPARM  PARM=P1,REP=DATA
         USSPARM  PARM=P2,REP=LOGMODE,DEFAULT=DSILGMOD
```

Usermod ZBP0002 is installed in TK5 to provide a suitable VTAM Interpret Table for locally connected 3270 compatible terminals to logon to STF. If Usermod ZBP0002 is not installed then an update to the currently used VTAM Interpret Table may be required.

The STF JCL PROC is copied to SYS2.PROCLIB as part of the \$INSTALL jobstream. This PROC will enable STF to run either as a started task or to invoke STF in batch mode with appropriate JCL to invoke the PROC. Customize this JCL for specific site configurational issues if required.

Installation Considerations

STF is pre-installed in TK5 Update 4 or later systems so for users running TK5 Update 5 or later then this chapter can be bypassed. STF has been installed in an Authorized Library and configured ready for use.

If the STF STEPLIB is not APF authorized then the following STF functions will be disabled:

- writing SMF records
- changing a password during Logon
- verify user-id/password during Logon

The STFLOGP DD statement is required only if the LOG task is used. The log dataset requires the DCB parameter of LRECL=133. If the LOG task is started and the STFLOGP DD statement is omitted then log records are written to the MVS SYSLOG. Alternatively, STFLOGP can be a SYSOUT data set. If LOG is not specified in the EXEC PARM then the default is LOG=NO. The log task is therefore not automatically started at STF initialization.

If ACB is not specified in the EXEC PARM then the VTAM ACB name defaults to STF.

If CONFTXT is not specified in the EXEC PARM then the default CONFTXT=YES is used with the result that STF data cannot be captured in a GTF trace.

If CONFLGN is not specified in the EXEC PARM, the default CONFLGN=YES is used and STF will reject Short Logons.

If TEST is not specified in the EXEC PARM then the default TEST=NO is used. In TEST mode, pre-loading of modules is disabled and extra trace messages may be displayed.

If NSOL is not specified in the EXEC PARM then the default NSOL=NO is used. The Network Solicitor subtask (STFNSOL) is not started.

If SMF is not specified in the EXEC PARM, the default SMF=NO is used. STF will not write SMF records. SMF records cannot be written if STF is running unauthorized.

Specify SHUTLAST=YES to close STF when the last user has logged-off.

Getting Started with STF

A VTAM driven network in the MVS environment is complex to configure and administer and particularly unforgiving of configurational errors. STF was developed to assist in monitoring and testing VTAM networks and the devices attached to networks. By necessity, STF must provide an extensive set of commands to interface to and run tests in such a complex environment. This chapter provides a step by step tutorial on how to use STF to perform some useful tests. Much of the information in this chapter is also presented elsewhere in this STF User Guide with various topics providing more in-depth descriptions of command options and the responses from the commands. The purpose of this chapter is to introduce the user to STF and encourage the user to explore the full functionality provided by STF as described in the topic specific chapters.

Start STF

STF can be started in a number of ways however, for this tutorial, start STF by issuing a Start command at the MVS console.

S STF

The following messages will appear on the MVS console

```
IEF403I STF - STARTED - TIME=11.13.20
+STF0003I STF      S/T/F 5.02 ACTIVE   2026-01-18 11:13:20
+STF0700A STF      AWAITING OPERATOR COMMAND...
```

STF is now started and available to accept a logon from a 3270 terminal.

Logon to STF

```
Terminal  CUU0C0                                     Date 15.01.26
                                                    Time 20:22:23

ZZZZz /, |, - \, ' _ , , - - - , , _
      |, 4- ) ) - , - . , ( (
      ' - - - ' ( _ / - - ' \ - ' ) _

The MVS 3.8j
Tur(n)key system

TK3  created by Volker Bandke      volker@bandke.org
TK4- update by Juergen Winkelmann juergen.winkelmann@pebble-beach.ch
TK5  update by Rob Prins          prin0096@gmail.com
      see SYS2.JCLLIB(CREDITS) for complete credits
      MVS 3.8j Level 8505 - Update 5

Logon ==> _

RUNNING TK5
```

Figure 1 - TK5 Network Solicitor Screen

At a screen displaying the TK5 Network Solicitor screen, as shown in the figure above, enter a logon command to logon to STF.

```
LOGON APPLID=STF
-or-
LOGON APPLID(STF)
```

The STF Logon screen will appear on the display

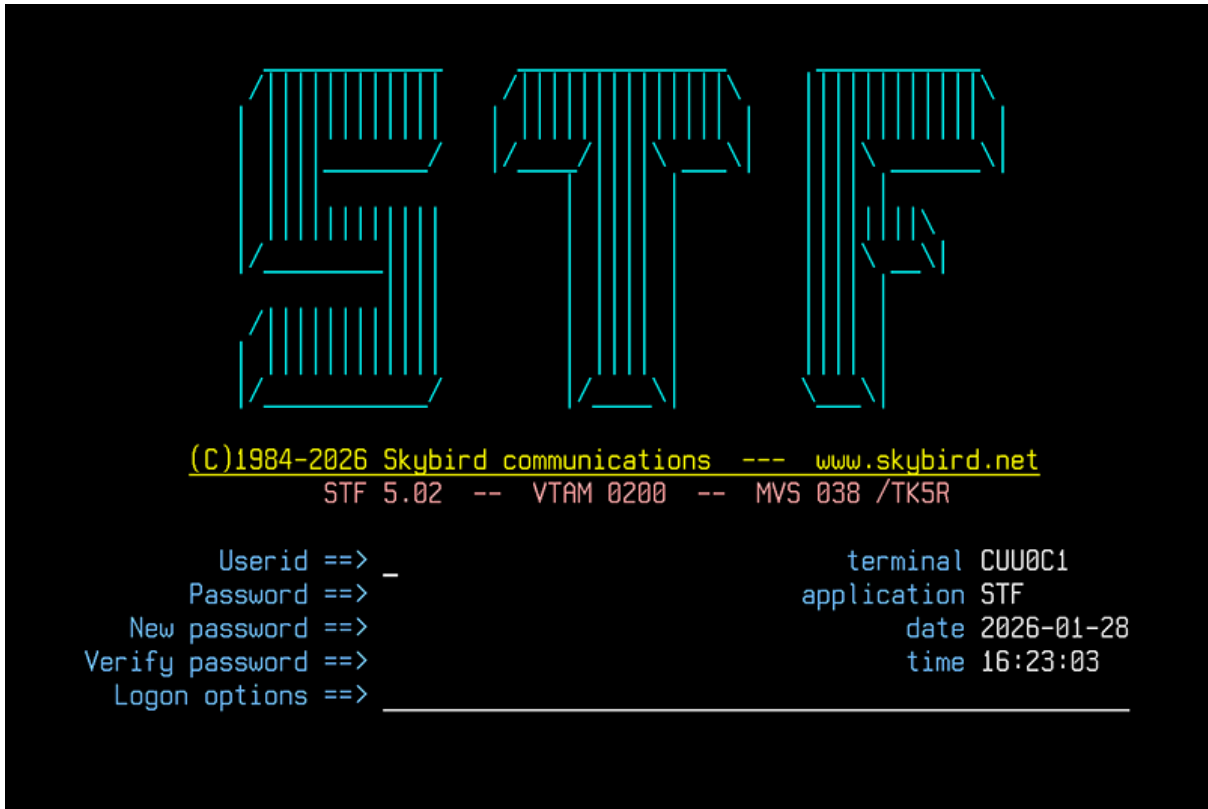


Figure 2 - STF 3270 Logon Screen

Enter the User ID and the password for a User Id that is known to RAKF as the Logon request will be validated by RAKF. In the example above the HERC01 User Id is going to be used to logon to STF. The Logon screen will be replaced by the STF Command screen where commands will be entered into STF and the results of the commands will be displayed.

Taking ownership of a terminal for testing

One of the many functions provided by STF is to test the compatibility of a 3270 emulator to correctly display 3270 orders, attributes and character sets. Before the 3270 compatibility tests, or any other STF testing can be run, STF needs to take ownership of the 3270 terminal that is going to be used for emulator testing.

Important!

Before STF can take ownership of a terminal, the Network Solicitor screen as shown in: Figure 4 - Network Solicitor Screen – How to identify the luname, must be visible.

You can press “Clear” to cause the Network Solicitor screen to be displayed in case a terminal still shows the initial Hercules TK5 Welcome screen.

```
Hercules Version : 4.9.1.11612-SDL-gee86c4de
Host name       : W11PROD
Host OS        : Windows 11 Pro 25H2-10.0.26200
Host Architecture : Intel(R) x64
Processors     : LP=28, Cores=20, CPUs=1
LPAR Name      : HERCULES
Device number  : 0:00C1
Subchannel     : 000A

The Hercules S/370, ESA/390 and z/Architecture Emulator
SDL 4.x Hyperion

Hyperion

My PC thinks it's a MAINFRAME!

Copyright (C) 1999-2025 Roger Bowler, Jan Jaeger, and others
```

Figure 3 - Hercules Welcome screen

In the MVS TK5 environment every terminal is either owned by the Network Solicitor or logged on, via VTAM, to an application such as TSO. Select a terminal for testing that is owned by the Network Solicitor and not by any application.

Make careful note of the luname of the terminal because the luname will be used to identify the target terminal to STF. The figure below shows where the luname appears on the Network Solicitor screen.

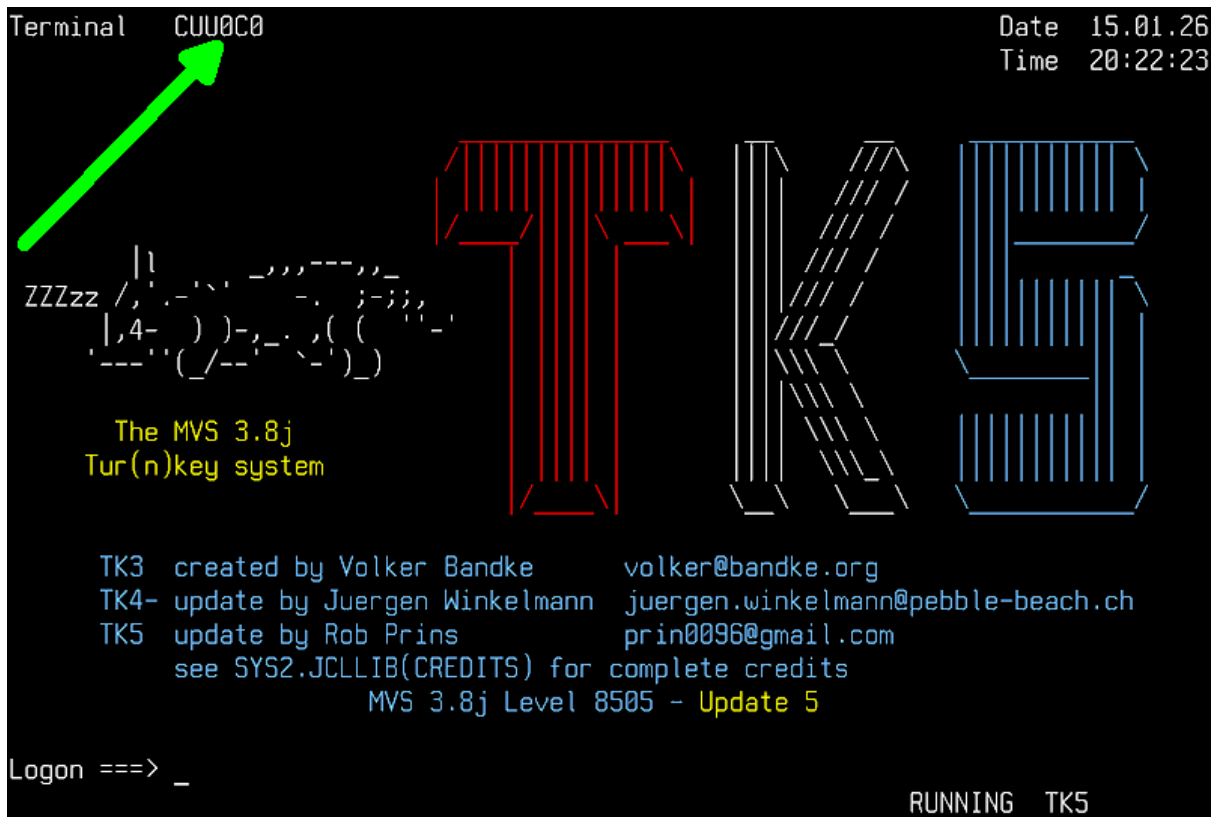


Figure 4 - Network Solicitor Screen – How to identify the luname

The STFACQ subtask is used to take ownership of a terminal away from the Network Solicitor and place it under control of STF.

On the STF Command screen, in the command area, enter the command:

S TASK=STFACQ, ID=*luname*, OPN

Where the ID=*luname* in the command must match the LU name of the terminal selected for testing. When STF has gained ownership of the terminal a message is displayed on the terminal identifying that the terminal is now owned by STF as shown in the figure below.

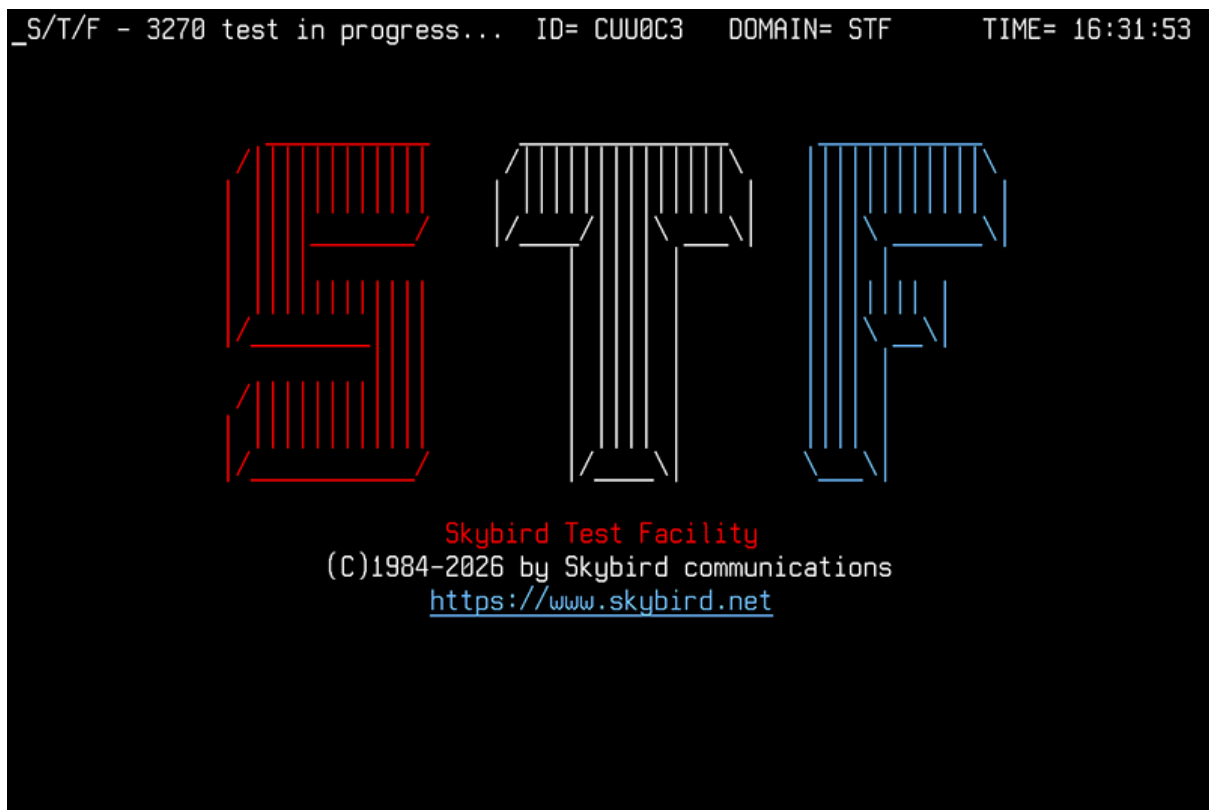


Figure 5 - Terminal for testing under the control of STF

Run 3270 emulator compatibility tests

As STF has ownership of the terminal then STF can send test screens to the terminal. STF provides several test screens that can be sent to the target terminal to test the terminal's 3270 compatibility. Using the LU name of the terminal now owned by STF then, on the STF Command screen, in the command area, enter the command:

```
F CUU0C2,SCREEN=SCRN@CHR
```

This command will display the standard 3270 character set and the 3270 APL character set as shown in Figure 5 below on the terminal being tested.

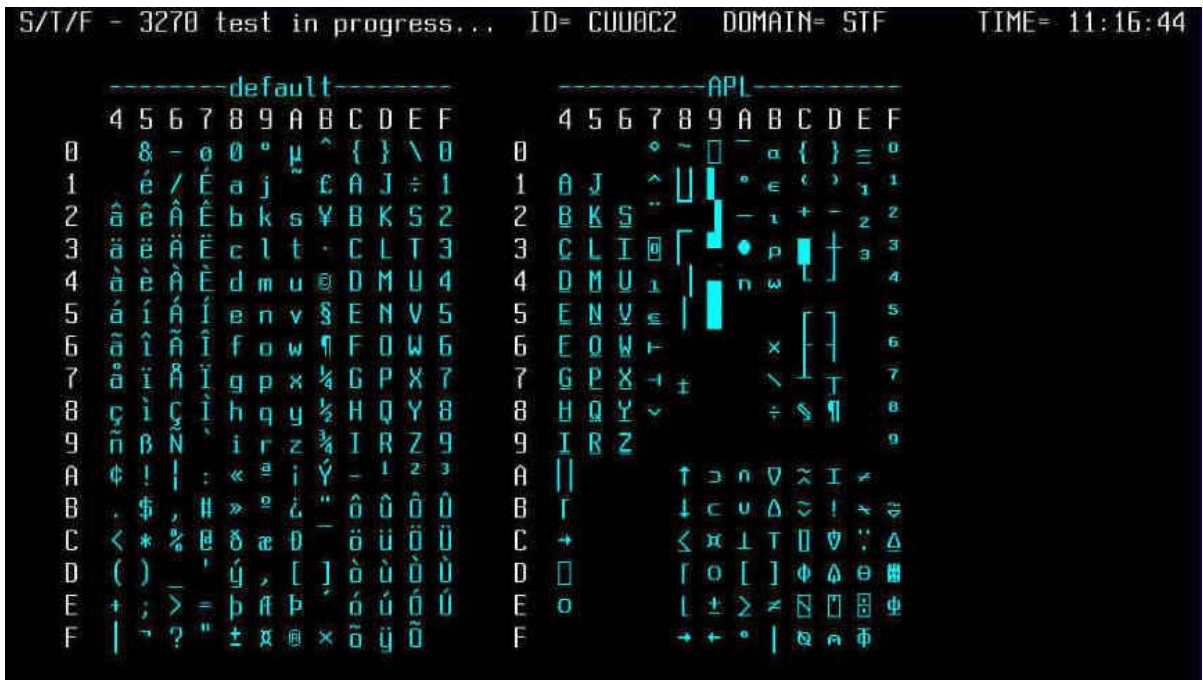


Figure 6 - SCRN@CHR: 3270 Character Sets

On the STF Command screen, in the command area, enter the command:

```
F CUU0C2,SCREEN=SCRN@SYM
```

This command shows the 3270 emulator special characters (symbols) as shown in the figure below:

```

STF TEST ----- STF CUU0C2 HERC01

Special characters (symbols)
-----
4A ¢ Dollar cent      60 - Minus           7E = Equal
4B . Point            61 / Slash           7F " Double quote
4C < Left angle bracket 6A | Split or       A1 ~ Tilde
4D ( Left bracket     6B , Comma          AD [ Left square bracket
4E + Plus             6C % Percent        AF ® Trademark
4F | Or              6D _ Underscore     B3 • Dot
50 & And             6E > Right angle bracket B4 © Copyright
5A ! Exclamation     6F ? Question mark  B5 § Paragraph
5B $ Dollar          79 ` Back quote     BD ] Right square bracket
5C * ASTERISK        7A : Colon          C0 { Left brace
5D ) Right bracket   7B # Number         D0 } Right brace
5E ; SEMI COLON      7C @ At             E0 \ Back slash
5F ^ Not            7D ' Single quote

10:51:28 Enter TEST command...
COMMAND ==> _

```

Figure 7 - SCRN@SYM: Special characters (symbols)

On the STF Command screen, in the command area, enter the command:

F CUU0C2,SCREEN=SCRN@ATR

This command shows the 3270 emulator colors for data displayed depending on the 3270 attribute settings as shown in the figure below:

S/T/F - 3270 test in progress... ID= CUU0C2 DOMAIN= STF TIME= 14:22:45

Prot	Num	High int.	Sel Pen	Non Dsp	MDT on	Hx Char	Prot	Num	High int.	Sel Pen	Non Dsp	MDT on	Hx Char
						40 AAAA	PROT						60 AAAA
					MDT C1	AAAA	PROT					MDT	61 AAAA
			SEL			C4 AAAA	PROT			SEL			E4 AAAA
			SEL		MDT C5	AAAA	PROT			SEL		MDT	E5 AAAA
		HIGH	SEL			C8 AAAA	PROT		HIGH	SEL			E8 AAAA
		HIGH	SEL		MDT C9	AAAA	PROT		HIGH	SEL		MDT	E9 AAAA
		----	---	NON		4C	PROT		----	---	NON		6C
		----	---	NON	MDT	4D	PROT		----	---	NON	MDT	6D
NUM						50 0000	PROT SKP						F0 0000
NUM					MDT D1	0000	PROT SKP					MDT	F1 0000
NUM			SEL			D4 0000	PROT SKP			SEL			F4 0000
NUM			SEL		MDT D5	0000	PROT SKP			SEL		MDT	F5 0000
NUM		HIGH	SEL			D8 0000	PROT SKP		HIGH	SEL			F8 0000
NUM		HIGH	SEL		MDT D9	0000	PROT SKP		HIGH	SEL		MDT	F9 0000
NUM		----	---	NON		5C	PROT SKP		----	---	NON		7C
NUM		----	---	NON	MDT	5D	PROT SKP		----	---	NON	MDT	7D

Insert Cursor ==> _

Figure 8 - SCRN@ATR: 3270 Colours set by Attribute Character

On the STF Command screen, in the command area, enter the command:

```
F CUU0C2,SCREEN=SCRN@EDS
```

This command uses the 3270 Set Field Extended (SFE), Set Attribute (SA) and Modify Field (MF) Orders to set the character colour and background colour on the display. This is shown in the figure below on the terminal being tested.



Figure 9 - SCR@EDS: 3270 Colours set by Extended Attribute

Completing the 3270 emulator compatibility tests

As the 3270 emulator compatibility tests are now complete, release the terminal being tested back to the Network Solicitor by entering the command:

```
F CUU0C2,RELEASE
```

```

STF 5.02 ----- STF CUU0C1 HERC01

-s task=stfacq,id=cuu0c2,opn
STF2302I COMMAND ACCEPTED
STF0030I STFACQ   STARTED BY HERC01
STF0036I STFACQ   READY AND WAITING FOR WORK
STF9297I RPL MACRO 0016 - SIMLOGON
STF9291I RPL CODES 0000 - Normal completion
STF1151I SESSION ESTABLISHED WITH ID= CUU0C2
STF1172I 00000896 BYTES SENT TO CUU0C2
-f cuu0c2,screen=scrn@chr
STF5301I COMMAND ACCEPTED
STF1172I 00001400 BYTES SENT TO CUU0C2
-f cuu0c2,screen=scrn@sym
STF5301I COMMAND ACCEPTED
STF1172I 00001248 BYTES SENT TO CUU0C2
-f cuu0c2,screen=scrn@atr
STF5301I COMMAND ACCEPTED
STF1172I 00001592 BYTES SENT TO CUU0C2
-f cuu0c2,screen=scrn@eds
STF5301I COMMAND ACCEPTED
STF1172I 00000760 BYTES SENT TO CUU0C2
-f cuu0c2,release
STF5301I COMMAND ACCEPTED
STF9297I RPL MACRO 001F - CLSDST
STF9291I RPL CODES 0000 - Normal completion
STF1163I ID=          , MODETAB= *DEFAULT , DLOGMOD= *DEFAULT
STF1164I DEVICE= n/a          , STATUS= n/a          , TRACE= NO
-p task=stfacq
STF2302I COMMAND ACCEPTED
STF0047I STFACQ   STOPPED BY HERC01

10:44:59 Awaiting command...
COMMAND ==> _

```

Figure 10 - STFACQ session log

The STF Command screen, at this time, will show the commands entered into STF, the status of each command and the release of the terminal used for testing back to the Network Solicitor. If this is the end of this STF session then enter the LOGOFF command to exit from STF with the terminal being passed back to the Network Solicitor.

The STF started task is still running and can be used for further STF sessions. If the STF started task is no longer required then, at the MVS Console enter the command:

P STF

The following messages will appear on the MVS console.

```

STF0705I STF          STOP COMMAND ACCEPTED
STF0003I STF          SHUTDOWN STARTED      2026-01-08 15:25:45
STF0003I STF          SHUTDOWN COMPLETE    2026-01-08 15:25:47

```

Shutting down the STF started task before shutting down VTAM is recommended otherwise VTAM will not shut down promptly because there is still a VTAM application still running.

This tutorial has provided an introduction to STF where STF was first started and then accepted a logon from a 3270 terminal. From the STF command screen a command was issued to gain control of a terminal for testing. Using further STF commands, multiple test screens were sent to the terminal being tested to verify 3270 compatibility. The terminal under test was then released back to the Network Solicitor and the user logged off STF. Optionally STF was shut down by a Stop command issued at the MVS Console.

STF provides an extensive set of commands and options for use in a VTAM network. Users are encouraged to read the various topic specific chapters in this STF User Guide and explore the functionality provided by STF.

Run STF

STF can be started and run in three different ways depending on user preference. All three ways provide the same STF functionality and users can LOGON to STF from a 3270 compatible terminal. However, the method of operator interface with STF is different depending on the way STF was started.

Started Task

At the MVS console issue:

```
S STF
```

This is the preferred method of starting STF as it does not require an Initiator address space or a TSO Logon.

Batch

Submit a job invoking the STF JCL Proc. Sample JCL is provided below:

```
//STF      JOB (STF),CLASS=A,MSGCLASS=X,MSGLEVEL=(1,1)          C
//              NOTIFY=&SYSUID
//STF501   PROC OUT=*
//STF      EXEC PGM=STFMAIN,                                     C
//              PARM='ACB=STF,LOG=YES,TEST=NO,NSOL=NO,SHUTLAST=NO, C
//              TIME=1440,REGION=4096K
//STEPLIB  DD DSN=STF.LINKLIB,DISP=SHR
//STFHELP  DD DSN=STF.HELP,DISP=SHR
//STFCKDS  DD DSN=STF.CKDS,DISP=SHR
//STFLOGP  DD SYSOUT=&OUT
//VTAMLIB  DD DSN=SYS1.VTAMLIB,DISP=SHR
//SYSPRINT DD SYSOUT=&OUT
//SYSUDUMP DD SYSOUT=&OUT
//              PEND
//STF      EXEC STF501
```

The allocation of STF.CKDS is optional and only required if KUSP/CKDS are used.

TSO Foreground Task

Issue the following commands when at the TSO Ready prompt:

```
ALLOC DATASET('STF.HELP') DDNAME(STFHELP) SHR
ALLOC DATASET('STF.CKDS') DDNAME(STFCKDS) SHR
```

```
CALL 'STF.LINKLIB(STFMAIN)'  
FREE DDNAME(STFHELP)
```

When STF runs as a TSO foreground task, the Help dataset must be allocated with an ALLOC command before the TSO CALL command is used to invoke STF. The allocation of the CKDS dataset is optional, it is only required if KUSP/CKDS are used.

STF Operator Interfaces

Depending on how STF was started the appropriate Operator Interface is started automatically. When STF runs as a Started Task (STC) or as a Batch Job (JOB) the MVS console operator interface is automatically started. If STF is executed as a TSO foreground application (TSU) the TSO interface is activated automatically. Each of these interfaces are discussed in the later sections.

There are two modes to communicate with STF:

- LINE mode,
- FULL SCREEN mode.

The STF interfaces to MVS, TSO (and optionally other applications) operate in LINE mode. This interface is also called STF OPERATOR interface.

The STF FULL SCREEN interface is also known as the STF User or Terminal interface. This user interface is only available from a 3270 compatible terminal logged onto STF via VTAM.

MVS Operator Interface

When STF has been started, either as a started task or a batch job, the MVS console interface is automatically started. The MVS console Modify command can be used to pass commands to STF. The MVS console Stop command is used to stop STF. Only line-mode commands are accepted from MVS consoles. If a command only appropriate for full screen access to STF is entered from MVS then STF returns the following message:

```
STF2407E COMMAND REJECTED; NOT IN FULLSCREEN MODE
```

As MVS operators do not have to LOGON to STF, certain commands may be rejected by the security exit(s). In this case the following message appears:

```
STF2406E COMMAND REJECTED; USER NOT VERIFIED
```

TSO Operator Interface

When STF runs as a TSO foreground task, the TSO interface is automatically started.

STF uses line mode TPUT and TGET macros to communicate with the TSO user. During TSO foreground execution of STF the MVS-console operator interface can be started manually in either of two modes using the STF start command depending on the preferred method of interaction with STF:

- S TASK=STFCONS (for command entry using the MVS console Modify command)
- S TASK=STFWTOR (for command entry using WTOR and WTO console messages)

STF Help Facility

The STF Help command gives access to help information contained within STF modules and (optionally) the STFHELP dataset.

HELP 3270	display 3270 control characters
HELP APL	display 3270 APL characters
HELP ATTR	display 3270 attribute characters
HELP CHARS	display 3270 characters
HELP ATTR	display 3270 special characters (Symbols)
HELP cmd/task	display information about a specific command or task
HELP COMMANDS	display a list of all line commands
HELP INFO	display STF information
HELP NEWS	display STF news item(s)
HELP PARM	display STF startup parameters
HELP PFKEY	display PF Key settings
HELP SAF	display SAF/RAKF return codes
HELP SHORT	display short form of commands/operands
HELP TERMINAL	display terminal control commands
HELP USAGE	display STF Usage notes
HELP DIR	to list the HELP members in STFHELP
HELP HELP	for the rules to create HELP members

Refer to the STF Customization Guide on how to add additional Help information or update the existing Help information.

There is some overlap between HELP information and information from the TEST command. This is because the TEST command is a Full screen command, where HELP is a line command. Line commands can also be used from the MVS console (F STF,HELP) and from TSO foreground session(s).

VTAM logon

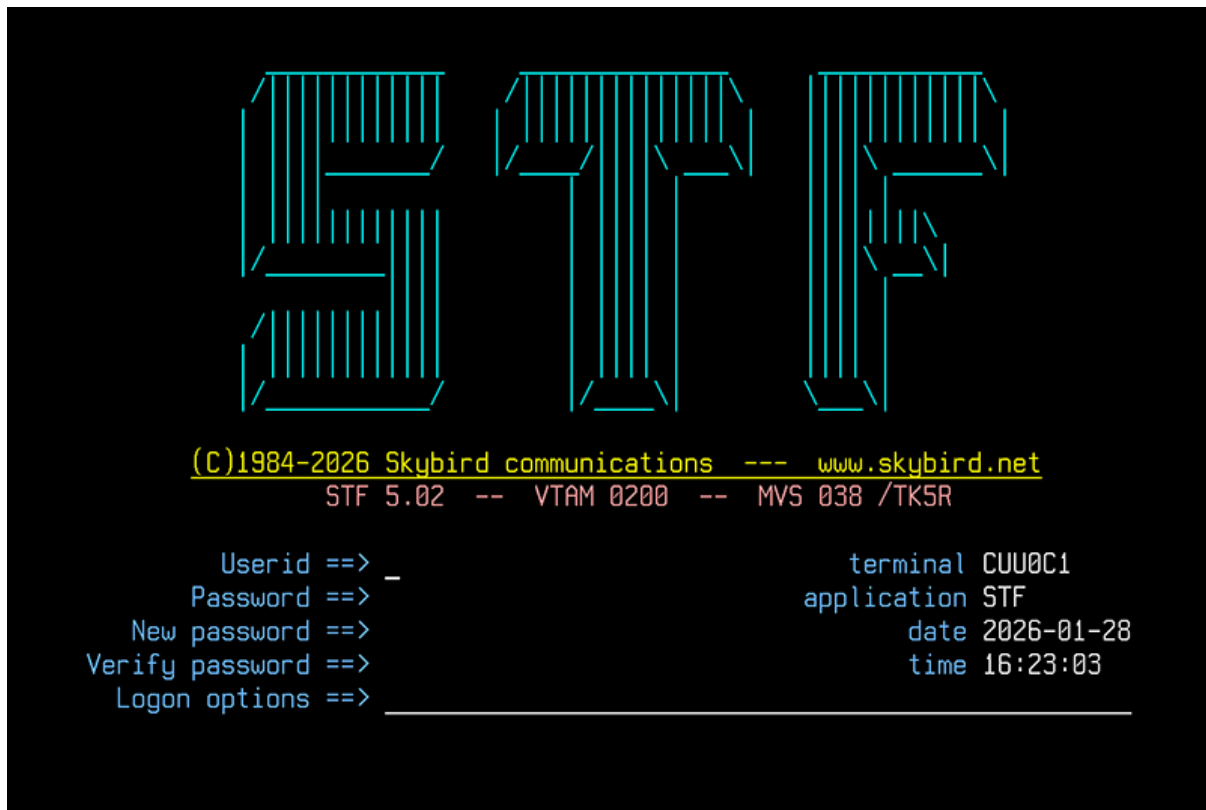


Figure 11 - STF 3270 Logon screen

Full screen access to STF is only available when a 3270 compatible terminal logs on to STF through VTAM. This logon procedure is installation dependent based on VTAM customization and configuration options. For most installations the default VTAM logon command can be used to logon to STF and display the Logon screen.

```
LOGON APPLID=STF <userid/password/new-password/verify-password>
-or-
LOGON APPLID(STF) <userid/password/new-password/verify-password>
```

The userid/password and new/verify password are optional. If no userid/password is specified then STF prompts for a userid and a password. Note that STF always requires a userid and a password. Depending on STF installation options, the password may or may not be validated, but it must be specified.

Entering a new password may or may not update the password, depending on what exits are active and if STF is running Authorized. A new password, if provided, must be entered twice for verification purposes. Additional information can be obtained by pressing PF1/13.

Special User ID's

If LOGOFF is entered as a User-ID, the terminal is logged off from STF. Pressing the PA1 key or the PF3/15 key will also logoff the terminal from STF.

If STFANL is entered as a User-ID, it will start an STFANL session for this terminal. Options for STFANL can be entered in the "user logon options" field. If the initialization of STFANL fails, an error message is displayed.

More information about the STFANL task can be found under "Response and Stress tests".

Screen format and command entry

```
STF 5.02 ----- STF CUU0C1 HERC01
(1)
-l stat
STF2505I STF STATUS DISPLAY -
STF2506I MVS RELEASE = 038 , CPU ID = 000611 , MODEL = 3033
STF2508I SMF ID = TK5R , SMF RECORDING = N
STF2510I STF RELEASE = 5.02 , STARTED = 2026-01-18 11:13:20
STF2512I STF LOGGING = ACTIV , PARM = STF/---/---
STF2511I JOB = STF , ACB NAME = STF , ASID = 000A
STF2522I ACCEPT LOGONS - NOCONFTEXT - NOCONFLGN - NOAPF
(2)
STF2513I TASKS STARTED = 0011 , ENDED = 0006 , ACTIVE = 0005
STF2528I MESSAGE QUEUE WAIT ENQ/DEQ = 000000/000000
-l parm
STF2520I STF PARAMETER DISPLAY -
STF2521I TEST = N , SMF = N , NSOL = N , LOG = Y
STF2527I SHUTDOWN AFTER LAST USER LOGOFF = N
STF2523I CONFTEXT = N , CONFLGN = N , ACB = STF

15:00:39 Awaiting command...
(3)
COMMAND ==> _
(4)
```

Figure 12 - Sample STF Command screen

The standard STF screen format is divided into the following areas as shown in the Figure above with each area numbered for reference.

1. Screen header
2. Command output
3. Processing state
4. Command input

1. The screen header displays (left to right) the STF version or full screen command name, ACB name, terminal name, user-id.
2. The command and the output produced are displayed in the command output area. Use PF07/PF19 and PF08/PF20 to scroll back and forward through the output area screen buffer.
3. The default processing state is: Awaiting command... During scrolling (PF07/PF08) the state may change to: Top of buffer... or End of buffer..., indicating that no further scrolling is possible.
4. STF commands are entered in the command input area.

Important!

Beginning with STF Version 5.01 a buffer function has been implemented which allows scrolling through the screen(s). By default the 3270 screen is positioned at the end of this buffer. If the output generated by a command overflows onto the next screen, you can manually scroll back using PF7 to view all the output that was generated.

Screen control commands

There are several commands available for controlling the STF screen:

Command	Description
?	invoke HELP facility
&	retrieve last entered command
&command	re-display this command after processing
~command	skip save in command stack
<command	skip save in command stack and do not echo
/command	pass command to VTAM
=	re-execute last entered command
AGAIN	re-execute last entered command
K	clear screen and screen buffer
LOCK	disable command processing
ATTN	not supported
CLEAR	clear screen
PA1 key	retrieve last command
PA2 key	cancel (NetView interrupt key)
PA3 Key	clear screen
PF1/PF13	invoke HELP facility
PF7/19 key	scroll back
PF8/20 key	scroll forward

PF12/24 key	retrieve previous command
SET ECHO(ON)	enable input echo
SET ECHO(OFF)	disable input echo
SET SCROLL(HALF)	set scroll amount to half page
SET SCROLL(PAGE)	set scroll amount to full page
SET STAT(ON)	display response time statistics
SET STAT(OFF)	do not display response time statistics
SET MODE(nn)	Set 24, 32 or 43 line mode on display
UNLOCK	enable command processing

Skip save "<" and SET ECHO(OFF) are intended for entering passwords or other sensitive data that should remain secret.

Working with STF

Starting and Controlling STF subtasks

STF subtasks are started using the following STF start command:

```
S TASK=taskname<,options>
```

The STF modify command is used to pass data and/or commands to STF subtasks:

```
F taskname,data
```

It is possible that multiple tasks with the same taskname are active. In this case, the data is passed to all active tasks with the same name. If data needs to be passed to a specific task then instead of taskname, the taskid, userid or luname can be used to identify the specific task. To list all active tasks, users or sessions (lunames) enter:

```
L APPL      a list of all active appl-appl sessions,  
L SESS      a list of all active sessions,  
L TASK      a list of all active tasks,  
L USER      a list of all active users.
```

STF subtasks can stop automatically (if a pre-defined condition is met e.g. the limit is reached) or can be stopped manually with an STF stop command:

```
P TASK=taskname
```

If multiple tasks with the same taskname are active, only the first active task is stopped. To identify the specific task to be stopped use the taskid, userid or luname to uniquely identify the task .

Acquire terminal (STFACQ)

STFACQ has been specially developed for MVS-TK5 to overcome limitations in VTAM2 due to the lack of the VTAM OPNDST ACQUIRE option. In MVS-TK5 terminals are by default allocated to the Network Solicitor and thus not accessible for STF. By using a SIMLOGON instead of an OPNDST ACQUIRE it is possible to 'allocate' a terminal to STF.

```
S TASK=STFACQ,OPN,ID=luname<,options>
```

Options:

```
LOG=NO|YES      Copy all commands to LOG (if active)
```

```
HCL=luname     Copy all commands to Hardcopy (if  
active)
```

TRACE=NO|YES

Display TRACE information

As long as there is no active session (successful OPN) the luname cannot be used for modify commands. Use the TASKID instead. After a successful OPN the following commands are available:

F *luname*,STATUS Show status
F *luname*,BIND Show session parameters
F *luname*,QUERY Show terminal characteristics
F *luname*,RELEASE Release terminal (CLSDST)
F *luname*,RESET Reset all options
F *luname*,SCREEN=*screen* Send screen
 SCRN@ATR 3270 attributes
 SCRN@CHR APL and standard character set
 SCRN@ECD Extended Data Stream
 SCRN@SYM Special characters (Symbols)
F *luname*,PASS,APPL=*application*
 <DATA=*text*> pass logon data (userid/password)

```
STF 5.02 ----- STF CUU0C1 HERC01
-s task=stfacq,id=cuu0c2,trace=no,opn,bnd,query
STF2302I COMMAND ACCEPTED
STF0030I STFACQ STARTED BY HERC01
STF0036I STFACQ READY AND WAITING FOR WORK
STF9297I RPL MACRO 0016 - SIMLOGON
STF9291I RPL CODES 0000 - Normal completion
STF1151I SESSION ESTABLISHED WITH ID= CUU0C2
+-----+
| CUU0C2 * LOGICAL UNIT INFORMATION * STF |
+-----+
SESSION PARAMETERS FROM MODETABLE: *DEFAULT ENTRY: *DEFAULT
----- Common Protocols: 6000 -----
LU-TYPE: LU0- FM PROFILE: 02 FM HEADER USAGE ALLOWED: YES
LU-MODE: --Q- TS PROFILE: 02 READ PARTITION SUPPORT: NO
BRACKET: YES TRM.RULE1: NO ALTERNATE CODE SUPPORT: NO
----- Primary: 71 Secondary: 40 -----
DR= YES ER= YES EB= YES DR= NO ER= NO EB= NO
MAX. RUSIZE SEC to PRI: 0000 MAX. RUSIZE PRI to SEC: 0000
PACING SND: 0000 - RCV:00000 PACING SND:00000 - RCV:00000
----- Cryptographic Control -----
PRIVATE: NO SESSION: NO SLU CAPABLE OF CRYPTOGRAPHY: NO
----- Query Reply Structure -----
CHAR.MATRIX WIDTH... 07 DEPTH..... 12 HARDCOPY..... n/a
USABLE AREA (CHAR.CELLS) WIDTH..... 080 HIGHT..... 043
IMPLICIT PARTITION (DEF) WIDTH..... 080 HIGHT..... 024
IMPLICIT PARTITION (ALT) WIDTH..... 080 HIGHT..... 043
RED... YES GREEN... YES BLUE..... YES WHITE..... YES
PINK.. YES YELLOW.. YES TURQUOISE.. YES DEFAULT... GREEN
REVERSED VIDEO..... YES BLINK..... YES UNDERSCORE... YES
QUERY REPLY MODE SUPPORT SFE/MF..... YES SF.. YES SA.. YES
-----+
14:09:36 Awaiting command...
COMMAND ==> _
```

Figure 13 - STFACQ with Query command screen display

Response and Stress tests (STFANL)

STFANL is used to perform response time or stress tests.

There are multiple ways to invoke STFANL:

- Start as subtask
- Enter the STFANL command from a 3270 session
- Specify STFANL as a logon-id at the STF logon screen (Options for STFANL can be specified in the Logon options field).

To start STFANAL as a subtask enter:

```
S TASK=STFANL ,RESPONSE|STRESS<,options>
```

Options for both RESPONSE and STRESS Tests:

Option	Description
ID= <i>luname</i>	Destination LU name
WAIT= <i>nnnn</i>	Time in 0.01 seconds that STFANL waits before acquiring the LU (enable user to LOGOFF). Default= 0000, range 0-9999
LOOP= <i>nnnn</i>	Processor load loop count Default: 1000, max.9999
INTVL= <i>nnnn</i>	Sample interval in 0.01 seconds Default: 6000, max.9999, 0= continuous
LIMIT= <i>nnnn</i>	Maximum number of samples Default: 0999, max.9999, 0= no limit
LOG=NO YES	Write statistics to STF log dataset Default: LOG=NO
MN=NO YES	Monitor STFANL progress Default: MN=NO. With MN=YES all intermediate results are reported to the user that started the STFANL session. One line for every test cycle.
SUM= <i>userid</i>	Send summary report to USER-ID
SUM=CONSOLE	Send summary report to MVS console Default: summary report to STF log
HCL= <i>luname</i>	Pass statistics to STF hardcopy task Default: no hardcopy STFHCL must be started for the specified luname

Additional options for STRESS Tests only

IN= <i>nnnn</i>	Inbound data length in bytes Default: 0100, max.1500, but less or equal to OUT
OUT= <i>nnnn</i>	Outbound data length in bytes Default: 1000, max.1500 STF adds 6 bytes of control information to INbound and 14 bytes to OUTbound data)

Refer to the STF online Help facility for a complete list of operands that can be specified by issuing the command H STFANL

```

_STF ANL -- Performance test                               ID= CUU0C1  DOMAIN= STF
-----
-----minimum- -----current- -----maximum- -----average- -----avg.dev-
INBOUND      000.0021      000.0021      000.0026      000.0023      000.0001
OUTBOUND     000.0004      000.0006      000.0007      000.0006      000.0000
PROCESS      000.0044      000.0044      000.0073      000.0056      000.0007

INBOUND DATA LENGTH... 00000036 bytes
OUTBOUND DATA LENGTH... 00000733 bytes

STARTED..... 11:14:14      UPDATE COUNT... 00000003      INTERVAL..... 00000300
UPDATED..... 11:14:23      UPDATE LIMIT... 00000010      MODIFIED..... 00000000

```

Figure 14 - STFANL screen

The minimum, current, maximum, average and average deviation are calculated for:

INBOUND data received
 OUTBOUD date sent
 PROCESS internal processing time

Response time test methodology:

```

Cycle WAIT          wait for INTVL timer
      STCK          start OUTBOUND timer
      PROC loop     simulate processor load
      SEND data     send data
      WAIT          wait for response
      STCK          stop OUTBOUND timer
      STCK          start INBOUND timer
      SEND RD       send read attention
      RECEIVE data  wait for data (last in chain)
      STCK          stop INBOUND timer
      STIMER        start INTVL timer
      goto Cycle

```

Stress test methodology:

```
Cycle WAIT          wait for INTVL timer
      STCK          start OUTBOUND timer
      SEND data     send data
      WAIT          wait for response
      STCK          stop OUTBOUND timer
      STCK          start INBOUND timer
      SEND RD       send read attention
      RECEIVE data  wait for data (last in chain)
      STCK          stop INBOUND timer
      STIMER        start INTVL timer
      goto Cycle
```

To simulate some processor load, STFANL loops through various assembler instructions. The number of processing loops can be altered with the LOOP= nnnn parameter, where nnnn specifies the loop count.

Note: the Response data results may be sent by a Session Monitor instead of the target Terminal.

Hardcopy printer (STFHCL)

The task STFHCL can be started to print a realtime hardcopy on a specified printer. Data is passed to STFHCL with the STF modify command or by specifying HCL=luname, where luname is the name of the printer used by STFHCL, for an STF subtask. If the printer to be used by STFHCL is in another domain then STFHCL may not be able to determine the LU-type. Use the MODE=SCS operand for LU1 printers or MODE=DSC for LU0 and LU3 printers. For SCS (LU1) printers the lines per page can be changed with the PAGE=nnn operand.

```
S TASK=STFHCL , ID=luname1 , MODE=SCS , PAGE=066
S TASK=STFANL , ID=luname2 , HCL=luname1
```

In the above example STFHCL is started for an LU1 printer with 66 lines per page. STFANL will pass its statistics to STFHCL, indicated by luname1, where they will be printed on luname1.

Due to the limited functionality of VTAM2 some STFISC commands will not function properly. It is HIGHLY RECOMMENDED to use STFACQ instead of STFISC on MVS-TK5. STFACQ has been developed to work with VTAM2.

Interactive Session Control (STFISC)

STFISC provides for complete control over a 3270 session. Start STFISC by entering the STF start command. Data is passed to STFISC with the STF modify command.

Please specify the ID as the luname operand on the start command for STFISC and use this luname with all subsequent modify commands. This ensures that the command reaches the correct session in case multiple STFISC tasks are active.

```
S TASK=STFISC , SIMLOGON , ID=luname
F luname , SCREEN=SCRN@CHR
```

Refer to the STF online Help facility for a complete list of all operands that can be specified:

H STFISC

The MVS 3.8 VTAM2 implementation limits the number of SNA commands that can be issued by STFISC. However, STFISC can still be used to send STF defined test screens or user defined data stream(s) to a terminal. A Clear request should be done before the next Screen can be sent.

Logging Facilities (STFLOG)

The task STFLOG is used to write STF log records to the STF internal log, the MVS system log and/or the STF log dataset. STFLOG can be started with the STF start command or by specifying LOG=YES parameter in the STF Started task procedure (or MVS start command for STF). If STFLOG is started automatically during STF initialization by specifying LOG=YES then STF attempts to open the STF log dataset. If this open fails, STFLOG will automatically switch to the MVS system log. If STFLOG is started using the STF start command, the options specified with the start command indicate whether the STF log or MVS system log is used:

```
S TASK=STFLOG , MVSLOG      writes to MVS system log
S TASK=STFLOG , STFLOG     writes to STF log dataset
S TASK=STFLOG , WTOLOG     writes to MVS console
```

Full screen commands

Full screen commands are only available for 3270 terminal sessions.

The following full screen commands have been implemented:

- STFANL start STFANL on this terminal
- CALC calculator
- KUSP cryptographic interface
- CKDS CKDS interface
- DEBUG alter/display storage
- ECHO perform an input echo test
- EDIT edit a dataset
- SAF perform RAKF functions
- TEST display (STFISC) test screens

CALC

```

STF CALC ----- STF CUU0C1 HERC01

----- Convert -----
TXT ==> Skybird communications
HEX ==> E292A8828999844083969494A495898381A3899695A2
-----+-----1-----+-----2-----+-----3-----+-----4-----+-----5-----+-----6-----+-----
HEX ==> C1C2C3C4C5C6C7C8C9D1D2D3D4D5D6D7D8D9E2E3E4E5E6E7E8E9
TXT ==> ABCDEFGHIJKLMNOPQRSTUVWXYZ

DEC ==> 00000100 HEX ==> 00000064
HEX ==> 00000A00 DEC ==> 2.560

----- Calculate -----
HEX ==> 000D2A86 HEX ==> 0000000A (+) ==> 000D2A90 ( 862.864 )
(-) ==> 000D2A7C ( 862.844 )
(x) ==> 0083A93C ( 8.628.540 )
(/) ==> 00015100 ( 86.285 )
HEX ==> 000E2A96 DEC ==> 00000064 (+) ==> 000E2AD6 ( 928.470 )
(-) ==> 000E2A56 ( 928.342 )
(x) ==> 038AA580 ( 59.417.984 )
(/) ==> 000038AA ( 14.506 )

13:36:39 Awaiting command...
COMMAND ==> _

```

Figure 15 - CALC screen

STFCALC is a full screen calculator can be used to convert between hexadecimal, decimal and character text. It also supports calculations with hexadecimal and decimal numbers.

Character text is converted to its hexadecimal representation, hexadecimal text is converted to characters, decimal number is converted to hexadecimal and hexadecimal number is converted to decimal.

Two hexadecimal numbers and/or one hexadecimal number and one decimal

number are added, subtracted, multiplied and divided. Divide only displays the quotient, a remainder is ignored.

Use PF03/15 or EXIT command to leave the calculator screen. Use the K or CLR command to clear all input fields.

KUSP

```
STF KUSP ----- STF CUU0C2 HERC01

-----input-- -----output--

1 GENKEY KEY ==>          KEY ==> F4199C13C9486401
  LOCLAB ==> LFILE01      KEY ==> 805BB80F280CE072
  LOCLAB2 ==> LTERM01     KEY ==> 9A882965D49F64A7
  REMLAB ==>              KEY ==>

2 RETKEY KEY ==>          KEY ==>
  REMLAB ==>              KEY ==>

3 CIPHER FNC ==>          DATA ==>
  KEY ==>
  ICV ==>
  DATA ==>

4   EMK KEY ==>          KEY ==>

19:25:55 Enter option...
OPTION ==> 1
```

Figure 16 - KUSP screen

STFKUSP provides a full screen interface to a Cryptographic Unit Subsystem. Because such a device is not available under MVS-TK5, STFKUSP emulates KUSP functions using a built-in software implementation of the DES (Data Encryption Standard) algorithm.

A few cryptography keys are stored in a sequential dataset. See CKDS for more information.

CKDS

```
STF CKDS ----- STF CUU0C2 HERC01

--label-  -----key-  -----key-  T  -userid-  -----date-  ---time-
LTERM01   F19A9659ED99FF11  0000000000000000  1  HERC01    2026-01-27  19:43:46
LFILE01   0000000000000000  A16A02281112C73E  2  HERC01    2026-01-27  19:43:46
RHOST01   45F7114E29BA5C57  662764FA0C1D62A9  3  HERC01    2026-01-27  19:43:46
RFILE01   0FF80FA965B52654  5910B79ECBF545C0  3  HERC01    2026-01-27  19:43:46

19:44:01 Enter CKDS command...
COMMAND ==> _
```

Figure 17 - CKDS screen

STFCKDS provides a full screen interface to the CKDS (Cryptographic Key Data Set) that is used by STFKUSP. CKDS is a sequential dataset with LRECL=56 and must be allocated to DDNAME= STFCKDS.

And (empty) CKDS dataset must exist before the CKDS interface can be used. With the CKDS interface the following commands are available:

INIT Generate the required CKDS records
SAVE Write the generated CKDS records to the CKDS dataset

The current implementation writes a fixed number of 10 records, with pre-defined labels, to the CKDS. Record-1 (KMH0/1) is never displayed, Records-2 - 5 are shown, Records 6 - 10 are empty (not shown).

DEBUG

```

STF DEBUG ----- STF CUU0C2 HERC01

TSK CUU0C2      TVB 000A7708  INP 000D0000  RPL/SND 000C26E0  ACB/STF 000B0550
TCB 00993EB8   TIB 000BD608  OUT 000BD4F0  RPL/RCV 000B6290  NIB/WRK 000C26A0
MVT 000A7598   PCB 000A4C50  MSG 000C9750  RPL/WRK 000B6068  LOG/BUF 000BC414

+000(000) 000BD608 E2E3C6E3 C9C24040 000A7598 000A7690 * STFTIB ..Íq..Î° *
+010(016) 000BD618 0000008C E4E2C5D9 F0F0F840 E2E3C6F3 * ...ðUSER008 STF3 *
+020(032) 000BD628 F2F7F040 01020080 08011006 D3E4F060 * 270 ...ð....LU0- *
+030(048) 000BD638 C1F2D8C5 C3E4E4F0 C3F24040 C8C5D9C3 * A2QECUU0C2 HERC *
+040(064) 000BD648 F0F14040 40404040 40404040 40404040 * 01 *
+050(080) 000BD658 40404040 00000000 00000000 0000F2F0 * .....20 *

+000(000) 000BC414 000BC420 000BCBF0 000BCD30 F0F87AF5 * ..D...ð0..ð.08:5 *
+010(016) 000BC424 F67AF2F6 407E7E7E 7E7E7E40 E2E3C640 * 6:26 ===== STF *
+020(032) 000BC434 E58599A2 89969560 F56B40D9 85938581 * Version-5, Relea *
+030(048) 000BC444 A28560F0 6B409496 84898689 8381A389 * se-0, modificati *
+040(064) 000BC454 96954093 85A58593 60F2407E 7E7E7E7E * on level-2 ===== *
+050(080) 000BC464 7E7E7E7E 7E7E7E7E 7E7E7E7E F0F87AF5 * =====08:5 *

19:26:06 Enter DEBUG command...
COMMAND ==> _

```

Figure 18 - DEBUG screen

The DEBUG command was developed as an online debugging tool to solve problems within STF. DEBUG can be used to view and alter storage areas including STF program storage and (unprotected only) storage not obtained by STF.

The DEBUG display is divided into 3 parts:

TSK **CUU0C1** contains control block addresses
+000(000) **000BD238** first storage area (default: TIB)
+000(000) **000C6664** second storage area (default: LOG)

The control block addresses displayed apply to the task name in TSK. The task name (**CUU0C1** in this example) can be changed to view the control block addresses of another task.

The addresses of storage area-1 and storage area-2 can be changed by typing a new address. To set storage area-1 to a specific control block address, the following commands may also be used:

ACB, TCB, MVT, TVB, TIB, INP, OUT, PCB, RPS, RPW, NBW, BND, LGN or LOG

Use the ZAP command to alter 4 bytes at storage area-1. You must change 4 bytes at a time:

ZAP HEX=xxxxxxxx

Before the storage is updated, DEBUG will verify if the storage has not been altered since it was displayed.

Other commands:

PF03/15	Exit, return to terminal mode
PF07/19	Scroll back in storage area-2
PF08/20	Scroll forward in storage area-2
PF10/22	Return and pass command to terminal mode
END/EXIT/QUIT	Return to terminal mode
LOGOFF	Logoff from STF

ECHO

```
STF ECHO ----- STF CUU0C1 HERC01

ECHO ==> _
          ----+-----1-----+-----2-----+-----3-----+-----4-----+-----5-----+-----6-----+-----
TXT ==> Skybird Test Facility
HEX ==> E9A88984E8AA4C88898AA
        228299403523061393938

LEN ==> 00000027 (DATA= 00000021)
CRC ==> 2AEB403F ( DEC= 20060479)

KEY ==> ENTER
AID ==> 7DC44F (R= 004, C= 032)
SIG ==>

? SELECT

13:54:43 Enter ECHO command...
COMMAND ==>
```

Figure 19 - ECHO screen

ECHO presents a 3270 screen where text data can be entered at the ECHO prompt. The following fields are displayed on the ECHO screen:

- ECHO ==> Text input prompt
- TXT the input characters entered at the ECHO prompt
- HEX the hexadecimal representation of the input text
- LEN the total length of the input (length of text)
- CRC the calculated CRC in hexadecimal (numeric)
- KEY the key pressed on the keyboard
- AID the AID byte received and the cursor position (row/col)
- SIG the SIGNAL data (if any)
- ? SELECT used to detect a Selector Pen (or cursor position)
- COMMAND ==> Command input prompt

To leave the ECHO test screen type: END, EXIT or QUIT in the command prompt and press Enter.

EDIT

```

UPDATE TLDR      : TRUNC XLATE NONUM NULLS ASIS ----- 00025 LINES
CMD==> _
                                     BOUNDS 01,80 SCROLL  CUR
-----+-----1-----+-----2-----+-----3-----+-----4-----+-----5-----+-----6-----+-----7-----
***** ***** TOP OF DATA *****
000001
000002
000003
000004 TLDR: a few commands to get you started...
000005
000006
000007 HELP COMMANDS                display a list of all commands
000008
000009 HELP TERMINAL                display terminal dependent commands
000010
000011 HELP DIR                    display Help directory members
000012
000013 HELP 3270                  display 3270 control characters
000014
000015 CALC ROW=24,COL=10           calculate SBA for R24,C10
000016
000017 SHOW RPL=0008                show description for RTNCD=00, FDBK2=08
000018
000019 STFANL LIMIT=10,INTVL=300     analyze responsetime for this terminal
000020                               (10 samples at 300 msec interval)
000021
000022 EDIT DSN=STF.V500.HELP,M=NEWS  edit news member
000023
000024
000025
***** ***** BOTTOM OF DATA *****

```

Figure 20 - EDIT screen

EDIT is a full screen editor to update text files. Its primary purpose is to update STF Help members.

EDIT DSN=*datasetname*,M=*membername*

The header line displays the current status (left to right):

UPDATE CREATE	Update existing member or Create new member
Member name	Member name
TRUNC	If highlighted, the member was too big and has been truncated
XLATE	The member contained unprintable characters which have been translated to blanks
NONUM	No numbers in col.72-80
NULLS	Lines filled with trailing nulls
ASIS	Text not translated to uppercase
BOUNDS	Current bounds
SCROLL	Current scroll amount

If the member name does not exist a new empty member is created. To start editing, first insert a few empty lines:

I *,n where n= number of lines to insert

Although the EDIT screen resembles RPFEDIT (or ISPF EDIT), it does NOT support line commands. All commands must be entered at the CMD ==> prompt.

The following EDIT commands are available:

BNDS <i>n,m</i>	Set boundary at columns n and m
NUM UNNUM	(Remove) line numbers in col.72-80
NULLS NONULLS	(Do not) fill lines with trailing nulls
ASIS CAPS	(Do not) translate content to uppercase
SAVE	Save changes (update member)
END	Exit without save
TOP	Scroll to first line
BOTTOM	Scroll to last line
BACK	Scroll back 1 page
NEXT	Scroll forward 1 page
L + <i>n</i> / <i>-n</i>	Scroll n lines
L <i>n</i>	Scroll to line n
I <i>n,m</i>	Insert n lines after line m

DEL <i>n,m</i>	Delete <i>n</i> lines after line <i>n</i>
F <i>string</i> <ALL>	Find <i>string</i> <in all lines>
F <i>string</i> < <i>n</i> >	Find <i>string</i> <at column <i>n</i> >
F X' <i>hh..</i> ' < <i>n</i> >	Find HEX <i>string</i>
F P' <i>.</i> ' < <i>n</i> >	Find UNPRINTABLE characters
C / <i>str1/str2</i> / <i><ALL></i>	Change <i>string1</i> into <i>string2</i> <in ALL lines>
C / <i>str1/str2</i> / <i><n,m></i>	Change <i>string1</i> into <i>string2</i> <in lines <i>n</i> through <i>m</i> >
COPY <i>n,m,o</i>	Copy lines <i>n</i> through <i>m</i> after line <i>o</i>
MOVE <i>n,m,o</i>	Move lines <i>n</i> through <i>m</i> after line <i>o</i>
PF3/15	Exit
PF7/19	Scroll back (up)
PF8/20	Scroll forward (down)
PF10/22	Scroll left
PF11/23	Scroll right

SAF

```
STF SAF ----- STF CUU0C3 HERC01
(E) APF AUTHORIZATION REQUIRED

1 AUTH entity =====>
  attribute ==>
    class ==>
  application ==>

2 VERIFY user =====>
  password ==>
  seclabel ==>
  group ==>
  application ==>
  terminal ==>

3 VERIFY + AUTH

09:13:59 Enter SAF option...
OPTION ==> 2
```

Figure 21 - SAF screen

SAF provides the ability to interactively perform selected calls to RAKF via the SAF interface.

TEST

```
STF TEST ----- STF CUU0C2 HERC01

                                         LU type.. 0
                                         Model.. 2
Write Alternate.. A
Query Reply.. Q
Extended Data.. E

Enter one of the following commands:

ATR (SCRN@ATR) - display 3270 attributes
CHR (SCRN@CHR) - display APL + Default characters
EDS (SCRN@EDS) - display Extended Data Stream
SYM (SCRN@SYM) - display Special characters (Symbols)
xxx (SCRN@xxx) - display User defined screen(s)

END or PF03/15 - leave TEST mode

20:05:28 Enter TEST command...
COMMAND ==> _
```

Figure 22 - TEST screen

Most STFACQ screens are also available as a full screen TEST command. The advantage of using STFACQ over the TEST command is that if a TEST fails, you do not lose your STF access.

The TEST screen supports the following commands:

PF01/13	Help
SCRN@ATR	Display 3270 Attributes
SCRN@CHR	Display APL Characters
SCRN@SYM	Display Special characters (symbols)
SCRN@EDS	Display Extended Data Stream
PF03/15 or END	Leave TEST mode

STF Security Considerations

STF has a number of options provided to protect sensitive data. These options may not be required in an MVS-TK5 environment. However, they are available in case there is a need to use them.

CONFLGN

The CONFLGN startup parameter can be used to prevent “short logons”. A short logon is defined as a logon string that specifies the userid/password on the Logon command. By setting CONFLGN=YES short logons are rejected. The user is required to use the STF Logon screen to enter the userid and the password is entered in a non-displayed field.

CONFTEXT

When CONTEXT=YES is specified then data traffic sent to and from STF to the terminal is marked as confidential and will not be captured in a GTF trace.

<command

STF commands entered through a 3270 terminal are echoed on screen and stored on the command stack from which they can be retrieved using PF12/24 (or AGAIN or ‘=’). If a command is preceded by ‘<’ then it is not echoed and not stored on the command stack. The ‘<’ command prefix can be used to prevent possible disclosure when entering sensitive information such as passwords.

ECHO ON|OFF

The terminal command “SET ECHO (ON|OFF)” can be used to enable or disable the echoing of commands. When SET ECHO OFF is in effect then echoing of command input in the input area is also suppressed. Care must be taken entering commands as there will be no visibility of what was actually typed.

CLS

Use the CLS command to Clear the screen buffer.

LOCK/UNLOCK

The LOCK and UNLOCK commands are used to Lock (and Unlock) a terminal when it is left unattended.

HOLD/RELEASE

When a task is Held, the task will not process commands until it is released. User interface tasks, such as STF3270 and STF3767 cannot be placed in a Held status.

SMF recording (STFSMF)

SMF logging must be activated through the STF start-up parameter SMF=nnn, where nnn is the SMF record type to be written. Only record types 128 to 255 are valid for user defined SMF records. STF must be running APF authorized to be able to write SMF records. If STF is not running APF authorized then SMF logging is disabled. SMF logging is intended for accounting purposes. It does not replace the standard STF logging. SMF records written by STF have the following format:

Bytes:	Data Definition	Description
0-1	XL1'0050'	Record length (80 bytes)
2-3	XL1'0000'	Reserved for VBS
4	BL1'00000010'	Flag byte
5	XL1'..''	Record type (128..255)
6-9	XL4	Recording time
10-13	XL4	Recording date
14-17	CL4	System id
18-21	CL4	Subsystem id
22-79	0CL60	STF user data:
22-29	CL8	Action: Start/Stop/Logon/Logoff
30-37	CL8	TIBTEP
38-45	CL8	TIBRID
46-53	CL8	TIBUID
54-61	CL8	TIBLU
62	XL1	TVBREQ
63	XL1	TVBRSP
64-79	XL18	Reserved

STFSMF is called whenever a subtask is started or stopped.

Appendix-A Command summary

Command	Action
ABEND <STEP>	Issue (STEP) abend
ACCEPT	Accept LOGON's
AGAIN	Re-execute previous command
CANCEL TASK= <i>taskname</i>	Cancel task with dump (U109 abend)
CLOSE	Start CLOSEDOWN
CKDS	Invoke full screen CKDS interface
DEBUG	Invoke full screen DEBUG facility
DEQUEUE	Check / Retrieve queued message(s)
DLOG	Display STF in-storage log entries
DUMP	Cancel STF with DUMP (U007 abend)
EDIT DSN= <i>dataset</i> ,M= <i>member</i>	Invoke full screen text EDITOR
ECHO	Invoke full screen ECHO test
END	End service
HELP < <i>command</i> >	Display HELP information
HELP CMD	Display all STF commands
HELP DIR	Display all members in Help directory
HELP HELP	Display additional HELP functions
HELP PFK	Display PF/PA key settings
HOLD TASK= <i>taskname</i>	Put task/user in HOLD status
K	Clear screen
LIST DATE	List current date, time and day
APPL <,>ALL>	or APPL-APPL sessions
STAT	or STATUS
SESS <,>ALL>	or SESSION entries
TASK <,>ALL>	or TASK entries
USER <,>ALL>	or USER entries
PARM	or Startup parameters
ALL	or ALL of the above
<i>name</i>	or specific task/user entry
''	or entry of your terminal
KUSP	Invoke full screen Cryptographic Support Facility
LOCK <i>lockword</i>	Disable command processing
LOGOFF	Logoff from STF
LOGON APPLID= <i>applname</i> <,>DATA= <i>text</i> >	Logon to another application pass logon data to application
MODIFY <i>taskname</i> , <i>string</i>	Send string to specified task
PASS ID= <i>luname</i> ,>LOGON= <i>application</i> <,>DATA= <i>text</i> >	Pass LU to application pass logon data to application
REJECT	Reject LOGON's
RELEASE TASK= <i>taskname</i>	Release task/user from hold status
ROUTE <i>applname</i> , <i>text</i>	Route text to application

SAF	Invoke full screen SAF interface
SET ECHO(OFF ON	Turn OFF ON input echo
MODE(24 32 43)	set number of lines on display
SCROLL(PAGE HALF)	set scroll amount
STAT(OFF ON)	turn OFF ON statistics display
SEND <i>userid,text</i>	Send text to STF user(s)
SHOW ACB= <i>nn</i>	Show description of ACB ERROR
REQ= <i>nn</i>	or description of RPL REQUEST
RPL= <i>nnnn</i>	or description of RTNCD/FDBK2
SENSE= <i>nnnn</i>	or description of SSENSEI/MI
SHOW SBA= <i>nnnn</i>	Calculate Col for the given SBA
ROW= <i>nn</i> ,COL= <i>nnn</i>	or calculate SBA from Row, Col
<,WIDTH= <i>nnn</i>	optionally specify screen width.
SHOW RU= <i>nnnn</i>	Calculate INBOUND and OUTBOUND
	data size for the given RU size.
START TASK= <i>taskname</i>	Start task
<,options>	options to be passed to task
STOP TASK= <i>taskname</i>	Stop task/user
FORCE= <i>taskname</i>	Stop task/user
STATUS ID= <i>luname</i>	Display status of an LU
PING ID= <i>luname</i>	Run IBM3270 test on terminal
ID=''	or test this terminal
<,PRINTER=NO YES>	for LU0 only: indicate if LU is
	a printer
<,MODETAB= <i>xxxxxxxxxx</i> >	Use mode table xxxxxxxx
<,DLOGMOD= <i>xxxxxxxxxx</i> >	Use mode table entry xxxxxxxx
<,INTVL= <i>nnnn</i> >	Interval in 0.01 seconds
<,ACQUIRE=YES NO>	Indicates if the LU should or
	should not be ACQUIRED
<,RTIME=YES NO>	Specify RTIME=NO to suppress
	response time measurement
TSO <i>userid,text</i>	Send text to TSO user
UNLOCK <i>lockword</i>	Enable command processing

Commands in GRAY are available but may not work correctly without ACF/VTAM and/or a full SNA implementation. See also: STFACQ which implements an alternative solution for these commands.

All commands are processed immediately after they have been entered. A new command should not be entered before the processing of the current command has completed and when the message "Awaiting command" appears on the display. More information about specific commands is available in the STF online Help facility.

Contact information & Credits

STF is written by Rob Kemme for Skybird communications.

Special thanks to Rob Prins for reviewing and updating the STF source code.

Special thanks to Thomas Armstrong for reviewing and updating the STF documentation.

For the latest news and documentation updates visit the STF Homepage:

<http://www.skybird.net/stf/>

Consider joining one or more of the following MVS user groups:

<https://groups.io/g/turnkey-mvs/>

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