SCF Reference Manual for SCP

Abstract This manual describes the SCF commands used to configure, control, and inquire about the SCP data-communications subsystem.

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NOTATION CONVENTIONS

The following list summarizes the conventions for syntax notation in this manual.

Notation	Meaning
UPPERCASE LETTERS	Uppercase letters represent keywords and reserved words; enter these items exactly as shown.
italics	Lowercase italic letters represent variable items that you supply.
Brackets []	Brackets enclose optional syntax items. A group of vertically aligned items enclosed in brackets represents a list of selections from which you can choose one or none.
Braces {}	Braces enclose required syntax items. A group of vertically aligned items enclosed in braces represents a list of selections from which you must choose one.
Vertical line |	A vertical line separates alternative syntax items in a horizontal list. Such a list, enclosed in either braces or brackets, is an alternative to a vertical list for presenting selections.
Ellipsis ...	An ellipsis immediately following a pair of brackets or braces indicates that you can repeat the enclosed syntax items any number of times.
Percent sign %	A percent sign precedes a number that is not in decimal notation. % indicates octal notation. %B indicates binary notation. %H indicates hexadecimal notation. (%D at the end of a hexadecimal value denotes double precision. %F at the end of a hexadecimal value denotes a fixed numeric constant.)
I/O	In procedure calls, input parameters (those passing data to the called procedure) are followed by an I; output parameters (those that return data to the calling program) are followed by an O.
Spaces	If a space separates two items, that space is required. If one of the items is a punctuation symbol, such as a parenthesis or a comma, spaces are optional.
Punctuation	Parentheses, commas, semicolons, and other symbols not described above must be entered precisely as shown. Quotation marks around any symbol indicate that it is not a syntax descriptor but a required character, and you must enter it as shown.

PREFACE

This manual describes the Subsystem Control Facility (SCF) interactive interface that allows operators and network managers to configure and control an SCP process. SCF also provides means for examining the configuration and status of an SCP process.

SCF is similar in use and function to CMI, described in the *Communications Management Interface (CMI) Operator's Guide*. CMI is used to configure and control the subsystems described in the CMI manual; SCF is used to configure and control the subsystem described in this manual.

The Subsystem Control Point (SCP) is used as the interface between SCF and the data-communications subsystems. SCP is described in the *Communications Management Programming Manual*; the interactive interface to the SCP process, SCF, is described here.

This manual is written for operators and network managers. It provides the subsystem-specific information concerning the SCP product.

Section 1, "Introduction," gives an overview of SCP, and describes the objects on which it operates.

Section 2, "SCP Commands," describes the syntax and action of the SCP commands.

Appendix A, "Command Summary," contains a summary of the syntax of the SCP commands.

Appendix B, "Error Messages," describes the error messages issued by the SCP process.

Before reading this book, you should be familiar with the reference manuals that describe the data-communications subsystems available at your installation. You should also be familiar with the *System Generation Manual*; it explains system configuration and SYSGEN. Other GUARDIAN 90 manuals are referred to occasionally in this manual for detailed information on particular topics.

The following publications might be of interest:

- *Introduction to Tandem Computer Systems*
- *Introduction to Tandem Data Communications*
- *Introduction to Distributed Systems Management (DSM)*
- *Communications Management Programming Manual*
- *Distributed Systems Management (DSM) Programming Manual*
- *Event Management Service (EMS) Manual*
- *Distributed Name Service (DNS) Manual*
- *Subsystem Control Facility (SCF) Reference Manual*
- *SCF Reference Manual for AM3270 and TR3271*
- *SCF Reference Manual for EXPAND*
- *SCF Reference Manual for GDS*
- *SCF Reference Manual for MULTILAN/TLAM*
- *SCF Reference Manual for SNAX/SF*
- *SCF Reference Manual for Tandem OSI/AS*
- *SCF Reference Manual for Tandem OSI/TS*
- *SCF Reference Manual for X25AM*

SECTION 1

INTRODUCTION

This manual describes the subsystem-specific details for using the Subsystem Control Facility (SCF) to control and inquire about the SCP process. To use SCF to control or inquire about SCP, the SCP process must first be running as described in the *Communications Management Programming Manual*.

For information about the role of SCP as an interface between SCF and other data-communications subsystems, refer to the *Communications Management Programming Manual* and the *Subsystem Control Facility (SCF) Reference Manual*.

OBJECT TYPES AND OBJECT NAMES

The SCP process supports two object types--PROCESS and *null*.

If you use the *null* object type (that is, if you omit the PROCESS object type when you enter a command), the PROCESS object type is assumed.

The PROCESS object name identifies a specific SCP process. The object name follows GUARDIAN 90 naming conventions. Usually, the SCP object process is named $ZNET. Use the command

```
LISTDEV SCP
```

to obtain a list of SCP process names on your system.

SECTION 2

SCP PROCESS COMMANDS

The SCF commands and their modifiers that apply to SCP are described in this section.

SCP supports the following commands:

Sensitive Commands	**Nonsensitive Commands**
ABORT	INFO
PRIMARY	LISTOPENS
START	STATUS
STOP	VERSION
TRACE	

For information about TRACE commands applied to other subsystems, see the relevant subsystem description. The TRACE command described in this section applies only to SCP.

The syntax for the commands is shown in Appendix A. Detailed syntax information for these commands is provided when you type the following SCF command:

```
HELP SCP [ command-name ]
```

ABORT COMMAND

The ABORT command terminates the operation of the SCP process as quickly as possible--only enough processing is done to ensure the security of the subsystem. The SCP process is left in the STOPPED state. This is a sensitive command.

The SUB and SEL options are not supported for the ABORT command.

The ABORT command has the following *object-spec*:

object-type	*object-name*
PROCESS	*SCP-process-name*

Examples

```
ABORT $ZNET
```

INFO COMMAND

The INFO command displays the current or default attribute values for the specified SCP process.

The DETAIL, SUB, and SEL options are not supported for the INFO command.

The INFO command has the following *object-spec*:

object-type	*object-name*
PROCESS	*SCP-process-name*

The display for the INFO command has the following format:

Display

```
SCP Info Process

Name          Autostop      Delay   Spage  Program
aaaaaaaa      bbbbbbbb   cccccccc   ddd    eeeeeeee
```

Explanation of Symbols

aaaaaaaa is the SCP process name.

bbbbbbbb is the amount of time this SCP process will wait after the last close before stopping itself. The format of the value is HHHH:MM:SS.DD, where HHHH is the hours, MM is the minutes, SS is the seconds, and DD is the fraction of a second. If the displayed value is -1, this SCP process will wait indefinitely.

→

cccccccc	is the amount of time this SCP process will allow a file-system open to a subsystem to remain idle before closing it. The format of the value is HHHH:MM:SS.hh where HHHH is hours, MM is minutes, SS is seconds, and hh is hundredths of a second. If the displayed value is -1, the open will be maintained indefinitely.
ddd	is the number of pages in the secondary memory pool, as specified at initiation time.
eeeeeeee	is the fully qualified name of the program file from which SCP was run.

Examples

```
INFO $ZNET
```

LISTOPENS COMMAND

The LISTOPENS command displays a list of file-system opens that apply to the SCP object.

The SUB and SEL options are not supported for the LISTOPENS command.

The LISTOPENS command has the following *object-spec*:

object-type	*object-name*
PROCESS	*SCP-process-name*

The display format of the SCP LISTOPENS command differs from that of the SCF LISTOPENS command described in the *Subsystem Control Facility (SCF) Reference Manual*.

The format of the display for the SCP LISTOPENS command is:

Display

```
System     Name      PPID    BPID     Queue
\aaaaaaaa $bbbbbbbb cc,ccc  dd,ddd    eee
\aaaaaaaa $bbbbbbbb cc,ccc  dd,ddd    eee
```

Explanation of Symbols

aaaaaaaa	is the name of the system the opener process resides on.
bbbbbbbb	is the name of the opener process. If the process is unnamed, this field is blank.
cc,ccc	is the CPU and PIN of the opener's primary process.

→

dd,ddd	is the CPU and PIN of the opener's backup process if the opener has checkopened SCP.
eee	is the number of requests from this opener queued within SCP.

PRIMARY COMMAND

The PRIMARY command causes the backup CPU to become the primary CPU and the primary to become the backup. This is a sensitive command.

Considerations

The effect of the PRIMARY command for 6100 family controllers differs depending on the controller configuration: dual-port CIU, single-port CIU, or single-board (6105, 3605, 6106, or 3606) controller. For details, refer to Appendix D of the *Subsystem Control Facility (SCF) Reference Manual*.

START COMMAND

The START command initiates the operation of an SCP process. Successful completion of the START command leaves the process in either the STARTED or STARTING state. This is a sensitive command.

The SUB and SEL options are not supported for the START command.

NOTE

The START command has meaning for SCP only when the following are all true: a STOP,ORDERLY command has been issued, the SCP process has not yet stopped, and it is now desired that the SCP process should resume normal operation.

The START command has the following *object-spec*:

object-type	*object-name*
PROCESS	*SCP-process-name*

STATUS COMMAND

The STATUS command displays the dynamic state, last error, and modifiable characteristics of the specified SCP process. STATUS also displays specific SCP attributes and values.

The SUB and SEL options are not supported for the STATUS command.

The STATUS command has the following *object-spec*:

object-type	*object-name*
PROCESS	*SCP-process-name*

The display for the STATUS command with and without the DETAIL option has the following format:

Regular Display

```
SCP Status Process

Name        State PPID    BPID  Appl Subsys Reqs Qreqs Open
aaaaaaaa bbbbbbbb cc,ccc dd,ddd eeee ffff   ggg  hhh   FS
```

Detailed Display

```
SCP Detailed Status  Process  aaaaaaaa

PPID........ cc,ccc BPID..... dd,ddd   State...... bbbbbbbb
Appl Opens.. eeee   Free Blks iii      Curr Reqs.. ggg
Subsys Opens ffff   Mem Used jjjjjjjj  Queued Reqs hhh
Open Type... FS     Mem Free kkkkkkkk  Total Reqs. mmmmmmmm

Trace File.. llllllll
```

→

Explanation of Symbols

aaaaaaaa	is the SCP process name.
bbbbbbbb	is the state of the SCP process. STARTED and STOPPING are the only states supported by SCP.
cc,ccc	is the CPU and PIN of the SCP primary process.
dd,ddd	is the CPU and PIN of the SCP backup process. If there is none, 0,0 is displayed.
eeee	is the number of applications processes that have opened SCP.
ffff	is the number of subsystem server processes that SCP has opened.
FS	is the type of open to use to communicate with this SCP process: FS stands for File System.
ggg	is the number of requests that are currently active for this SCP process.
hhh	is the number of requests active for this SCP process plus those saved to support NonStop application retries.
iii	is the number of free blocks available to SCP.
jjjjjjjj	is the number of bytes allocated in the memory pool.
kkkkkkkk	is the number of bytes free in the memory pool.
llllllll	is the file name of the trace file for SCP, if an SCP primary trace is in progress.
mmmmmmmm	is the total number of requests seen by this SCP process.

STOP COMMAND

The STOP command terminates the activity of an SCP process in a normal manner. It deletes all connections to and from the process in a nondisruptive manner. Upon successful completion, a configured process is left in the STOPPED state and a nonconfigured process is deleted. This is a sensitive command.

The SUB and SEL options are not supported for the STOP command.

The STOP command has the following *object-spec*:

object-type	*object-name*
PROCESS	*SCP-process-name*

TRACE COMMAND

SCP uses the SCF TRACE facility to request the capture of target-defined data items, alter trace parameters, and end tracing. This is a sensitive command.

An SCF trace produces a trace file that can be displayed using the commands available in the PTRACE program. The trace file is created by SCF. The PTRACE program is described in the *PTRACE Reference Manual*.

The TRACE command has the following *object-spec*:

object-type	*object-name*
PROCESS	*SCP-process-name*

The SCP subsystem has the following *select-spec*:

Keyword	Value	Meaning
ALL	-1	traces all items. This is the default value.
SPI	1	traces SPI headers in both requests and responses.
MODULE	2	traces the SCP module.

VERSION COMMAND

The VERSION command displays the version level of the SCP process.

The format of the VERSION command display without the DETAIL option is:

```
VERSION \SYST1.$ZNET: SCP - T9395C20 - 15FEB89 - 10FEB89
```

The format of the VERSION command display with the DETAIL option is:

```
Detailed VERSION \SYST1.$ZNET
  SYSTEM \SYST1
    SCP - T9395C20 - 15FEB89 - 10FEB89
    GUARDIAN - T9050 - (M20)
    SCF KERNEL - T9082C20 - (15FEB89) (26JAN89)
    SCP PM - T9395C20 - 15FEB89 - 10FEB89
```

APPENDIX A

COMMAND SUMMARY

```
ABORT [ /OUT file-spec/ ] [ object-spec ]

INFO [ /OUT file-spec/ ] [ object-spec ] [ , DETAIL ]
     [ , DEFAULT ] [ { , attribute-name } ... ]

LISTOPENS [ /OUT file-spec/ ] object-spec

PRIMARY [ /OUT file-spec/ ] [ object-spec ] , number

START [ /OUT file-spec/ ] [ object-spec ]

STATUS [ /OUT file-spec/ ] [ object-spec ] [ , DETAIL ]

STOP [ /OUT file-spec/ ] [ object-spec ] [ , ORDERLY ]

TRACE [ /OUT file-spec/ ] [ object-spec ]
      { , STOP  [ , BACKUP ]          }
      { [ , BACKUP              ]
        [ , COUNT count         ]
        [ , NOCOLL              ]
        [ , PAGES pages         ]
        [ , RECSIZE size        ]
        [ , SELECT select-spec  ]
        [ , TO file-spec        ]
        [ , WRAP                ] ... }

VERSION [ /OUT file-spec/ ]  object-name  [ , DETAIL ]
```

APPENDIX B

ERROR MESSAGES

The following messages are sent to SCP's home terminal. They indicate that a fatal error was detected during process initiation.

```
SCP \system-name.$SCP-process-name Bad startup message;
                                   file error:  nnn
```

Probable Cause

The startup message could not be read due to the indicated file error.

Recommended Action

Refer to the *System Procedure Errors and Messages Manual* for information about the indicated file error.

SCP *system-name*.$*SCP-process-name* Could not retrieve CRTPID

Probable Cause

SCP was unable to get its own CRTPID.

Recommended Action

A problem was encountered in the operating system. See your system manager.

SCP *system-name*.$*SCP-process-name* Invalid startup params; file error: *nnn*

Probable Cause

The startup parameters specified are invalid.

Recommended Action

Check the syntax and try again.

SCP *system-name*.$*SCP-process-name* Must be run as SUPER.SUPER

Probable Cause

An attempt was made to run SCP with an access ID other than -1.

Recommended Action

The access ID must be -1 (SUPER.SUPER) to run SCP.

SCP *system-name*.$*SCP-process-name* Must be a named process

Probable Cause

An attempt was made to run SCP as an unnamed process.

Recommended Action

The SCP process must be named.

```
SCP \system-name.$SCP-process-name $RECEIVE open
                                   error:  nnn
```

Probable Cause

$RECEIVE failed to open.

Recommended Action

A problem was encountered in the operating system. See your system manager.

```
SCP \system-name.$SCP-process-name Allocate segment
                                   failed:  nnn
```

Probable Cause

A call to the ALLOCATESEGMENT procedure failed.

Recommended Action

Refer to the *System Procedure Errors and Messages Manual* for information about the indicated error.

```
SCP \system-name.$SCP-process-name User segment
                                    failed
```

Probable Cause

The call to the ALLOCATESEGMENT procedure was successful but the allocated segment could not be accessed.

Recommended Action

See your system manager.

The SCP subsystem error messages follow:

SCP Error 00001

```
SCP 00001 STOP failed: SCP process has other openers
```

Probable Cause

You tried to stop an SCP that is busy with other requesters.

Recommended Action

Wait until the other users have closed this SCP. When all requesters have closed this SCP, you can reissue the STOP command. Alternatively, you can determine if the other requesters are actively using this SCP. If they are not, and you are sure it is safe to do so, you can abort the SCP.

SCP Error 00002

```
SCP 00002 No backup available
```

Probable Cause

You have attempted to execute a command that requires a backup SCP process and no backup SCP process exists.

Recommended Action

Start up another SCP process that has a backup process.

SCP Error 00003

```
SCP 00003 No information available
```

Probable Cause

You have requested information about an object for which there is no information available.

Recommended Action

Make sure you have specified the object or object type correctly, and reissue the command.

SCP Error 00004

```
SCP 00004 Required Value Missing:  value
          (tnm:S#Z###, Offset: #L##)
```

Probable Cause

You did not supply enough information for the command.

Recommended Action

Reissue the command with the missing information added.

SCP Error 00005

```
SCP 00005 Trace parameters are not alterable to backup
          tracing process
```

Probable Cause

You cannot supply any modifier in the TRACE command, except STOP, to a backup process that has a trace in progress.

Recommended Action

Either stop the backup trace, make the backup process a primary process and modify the parameter, or do nothing.

SCP Error 00006

```
SCP 00006 Trace command modifier required.
```

Probable Cause

You did not supply any modifier in the TRACE command.

Recommended Action

Include a modifier in the TRACE command and reissue the command.

SCP Error 00500

```
SCP 00500 Duplicated modifier:  modifier-list
```

Probable Cause

You entered a field name twice.

Recommended Action

Either remove one of the field names, or spell it correctly if you meant to specify a different field.

SCP Error 00501

```
SCP 00501 Attribute is already defined:  attribute-list
```

Probable Cause

You entered a trace attribute twice.

Recommended Action

Remove the duplicate attribute.

SCP Error 00502

SCP 00502 Invalid enumerated value: *value* (#Z###)

Probable Cause

You specified a value that is not supported.

Recommended Action

Determine what values are acceptable and use one of them, or use the English keyword for the value.

SCP Error 00503

SCP 00503 Invalid *attribute-name* value for *object-name*

Probable Cause

An illegal attribute value was encountered.

Recommended Action

Recovery action depends on the attribute in error and on the value specified for that attribute. Valid ranges for attribute values can be found by using the SCF HELP facility. The ranges for attribute values also can be found in the appropriate subsystem SCF reference manual (refer to the Preface of this manual for a list of the subsystem SCF reference manuals).

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