



IBM® Sterling Connect:Express® for z/OS®

Utilities Guide

Version 4.3

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Preface

The *Sterling Connect:Express for z/OS Utilities Guide* is for programmers and network operations staff who automate and organize file transfer operations with Sterling Connect:Express for z/OS.

Chapter Overview

The *Sterling Connect:Express for z/OS Utilities Guide* is organized into the following chapters and appendices:

Chapter/Appendix	Description
1 The Utilities Package	This chapter provides an overview of the Utilities Package for Sterling Connect:Express and discusses how to integrate the utilities into the monitor configuration and the user environment.
2 Automatic Monitor Checking and Alert Generation	This chapter describes the utilities that enable you to send end of transfer notifications, check connections and operations, and manage a remote Partner.
3 Integrating Transfer Operations into the User Environment	This chapter describes the utilities that enable you to activate user procedures, delete checkpoint files, purge transfer requests, and manage Partner and File directories.
A Supporting Lists, Tables, and Examples	This appendix provides reference lists of action keywords, dynamic variables, and error and severe messages. There are also examples of a SYSUE1 file and a SYSOUT file.
B Using Environment Variables	This appendix provides information on how you can define and use environment variables to extend PeSIT Pi99 field.

Sterling Connect:Express Documentation

Sterling Connect:Express documentation consists of the following manuals:

- ❖ The *Sterling Connect:Express for z/OS 4.3.0 Release Notes* lists maintenance updates and any important notes.
- ❖ The *Sterling Connect:Express for z/OS 4.3.0 Installation Guide* describes the planning and installation of Sterling Connect:Express.

- ❖ The *Sterling Connect:Express for z/OS 4.3.0 User Guide* includes general information on using the TSO/ISPF interface, and serves as a reference of user and environment commands.
- ❖ The *Sterling Connect:Express for z/OS 4.3.0 Utilities Guide* describes the optional Utilities package that you can integrate with Sterling Connect:Express.
- ❖ The *Sterling Connect:Express for z/OS 4.3.0 FTP Guide* provides you with the information that you need to use Sterling Connect:Express with the FTP protocol.
- ❖ The *Sterling Connect:Express for z/OS 4.3.0 Administration Guide* provides detailed information about transfer operations for system administrators and other advanced users of Sterling Connect:Express.
- ❖ The *Sterling Connect:Express for z/OS 4.3.0 Options Guide* provides information about the CICS and IMS interfaces available for Sterling Connect:Express.
- ❖ The *Sterling Connect:Express for z/OS 4.3.0 PeSIT User Fields Guide* describes how you can exchange the PeSIT Pi37 and Pi99 fields with any PeSIT software.
- ❖ The *Sterling Connect:Express HTTP Option Implementation Guide* provides you with the information that you need to implement HTTP access to the Sterling Connect:Express for z/OS repository.
- ❖ The *Sterling Connect:Express for z/OS 4.3.0 Etebac3 User Guide* provides you with the information that you need to use Sterling Connect:Express with the Etebac3 protocol.
- ❖ The *Sterling Connect:Express for z/OS 4.3.0 SSL Guide* includes general information on implementing secured file transfers.
- ❖ The *Sterling Connect:Express for z/OS 4.3.0 Sysplex Supervision Guide* includes general information on implementing a group of Sterling Connect:Express Plex managers under control of a Sterling Connect:Express Plex supervisor.

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The Sterling Commerce Customer Support Web site at www.sterlingcommerce.com is the doorway to Web support, information, and tools. This Web site contains several informative links, including a solutions database, an issue tracking system, fix information, documentation, workshop information, contact information, sunset and retirement schedules, and ordering information. Refer to the Customer Support Reference Guide at www.sterlingcommerce.com/customer/tech_support.html for specific information on getting support for Sterling Commerce products.

Conventions Used in This Guide

The *Sterling Connect:Express for z/OS Utilities Guide* uses certain notational conventions. This section describes the conventions used in this guide.

Convention	Description
UPPERCASE LETTERS	Uppercase letters in the command format indicate that you type in information as shown.

Convention	Description
Lowercase letters	Lowercase letters or words in commands or syntax boxes require substitution by the user. For example, index1.index2.PARMLIB indicates that you must provide the first and second indexes of the string. "PARMLIB" is mandatory.
Bold Letters	Bold print in syntax boxes indicates Sterling Connect:Express commands and required parameters. For example, PLEX=N indicates that the parameter PLEX must be set to N.
<u>Underlined Letters</u>	Underlining indicates default values for parameters and subparameters. For example, PLEX=Y <u>N</u> specifies that the default for PLEX is N.
Vertical Bars ()	Vertical bars indicate that you can supply one of a series of values separated by the vertical bars. For example RUN=H C specifies that H or C is valid.
Monospaced characters (characters of equal width)	Monospaced characters represent information for screens, commands, Processes, and reports.
Punctuation	Code all commas and parentheses as they appear.
£ or #	The Pound character (£) and the hash character (#) are equivalent.

The Utilities Package

This chapter provides an overview of the Utilities Package for Sterling Connect:Express and discusses how to integrate the utilities into the monitor configuration and the user environment.

Overview

This guide covers the Utilities Package for Sterling Connect:Express for z/OS and is for system administrators or other advanced users of Sterling Connect:Express.

The Utilities Package enables you to integrate file transfer operations in your environment and adds a layer of high-level functionality to the monitor's basic file transfer services. The Utilities Package includes programs and parameter files that provide monitor management and file transfer operations management. The Utilities Package provides functionality in two areas:

- ❖ Automatic Monitor Checking and Alert Generation
- ❖ Integrating Transfer Operations into the User Environment

Each utility receives input parameters and/or files and then delivers actions, notifications, and reports. WTO Messages are issued so that you can store them in a SYSPRINT file or trap them with Netview. Some utility programs are executed in their own address space, while others are executed in one of the Sterling Connect:Express address spaces. The TOM and APM are used for PeSIT and ODETTE transfers, and the AFM and EAS are used for FTP transfers.

Integrating the Utilities Package with Sterling Connect:Express

To integrate the Utilities Package into the Monitor configuration, you must position new parameters and specify some functionality in the monitor configuration through the TSO/ISPF operator interface or in the SYSIN file.

Utilities functions are based on standard Sterling Connect:Express interfaces--the API interface and the user exit interface. With the API interface, some functions use subsystem interface services such as DISPLAY, TRANSFER, and MODIFY. With the user exit interface, some functions are implemented by standard exits such as, journal, beginning and end of transfer, connection, and selection exits.

You can also integrate the Utilities Package into the user environment so that user procedures start automatically. You can implement external jobs or z/OS commands for permanent or occasional checking, and setup a utility to send alert messages to a control process. In addition, you can work with vendor utilities like IDCAMS or TSO.

If you use any of the Programs described in the following sections, you will need to define parameters in the Sterling Connect:Express configuration or in specific files.

Trapping WTO Messages with NETVIEW

WTO messages are sent to the JES log of the job, not to the z/OS console, and Netview can trap these messages. If you use this feature, you must update the NETVIEW message table with the specific message headers from the Utilities package modules. Messages display the subsystem name followed by three letters that represent the origin module name. For example, if the subsystem name is TOMP, you would see the following message headers:

```
TOMPSM1 - TOMPJN1 - TOMPRC1
          headers from:
P1GFISM1 - L1GFIJN1 - L1GFIRC1
```

Redirecting Messages to SYSPRINT Files

WTO messages can also be redirected to SYSPRINT files. When a program is executed in a Sterling Connect:Express address space, the SYSPRINT file is dynamically created from a prefix and a time stamp during the transfer. If a program is executed on its own, you must add a SYSPRINT DD card to the JCL of the address space where it is executed.

Adding Extra JCL DD Cards

To integrate user processes with transfer operations, you may need to add extra DD cards to the JCL of the address space where it is executed, either TOM, APM, AFM, or EAS. These cards correspond to SYSPRINT files, JCL skeletons, program libraries, trace files, or snap files for debugging. The following table shows the

corresponding processes and the DD cards required. The last column shows how the process can be invoked using the general exits L1GFIUE1 or L1GFICE1.

DD Card	Process	L1GFIUE/L1GFICE1†
SYSPRINT	P1GFIIDC, P1GFIID0, P1GFICP1	\$PGMJ\$
SYSJOB	P1B2PJCL	\$JCL\$
SYSPRT	P1B2PJCL	\$JCL\$
SYSPCH	P1B2PJCL	\$JCL\$
SYSPR20	P1GFICP1, P1GFIRP1, P1B2P300, P1B2PREQ, P1B2PRQ2	\$300\$, \$REQ\$, \$JOB\$
WTOPRINT	P1GFICP1, P1GFIRP1	
SYSEXEC	REXX Procedure	\$REXX\$
SYSTSPRT	REXX Procedure	\$REXX\$
SYSTSIN	REXX Procedure	\$REXX\$

† L1GFIUE1, L1GFICE1 and '\$xxx\$' keywords are explained in Chapter 3, Integrating Transfer Operations into the User Environment.

Automatic Monitor Checking and Alert Generation

This chapter describes the utilities that enable you to send end of transfer notifications, check connections and operations, and manage a remote Partner.

Overview

The Utilities Package includes a program that produces Statistics by analyzing data from the transfer results of one or more monitors. There is another program that you can setup to issue notification messages at the time of an error, or you can monitor Sterling Connect:Express by periodically scanning journals and logs. The following utilities can be run externally or online. Each function and module is described in its own section following the table.

Function	Module	Description
Producing Statistics from Journal Files	P1GFIJS2	External tool: Produces statistics based on one partner (or a generic partner), one file (or a generic file), a date/time interval, or transfer failures. Statistics can be made from one or several Journal files, from one or several monitors.
Sending End of Transfer Notifications	L1GFIJN1	Journal exit: Notifications can be sent to NETVIEW at end of transfer from the journal recording process.
	L1GFITS1	External tool: A notification message is sent to the first user from a list of users logged on to TSO.
Checking Connections and Transfer Selections	L1GFICN1	Connection and selection exit: Enables you to detect immediately session failures or transfer negotiation failures.
Checking General Operations	P1GFISM1	External tool: Performs a periodical checking of Sterling Connect:Express resources and sends alerts to Netview or to a user exit.
Managing a Remote Monitor	L1GFIRC1	Beginning and end of transfer exit: You can establish a session with a remote Sterling Connect:Express and monitor it remotely or check the link.

Producing Statistics From Journal Files (P1GFIJS2)

This utility processes input from one or more journal files. It sorts and merges the files in a sequential file output and then removes any duplicates. You can produce Statistics by Partner name or root, File name or root, or for a designated date and time range. You can also request Statistics about failed transfers. This program can be executed in its own address space.

Note: Journal files can be from different monitors.

Implementing P1GFIJS2

The P1GFIJS2 gets its input parameters from the EXEC PARM field. These parameters include the selection criteria and tell Sterling Connect:Express how to format the results. If the program finds a SYSJNL DD card, it will process a unique VSAM journal file. If it finds a CUMULS DD card, it will process a sequential file that results from a previous merge procedure.

```
//CUMJNLS DD      DISP=SHR, DSN=INDEX1.P1GFIJS2.TEMPIN
              - OF -
//SYSJNL  DD      DISP=SHR, DSN=INDEX1.TOM2V410.SYSJNL
```

Note: Sterling Connect:Express looks at the SYSJNL card first.

Entering Selection and Output Criteria

You must specify the criteria for the statistics that you want as well as the format for the output. You enter your options in the PARM field, as shown in the following example. Positions of the keywords are fixed.

```
PARM field: 'OPT1',STR='yymmdd',END='yymmdd',DIR='d', 'OPT2'
```

The following table describes the parameters that you use to enter your selection criteria.

Parameter	Format	Description
OPT1	4 Characters alphanumeric	FULL: header, statistics and Journal record FAIL: header, statistics and Journal record (failures only) STAT: statistics only HEAD: header only
STR	Date – yymmdd	Beginning of transfer date: any transfer started after this date (included) that meets the next condition is processed.
END	Date – yymmdd	End of transfer date: any transfer ended before this date (included) that meets the previous condition is processed.
DIR	1 Character alphanumeric	T = Transmission R = Reception * = Both direction

Parameter	Format	Description
OPT2 optional	1 to 12 Characters alphanumeric	SPN = Partner name (8 characters) or generic root ('GEN*' or 'GEN' are equivalent). For example, SPN=NEWYORK. SFN = File name (8 characters) or generic root ('GEN*' or 'GEN' are equivalent). For example, SFN=FILE00*

Process Description

P1GFIJS2 is an example of JCL in the *SAMPOPT* library. Steps 1-3 apply when you have several files. For one file, only step 3 applies. The process flows as follows:

1. Sterling Connect:Express allocates a sequential file. The space must be sufficient for all the records expected from the journal files.
2. The REPRO IDCAMS and sort procedure is run, then the L1GFIJS2 (E35) module removes any duplicates.
3. The P1GFIJS2 module processes the selection criteria and creates statistics from the sequential file built in steps 1 and 2, according to the OPT1 option.
OR
The P1GFIJS2 module processes the selection criteria and creates statistics from one VSAM journal file, according to the OPT1 option.

Viewing the Results

You can format the results with the OPT1 option. The header for all options shows global information, the statistics (FULL, FAIL, and STAT options) show general numbers corresponding to your selection criteria, and the FULL and FAIL options list all selected journal records. The return code indicates if the process was successful or not. The following table lists the possible return codes.

Code	Description
0	Successful
4	'WARNING' – an anomaly has been detected during the process or no record was found. In case of OPT1=HEAD, no record was looked for, and the return code is always 4.
8	ERROR detected in the PARM field
12	FATAL ERROR

WTO Messages

WTO messages are time stamped and can be redirected to a file called WTOPRINT. Journal records can also be redirected to a file called EXTJNL, as shown in the following example.

```
//WTOPRINT DD SYSOUT=*
//EXTJNL   DD SYSOUT=*          FBA LRECL=133
```

OPT1 = Any Value

The header lines of the WTOPRINT file display for any OPT1 value. The first line indicates the last update of the journal file. The next line indicates the statistics mode, multiple Journal files, or one VSAM file. Then Sterling Connect:Express displays the selection criteria and general counts, the total number of records, the number of selected records, the number of successful records, and the return code.

```
01115 182102 P1GFIJS2 UPDATE DATE : 000403
01115 182102 P1GFIJS2 NOTICE CUMJNLS JOURNAL USED (SEQ.,SORTED,NO-DUP)
01115 182102 P1GFIJS2 NOTICE HEAD JOURNAL FOR STR=010401
01115 182102 P1GFIJS2 NOTICE HEAD JOURNAL FOR END=010430
01115 182102 P1GFIJS2 NOTICE HEAD JOURNAL FOR DIR=*
01115 182102 P1GFIJS2 NOTICE HEAD JOURNAL END RC00000004 TOTAL RECORDS=0000
01115 182102 P1GFIJS2 NOTICE HEAD ENTRIES MATCH=00000000 ENTRIES OK=0000

-----
*          *TYPE                COUNT OK /  MATCHED *  *D*  *PARTNER *
*          *BEG.DATE            *END-DATE          *DUR.SEC.*RST
-----
```

Note: If OPT1=HEAD, the return code is always equal to 4.

OPT1 = FULL or FAIL

If OPT1 = FULL or FAIL, the header line displays in the WTOPRINT file and the journal record lines appear in the EXTJNL file. The first lines of the EXTJNL file display the job name, date and time, and selection criteria (SEL) parameters in the following order: direction, partner, file, date/time interval. The following screen shows an example.

```
USR4JS2  01115    18210
SEL:          *          SCI                010401    010430
```

Each journal record is displayed with two lines. Some lines are truncated in the example below.

```
*FILE          *DATA SET NAME                *T *D*PP*PARTNER *T*L*ST*
*          *REQ.NUM.*FROM          *C*Y*BEG.DATE/HOUR      *END-DATE/HOUR      *DURATION*RST
```

Line 1: *File *Physical Name *File Type *Direction *Presentation *Partner *Partner type *Link *Session Table *Remote Physical Name *TRC *PRC

Line 2: *Request Number *Requestor *Class *Priority *Date/Time Begin. *Date/Time End *Elapse *Retries *Kbytes protocol *Kbytes File *Kbytes/Second * Number of records *Messages Sent/Received *subsystem

The list of journal records displays total counts and average counts as shown in the following example. Some lines are truncated in the figure below.

```

*      *TYPE                COUNT OK /  MATCHED *  *D*  *PARTNER *
*      *TOTAL OF TRANSFERS OK:    005 /    005 *  ***  *      *

*      *TOTAL FAIL:      0  *BEG. DATE      *END-DATE      *DUR. SEC. *RST
*                        *010401          *010430          *      4*-
-----
*      *TYPE                COUNT OK /  MATCHED *  *D*  *PARTNER *
*      *AVERAGE OF TRANSFERS OK:  005 /    005 *  ***  *      *

*                        *BEG. DATE      *END-DATE      *DUR. SEC. *RST
*                        *010401          *010430          *      4*-

```

Line 1: *Total counts *Transfers successfully ended* *Transfers matching the criteria* *Direction criteria* *Partner criteria*

Line 2: *Total of transfers that failed among the total matching (only for Total) *Begin date criteria* *End Date criteria* *Transfer Elapse (seconds)* *Number of retries* *Protocol Kbytes* *File Kbytes* *Kbytes/second* *Number of Records* *Messages Sent/Received* and *Subsystem Name*

OPT1 = STAT

When OPT1 = STAT, the Header lines display in the WTOPRINT file and total counts appear in the EXTJNL file, as shown in the following example.

```

*      *TYPE                COUNT OK /  MATCHED *  *D*  *PARTNER *
*      *TOTAL OF TRANSFERS OK:    005 /    005 *  ***  *      *

*      *TOTAL FAIL:      0  *BEG. DATE      *END-DATE      *DUR. SEC. *RST
*                        *010401          *010430          *      4*-

```

Examples of Statistics

OPT1 = HEAD

When OPT1 = HEAD, only the header is displayed, as shown in the following example of a WTOPRINT file.

Note: If the beginning date = 000000 and end date = 999999, then all transfers are included.

```

01115 182102 P1GFIJS2 UPDATE DATE : 000403
01115 182102 P1GFIJS2 NOTICE CUMJNLS JOURNAL USED (SEQ., SORTED, NO-DUP)
01115 182102 P1GFIJS2 NOTICE HEAD JOURNAL FOR STR=010401
01115 182102 P1GFIJS2 NOTICE HEAD JOURNAL FOR END=010430
01115 182102 P1GFIJS2 NOTICE HEAD JOURNAL FOR DIR=*
01115 182102 P1GFIJS2 NOTICE HEAD JOURNAL END RC00000004 TOTAL RECORDS=0000
01115 182102 P1GFIJS2 NOTICE HEAD ENTRIES MATCH=00000000 ENTRIES OK=0000

-----
*      *TYPE                COUNT OK /  MATCHED *  *D*  *PARTNER *
*                        *BEG. DATE      *END-DATE      *DUR. SEC. *RST
-----

```

In this example, the first line indicates the last modification date of the Journal file, and the second line indicates that statistics are from multiple journal file (CUMJNLS). There is no total count and the return code is 4.

OPT1 = STAT

When OPT1 = STAT, header and total counts are provided, as shown in the following example of a WTOPRINT file.

```

01115 182102 P1GFIJS2 UPDATE DATE : 000403
01115 182102 P1GFIJS2 NOTICE SYSJNL  VSAM      JOURNAL USED
01115 182102 P1GFIJS2 NOTICE STAT    JOURNAL FOR STR=000000
01115 182102 P1GFIJS2 NOTICE STAT    JOURNAL FOR END=999999
01115 182102 P1GFIJS2 NOTICE STAT    JOURNAL FOR DIR=*
01115 182102 P1GFIJS2 NOTICE STAT    JOURNAL END RC00000000 TOTAL RECORDS=00001395
01115 182102 P1GFIJS2 NOTICE STAT    ENTRIES MATCH=00001393  ENTRIES OK=00000992

```

In this example, the second line indicates that the statistics were produced from a unique VSAM file. This file contains 1395 records, and 1393 records were selected based on criteria. Of the selected records, 992 were successful transfers. The following screen shows these results in the EXTJNL file.

```

*      *TYPE                COUNT OK /  MATCHED *  *D*  *PARTNER *
*      *TOTAL OF TRANSFERS OK:      992 /    1393 *  ***  *          *

*      *TOTAL FAIL:      401 *BEG.DATE      *END-DATE      *DUR.SEC.*RST
*                        *010401          *010430          *          4*-

```

OPT1 = FAIL

When OPT1 = FAIL, header and total counts are displayed. Journal records are also listed, as long as at least one return code is not null. The following screen shows an example of the WTOPRINT file.

```

01115 182102 P1GFIJS2 UPDATE DATE : 000403
01115 182102 P1GFIJS2 NOTICE SYSJNL  VSAM      JOURNAL USED
01115 182102 P1GFIJS2 NOTICE FAIL    JOURNAL FOR STR=000000
01115 182102 P1GFIJS2 NOTICE FAIL    JOURNAL FOR END=999999
01115 182102 P1GFIJS2 NOTICE FAIL    JOURNAL FOR DIR=R
01115 182102 P1GFIJS2 NOTICE FAIL    JOURNAL END RC00000000 TOTAL RECORDS=00001395
01115 182102 P1GFIJS2 NOTICE FAIL    ENTRIES MATCH=00001393  ENTRIES OK=00000992

```

OPT1 = FULL

When OPT1 = FULL, all line types are displayed. The following example shows journal records for any SCI* partners during the month of April in a WTOPRINT file.

```

01115 182102 P1GFIJS2 UPDATE DATE : 000403
01115 182102 P1GFIJS2 NOTICE SYSJNL  VSAM      JOURNAL USED
01115 182102 P1GFIJS2 NOTICE FULL    JOURNAL FOR STR=010401
01115 182103 P1GFIJS2 NOTICE FULL    JOURNAL FOR END=010430
01115 182103 P1GFIJS2 NOTICE FULL    JOURNAL FOR DIR=*
01115 182103 P1GFIJS2 NOTICE FULL    JOURNAL FOR SPN=SCI
01115 182103 P1GFIJS2 NOTICE FULL    JOURNAL END RC00000000 TOTAL RECORDS=00001395
01115 182103 P1GFIJS2 NOTICE FULL    ENTRIES MATCH=00000005  ENTRIES OK=00000005

```

The following example shows the EXTJNL file when OPT1 = FULL.

```

-----
USR4JS2  01115   18210
SEL:      *          SCI                      010401      010430
-----
*FILE      *DATA SET NAME                      *T *D*PP*PARTNER *T*L*ST*
*          *REQ.NUM.*FROM      *C*Y*BEG.DATE/HOUR      *END-DATE/HOUR      *DURATION*RST
-----
*RC1LOOPX*INDEX1.SCIIPSR.RC1LOOP.D010415.B0601332      *S *R*04*SCIIPSR *T*X*32*
*          *00001332*SCIIPSR *A*0*01/04/15*12:44:59*01/04/15*12:45:01*00:00:02*-
-----
*RC1LOOPX*INDEX1.SCIIPSR.RC1LOOP.D010415.B0601335      *S *R*04*SCIIPSR *T*X*32*
*          *00001335*SCIIPSR *A*0*01/04/15*12:45:14*01/04/15*12:45:23*00:00:09*-
-----
*RC1LOOPX*INDEX1.SCIIPSR.RC1LOOP.D010415.B0601333      *S *R*04*SCIIPSR *T*X*32*
*          *00001333*SCIIPSR *A*0*01/04/15*12:45:16*01/04/15*12:45:21*00:00:05*-
-----
*RC1LOOPX*INDEX1.SCIIPSR.RC1LOOP.D010415.B0601337      *S *R*04*SCIIPSR *T*X*32*
*          *00001337*SCIIPSR *A*0*01/04/15*12:45:22*01/04/15*12:45:25*00:00:03*-
-----
*RC1ECHOS*INDEX1.SCIIPSR.RC1ECHOS.D010416.B0700006      *S *R*04*SCIIPSR *T*S*32*
*          *00000006*SCIIPSR *A*0*01/04/16*16:53:08*01/04/16*16:53:08*-      *-
-----
*          *TYPE                COUNT OK / MATCHED * *D* *PARTNER *
*          *TOTAL OF TRANSFERS OK:      005/      0005 * *** *      *
-----
*          *TOTAL FAIL:      0 *BEG.DATE      *END-DATE      *DUR.SEC.*RST
*          *010401      *010430      *      57*-
-----
*          *TYPE                COUNT OK / MATCHED * *D* *PARTNER *
*          *AVERAGE OF TRANSFERS OK:      005 /      005 * *** *      *
-----
*          *BEG.DATE      *END-DATE      *DUR.SEC.*RST
*          *010401      *010430      *      4*-

```

Total and average numbers are computed from the selected records. In this example, five records were selected and there were no failures among them.

Sending End of Transfer Notifications (L1GFIJN1)

This program is executed in the TOM address space and it is a Journal exit module. This Journal exit enables you to send an alert each time an error is detected at the end of a transfer. Using this exit, you can also produce statistics during the termination of Sterling Connect:Express about work done since the initialization or since the last statistics request. Then, the counts are reset. You can request statistics at any time by transferring the symbolic file 'STATS.'

Implementing L1GFIJN1

This program is a Journal exit and is called by the standard Journal procedure to check the Journal record. The Journal record structure is described by the D1B2PJNL structure provided in the *MACLIB* library. The program is either declared in the SYSIN file, as shown in the following example:

```
UEXJNL=L1GFIJN1
```

Or, as shown below, in the SYSINEXT file of the L1B2PDIX journal exit driver which is in the TOM address space JCL.

```
//SYSINEXT DD UEXJNL=L1B2PDIX
```

The L1GFIJN1 program is authorized (APF) and WTO messages (ROUTCDE=11) are not sent to the z/OS console.

Process Description

During initialization, a message is sent. At each end of transfer, whether it was successful or not, a message displays the symbolic file name, the partner name, the request number, date and time, and PRC and TRC return codes. During termination or at end of 'STATS' transfer, total counts are displayed and then erased.

All retries for one transfer are counted. For example, if a transfer is interrupted, restarted and successfully ended, the counts display as follows:

```
TOTAL 2 OK=1 KO=1
```

Viewing the Results

The following table lists the valid Return Codes for this program.

Code	Description
0	Successful
4	'WARNING' – An anomaly has been detected during processing.

WTO Messages

A transfer that ended successfully displays the following values:

TRC=0000 - PRC=0000

The table below describes the conventions for WTO messages sent by this utility.

Character	Description
????????	Status or flag
++++++	Numeric field, a number, a count, a code
//////	Alphanumeric, partner name for example

The following table lists the possible messages for this utility.

L1GFIJN1 Messages	
TOM?JN10	INIT The subsystem name is not yet known at this point during initialization.
TOM+JN11	//////// //++++ TRC++++ PRC++++ RST+++ ++:++:++ Partner Name File Name Request Number TRC PRC Number of retries End time If the transfer is interrupted, the End time is null.
TOM+JN12	ERROR ? (INTERNAL ERROR) ? = P - Internal error while passing parameters ? = S - Invalid subsystem name (must be TOM?)
TOM+JN13	TOTAL +++++ OK=++++ KO=++++ P=++++ T=++++ During termination, the exit shows the counts for total work done since the last time statistics were processed. TOTAL=count1 OK=count2 KO=count3 P=count4 T=count5 Count1: total number of calls to exit Count2: total number of successful transfers Count3: total number of interrupted or rejected transfers Count4: total number of unsuccessful transfers with PRC not null Count5: total number unsuccessful transfers with TRC not null
TOM+JN14	STATS TOTAL +++++ OK=++++ KO=++++ P=++++ T=++++ This message is issued at each 'STATS' transfer.

Sending End of Transfer Notifications to a TSO User (L1GFITS1)

This utility provides a way to send a TSO message to the first user in a list of users logged on to TSO. This program can be executed in its own address space.

Implementing L1GFITS1

You can use the L1GFITS1 program either in batch or in the L1GFIUE1 general exit process as the parameter of a \$PGMJ\$ keyword.

```
SYSUE1 Example---- $PGMJ$ L1GFITS1 'PARMS'
```

The program receives the EXEC PARM field input, as shown in the following example.

```
($VAR$ L1 USR0003,USR0004,USR0005,USR0008)
L1GFITS1 ULN=(RC0,&L1),MSG=&SSN&CT3&FILENAME&DSN,UER=PSR0008
```

The table below describes the parameters for this utility.

Parameter	Description
MSG	Text of the message (any character or blank). Dynamic keywords are supported when processed by L1GFIUE1. In the example above, &SSN will be replaced by the Sterling Connect:Express subsystem name (TOM?), &CT3 will be replaced by the call type (IEX or TEX), and &FILENAME will be replaced by the data set name of the file transferred.
ULN	List of TSO users, the first who is found connected will be sent the message. Using the keyword RC0 avoid return code 4 if no user is connected.
UER	Name of the user to receive the message, if no user on the list is connected.

Viewing the Results

The following table lists the possible Return Codes for the L1GFITS1 utility.

Code	Description
0	Successful
4	'WARNING' – no user from the list is logged on. If this is performed during transfer execution this return code would result in a transfer interruption. If you want to skip the error, use the keyword RC0 in the ULN field.
8	ERROR detected during processing

The screen below shows several examples.

```
BATCH:
//GO EXEC PGM=L1GFITS1,
// PARM='MSG=HEY JOE ULN=(USR0003,USR0004,USR0005) UER=USR0009'
//STEPLIB DD DISP=SHR,DSN=INDEX1.TOMV???.LOADLIB
//SYSUDUMP DD SYSOUT=*

L1GFIUE1:
$PGMJ$ L1GFITS1 ULN=(&L1) MSG=&SSN &FILENAME &DSN UER=USR0004
```

Checking Connections and Transfer Selections (L1GFICN1)

L1GFICN1 is a connection and transfer selection exit module that is executed in the TOM, AFM, APM or EAS address space. The L1GFICN1 utility enables you to trap incidents and take immediate actions. It provides information like request number, Partner name, TRC, PRC, NRC, and network link type. An example of the source file, L1USRCN1, is provided in the *SAMPLIB* library.

Implementing L1GFICN1

This program is a standard exit that is called during the connection phase or the file transfer selection phase. When monitoring connections, an exit must be declared in the user connection exit table T1B2PCNT (TSO/ISPF Option 3.3.CNT). Input parameters are from the D1B2PCNX structure. When monitoring transfer selections, you must declare this exit in the user selection exit table T1APMSRT (option 3.3 SRT on the Main Menu). Input parameters are from the D1B2RUEX structure provided in the *MACLIB* library.

Viewing the Results

The following table lists the valid Return Codes for this utility.

Code	Description
0	Successful
4	'WARNING' – an anomaly has been detected during processing.

The return code is displayed in the TRC field and in the LOG file as TRC=46RC, like all return codes from a user exit. If an anomaly occurs, a WTO message is sent to the z/OS LOG.

WTO Messages

The table below describes the conventions for WTO messages sent by this utility.

Character	Description
????????	Status or flag
++++++	Numeric field, a number, a count, a code
////////	Alphanumeric, partner name for example

The following table describes the possible messages for this utility.

L1GFICN1 Message	
TOM+CN1 NOTICE	L1GFICN1 INIT 01/04/25 20:07:33
Initialization of Sterling Connect:Express	
TOM+CN1 ERROR	//////// mod-type +++++++ TRC++++ PRC++++ NR+++++ ?/+++++

L1GFICN1 Message

Information is: Partner, calling mode– error type, Request number, TRC, PRC, NRC1, link type/NRC2, Time
Mod – INP, input call
Mod – OUT, output call
Error type – CLOS,FAIL during connection
Error type – APPL,INIT,END,ABND,FAIL during transfer selection
Link type: S=SNA, T=TCP/IP, X=X25, C=LU6.2

TOM+CN1 NOTICE L1GFICN1 TERM

01/04/25 24:37:05

Sterling Connect:Express termination phase

Error Types

Error types correspond to the call type. The following table lists the connection errors.

Error	Description
CLOS	Session has been interrupted by a protocol message ABORT.
FAIL	Session has been rejected.

The table below describes the possible selection errors.

Error	Description
APPL	Call before the beginning of transfer, before reception demand by caller.
INIT	Call before the beginning of transfer – allocation phase.
END	Call at end of transfer – deallocation phase.
FAIL	Call at end of transfer when transfer is interrupted.
ABND	Call at end of transfer when an abend occurred (Example D37, 913)

Checking General Operations (P1GFISM1)

This utility checks file transfer operations and periodically scans Sterling Connect:Express resources such as PCT, FCT, RCT, HCT, XCT, APM, and Network resources. The utility sends an alert message each time an anomaly is detected, and performs more than 31 types of controls. This automatic process performs the operations just as a human operator would using the TSO/ISPF interface. This is a permanent program that runs until a fatal error occurs or until it receives an EXIT or STOP command.

The P1GFISM1 utility runs automatically and uses the Sterling Connect:Express API with dynamic calls to the DISPLAY services of the LOB2Z20 interface module. All calls are performed systematically, the answers are analyzed, and you are notified of any anomalies with WTO messages. This program is executed in its own address space.

This program can be running even if Sterling Connect:Express is not up. An alert message is sent until the monitor is started.

Implementing the P1GFISM1 Monitor

You can only start the P1GFISM1 program if the subsystem that you want to check has been declared to z/OS. If the TOMP subsystem is unknown, the program stops.

```
TOMP SM1 ERROR  L0B2Z20  RC00000004          STATE  T2908  TOM/Z20
```

The version of Sterling Connect:Express is also controlled, and if versions are not compatible, the program stops. The following screen shows an example:

```
TOMP SM1 ERROR  L0B2Z20  RC00000004          STATE  T2916  TOM/Z20
```

The program works even if Sterling Connect:Express has been stopped and has not been restarted since the last IPL, or if Sterling Connect:Express is terminating. The screen below shows an example:

```
TOMP SM1 ERROR  L0B2Z20  RC00000004          STATE  T2001  TOM/Z20
```

This message displays when Sterling Connect:Express is not running and the program is waiting for next start. The P1GFISM1 program is authorized (APF), and WTO messages do not appear on the z/OS console.

Initialization Parameters

You can start the program using the following EXEC parameters:

```
SSN= 'subsystem name', ITS= Number of seconds, MFY
```

The table below describes the parameters.

Parameter	Description
SSN	Subsystem name in the form TOM?
ITS 6 characters	The program uses a timer for periodic scanning of the resources. This timer is given in seconds. Example: ITS=001800 means 30 minutes. (ITS=000000 is equivalent to asking a check up performed only during termination). Positions of parameters are fixed. The number of seconds must be entered as 6 characters.
MFY (optional)	MODIFY commands can be passed. The default, and standard option, is a REPLY to a WTOR message issued by the program P1GFISM1. If MFY option is chosen, the program expects a 'STOP' command to terminate.

Operational Commands

You can issue commands while the program is running. These commands are sent through MODIFY or REPLY (standard option). The table below lists the valid commands.

Command	Description
STOP	Termination requested (Option 'MFY' active)

Command	Description
EXIT	Termination requested
STAT	This command requests a file transfer using the symbolic file 'STATS'. This file must be defined in the Files Directory of Sterling Connect:Express. (See <i>L1GFJN1 description</i>)
LOAD	Load L1USRSM1 user exit
SCAN	This command requests an immediate check up of Sterling Connect:Express resources.

A message is displayed each time you enter a command, as shown in the following example.

```
TOM2SM1 NOTICE REPLY STAT
TOM2SM1 NOTICE REPLY EXIT
```

Using NETVIEW CLIST

WTO messages with the parameter `ROUTCDE=11` are considered informational and processed by Netview, so you must define a Netview Subsystem. A NETVIEW CLIST can initiate an action depending on the message received. Refer to IBM documentation for more information about Netview.

Implementing the L1USRSM1 User Exit Module

You can implement a user exit module called L1USRSM1 that enables the user to send messages and take an action based on the message received. This exit is called when a WTO message is sent and before it goes to the z/OS console. An assembly example is in the *SAMPOPT* library.

This exit is dynamically loaded and you can request it with the LOAD command. Input parameters are from the DIGFISM1 structure provided in the *MACLIB* library. The exit is called during initialization and termination of the PIGFISM1 program. When you execute the 'LOAD' command, the current exit is called for termination and the new exit is then loaded and called for initialization.

Viewing the Results

The table below lists the possible return codes for this utility.

Code	Description
0	Successfully processed
4	'WARNING' – one anomaly was detected during process
8	ERROR detected during process
12	FATAL ERROR detected during process

WTO Messages

Messages provide information about actions performed, statistics about objects that have been controlled, and inform you of anomalies found during transfer operations. The WTO messages are time stamped and can be redirected to a file as shown in the screen below.

```
//WTOPRINT DD SYSOUT=*
```

If an abnormal situation occurs, information from the L0B2Z20 interface can be written in a file, and then you can add a SNAP file, as shown in the example below.

```
//SYSPR20 DD SYSOUT=*
//SNAP DD SYSOUT=*
```

The anomaly message shows the subsystem name, the type of message, the resource involved, and the anomaly detected. The format is 'Ssn'SM1 'Type' 'Resource' 'Message.' The following table describes the variables of the anomaly message.

Variable	Length	Description
Ssn	4 characters	Subsystem name in the form of TOM?
Type	8 characters	Type of message: NOTICE Provides information about a step while processing. ERROR Indicates that an anomaly has been detected for a global resource (PCT,FCT,RCT, Network.) WARNING Indicates a non-critical anomaly. SEVERE Indicates a situation that is considered to be critical. SCANNED Is followed by statistical numbers.
Resource	8 characters	Sterling Connect:Express Resource involved in the following information. Examples: MCHXX, REQUEST, P1GFISM1
Message	92 characters	The message itself

The table below describes the conventions used in WTO messages for this utility.

Character	Description
????????	Status or flag
++++++	Numeric field, a number, a count, a code
//////	Alphanumeric , partner name for example
P++++	Return code PRC
T++++	Return code TRC
T++++/	Return code TRC and a letter / (L for 'Local', R for 'Remote')

Some messages are critical for Sterling Connect:Express processing, like 'ERROR' or 'SEVERE.' These messages appear in bold characters in the following list of messages. Others messages are critical for the

utility's processing and need to be included in the alerts processed. One example of this type of message is *outlined* in bold in the list below.

P1GFISM1 Messages			
TOM+SM1	NOTICE	////////(JOBNAME)	READY
The automate is ready to receive commands from the operator.			
TOM+SM1	ERROR	ADDR	//////// (INTERNAL ERROR->STOP)
The module name ////////// might be LOB2Z20/L1USRSM1			
TOM+SM1	ERROR	APM++	ABENDED
APM++ = APM01 TO 08			
TOM+SM1	ERROR	COMMAND	//// (INVALID COMMAND)
TOM+SM1	ERROR	DISPLAY	APM (INTERNAL ERROR->STOP)
TOM+SM1	ERROR	DISPLAY	FCT (INTERNAL ERROR->STOP)
TOM+SM1	ERROR	DISPLAY	GBL (INTERNAL ERROR->STOP)
TOM+SM1	ERROR	DISPLAY	NET (INTERNAL ERROR->STOP)
TOM+SM1	ERROR	DISPLAY	PCT (INTERNAL ERROR->STOP)
TOM+SM1	ERROR	DISPLAY	RCT (INTERNAL ERROR->STOP)
TOM+SM1	ERROR	DISPLAY	TCT (INTERNAL ERROR->STOP)
TOM+SM1	ERROR	EMPTY	FCT (INTERNAL ERROR->STOP)
TOM+SM1	ERROR	EMPTY	PCT (INTERNAL ERROR->STOP)
TOM+SM1	ERROR	EMPTY	RCT (INTERNAL ERROR->STOP)
TOM+SM1	ERROR	ENQ	(USER ERROR->STOP, ALLREADY ACTIVE)
TOM+SM1	ERROR	ESTAE	(INTERNAL ERROR->STOP)
TOM+SM1	ERROR	EXEC	LOB2Z20 RC+++++++ STATE T++++ TOM/Z20
P1GFISM1 stops if the Subsystem is unknown or versions are not compatible.			
TOM+SM1	ERROR	FCT	????????
TOM+SM1	ERROR	FILE	DISABLED ////////// ++++++++ REQUEST(S) -
TOM+SM1	ERROR	FILE	UNK. STA:? //////////
TOM+SM1	ERROR	LOAD	//////// (ERROR PRELOAD->STOP,CHECK STEPLIB)
The module name ////////// might be LOB2Z20/L1USRSM1			
TOM+SM1	ERROR	LOOP	FCT (INTERNAL ERROR->STOP)
TOM+SM1	ERROR	LOOP	PCT (INTERNAL ERROR->STOP)
TOM+SM1	ERROR	LOOP	RCT (INTERNAL ERROR->STOP)
TOM+SM1	ERROR	LU 6.2	ABENDED //////////
TOM+SM1	ERROR	MCH++	DISABLED //////////
MCH++ = MCH01 to 16			
TOM+SM1	ERROR	OPEN	//SNAP (USER ERROR, CHECK JCL)
TOM+SM1	ERROR	OPEN	//WTOPRINT (USER ERROR, CHECK JCL)
TOM+SM1	ERROR	PARAM	? (USER ERROR->STOP, CHECK PARAM)
? = K- keyword missing or misplaced			
? = L- PARAM field missing or invalid length			
? = N- invalid numeric field			
? = M- 'MFY' option expected			
? = P- parameter missing or misplaced			
TOM+SM1	ERROR	PARTNER	DISABLED ////////// ++++++++ REQUEST(S) -
TOM+SM1	ERROR	PARTNER	UNK. STA:? //////////
TOM+SM1	ERROR	PCNEPAD	ABENDED //////////
TOM+SM1	ERROR	PCT	????????
TOM+SM1	ERROR	RCT	????????
TOM+SM1	ERROR	REQ-SIT	DISABLED ++++++++ FILE "////////" PARTNER "////////"
SIT Transfers only			
TOM+SM1	ERROR	REQUEST	UNKNOWN .STA. ++++++++
TOM+SM1	ERROR	REQUEST	UNKNOWN .ST1.
TOM+SM1	ERROR	REQUEST	UNKNOWN .ST2.
TOM+SM1	ERROR	REQUEST	UNUSABLE ++++++++ FILE "////////" PARTNER "////////"
TOM+SM1	ERROR	REQUEST	T++++P++++ ++++++++ FILE "////////" PARTNER "////////"
TOM+SM1	ERROR	REQ-SIT	T2077 RET++ ++++++++ FILE "////////" PARTNER "////////"
RET++ is the number of connection retries,for SIT sessions only.			
TOM+SM1	ERROR	SNAPA	ABENDED //////////
TOM+SM1	ERROR	SNA3270	ABENDED //////////

P1GFISM1 Messages (Continued)<Continued>				
TOM+SM1	ERROR	SSN	???????	(SUBSYS NOT UP BECAUSE 'STOP')
TOM+SM1	ERROR	TCP-IP	ABENDED	////////
TOM+SM1	ERROR	TIMER	L1B2PTIM	(INTERNAL ERROR->STOP)
TOM+SM1	ERROR	USRJNL	???????	(UEXJNL NOT UP BECAUSE 'ABEND')
SIT transfers.				
TOM+SM1	ERROR	X25DATE	ABENDED	////////
TOM+SM1	ERROR	X25GATE	ABENDED	////////
TOM+SM1	NOTICE	L1USRSM1	INIT (NOT BY WTO BUT BY INTERNAL PARMLIST)	
TOM+SM1	NOTICE	L1USRSM1	TERM (NOT BY WTO BUT BY INTERNAL PARMLIST)	
TOM+SM1	NOTICE	MODIFY	////	
TOM+SM1	NOTICE	P1GFISM1	STARTED V?R? &COMPILE-DATE	
TOM+SM1	NOTICE	P1GFISM1	ENDED	
TOM+SM1	NOTICE	P1GFISM1	ABEND RECOVERY (INTERNAL/USER ERROR->STOP)	
The L1USRSM1 user exit is not informed of the Abend.				
TOM+SM1	NOTICE	REPLY	////	
TOM+SM1	NOTICE	TRF	STATS	??? STATE T+++
??? = OK - successful 'STATS' transfer				
??? = KO - error during 'STATS' transfer TRC= ++++				
??? = REC - 'STATS' transfer request has been registered (C:X is not running) TRC=1000				
TOM+SM1	NOTICE	++++++	SECONDS	TIMER
TOM+SM1	SCANNED	++++++	/	++++++ EFF
TOM+SM1	SCANNED	++++++	/	++++++ MCH
TOM+SM1	SCANNED	++++++	FILE(S)	
TOM+SM1	SCANNED	++++++	PARTNER(S)	
TOM+SM1	SCANNED	++++++	REQUEST(S)	
TOM+SM1	SEVERE	APM	NONE	ENABLE
TOM+SM1	SEVERE	EFF	NONE	ENABLE
TOM+SM1	SEVERE	MCH	NONE	ENABLE
TOM+SM1	SEVERE	P1GFISM1	ERROR	? ? (INTERNAL ERROR->STOP)
TOM+SM1	WARNING	EFF	ALL	USED
TOM+SM1	WARNING	FILE	DISABLED	////////
TOM+SM1	WARNING	PARTNER	++++/++++	LNK //////////
Only if the number of allocated links is greater than 1 and if the maximum has been reached.				
TOM+SM1	WARNING	PARTNER	DISABLED	////////
TOM+SM1	WARNING	REQUEST	COUNT	++++++
Only if the count is greater than 700 requests				
TOM+SM1	WARNING	REQUEST	T2077 RET++	++++++ FILE "////////" PARTNER "////////"
NOTE: RET++ IS RETRY COUNT OF CONNECTION (NOT SIT).				
TOM+SM1	WARNING	REQUEST	DISABLED	++++++
TOM+SM1	WARNING	REQUEST	NO APM CLASS	++++++
The transfer class of the request is not served by any APM.				

Managing a Remote Monitor (L1GFIRC1)

This program is a beginning and end of transfer exit module, and is executed in the APM address space. This utility enables you to monitor operations remotely. For example, you can:

- ❖ Activate a Sterling Connect:Express resource
- ❖ Check a network link or the status of one Sterling Connect:Express resource
- ❖ Make or purge a file transfer request

An operation is performed by sending a file with a special symbolic file name that activates the L1GFIRC1 exit at the beginning and end of transfer. The exit performs the action based on the symbolic file name. The following table describes the three types of operations that you can perform.

Type of Operation	Symbolic File Name	Action
CMD/RES	RC1CMD	Send a command file to a remote Sterling Connect:Express monitor.
	RC1RES	The remote monitor will send back a report file.
ECHO	RC1ECHO	Send a command file to a remote Sterling Connect:Express monitor. The remote monitor will send back the file.
	RC1ECHOS	SNA link is forced.
	RC1ECHOX	X25 link is forced.
	RC1ECHOI	TCP/IP link is forced.
LOOP	RC1LOOP	Send a file back and forth between two Sterling Connect:Express monitors. To stop the loop, you must disable the partner or the file and purge the transfer requests currently interrupted or waiting.
	RC1LOOPS	SNA link is forced.
	RC1LOOPX	X25 link is forced.
	RC1LOOPI	TCP/IP link is forced.

Each type of operation results in one file transfer in one direction, and one file transfer back. The LOOP operation results in a continued loop. In all cases, the network link type is the same in both directions.

The L1GFIRC1 program is authorized (APF), and WTO messages with the parameter ROUTCDE=11 are not sent to the z/OS console.

Implementing the L1GFIRC1 Exit

This program is a standard exit that you can activate at the beginning and/or end of transfer. It must be defined in the exit fields of the symbolic file definition involved. Input Parameters are received from the D1B2RUEX structure provided in the *MACLIB* library.

After the symbolic files, RC1CMD, RC1RES, RC1ECHO* and RC1LOOP*, are created in the Files directories of all Sterling Connect:Express monitors involved, you can start the process at any time by making a transfer request with the appropriate symbolic file name.

Messages are generated in a SYSPRINT file allocated to the APM address space where the process is running with the DDNAME built. The following screen shows an example.

```
SYSPRINT File: RC'mmss'ef'
```

In this example, RC is a constant prefix, 'mmss' represents minutes and seconds, and 'ef' is the number of the effectors where the transfer is executed.

You can access this file under SDSF.DA, with the '?' command. It contains messages about the 'CMD,' 'RES,' or 'ECHO' processes. If an error occurs when accessing this SYSPRINT file, WTO messages are sent.

Viewing the Results

The following table lists the return codes sent by this utility.

Code	Description
0	Successful
4	'WARNING' – invalid command syntax
8	ERROR detected in the parameter list
12	FATAL ERROR

The return code is displayed in the TRC field of the RCT entry in the Journal record and in the Log file. TRC=40RC is used at the beginning of a transfer, and TRC=49RC is used at the end of a transfer. A more detailed message is written in the APM SYSPRINT file.

WTO Messages

The table below describes the conventions for WTO messages sent by this utility.

Character	Description
????????	Status or flag
++++++	Numeric field, a number, a count, a code
///////	Alphanumeric , partner name for example

The following table lists the possible messages for this utility.

L1GFIRC1 Messages	
TOM+RC1 NOTICE	//////// TRANSFERED ////////// This file was transferred to this partner
TOM+RC1 NOTICE	//////// RECEIVED ////////// This file was received from this partner
*TOM+RC1 ERROR	//////// ////////////////////////////////////// The transfer failed, see SYSMSG and SYSPRINT files

The CMD/RES Process

With a CMD/RES operation, a command file is transferred under the symbolic file name RC1CMD, and then the receiver processes this file and sends a report under the symbolic file name RC1RES. Commands are defined by the sender using a special syntax. These commands represent calls to the standard API interface L0B2Z20.

The remote Sterling Connect:Express monitor enters the commands under RACF control. The standard L1B2PTAC module is used with the SAF option. The result of this process is written on the corresponding command line, and then sent back to the originator. Results are analyzed and notifications are sent.

The CMD/RES process uses two files--the command file and the report file. These files are described in the sections that follow.

Note: If 'USER' is not defined ('IRR012I') or access is refused (ABEND913), the command is not processed.

The following table lists the parameters that you can use with RACF controls:

Parameter†	Description
USER	Symbolic name of the caller.
RESOURCE	A file name is built as follows: 'Subsys.Table.Id'
Subsys	Called Subsystem name
Table	Abbreviated name of the table: FTC/PCT/RCT/TCT/TRF
Id	Name of the entry in the table (blank for TRF table)
ACCESS	Depends on the L0B2Z20 service invoked by the command. READ - Display UPDATE - Enable/Disable/Interrupt/Restart ALTER - Transfer

† These access rules must be declared to RACF on the remote site.

The Command File

You can edit the command file using the 'EDIT' command in the Transfer Request panel of Sterling Connect:Express. This enables you to enter a transfer request after creating or updating the command file. This file must have a record length of 255 characters, with no blocking factor, as shown in the following example. The syntax of this file is based on the L0B2Z20 module use, with a special header line.

```
LRECL=255, BLOCKS=255, RECFM=F or LRECL=259, BLOCKS=263, RECFM=VB
```

Command File Header

The header is composed of two parts, one for the sender (command file) and one for the receiver (report file). The header uses 99 characters, and displays the date and time, USERID to be notified, system name, subsystem name TOM?, and one option from the following list:

Option	Description
FORMAT	Formatted results are notified to the TSO USER.
TRACE	The process is traced in the SYSPRINT file.
NOOPT	Results are provided in the form of the L0B2Z20 module answer.

System and subsystem fields must be the same for the sender and the receiver. The exit module updates the date and time fields, the system and subsystem name fields, and the option field which is changed to RES or CMD depending on the situation.

The screen below shows an example of a command file header, before and after processing.

```

$01/03/24 12:18:14 USR0004 SYSA TOM1 FORMAT / AA/MM/JJ HH.MM.SS UUUUUUU SYSA TOM1
$01/03/24 12:18:14 USR0004 SYSA TOM1 RES / 01/13/24 12:18:16 APM0201 SYSA TOM1

```

Command Lines

A command is defined as follows.

```

Subsystem Service Table Id Parameters

```

Command	Description
Subsystem	Name of the local subsystem (TOM? Or any TOM*)
Service†	Display, Hold, Transfer, Enable, Restart, Interrupt, Purge
Table†	Fct, Pct, Rct, TCT
Parameters	Partner for 'DP', 'HP', 'EP' File for 'DF', 'HF', 'EF' Request number for 'DR', 'DT', 'ER', 'HR', 'IR', 'PR' Transfer request parameters for 'TR'

† The 'service + table' combinations (DP, HP, EP ...) are all combinations supported by the L0B2Z20 module. See D0B2ZEX* corresponding structures provided in the *MACLIB* library.

The Parameters of a transfer request use standard symbols and are defined as follows.

```

TOM ?TR00000000 0000Link/Class/Priority/Type/Direction/File/Partner/ Data set name

```

The following screen shows an example of a transfer request.

```

TOM2TR00000000 0000SA1N1F1 PART5 INDEX1.PS.V255.MEGA

```

In the example above, the Transfer Request was made to subsystem **TOM2**, on an SNA link, transfer class **A**, priority **1**, Normal request, Transmission of the file **F1** to the partner **PART5**, and data set **INDEX1.PS.V255.MEGA**. The zeros correspond to the request number and return code that are set in the RESCMD report by the receiver.

Example of a Command File

In the example below, the command file is sent from the subsystem TOM1, identified locally by the parameter DPCSID= SCIPSR, to the subsystem TOM2, identified by the partner symbolic name SCIPSR2.

```
$01/04/25 10:10:10 USR0009 83BA TOM1 FORMAT / AA/MM/JJ HH.MM.SS UUUUUUUU 83BA TOM1
TOM2HFF1
TOM2DFF1
TOM2EFF1
TOM2HPSCIPSR
TOM2DPSCIPSR
TOM2EPSCIPSR
TOM2HR00000001
TOM2ER00000001
TOM2DR00000001
TOM2TR00000000 0000SA1NTF1 SCIPSR5 INDEX1.PS.V255.MEGA
*NOTE : YOU CAN USE 'TOM*' FOR ANY REMOTE SUBSYS.
*TOM*DPSCIPSR
*---
TOM3DPSCIPSR
TOM2DPSCITOMP
*---
*XXXX.....(EVOLUTION POSSIBLE TO OTHER SUBSYSTEM DIALOGS)
```

The following operations are performed:

- ❖ Disable symbolic file F1
- ❖ Display symbolic file F1
- ❖ Enable symbolic file F1
- ❖ Disable symbolic partner SCIPSR
- ❖ Display symbolic partner SCIPSR
- ❖ Enable symbolic partner SCIPSR
- ❖ Disable request number 00000001
- ❖ Display request number 00000001
- ❖ Enable request number 00000001
- ❖ Transfer the file INDEX1.PS.V255.MEGA to partner SCIPSR5 under file name F1
- ❖ Display symbolic partner SCIPSR (*subsystem TOM3 is invalid*)
- ❖ Display symbolic partner SCITOMP (*access to this partner is protected*)

The Report File

The report file is built from the command file. In this file, the results of the command are added to the command lines and the header is updated. The example below is based on the command file from the previous section. Some lines are truncated.

```

$01/04/25 12:18:14 USR0004 83BA TOM2 RES / 01/04/25 12:18:16 APM0201 83BA TOM2
TOM2HFF1      0000
TOM2DFF1      0000 ...F1  $$ALL$$ $$ALL$$ *S2HINDEX1.&PARTNID.&FILENAM.
TOM2EFF1      0000
TOM2DFF1      0000 ...F1  $$ALL$$ $$ALL$$ *S2EINDEX1.&PARTNID.&FILENAM.
TOM2HPSCIPSR  0000
TOM2DPSCIPSR  0000 ...SCIPSR -          THNAMSNX PSR2AP01PSR2AP049922707124
TOM2EPSCIPSR  0000
TOM2HR00000001 2015
TOM2ER00000001 2015
TOM2DR00000001 2900
TOM2TR00000090 0000SAINTF1      SCIPSR5 INDEX1.PS.V255.MEGA
*---
TOM3DPSCIPSR  9999 ...          ER-SSN-CMD/=
TOM2DPSCITOMP 9999 ...          SAF-REJECT

```

In this example, some commands were refused and user USR0004 is notified through TSO because of the FORMAT option in the Command file. Results for Display services are written similar to answers from the L0B2Z20 module from column 126, if the return code is equal to 0000. The following list summarizes the results of the command file.

- ❖ Request 00000001 was not found (TRC=2015 and 2900 following the command).
- ❖ Transfer request was accepted, the number is 00000090 and the return code is null.
- ❖ Subsystem TOM3 was not found (TRC=9999).
- ❖ Access to SCITOMP partner was protected.

Definition of the Symbolic File RC1CMD

```

TOM4120----- FILES ATTRIBUTES (2/5) -----
OPTION ==>

SYMBOLIC NAME      : RC1CMD      MODE: NORMAL

INIT STATE .....  : E          E: IN-SERVICE H: HOLD

DIRECTION .....   : *          T:TRANSMIT R:RECEIVE *:TRANS./REC.
RECEIVING PARTNER .. : *          'NAME', £LIST, */$ALL$$ OR $API$$
SENDING PARTNER ..... : *          'NAME', £LIST, */$ALL$$ OR $API$$

PRIORITY .....    : 1          0:URGENT 1:FAST 2:NORMAL 3:SLOW
DSN DEFINITION TYPE ... : D          D:DYNAMIC F:FIXED
ALLOCATION RULE ..... : 2          1:PREALL. 2:TO CREATE 3:EXIT A:AP

FILE TYPE .....   : S          S/H/M/P/PU/V/VU/UU/SU
PRESENTATION PROTOCOL . : 04         COMPRESS.,DATA TYPE (01-16)
UNLOAD/RELOAD MEMBER .. : -          OPTIONAL
SECURITY TABLE ..... : -          OPTIONAL

OPTION : VIEW          UPDATE: 94/02/03 17:47 PSR0009
-ENTER- : NEXT SCREEN -PF3- : CANCEL

```

```

TOM4120----- FILES ATTRIBUTES (3/5) -----
OPTION ==>>

SYMBOLIC NAME          : RC1CMD      DEF.: D   ALL.: 2   TYPE: S   DIR.: *
                        :
FILE NAME (DSNAME) .... : INDEX1.&PARTNID.&FILENAM.&REQDAT.&REQTIM
GDG NUMBER .....      : -                +XX OR -XX

1 SYMBOLIC UNIT NAME .. : 3390            'UNITNAME'
  VOLUME NAMES .....   : -                -                -
2 SMS DATA-STOR-MGMT .. : -                -                -
DISPOSITION .....     : NEW             SHR/OLD/NEW
ALLOCATION TYPE .....   : -                CYL/TRK
SPACE PRIM.-SEC. .... : -                1 TO 4 NUMERIC CHARACTERS
DIRECTORY BLOCKS .... : -                IF PARTITIONED
RECORD FORMAT .....   : -                F,FB,FBA,FBM,V,VB,VBA,VBM,VBS,VS,U
LRECL-BLKSIZE .....   : -                1 TO 5 NUMERIC CHARACTERS
RETENTION (EXPDT/RETPD) : -                X'CCYYDDD',E'YYDDD'/R'NNNN'

REMOTE DSN (FTP) ..... :
TYPE/STRUCTURE/MODE ... : EN/AN/I,F/R,B/C/S
UNIQUE .....          : N                Y/N
NOTE                  :

```

```

TOM4120----- FILES ATTRIBUTES (4/5) -----
OPTION ==>>

SYMBOLIC NAME          : RC1CMD      DEF.: D   ALL.: 2   TYPE: S   DIR.: *
                        :
                        : UPRFCT=
--- S : SYMBOLS CHECKING
V
TRANSMISSION :
START EXIT .....     : L1GFIRC1      USER EXIT NAME
- START COMMAND ..... : -
END EXIT .....      : -             USER EXIT NAME
- END COMMAND .....  : -

RECEPTION :
START EXIT .....     : -             USER EXIT NAME
- START COMMAND ..... : -
END EXIT .....      : L1GFIRC1      USER EXIT NAME
- END COMMAND .....  : -

OPTION : VIEW                UPDATE: 94/02/03 17:47 PSR0009
-ENTER- : NEXT SCREEN        -PF3- : PREVIOUS SCREEN

```

Definition of the Symbolic File RC1RES

```

TOM4120----- FILES ATTRIBUTES (2/5) -----
OPTION ==>

SYMBOLIC NAME          : RC1RES      MODE: NORMAL

INIT STATE             : E          E: IN-SERVICE H: HOLD

DIRECTION              : *          T:TRANSMIT R:RECEIVE *:TRANS./REC.
RECEIVING PARTNER     : *          'NAME', £LIST, */$SALL$S OR $$API$S$
SENDING PARTNER       : *          'NAME', £LIST, */$SALL$S OR $$API$S$

PRIORITY               : 1          0:URGENT 1:FAST 2:NORMAL 3:SLOW
DSN DEFINITION TYPE   : D          D:DYNAMIC F:FIXED
ALLOCATION RULE        : 2          1:PREALL. 2:TO CREATE 3:EXIT A:AP

FILE TYPE              : S          S/H/M/P/PU/V/VU/UU/SU
PRESENTATION PROTOCOL : 04         COMPRESS.,DATA TYPE (01-16)
UNLOAD/RELOAD MEMBER : -          OPTIONAL
SECURITY TABLE       : -          OPTIONAL

OPTION : VIEW                UPDATE: 94/02/03 17:47 PSR0009
-ENTER- : NEXT SCREEN       -PF3- : CANCEL

```

```

TOM4120----- FILES ATTRIBUTES (3/5) -----
OPTION ==>

SYMBOLIC NAME          : RC1RES      DEF.: D   ALL.: 2   TYPE: S   DIR.: *

FILE NAME (DSNAME)    : INDEX1.&PARTNID.&FILENAM.&REQDAT.&REQTIM
GDG NUMBER            : -          +XX OR -XX

1 SYMBOLIC UNIT NAME .. : 3390      'UNITNAME'
  VOLUME NAMES        : -          -          -          -
2 SMS DATA-STOR-MGMT : -          -          -          -
DISPOSITION           : NEW        SHR/OLD/NEW
ALLOCATION TYPE        : -          CYL/TRK
SPACE PRIM.-SEC.     : -          1 TO 4 NUMERIC CHARACTERS
DIRECTORY BLOCKS     : -          IF PARTITIONED
RECORD FORMAT        : -          F, FB, FBA, FBM, V, VB, VBA, VBM, VBS, VS, U
LRECL-BLKSIZE        : -          1 TO 5 NUMERIC CHARACTERS
RETENTION (EXPDT/RETPD) : -          X'CCYYDDD',E'YYDDD'/R'NNNN'

REMOTE DSN (FTP)     :
TYPE/STRUCTURE/MODE :          EN/AN/I,F/R,B/C/S
UNIQUE               : N          Y/N
NOTE                 :

```

```

TOM4120----- FILES ATTRIBUTES (4/5) -----
OPTION ===>

SYMBOLIC NAME          : RC1RES      DEF.: D   ALL.: 2   TYPE: S   DIR.: *
                        UPRFCT=

--- S : SYMBOLS CHECKING
V
TRANSMISSION :
START EXIT ..... : L1GFIRC1  USER EXIT NAME
START COMMAND ..... : -
END EXIT ..... : -          USER EXIT NAME
END COMMAND ..... : -

RECEPTION :
START EXIT ..... : -          USER EXIT NAME
START COMMAND ..... : -
END EXIT ..... : L1GFIRC1  USER EXIT NAME
END COMMAND ..... : -

OPTION : VIEW                UPDATE: 94/02/03 17:47 PSR0009
-ENTER- : NEXT SCREEN      -PF3- : PREVIOUS SCREEN

```

The ECHO Process

This process works like the CMD/RES process, but the option field must be set to ECHO, as shown below.

```

$01/04/25 12:18:14 USR0004 83BA TOM2 ECHO / 01/04/25 12:18:16 APM0201 83BA

```

The command file must have a record length of 255 characters, with no blocking factor.

```

LRECL=255, BLOCKS=255, RECFM=F or LRECL=259, BLOCKS=263, RECFM=VB

```

Using the average sequential file results in a loop that can only be stopped by disabling the Partner or the file.

Definition of the Symbolic Files RC1ECHO*

```

TOM4120----- FILES ATTRIBUTES (2/5) -----
OPTION ==>

SYMBOLIC NAME           : RC1ECHO   MODE: NORMAL

INIT STATE .....       : E         E: IN-SERVICE H: HOLD

DIRECTION .....        : *         T:TRANSMIT R:RECEIVE *:TRANS./REC.
RECEIVING PARTNER ..... : *         'NAME', £LIST, */$$ALL$$ OR $$API$$
SENDING PARTNER .....   : *         'NAME', £LIST, */$$ALL$$ OR $$API$$

PRIORITY .....         : 1         0:URGENT 1:FAST 2:NORMAL 3:SLOW
DSN DEFINITION TYPE ... : D         D:DYNAMIC F:FIXED
ALLOCATION RULE .....    : 2         1:PREALL. 2:TO CREATE 3:EXIT A:AP

FILE TYPE .....        : S         S/H/M/P/PU/V/VU/UU/SU
PRESENTATION PROTOCOL . : 04        COMPRESS.,DATA TYPE (01-16)
UNLOAD/RELOAD MEMBER .. : -         OPTIONAL
SECURITY TABLE .....   : -         OPTIONAL

OPTION : VIEW           UPDATE: 94/02/03 17:47 PSR0009
-ENTER- : NEXT SCREEN  -PF3- : CANCEL
  
```

```

TOM4120----- FILES ATTRIBUTES (3/5) -----
OPTION ==>

SYMBOLIC NAME           : RC1ECHO   DEF.: D   ALL.: 2   TYPE: S   DIR.: *

FILE NAME (DSNAME) .... : INDEX1.&PARTNID.&FILENAM.&REQDAT.&REQTIM
GDG NUMBER .....       : -         +XX OR -XX

1 SYMBOLIC UNIT NAME .. : 3390      'UNITNAME'
  VOLUME NAMES .....   : -         -         -         -
2 SMS DATA-STOR-MGMT .. : -         -         -         -
DISPOSITION .....      : NEW       SHR/OLD/NEW
ALLOCATION TYPE .....    : -         CYL/TRK
SPACE PRIM.-SEC. ....  : -         -         1 TO 4 NUMERIC CHARACTERS
DIRECTORY BLOCKS ..... : -         IF PARTITIONED
RECORD FORMAT .....    : -         F,FB,FBA,FBM,V,VB,VBA,VB,M,VBS,VS,U
LRECL-BLKSIZE .....    : -         -         1 TO 5 NUMERIC CHARACTERS
RETENTION (EXPDT/RETPD) : -         X'CCYYDDD',E'YYDDD'/R'NNNN'

REMOTE DSN (FTP) ..... :
TYPE/STRUCTURE/MODE ... :           EN/AN/I,F/R,B/C/S
UNIQUE .....           : N         Y/N
NOTE :
  
```

```

TOM4120----- FILES ATTRIBUTES (4/5) -----
OPTION ===>

SYMBOLIC NAME          : RC1ECHO   DEF.: D   ALL.: 2   TYPE: S   DIR.: *
                        UPRFCT=

--- S : SYMBOLS CHECKING
V
TRANSMISSION :
START EXIT ..... : L1GFIRC1   USER EXIT NAME
START COMMAND ..... : -
END EXIT ..... : -           USER EXIT NAME
END COMMAND ..... : -

RECEPTION :
START EXIT ..... : -           USER EXIT NAME
START COMMAND ..... : -
END EXIT ..... : L1GFIRC1   USER EXIT NAME
END COMMAND ..... : -

OPTION : VIEW                UPDATE: 94/02/03 17:47 PSR0009
-ENTER- : NEXT SCREEN      -PF3- : PREVIOUS SCREEN

```

The LOOP Process

You can use the LOOP process to load a network link and test it, or to load the Sterling Connect:Express monitor. With the loop process, you send back the file you just received. This results in one file created for each transfer. You can delete the transmitted file with an end of transfer command so that it does not waste space on the disk. The LOOP process can be set up using the L1GFIUE1 general exit.

Note: The original file that you transmit is deleted automatically.

The following screen shows an example of an end of transfer command for deleting the file transferred. Refer to the Files Attributes 4/5 screen shown on page 2-24.

```

//PROCDEL  PROC D=
//BR14     EXEC PGM=IEFBR14
//DD1      DD DSN=&D, DISP=(OLD,DELETE)

```

Definition of the Symbolic Files RC1LOOP*

```

TOM4120----- FILES ATTRIBUTES (2/5) -----
OPTION ==>

SYMBOLIC NAME           : RC1LOOP   MODE: NORMAL

INIT STATE .....       : E         E: IN-SERVICE H: HOLD

DIRECTION .....        : *         T:TRANSMIT R:RECEIVE *:TRANS./REC.
RECEIVING PARTNER .....: *         'NAME', £LIST, */$$ALL$$ OR $$API$$
SENDING PARTNER .....  : *         'NAME', £LIST, */$$ALL$$ OR $$API$$

PRIORITY .....         : 1         0:URGENT 1:FAST 2:NORMAL 3:SLOW
DSN DEFINITION TYPE ... : D         D:DYNAMIC F:FIXED
ALLOCATION RULE .....   : 2         1:PREALL. 2:TO CREATE 3:EXIT A:AP

FILE TYPE .....        : S         S/H/M/P/PU/V/VU/UU/SU
PRESENTATION PROTOCOL . : 04        COMPRESS.,DATA TYPE (01-16)
UNLOAD/RELOAD MEMBER ..: -         OPTIONAL
SECURITY TABLE .....  : -         OPTIONAL

OPTION : VIEW           UPDATE: 94/02/03 17:47 PSR0009
-ENTER- : NEXT SCREEN  -PF3- : CANCEL

```

```

TOM4120----- FILES ATTRIBUTES (3/5) -----
OPTION ==>

SYMBOLIC NAME           : RC1LOOP   DEF.: D   ALL.: 2   TYPE: S   DIR.: *

FILE NAME (DSNAME) .... : INDEX1.&PARTNID.&FILENAM.&REQDAT.&REQTIM
GDG NUMBER .....       : -         +XX OR -XX

1 SYMBOLIC UNIT NAME .. : 3390      'UNITNAME'
  VOLUME NAMES .....   : -         -         -         -
2 SMS DATA-STOR-MGMT ..: -         -         -         -
DISPOSITION .....      : NEW       SHR/OLD/NEW
ALLOCATION TYPE .....    : -         CYL/TRK
SPACE PRIM.-SEC. ....  : -         -         1 TO 4 NUMERIC CHARACTERS
DIRECTORY BLOCKS ..... : -         IF PARTITIONED
RECORD FORMAT .....    : -         F,FB,FBA,FBM,V,VB,VBA,VB,M,VBS,VS,U
LRECL-BLKSIZE .....    : -         -         1 TO 5 NUMERIC CHARACTERS
RETENTION (EXPDT/RETPD): -         X'CCYYDDD',E'YYDDD'/R'NNNN'

REMOTE DSN (FTP) ..... :
TYPE/STRUCTURE/MODE ... :           EN/AN/I,F/R,B/C/S
UNIQUE .....           : N         Y/N
NOTE :

```

```

TOM4120----- FILES ATTRIBUTES (4/5) -----
OPTION ==>

SYMBOLIC NAME          : RC1LOOP   DEF.: D   ALL.: 2   TYPE: S   DIR.: *
                        UPRFCT=

--- S : SYMBOLS CHECKING
V
TRANSMISSION :
  START EXIT ..... : L1GFIRC1   USER EXIT NAME
  START COMMAND ..... : -
  END EXIT ..... : -           USER EXIT NAME
  END COMMAND ..... : S PROCDEL, D=&DSN

RECEPTION :
  START EXIT ..... : -           USER EXIT NAME
  START COMMAND ..... : -
  END EXIT ..... : L1GFIRC1   USER EXIT NAME
  END COMMAND ..... : -

OPTION : VIEW                               UPDATE: 94/02/03 17:47 PSR0009
-ENTER- : NEXT SCREEN                       -PF3- : PREVIOUS SCREEN

```

Integrating Transfer Operations into the User Environment

This chapter describes the utilities that enable you to activate user procedures, delete checkpoint files, purge transfer requests, and manage Partner and File directories.

Overview

To integrate file transfer processes into the user environment, you must setup procedures for managing the operational environment and procedures for managing data transfers. For example, you may want to automatically delete obsolete files, setup start procedures, or forward received files. The utilities listed in the table below can help you accomplish this. These modules can run externally or online. Each one is described in its own section following the table.

Function	Module	Description
Activating User Procedures During File Transfer	L1GFIUE1	This exit can be used for conditionally activating one or more user procedures like Start commands, Jobs, Programs, REXX, or CLISTS during file transfer operations.
Activating User Procedures During Connection Process	L1GFICE1	This exit can be used for conditionally activating one or more user procedures like Start commands, Jobs, Programs, REXX, or CLISTS during connection steps.
Deleting Checkpoint files	P1GFICP1	External tool. Checkpoint files attached to a transfer request are normally automatically deleted when the request is executed or purged by an operator. In some cases, these files can stay on disk. For example, if the monitor is cold started, the checkpoint files are not deleted. This external tool enables you to perform a controlled and automatic purge of any remaining checkpoint files.
Purging Transfer Requests	P1GFIRP1	This external tool enables you to purge transfer requests by partner name, file name, age or return codes.
Using the IDCAMS Utility	P1GFII DC & P1GFII D0	These two external tools send an EXEC PARM field to IDCAMS.
Managing Partner and File Directories with Batch Processes	P0B2DIR	This external tool manages Sterling Connect:Express Partners and Files directories with a batch process.

Activating User Procedures During File Transfer (L1GFIUE1)

This program can be implemented as a selection exit or a beginning and end of transfer exit module that is executed in the APM or EAS address space. This utility enables you to implement the user exit interface of Sterling Connect:Express without coding a program.

L1GFIUE1 exit parameters use a symbolic language to define conditions and actions to be taken. This language has a set of symbolic variables. Some are resolved dynamically from current file transfer information, while others are local or global variables used for internal resolution.

When this exit is activated, it processes a file called SYSUE1, in which all conditions and actions are defined. This source file is accessed automatically and does not need any compilation or link-edits. A TSO/ISPF operator interface is provided (Option 9.1) to help you define parameters in the file and simulate the process. Appendix A provides a list of action keywords and dynamic variables that you can use when defining the parameters for this utility. An Example of a SYSUE1 parameters file is in the *PARMLIB* library (LSYSUE1).

Executing the General Exit

The general exit is called in the APM address space (or the EAS address space for FTP transfers). You must add the SYSUE1 parameter file DD card in the JCL file, as well as all DD cards corresponding to the work files such as SYSPRINT and SYSPR20, that are needed for the called programs or procedures. It can be activated at four stages of a transfer operation. During the initialization and termination stage, the exit can intervene during the processing of the transfer request and then during the final realization phase. At the beginning and end of transfer, it can intervene in the allocation and deallocation phases.

When reading the parameter file *SYSUE1*, and if one of the conditions matches the current situation, L1GFIUE1 will execute the associated actions.

Using the General Exit During the Selection Phase

The general exit can be used during the initialization and termination phase of transfers. Therefore, it is defined as a selection exit declared in the T1APMSRT table (TSO/ISPF Option 3.3.SRT). Since the table T1APMSRT must be processed by the APM, you should activate the execution parameter SRV=L1APMSRV of the APM, as shown in the following example. In the case of FTP transfers, the driver L1APMSRV is always activated.

```
000030 //DEV$400 EXEC      PGM=P1APM001,REGION=0M,ACCT=(PSRACC) ,
000032 //   PARM=('APM=&APM', 'SSN=&SSN', 'MSG=&MSG', 'EFF=&EFF', 'ETC=&ETC',
000033 //           'SRV=L1APMSRV'),
000034 //           DYNAMNBR=64, DPRTY=(15,15), TIME=NOLIMIT
```

The phases are executed before the start of transfer (allocation phase) and after the end of transfer (deallocation phase). If the initialization was successful, the exit is called during the termination phase.

For example, in server mode, you can use the exit to ensure that a file is ready and available when the Partner requests the transfer. The exit is activated before transmitting the request to the monitor. Therefore, it is possible to determine the physical file name based on the request parameters, and to prepare a transmission request of type Hold. This request is presented at the moment when the request is processed by the monitor.

Using the termination phase enables you to process allocation errors. An allocation error occurs at the start of transfer. In this case, neither the start of transfer exit nor the end of transfer exit is activated. Only the call to the selection exit in the termination phase can process the error.

The selection exit is called according to the conditions associated with the protocol that you are using (for example, PeSIT E protocol number 5), the usage mode (for example session table 54 or 52), the direction of the session (incoming or outgoing), and the Partner type (Tom or Other).

Using the General Exit During the Transfer Phase

The general exit must be declared at the file definition level, like any other start or end of transfer exit, in transmission or reception. You can also define the exit in the monitor's SYSIN file with the keywords UEXFTS, UEXFTE, UEXFRS and UEXFRE, that correspond to the four types of calls to the exit. In this way, the symbolic file definition enables the deactivation of the exit using the keyword NONE placed in the appropriate field.

The exit is called at the start and end of transfer for all symbolic files for which it was declared. If the start of transfer was successful, the end of transfer exit is called. All errors detected before the start of transfer exit can only be processed by the selection exit during the termination phase.

Setting Up Parameters in the SYSUE1 File

A set of Keywords enables you to define conditions, actions, and variables that can be local, global, or dynamic. The \$IF\$ keyword declares conditions. Other keywords describe actions and local or global variables. Refer to Appendix A of this book for a list of action keywords and dynamic variables that you can use in the SYSUE1 file.

The SYSUE1 file has the following format:

Keyword	Description
\$IF\$	Conditions. For example: For the symbolic file F, all partners, successful end of transfer
\$Actionx\$	Action to be taken and parameters of the action. For example: Enable symbolic file "FILE"
\$Actiony\$	Action to be taken and parameters of the action. For example: Delete the data set
\$IF\$	Conditions. For example: all files, all partners, transfer failure
\$Actionz\$	Action to be taken and parameters of the action. For example: Start MYPROC with parameters of MYPROC

For each call, the exit looks at the SYSUE1 file and stops any time that \$IF\$ conditions match the current transfer situation. When an \$IF\$ condition is met, Sterling Connect:Express executes the associated \$action\$. If an \$action\$ fails, the exit skips any other \$action\$ declared behind the current \$IF\$, and moves on to the next \$IF\$ keyword.

The L1GFIUE1 exit normally expects to find an \$IF\$ condition in the SYSUE1 file that matches the current situation. If no match is found, the current transfer is interrupted with the return code TRC=4004 or TRC=4904, and PRC=3312, and the procedure that is declared after the \$ERR\$ keyword is activated. The following messages are written in a SYSPRINT file whose name has the format 'Upmmsst'. The exit creates this file

```
TOM4 L1GFIUE1 NO 1 MATCH FILENAM
TOM4 L1GFIUE1 LAST REC. *-----
```

You can use the keywords \$NC_SEL\$, \$NC_IEX\$, \$NC_TEX\$ so that errors are not returned just because no condition was met. These keywords should be placed at the beginning of the SYSUE1 file. \$NC_SEL\$ indicates that no match found during initialization or termination steps is not an anomaly. \$NC_IEX\$ indicates that no match found at beginning of transfer is not an anomaly. \$NC_TEX\$ indicates that no match found at the end of transfer is not an anomaly.

Note: It is better to declare one \$action\$ per \$IF\$ condition, even if you duplicate the \$IF\$ condition line. This way you are sure that no \$action\$ is skipped if any of them fail.

If one syntax error occurs during the process, the current transfer is interrupted with a return code of TRC=4008 or TRC=4908 and PRC=3312, and that is declared after the \$ERR\$ keyword is activated.

After all variables in a command have been replaced, if the length of the command is greater than 120 characters, the current transfer is interrupted with a return code of TRC=4008 or TRC=4908 and PRC=3312. The procedure that is declared after the \$ERR\$ keyword is activated and an error message is sent in a SYSOUT file named 'Upxxxxxx', with the line number of the error. This problem is more common with longer variables such as &LAB (80 characters), &DSN (44 characters), and &PI99 (254).

The following list outlines the rules and guidelines that apply to the SYSUE1 file.

- ❖ The maximum number of cards in the SYSUE1 file is 1024.
- ❖ Two successive \$IF\$ keywords are not allowed.
- ❖ There is no limit to the number of \$actions\$ listed behind an \$IF\$ keyword.
- ❖ File, Partner, TRC, PRC, SRC, Direction and Type, user condition and return code fields of \$IF\$ conditions support wild chars '*'.
- ❖ There is no limit to the number of variables that you can declare.
- ❖ \$NOSWAP\$, \$NOSTAE\$, \$VAR\$, \$CAP\$, \$NOCAP\$, \$W-VOL\$, \$W-UNT\$, \$W-RET\$, \$COND\$ and \$CTLEXC\$ cards can be placed anywhere in the SYSUE1 file.
- ❖ \$ERR\$, \$NC-IEX\$, \$NC-TEX\$ and \$NC-SEL\$ keywords must be placed at the top of the SYSUE1 declarations.
- ❖ The \$action\$ phrase length cannot exceed 120 characters, after extension of the variables.
- ❖ As soon as an error is detected while performing an \$action\$, the next \$IF\$ keyword is processed. All \$action\$ cards behind the failed \$action\$ are skipped.
- ❖ If an error occurs while processing an \$action\$, you will have TRC=40rc during the transfer initialization phase or TRC=49rc during the transfer termination phase.
- ❖ Except for the \$NOSWAP\$, \$NOSTAE\$, \$ERR\$, \$NC-IEX\$, \$NC-TEX\$, \$NC-SEL\$, \$W-VOL\$, \$W-UNT\$, \$W-RET\$, \$VAR\$, \$COND\$ and \$CTLEXC\$ cards, no \$action\$ card can be placed before the first \$IF\$ keyword.
- ❖ Parameters of \$IF\$ keywords are positional. Blanks must be left for further evolutions.
- ❖ No continuation character exists.
- ❖ '/' characters in position one and two indicate the end of file, all cards behind are omitted.
- ❖ '*' character in the first position indicates a comment line.

Defining the Conditions

Conditions are defined using the \$IF\$ keyword and can pertain to data flows or operation status. Note that several monitors can share the same SYSUE1 file. Conditions about data flow include:

- ❖ For one monitor or all monitors

- ❖ For one symbolic File, multiple symbolic Files, or all symbolic Files.
- ❖ For one symbolic Partner, multiple symbolic Partners, or all symbolic Partners.
- ❖ For transmission, reception, or both directions.
- ❖ For ongoing calls, outgoing calls, or both directions.
- ❖ For one type of network link, or all types.

Conditions for Sterling Connect:Express Operation status include the following:

- ❖ During initialization, at beginning of transfer, end of transfer, during termination, or all situations (*).
- ❖ If there is an error, a successful transfer, or both.
- ❖ If the transfer is retried or not.
- ❖ For one TRC return code value, a range of values, or all values.
- ❖ For one PRC return code value, a range of values, or all values.
- ❖ For one SRC return code value, a range of values, or all values.
- ❖ For one value of the current user condition field (IF), multiple values, or all.
- ❖ For one value of the current return code (RC), multiple values, or all.

The position and order of the parameters in the SYSUE1 file are fixed. The table below lists the position, the condition, and a brief description.

Position	Condition	Description
1	\$IF\$	Each \$IF\$ defines the limit of a list of \$actions\$ to perform. If there is an error during an \$action\$, Sterling Connect:Express processes the next \$IF\$ keyword. All \$IF\$ conditions are processed during a single call of L1GFIUE1 exit.
6	File(s)	Symbolic file name or generic definition including WILD CHAR '*' or \$\$ALL\$\$ for all the symbolic files. Examples: FILE = only FILE, FIC***** = all files beginning with 'FIC'
15	Partner(s)	Symbolic partner name or generic definition including WILD CHAR '*' or \$\$ALL\$\$ for all the symbolic partners. Examples: PART = only PART, PAR***** = all partners beginning with 'PAR'
24	Monitor(s)	Fourth character of the subsystem name or '*' for all. Example: 1 = TOM1
26	Direction	T = Transmission, R = Reception, * = both directions
28	Type	I = Initialization, S = Start, E = End, T = Termination, * = in any case. For Initialization and Termination calls, the L1GFIUE1 general exit must be declared in the T1APMSRT table. For Start and End calls, the L1GFIUE1 general exit must be declared in the Start exit and End exit fields, either in the file definition or in the SYSIN file.
30	Mode	D = Done (Successful), F = Failed, * = both cases
32	TRC	Return code or generic value including WILD CHAR '*': this condition is processed only if the mode is Failed. Examples: 5008 = file space full, 5*** = all TRC beginning with 5, **** = all TRC
37	PRC	Return code or generic value including WILD CHAR '*': this condition is processed only if the mode is Failed. Examples: 2211 = I/O error, 221* = all PRC beginning with 221, **** = all PRC

Position	Condition	Description
41	Retry	Y = must be performed for retried transfer.
43	File Type	Blank, Sequential, PDS, or all. Examples: S = Sequential, H= HFS, P = PDS, V = VSAM, PU = PDS unload/reload, VU = VSAM unload, reload, UU = User unload/reload, SU = Sysout unload/reload
46	Type of access	Ongoing or outgoing call, blank, or all. Example: I = Input, O = Output, * = both direction
48	Type of link	Network link used, blank, or all. Examples: X = X25, S = SNA, I = TCP/IP, * = all
50	SRC	Return code or generic value including WILD CHAR '*': this condition is processed only if the mode is Failed. Examples: 0210 = File in use, 02** = all SRC beginning with 02, **** = all SRC
55	IF	User condition defined by a '\$COND\$ IF:' card placed before Example: \$COND\$ IF:&2:4PARTNID&2:4FILENAME (build IF variable)) \$IF\$ *****\$ALL\$\$ * R E * **** * N ** P024F132
64	RC	Current return code filtered by a '\$COND\$ RC:' card placed before Example: \$COND\$ RC:0008 (Accept return codes less equal 8) \$IF\$ *****\$ALL\$\$ * R E * **** * N ** ***** 0004

The following screen shows an example of a condition. Defining the Actions

```

1-----6-----15-----24--28--32---37--41----46---50
$IF$ $$ALL$$ $ALL$$ * * * F **** * Y ** * X ****
For failed transfers on X25 links only, including retried transfers.

```

Each \$IF\$ keyword is followed by a list of one or more actions. An action consists of a keyword followed by parameters. The action keyword is in column 1, and the parameters begin in column 10. The screen below shows an example of an action.

```

1-----10
$CMD$ SEND '&DIR, &TYP, &LNK, &PARTNID, &FILENAM', USER=(USER4)
Send to user USER4, by a TSO command, a message that indicates the direction, the file type, the network link, the symbolic Partner name and the symbolic file name.

```

The following table lists the different types of actions that you can include in the parameters of the SYSUE1 file.

Action	Keyword
Simulation	\$SIM\$
Generation of error	\$ABEND\$ - \$PRC\$ - \$WAIT\$
Environment	\$NOSTAE\$ - \$NOSWAP\$ - \$CAPS\$ - \$NOCAPS\$ - \$W-VOL\$ - \$W-UNT\$ - \$W-RET\$ - \$CTLEXC\$

Action	Keyword
Execution	\$ERR\$ - \$NC-IEX\$ - \$NC-TEX\$ - \$NC-SEL\$ - \$CMD\$ - \$DYA\$ - \$EXIT\$ - \$JCL\$ - \$NOPI37\$ - \$PGM\$ - \$PGMJ\$ - \$PI37\$ - \$SUB\$ - \$REQ\$ - \$300\$ - \$PI99\$ - \$PI99WD\$ - \$PI99RD\$ - \$SNFY\$ - \$FNFY\$ - \$PI11\$ - \$PI12\$ - \$PI61\$ - \$PI62\$ - \$LOG\$
Local or global variables	\$VAR\$ - \$COND\$

You can implement some standard programs or Sterling Connect:Express utilities through the L1GFIUE1 general exit. They can be sent as parameters to one of the keywords such as \$EXIT\$, \$PGM\$, or \$PGMJ\$, or called by actions like \$JCL\$, \$REQ\$, \$300\$, \$SNFY\$, \$FNFY\$, \$SUB\$, or \$LOG\$. The table below lists the keywords that you can use with standard programs and Sterling Connect:Express utilities.

Keyword	Program	Description
\$300\$	P1B2P300	Modifies (Enable, Disable, Purge.) of a file, a partner, a request.
\$EXIT\$	L1EX£AE2 L1GFICN1 L1EXSNAP	Traces PeSIT protocol fields. Sends notification of anomalies. Traces the exit input parameters with SNAPDUMP
\$JCL\$	P1B2PJCL	Starts a user procedure with one parameter. See EX£PJCL provided in the *SAMPLIB* library.
\$LOG\$	L1B2LOG	Send a user message in the SYSLOG file of the APM.
\$PGM\$	Any program	Calls a user program with parameters passed through register1.
\$PGMJ\$	P1GFIDC P1GFID0 L1GFITS1 P1GFIRP1	Calls IDCAMS with EXEC PARM. Calls IDCAMS with EXEC PARM, without return code. Sends a TSO message to one user from a list. Purges a transfer request.
\$REQ\$	P1B2PREQ	Submits a transfer request with EXEC PARM.
\$SUB\$	Any utility	Submits a job from a JCL skeleton in which dynamic variables are replaced by current transfer parameters.
\$SNFY\$	P1B2PNFY	Sends Sterling Connect:Express notifications.
\$FNFY\$	P1B2PNFY	Sends Sterling Connect:Express notifications in a file.

Processing Symbolic Variables

You can extract a string from any symbolic variable &VAR. The following syntax reads "skip 5 characters and take the next twelve characters":

```
"&offset:lengthVAR". &5:12VAR
```

The following rules apply if you consider the size of the variable (its maximum length) and the length used (blank trailer excluded):

- ❖ Offset and length are 1 to 3 numeric characters, less than or equal to 254.
- ❖ Offset cannot exceed the size of the variable.

- ❖ If offset or length are omitted, the equivalent is zero.
- ❖ Offset = 0 means the variable is taken from the beginning, to the value of length.
- ❖ Length = 0 means that the variable is extracted from the offset to all the length used.
- ❖ If length is greater than the size of the variable, no more than the size of the variable is extracted.
- ❖ If length is greater than the length used, blanks are added to meet the value of length.

Examples of the symbolic variables follow:

(&VAR = 'abcdefghij ' - size of &VAR = 16, length used = 10):

&8VAR (no offset): takes 8 first characters of &VAR: 'abcdefgh'

&2:VAR (no length): skip two first characters of variable VAR and takes next characters used: 'cdefghijk'

&2:4VAR: takes characters 3 to 6 of variable &VAR: 'cdef'

&6:16VAR: skip six first characters of variable VAR, takes used characters 7 to 10 and add 6 blanks to complete to size of the variable: 'ghij '

Syntax rules are described in the manual *Sterling Connect:Express for z/OS PeSIT User Fields Guide* in the section *Keyword Syntax* and in the online help of the ISPF operator interface.

An example of the syntax rules follows:

if &PARTNID = 'PARIS ' :

Preparing the Pi99 to send :

000019 \$NOCAPS\$

000020 \$IF\$ FICH*** ***** * T I D **** * Y **

000021 \$PI99\$ =&7PARTNIDFile&DIR 20&1:2REQDAT&QQQ&1:6REQTIM --Remise

Pi99 sent: '=PARIS FileT 2007278031429 --Remise'

Receiving the Pi99

000025 \$VAR\$ L1:&10PARTNID&8:08PI99,&20:3PI99,&23:6PI99&32:8PI99

000026 \$IF\$ FICH*** ***** * R E D **** * Y **

000027 \$CMD\$ SEND 'FILE RECEIVED &L1',USER=(USRFINAL)

Message sent 'FILE RECEIVED PARIS FileT 278,031429,Remise '

Implementing User Conditions

The \$IF\$ card enables you to define conditions based on known variables such as the partner name or the type of call. A new card \$CONDS\$ enables you to define user variables, and the \$IF\$ card is added new condition masks.

You can define a user variable (an IF variable), from standard variables and a maximum return code allowed (an RC variable). Once you define these variables, you can use the new masks in next \$IF\$ cards. The \$CONDS\$ card are placed anywhere in the SYSUE1 file.

The following example demonstrates using the IF variable: the mask is placed in column 55 of the \$IF\$ card, and it is 8 characters long. It is processed the same way as partner and file masks. The IF variable is built from

the 4 first characters of the partner name and the 4 first characters of the file name. In the condition, this variable is equal to SIT1FIL0 for the process to be scheduled.

```
000024 $CONDS$      IF:&4:4PARTNID&4:4FILENAME
000026 $IF$ ***** ***** * R E * **** *** N **          SIT1FIL0
```

The following example demonstrates using the RC variable: the maximum return code is set to 8 (\$CONDS\$ RC:0008). The following commands respect this value, and the process stops only if the return code is greater than 8. To test if the return code is less than or equal to 8 in the \$IF\$ cards, place the mask at column 64 of the \$IF\$ card. It is 4 characters long, and processes the same as the TRC mask.

The first \$IF\$ card defines conditions to call MYPROG. The following \$IF\$ cards test the values 4 and 8 of the return code. Any return code from MYPROG is greater than 8, the process stops.

```
000024 $CONDS$      RC:0008
000026 $IF$ ***** ***** * R E * **** *** N **
000027 $EXIT$       MYPROG
000028 $IF$ ***** ***** * R E * **** *** N **          0008
000029 $CMD$       SEND 'ERROR MYPROG = 8',USER=(USRFINAL)
000030 $IF$ ***** ***** * R E * **** *** N **          0004
000031 $CMD$       SEND 'ERROR MYPROG = 4',USER=(USRFINAL)
```

You extract both variables by using the keywords &IF and &RC.

Placing the Process Control Under the Monitor

In some situations you might need to inactivate a command. The new command \$CTLEXC\$ enables you to ask permission from the monitor before executing a command. This functionality is associated with the Excluded status for the partner or the file.

Excluding a Partner or a File

In the same way you activate or deactivate a partner or a file (Status ENABLED / DISABLED) by passing a command to the monitor, using a batch utility (P1B2P300), or through the TSO ISPF operator interface, you can exclude (Status ENABLED.X\$ / DISABLED.X\$) or reset (Status ENABLED.R\$/ DISABLED.R\$) a partner or a file. Examples of excluding and resetting a partner follow:

```
/F JOBTOM,XP=Partner excludes Partner from L1GFIUE1 processing. "Partner EXCLUDE.UE1 BY OPERATOR"
```

```
/F JOBTOM,RP=Partner resets L1GFIUE1 processing for Partner. "Partner RESET.UE1 BY OPERATOR"
```

Using batch utility

The flag R\$ means that the resource is excluded at least once: excluding a resource is considered critical. For this reason, Sterling Connect:Express keeps the information in the status. An example of excluding a partner using a batch utility follows:

```
P1B2P300 .... P=Partner/X and P1B2P300 .... P=Partner/R$
```

Testing Resource Exclusion

When the command \$CTLEXC\$ is set to ON in the SYSUE1 file, the next commands are executed only if the current partner and the current file are in status ENABLED, DISABLED, ENABLED.R\$ or DISABLED.R\$

In the following example, **exclusion** and **Process 1** steps are under the control of the monitor. They are not executed if the current partner or the current file are excluded. The first command is executed in case of error.

It excludes the current file using the batch utility P1B2P300. **Process 2** is executed as the \$CTLEXC\$ command is set to OFF.

```
000027 $CTLEXC$ ON
000028 ***** exclusion
000029 $IF$ FICH*** ***** * R E F **** * Y **
000030 $CMD$ SEND 'ERROR! TRANS END TERM &TYP &PRC &TRC &SRC',USER=(USR01)
000031 $300$ S=&SSN/F=&FILENAM/X
000032 ***** process 1
000033 $IF$ FICH*** ***** * R E F **** * Y **
000034 $PGMJ$ P1GFIID0 DEL &DSN
000035 *****
000036 $CTLEXC$ OFF
000037 ***** process 2
000040 $IF$ F1DEL*** ***** * R E D **** * Y **
000041 $CMD$ SEND 'RECU &L1',USER=(PSR0008)
```

Simulating the L1GFIUE1 Exit

Before implementing the L1GFIUE1 exit, you can simulate the process. With a full implementation of this utility, the SYSUE1 file is processed normally, and all simulation modes are supported. You can simulate one command or the entire process.

Note: You can simulate L1GFIUE1 exits from the TSO/ISPF interface as well. This is described in the next section.

Simulations using the \$SIM\$ Keyword

You can simulate an L1GFIUE1 exit using the \$SIM\$ keyword. In this case, a \$SIM\$ card is placed to simulate an z/OS command and control the process without performing the action. The result of the process is written in a SYSPRINT file. The file name has the format 'Upxxxxxx'.

Note: This mode is available for authorized users only.

Simulations using the Symbolic File L1GFIUE1

When you use the symbolic file L1GFIUE1 for a transfer, the SYSUE1 file is processed in a simulation mode. All the commands are processed, and the results are written in a SYSPRINT file. The file name has the format 'Upxxxxxx'. In this mode, an \$ERR\$ action results in the WTO message 'L1GFIUE1 ERROR TOM? (SIMULATE)'.

Note: This mode is available for test by non-authorized users.

Tracking Errors in the SYSPRINT File

When using a simulation mode or when an error occurs, the general exit writes messages in a SYSPRINT file that is created in the address space where the process was executing. You can access the SYSPRINT file through ISF (SDSF) with the option 'INPUT ON.' The file name has the following format.

```
UPmmsstt - mm = minutes, ss = seconds, tt = thousands
```

On the ISF 'DA' screen, type a question mark '?' in front of the job and select the 'UP'... File corresponding to the transfer. All error messages are indicated on the right side of a SYSUE1 line number, and the message indicates the nature of the error. Error codes and messages are listed in Appendix A.

Creating the SYSUE1 File with the TSO/ISPF Interface

The TSO/ISPF operator interface can help you define the conditions and actions in the SYSUE1 file. From the Sterling Connect:Express Main Menu, select option 9.1 to display the SYSUE1 Tailoring screen. From this screen, you can:

- ❖ Define \$IF\$ keywords and associated \$actions\$
- ❖ Define user conditions
- ❖ Define local and global variables
- ❖ Define the environment \$actions\$ not associated with an \$IF\$ condition, for example (\$ERR\$, \$NOSTAE\$, \$NOSWAP\$)
- ❖ Process simulations

The following example shows the options on the SYSUE1 Tailoring screen.

```
TOM4240                SYSUE1 TAILORING                -
OPTION ==>

          1  T-TESTS                TESTING CONDITIONS
          2  C-CONDITIONS           USER CONDITIONS
          3  V-VARIABLES            GLOBAL/LOCAL VARIABLES
          4  S-SYTEM                SYSTEM PARAMETERS
          5  E-SIMULATE             TEST EXIT

FILE (MEMBER) ==> '.....' (//SYSUE1)
```

Defining Conditions (Option 1)

The Conditions option enables you to define an \$IF\$ line. Parameters are automatically placed in the correct position for you as you enter them, and values in the fields are controlled.

1. From the Sterling Connect:Express Main Menu, type 9.1 in the option field and press <Enter> to display the SYSUE1 Tailoring screen.
2. Type 1 in the option field and press <Enter> to define conditions.

```

TOM4240   SYSUE1 LIST PARAMETERS $IF$           NAMES INITIALIZED   !
OPTION ==>
          E : EDIT, I : INSERT $IF$, -ENTER- COMMANDS DEFINITION

MONITOR ==> TOM8
FILE (MEMBER) ==> PSR&DEV.TOM.PARMLIB(SYSUE1)

FILE ..... ==> P112****          (SYMBOLIC NAME/MASK/$$ALL$$)
PARTNER ... ==> $$ALL$$          (SYMBOLIC NAME/MASK/$$ALL$$)
SUBSYS .... ==> *                (SUBSYS SUFFIX)
DIRECTION . ==> T                (T/R/*)
TYPE ..... ==> I                (S/E FILE, I/T SRT, *)
MODE ..... ==> *                (D/F/*, TYPE=S/I=>*)
IF TYPE=E/T ET MODE=F (CODE/MASK/****):
SRC ..... ==> ****          TRC ..... ==> ****          PRC ..... ==> ***
IN RESTART. ==> N                (Y/N)
CODE ..... ==> **              (FILE-CODE/**)
ACCESS .... ==> *              (I/O/*)
LINK ..... ==> *              (C/I/N/O/S/T/X/*)
CONDITION.. ==> SIT*****      (VALUE/MASK/******)
ERROR CODE. ==> ****          (NNNN/MASK/****)
          X EXIT, -PF3- END

```

The following table describes the commands that you can enter in the option field on the first screen.

Command	Description
E	Edit the SYSUE1 file directly
I	Creates a new condition line with an action line or adds an action line behind a condition line. If you specify option 'I' before going to next screen, you will create a condition line and an \$action\$ line. If you don't specify option 'I', you will only add an \$action\$ line behind an existing condition line.

3. Type E in the option field and press <Enter> to edit an existing line or type I to insert a new line.

4. Enter your conditions and press <Enter> to define the actions associated with this condition. You enter one action at a time. Each \$Action\$ that you enter is kept in the user ISPF profile, so you can enter a new \$action\$ or select one from a list.

```

SYSUE1 PARAMETER  COMMAND
OPTION ===>

V-----S: ADD, V: CHECK VARIABLES
_ $SUB$      ===> JOB1'.....
.....
_ $CMD$      ===> .....
.....
_ $SIM$      ===> S PSRPROC'.....
.....
_ $PGM$      ===> P1B2PREQ  _ $PGMJ$ ===> ' ' ' ' _ $EXIT$ ===> ' ' ' '
_ $REXX$     ===> .....
.....
_ $REQ$      ===> .....
.....
_ $JCL$      ===> .....
.....
_ $300$      ===> .....
.....
_ $DYA$      ===> .....
.....
_ $PRCS$     ===> ' ' _ $WAIT$ _ $ABEND$
X EXIT, -PF3- BACK

```

Note: If you do not specify option 'I' and no existing \$IF\$ is found, the \$action\$ is just inserted and this can result in an error during execution.

Defining User Conditions (Option 2)

From the TSO/ISPF interface, you can enter the IF user condition and the maximum return code condition. Conditions are stored in the user ISPF profile. When defining conditions, you can enter a new condition or keep the existing one. The following screen shows the SYSUE1 List Conditions screen where you edit conditions.

```

TOM4240      SYSUE1 LIST  CONDITIONS $COND$
OPTION ===>
          E : MEMBER EDIT

MONITOR ===> TOM4
FILE(MEMBER) ===> TOM424.PARMLIB(SYSUE1)_____ (SYSUE1)

V-----S: ADD, V: CHECK VARIABLES

_ IF          ===> &PARTNID&4:4FILENAM_____
_ RC          ===> _____

```

When you enter a condition, it is inserted into the SYSUE1 file and put in the correct place. Once the condition is in the SYSUE1 file, you can update the condition place in the file itself.

Defining Local or Global Variables (Option 3)

From the TSO/ISPF interface, you can enter one to four global variables and one to four local variables. Enter one variable at a time. Variables are stored in the user ISPF profile. When defining variables, you can enter a new variable or select an existing one from a list.

When you enter or select a variable, it is inserted into the SYSUE1 file and put in the correct place. Once the variable is in the SYSUE1 file, you can update the variable name in the file itself. The following screen shows the SYSUE1 List Variable screen where you can edit or select variables.

```
TOM4120      SYSUE1 LIST VARIABLE $VAR$                NAMES INITIALIZED      !
OPTION =====>
              E : EDIT MEMBER

MONITOR =====> TOM4
FILE (MEMBER) =====> INDEX1.TOM4.SYSPRM(SYSUE1) _____ (SYSUE1)
V-----S: ADD, V: CHECK VARIABLES
__ G1          =====> TEST_____
_____
__ G2          =====> _____
_____
__ G3          =====> _____
_____
__ G4          =====> &DSN, &SSN, &DATE, &TIME_____
_____
__ L1          =====> _____
_____
__ L2          =====> _____
_____
__ L3          =====> _____
_____
__ L4          =====> _____
_____
              X EXIT, -PF3- BACK
```

Defining System Parameters (Option 4)

This option enables you to insert \$actions\$ that are not associated with an \$IF\$ condition. You use the following screen to define system parameters.

```
TOM4120      SYSUE1 LIST SYSTEM                        SERIOUS ERROR          !
OPTION =====>
              E : MEMBER EDIT

USER<->MONITOR/UTIL. INCOMPATIBLE LEVELS            R15 (DEC): 00000016
MONITOR =====> TOM4
FILE (MEMBER) =====> INDEX1.TOM4.SYSPRM(SYSUE1) _____ (SYSUE1)
V-----S: ADD, V: CHECK VARIABLES
_ $ERR$       ! =====> SEND 'UE1 ERROR ON &SSN &AP', USER=(???) , LOGON_____
_____
_ $NOSTAE$
_____
_ $NOSWAP$
_____
_ $NC-TEX$
_____
_ $NC-TEX$
_____
_ $NC-SEL$
```

Testing the Execution (Option 5)

This option enables you to simulate the L1GFIUE1 program. During a simulation, the SYSUE1 file is processed and \$IF\$ lines are compared to the transfer conditions that you defined in the TEST SYSUE1 LIST screen shown below.

```

TEST SYSUE1 LIST                                NAMES INITIALIZED      !
OPTION ===>                                     E : EDIT'SYSUE1', -ENTER- : TEST, -PF3- : END

EXIT ===> L1GFIUE1 (L1GFIUE1/...)
//DDN ===> UPMSSEE (UPMSSEE/...) MONITOR ===> TOM4
FILE(MEMBER) ...==> INDEX1.TOM4.SYSPRM(SYSUE1)                                (//SYSUE1)

FILE ..... ==> FICTST (SYMBOLIC NAME)
PARTNER ... ==> SCIPSR (SYMBOLIC NAME)
SUBSYS .... ==> 2 (SUFFIX OF SUBSYS)
DIRECTION . ==> R (T/R/*)
TYPE ..... ==> E (S/E FILE, I/T SRT, *)
MODE ..... ==> D (D/F)
SRC ..... ==> 0000 (SRC/MASK TYPE=E/T MODE=F, ****)
TRC ..... ==> 0000 (TRC/MASK TYPE=E/T MODE=F, ****)
PRC ..... ==> 000 (PRC/MASK TYPE=E/T MODE=F, ****)
RESTART ... ==> N (Y/N)
FILE CODE . ==> 4040 (HEXA FILE CODE)
ACCESS .... ==> I (I/O)
LINK ..... ==> I (C/I/N/O/S/T/X)

X EXIT, -PF3- END

```

You must define the SYSUE1 file that you want to test, and enter the monitor subsystem name TOM? and the conditions. Then, press <Enter> to display the process simulation.

```

L1GFIUE1 INDEX1.TOM4.SYSPRM(SYSUE1)
TOM40101TEXI02/01/0703:43:08FICTST SCIPSR A1111111.B2222222.C3333333.D4444444
.E5555555RSOS 0000*****

X3T 1 ORIGIN

DESTINATION :

02007 034308 TOM4 L1GFIUE1 PESIT-D1 V6R3
02007 034309 TOM4 L1GFIUE1 0002
02007 034309 TOM4 L1GFIUE1 VAR: $VAR$ G4:&DSN, &SSN, &DATE, &TIME 0002
02007 034309 TOM4 L1GFIUE1 0003
02007 034309 TOM4 L1GFIUE1 IF: $IF$ FICTST SCI* * R E D **** * N * * * 0003
02007 034309 TOM4 L1GFIUE1 0005
02007 034309 TOM4 L1GFIUE1 IF: $IF$ $$ALL$$ $$ALL$$ * * * F **** * Y * * * X 0005
02007 034309 TOM4 L1GFIUE1 0006
02007 034309 TOM4 L1GFIUE1 CMD: (SIMULATE) $SUB$ JOB1 0006
02007 034309 TOM4 L1GFIUE1 JOB1 0006
02007 034309 TOM4 L1GFIUE1 0007
02007 034309 TOM4 L1GFIUE1 RETO RC=?? 00000000 V6R3
02007 034309 TOM4 L1GFIUE1 V6R3
02007 034309 TOM4 L1GFIUE1 FLG: ?106?0 /11100/0111 0013/ / V6R3
02007 034309 TOM4 L1GFIUE1 TOM20101TEXI02/01/0703:43:08FICTST SCIPSR A1111111... V6R3
02007 034309 TOM4 L1GFIUE1 RSOS 000000000000 V6R3
02007 034309 TOM4 L1GFIUE1 INT/EXT ID - 00000000 ****/0000 ****/0000 V6R3

```

The first line indicates which SYSUE1 file is being processed. The next lines show the D1B2RUEX structure that is given to the general exit for testing conditions and replacing dynamic variables. The line number

displays on the right side, and the Julian date and time displays on the left side. The L1GFIUE1 level is indicated on the right side (V6R3).

In the example above, a variable was found on line 0002, the condition, "the criteria doesn't match the test criteria" was found on line 0003, and the condition, "the criteria matches the test criteria and action line 6 is simulated," was found on line 0005. The last lines show the internal status for further debugging.

Note: If you enter E in the option field, you can edit and update the SYSUE1 file that you selected. Then, press <PF3> to exit the file and start the simulation process.

Activating User Procedures During Connection Process (L1GFICE1)

The general connection exit is activated during session initialization and termination, in the same way as the general transfer exit L1GFIUE1 is activated during transfer operations.

L1GFICE1 exit parameters use a symbolic language to define conditions and actions to be taken. When this exit is activated, it processes a file called SYSCE1, in which all conditions and actions are defined. This source file is accessed automatically and does not need any compilation or link-edits. A TSO/ISPF operator interface is provided (Option 9.2) to help you define parameters in the file and simulate the Process. The action keywords and dynamic variables that you can use when defining the parameters for this utility are listed in *Appendix A, Supporting Lists, Tables, and Examples*. An Example of a SYSCE1 parameters file is in the *PARMLIB* library (LSYSCE1).

For general information about setting up parameters, defining conditions, processing symbolic variables, implementing user conditions and placing processing under control of the monitor, refer to the *Overview* section beginning on page 3-1 about the transfer exit functionality.

This section defines conditions, processes and symbolic variables that are already described in the transfer exit section, and describes those that apply only to the connection exit.

Executing the General Connection Exit

The general connection exit executes in the TOM and AFM address spaces. Add the SYSCE1 parameter file DD card in the JCL files, and all DD cards corresponding to the work files such as SYSPRINT and SYSPR20 as required by the called programs or procedures. The general connection exit is activated during the initialization and termination steps of the session.

If a condition matches the current situation when reading the parameter file *SYSCE1*, L1GFICE1 executes the associated actions.

If necessary, use the DYNAMNBR execution parameter as the number of allocated files increases when implementing the generalized exit.

Declare the L1GFICE1 in the T1B2PCNT table (TSO/ISPF 3.3.CNT option). You can filter calls to the exit through conditions like the protocol used (for example, 5 is for PeSIT E), the number of session table (4 is for 54 with PeSIT protocol, 64 with FTP protocol, and 24 with Odette protocol), session direction (inbound or outbound) and type of partner (Tom or Other).

Setting Up Parameters in the SYSCE1 File

A set of keywords enables you to define conditions, actions, and variables that are local, global, or dynamic. The \$IFS keyword declares conditions. Other keywords describe actions and local or global variables. For a list

of action keywords and dynamic variables that you can use in the SYSCE1 file, refer to *Appendix A, Supporting Lists, Tables, and Examples*.

The format and the syntax of the SYSCE1 file is the same as the SYSUE1 file described for the transfer exit.

For each call, the exit looks at the SYSCE1 file and stops any time that \$IF\$ conditions match the current connection situation. When an \$IF\$ condition is met, Sterling Connect:Express executes the associated Processes. If a Process fails, the exit skips any other Process declared behind the current \$IF\$, and moves to the next \$IF\$ keyword.

The L1GFICE1 exit expects to find an \$IF\$ condition in the SYSUE1 file that matches the current situation. If no match is found, the current connection is interrupted with the return code TRC=4604 and PRC=3312. The declared procedure after the \$ERR\$ keyword is activated. Messages are written in a SYSPRINT file whose name is in the format 'Upmmsst'. The exit creates the following file.

```
TOM4 L1GFICE1 NO 1 MATCH PARTNER
TOM4 L1GFICE1 LAST REC. *-----
```

Place the keyword \$NC_CNX\$ at the beginning of the SYSCE1 file to specify that errors are not returned if conditions are not met.

Defining the Conditions

Conditions are defined using the \$IF\$ keyword, and pertain to links or operation status. Several monitors can share the same SYSCE1 file.

Conditions about link include:

- ❖ One monitor or all monitors
- ❖ One symbolic partner, multiple symbolic partners, or all symbolic partners.
- ❖ Ongoing calls, outgoing calls, or both directions.
- ❖ One type of network link, or all types.

Conditions for Sterling Connect:Express Operation status include the following:

- ❖ During session establishment, end of session, session failure, or all situations (*).
- ❖ One TRC return code value, a range of values, or all values.
- ❖ One PRC return code value, a range of values, or all values.
- ❖ One NRC return code value, a range of values, or all values.
- ❖ One IF user variable value, a range of values, or all values.
- ❖ One return code value, a range of values, or all values.

The position and order of the parameters in the SYSCE1 file are fixed. The following table lists the position, condition, and a brief description of the parameters.

Position	Condition	Description
1	\$IF\$	Each \$IF\$ defines the limit of a list of \$actions\$ to perform. If an error occurs during an \$action\$, Sterling Connect:Express Processes the next \$IF\$ keyword. All \$IF\$ conditions are processed during a single call of L1GFICE1 exit.
6	Partner(s)	Symbolic partner name or generic definition including WILD CHAR '*' or \$\$ALL\$\$ for all the symbolic partners. Examples: PART = only PART, PAR***** = all partners beginning with 'PAR'

Position	Condition	Description
15	Monitor(s)	Fourth character of the subsystem name or '*' for all. Example: 1 = TOM1
17	Type	C = Call, E = end of session, F = session failure, * = any situation. For FTP only C and F are supported.
19	Type of access	Ongoing or outgoing call, blank, or all. Example: I = Input, O = Output, * = both direction
21	Type of link	Network link used, blank, or all. Examples: X = X25, S = SNA, I = TCP/IP, * = all
23	TRC	Return code or generic value including WILD CHAR '*': This condition is processed only if the type is Failed. Examples: 2011 = invalid partner, 20** = all TRC beginning with 20, **** = all TRC
28	PRC	Return code or generic value including WILD CHAR '*': This condition is processed only if the type is Failed. Examples: 3311 = protocol error, 33** = all PRC beginning with 33, **** = all PRC
32	NRC	Return code or generic value including WILD CHAR '*': This condition is processed only if the type is Failed. Example: 01***** = open session error
45	RC	Return code or generic value including WILD CHAR '*': This condition requires that a card '\$COND\$ RC:' is placed before. Example: \$COND\$ RC:0008 *IF\$ \$ALL\$\$ * C * * **** * 0004 *****
50	IF	User variable defined by a card '\$COND\$ IF:' placed before, or generic value including WILD CHAR '*': Example: \$COND\$ IF:&2:4PARTNID&0:10IAD *IF\$ \$ALL\$\$ * C * **** * ***** PAR0192.020.13

The following example shows the position and order of the parameters in the SYSCE1 file.

```

1----6-----15-----23---28--32---37--41--45---50
$IF$ $ALL$$ * F * X **** * ***** *
For all partners, any monitor , in case of failure on a X25 link.

```

The following table lists the actions you can include in the parameters of the SYSCE1 file.

- ❖ Simulation - \$SIM\$
- ❖ Generation of errors - \$ABEND\$ - \$PRC\$ - \$WAIT\$
- ❖ Environment - \$CAPSS\$ - \$NOCAPSS\$ - \$CTLEXCS\$ - \$NOESTAES\$ - \$NOSWAPS\$
- ❖ Execution - \$ERR\$ - \$NC-CNX\$ - \$CMD\$ - \$FNFY\$ - \$LOG\$ - \$PGM\$ - \$PGMJ\$ - \$SUB\$ - \$REQ\$ - \$SNFY\$ - \$300\$ - \$ORG\$ - \$DST\$ - \$PART\$ - \$IAD\$ - \$IHN\$ - \$IPT\$ - \$XAD\$ - \$SAD\$
- ❖ Local or global variables - \$VAR\$ - \$COND\$

You can implement some standard programs or Sterling Connect:Express utilities through the LIGFICE1 general exit. They can be sent as parameters to one of the keywords such as \$EXIT\$, \$PGM\$, or \$PGMJ\$, or

called by actions such as \$JCL\$, \$REQ\$, \$300\$, \$SNFY\$, \$FNFY\$, \$SUB\$, or \$LOG\$. The following table lists keywords you can use with standard programs and Sterling Connect:Express utilities.

Keyword	Program	Description
\$300\$	P1B2P300	Modifies (Enable, Disable, Purge) of a file, a partner, a request.
\$EXIT\$	L1GFICN1 L1EXSNAP	Sends notification of anomalies. Traces the exit input parameters with SNAPDUMP
\$FNFY\$	P1B2PNFY	Sends Sterling Connect:Express notifications, text format, in a file.
\$LOG\$	L1B2LOG	Sends a user message in the SYSLOG file of TOM
\$PGM\$	Any program	Calls a user program with parameters passed through register1.
\$PGMJ\$	P1GFIIDC P1GFIID0 L1GFITS1	Calls IDCAMS with EXEC PARM. Calls IDCAMS with EXEC PARM, without return code. Sends a TSO message to one user from a list.
\$REQ\$	P1B2PREQ	Submits a transfer request with EXEC PARM.
\$SNFY\$	P1B2PNFY	Sends Sterling Connect:Express notifications, text format.
\$SUB\$	Any utility	Submits a job from a JCL skeleton in which dynamic variables are replaced by current transfer parameters.

Simulating the L1GFICE1 Exit

Before implementing the L1GFICE1 exit, you can simulate the process . With a full implementation of this utility, the SYSCE1 file processes normally, and all simulation modes are supported. You can simulate one command or the entire Process.

Simulating Using the \$SIM\$ Keyword

You can simulate an L1GFICE1 exit using the \$SIM\$ keyword. For example, \$SIM\$ card is placed to simulate an z/OS command and control the Process without performing the action. The result of the Process is written in a SYSPRINT file. The file name has the format 'Upxxxxxx'.

Simulating using the Symbolic Partner L1GFICE1

When you use the symbolic partner L1GFICE1 for a transfer, the SYSCE1 file processes in a simulation mode. All the commands are processed, and the results are written in a SYSPRINT file. The file name is in the Upxxxxxx format. In this mode, an \$ERR\$ action results in the WTO message: L1GFICE1 ERROR TOM? (SIMULATE).

Note: This mode is available for test by non-authorized users.

Tracking Errors in the SYSPRINT File

When using a simulation mode or when an error occurs, the general exit writes messages in a SYSPRINT file it creates in the address space where the Process executes. Access the SYSPRINT file through ISF (SDSF) with the option INPUT ON. The file name uses the following format.

```
UPmmsstt - mm = minutes, ss = seconds, tt = thousands
P = I (initialization of TOM), T (termination of TOM),
C (Open session), E (Normal end of session), F (abnormal end of session)
```

On the ISF DA screen, type a question mark ? in front of the job and select the UP... File corresponding to the transfer. All error messages are indicated on the right side of a SYSCE1 line number, and the message indicates the nature of the error. Error codes and messages are listed in *Appendix A, Supporting Lists, Tables, and Examples*.

Creating the SYSCE1 File with the TSO/ISPF Interface

The TSO/ISPF operator interface helps define the conditions and actions in the SYSCE1 file. From the Sterling Connect:Express Main Menu, select option 9.2 to display the SYSCE1 Tailoring screen.

```
BB                               UTILITIES TOM-PAC
OPTION ====>

$PPPP      A      CCCC
$P P      A A      C
$P P      A A      C
$P P      A A      C
$PP      AAAAAAAA C
$P      A      A C
$P      A      A C
$P      A      A CCCC

          TRANSFERS MANAGEMENT          SESSIONS MANAGEMENT
_ 1  L1GFIUE1 //SYSUE1          _ 2  L1GFICE1 //SYSCE1
_ 1.1 TESTS                      _ 2.1 TESTS
_ 1.2 CONDITIONS                  _ 2.2 CONDITIONS
_ 1.3 VARIABLES                    _ 2.3 VARIABLES
_ 1.4 SYSTEM                       _ 2.4 SYSTEM
_ 1.5 SIMULATE                      _ 2.5 SIMULATE

X  EXIT                               -PF3- END
```


The following figure shows the options on the SYSUE1 Tailoring screen.

```
TOM4240          SYSCE1 TAILORING          -
OPTION ==>

      1  T-TESTS          TESTING CONDITIONS
      2  C-CONDITIONS    USER CONDITIONS
      3  V-VARIABLES     GLOBAL/LOCAL VARIABLES
      4  S-SYSTEM        SYSTEM PARAMETERS
      5  E-SIMULATE      TEST EXIT

FILE (MEMBER) ==> ' ' (//SYSCE1)

X EXIT, -PF3- END
```

From this screen, you

- ❖ Define \$IF\$ keywords and associated \$actions\$
- ❖ Define user conditions
- ❖ Define local and global variables
- ❖ Define the environment \$actions\$ not associated with an \$IF\$ condition, for example (\$ERR\$, \$NOSTAE\$, \$NOSWAP\$)
- ❖ Process simulations

Defining Conditions (Option 1)

The Conditions option enables you to define an \$IF\$ line. Parameters are automatically placed in the correct position as you enter them, and values in the fields are controlled.

1. From the Sterling Connect:Express Main Menu, type 9.2 in the option field and press <Enter> to display the SYSCE1 Tailoring screen.
2. Type 1 in the option field and press <Enter> to define conditions.

```

TOM4240      SYSCE1 LIST PARAMETERS  $IF$                NAMES INITIALIZED  !
OPTION ==>
           E : EDIT, I : INSERT $IF$, -ENTER- COMMANDS DEFINITION

MONITOR ==> TOM4
FILE (MEMBER) ==> TOM424.PARMLIB (SYSCE1)

PARTNER ... ==> GFIPSR*                (SYMBOLIC NAME/MASK/$$ALL$$)
SUBSYS .... ==> *                      (SUBSYS SUFFIX)
TYPE ..... ==> E                      (C/E/F, *)

IF TYPE=F (CODE/MASK/****):
NRC ..... ==> ***** TRC ..... ==> **** PRC ..... ==> ***

ACCESS .... ==> *                      (I/O/*)
LINK ..... ==> *                      (I/S/X/*)
ERROR CODE. ==> ****                  (NNNN/MASK/****)
CONDITION.. ==> *****                (VALUE/MASK/****)

X EXIT, -PF3- END

```

The following table describes the commands you can enter in the option field on the first screen.

Command	Description
E	Edit the SYSCE1 file directly
I	Creates a new condition line with an action line or adds an action line behind a condition line. If you specify Option I before going to next screen, you create a condition line and an \$action\$ line. If you don't specify Option I, you add an \$action\$ line behind an existing condition line.

3. Type E in the option field and press <Enter> to edit an existing line or type I to insert a new line.

4. Enter your conditions and press <Enter> to define the actions associated with this condition. Enter a new \$action\$ or select one from a list. Enter one action at a time. Each \$Action\$ you enter is kept in the user ISPF profile.

```

TOM4240      SYSCE1 PARAMETER  GENERAL COMMAND
OPTION ===>

V-----S: ADD, V: CHECK VARIABLES
_ $SUB$      ===> .....
_ $CMD$      ===> SEND'RECU: &PARTNID &IAD &AP &EF &IHN &ORG' .....
_ $SIM$      ===> .....
_ $PGM$      ===> ' ' _ $PGMJ$ ===> ' ' _ $EXIT$ ===> ' '
_ $REXX$     ===> .....
_ $REQ$      ===> .....
_ $JCL$      ===> .....
_ $300$      ===> .....
_ $PRCS$     ===> ' ' _ $WAIT$ _ $ABEND$

X EXIT, -PF3- BACK

```

Note: If you do not specify Option I and no existing \$IF\$ is found, the \$action\$ is inserted and can result in an error during execution.

Defining User Conditions (Option 2)

Conditions are stored in the user ISPF profile. From the TSO/ISPF interface, enter the IF user condition and the maximum return code condition. When you define conditions, enter a new condition or keep the existing one. The following example shows the SYSCE1 List Conditions screen to edit user conditions:

```

TOM4240      SYSCE1 LIST  CONDITIONS $COND$
OPTION ===>
          E : MEMBER EDIT

MONITOR ===> TOM4
FILE (MEMBER) ===> TOM424.PARMLIB(SYSCE1) _____ (SYSCE1)

V-----S: ADD, V: CHECK VARIABLES

_ IF        ===> &PARTNID&1:3IAD-&IHN _____
_ RC        ===> _____

```

A condition you enter is inserted into the SYSCE1 file and put in the correct place. Once the condition is in the SYSCE1 file, you can update the condition place in the file itself.

Defining Local or Global Variables (Option 3)

From the TSO/ISPF interface, enter one to four global variables and one to four local variables. Enter one variable at a time. Variables are stored in the user ISPF profile. When you define variables, enter a new variable, or select an existing one from a list.

When you enter or select a variable, it is inserted into the SYSCE1 file and put in the correct place. Once the variable is in the SYSCE1 file, you can update the variable name in the file itself. The following screen shows the SYSCE1 List Variable screen to edit or select variables.

```
TOM4240      SYSCE1 LIST VARIABLE $VAR$
OPTION =====>
              E : EDIT MEMBER

MONITOR =====> TOM4
FILE (MEMBER) =====> TOM424.PARMLIB (SYSCE1) _____ (SYSCE1)
V-----S: ADD, V: CHECK VARIABLES
__ G1        =====> _____
_____
__ G2        =====> _____
_____
__ G3        =====> _____
_____
__ G4        =====> &DSN, &SSN, &DATE, &TIME
_____
__ L1        =====> _____
_____
__ L2        =====> _____
_____
__ L3        =====> _____
_____
__ L4        =====> _____
_____
              X EXIT, -PF3- BACK
```

Defining System Parameters (Option 4)

This option enables you to insert \$actions\$ not associated with an \$IF\$ condition. Use the following screen to define system parameters.

```
TOM4240      SYSCE1 LIST SYSTEM                                NAMES INITIALIZED    !
OPTION =====>
              E : MEMBER EDIT

MONITOR =====> TOM4
FILE (MEMBER) =====> _____ (SYSCE1)

V-----S: ADD, V: CHECK VARIABLES
_ $ERR$      ! =====> SEND 'CE1 ERROR ON &SSN &IAD.F', USER=(???) , LOGON _____
_____
_ $NOSTAE$
_____
_ $NOSWAP$
```

Testing the Execution (Option 5)

To simulate the L1GFICE1 program, use this option. During a simulation, the SYSCE1 file processes. The \$IF\$ lines are compared to the transfer conditions defined in the following TEST SYSCE1 LIST screen.

```
TOM4240      TEST SYSCE1 LIST                                NAMES INITIALIZED      !
OPTION ==>                                     E : EDIT'SYSCE1', -ENTER- : TEST, -PF3- : END

4XX/TEST
EXIT ==> L1GFICE1      (L1GFICE1/...)
//DDN ==> UPMSSEE      (UPMSSEE/...) MONITOR ==> TOM4
FILE(MEMBER) ...==> PSR&DEV.TOM400.SRCLIB.PSR0008 (SYSCE1)      (//SYSCE1)

PARTNER ... ==> GFIPSR8      (SYMBOLIC NAME)                      ENABLED
SUBSYS .... ==> 8              (SUFFIX OF SUBSYS)
TYPE ..... ==> E              (C/E/F)
NRC ..... ==> 000000000000    (NRC TYPE=F)
TRC ..... ==> 8001           (TRC TYPE=F)
PRC ..... ==> 312            (PRC TYPE=F)

ACCESS .... ==> I              (I/O)
LINK ..... ==> I              (I/S/X)

X EXIT, -PF3- END
```

Define the SYSCE1 file to test. Enter the monitor subsystem name TOM? and the conditions. Press <Enter> to display the Process simulation.

Deleting Checkpoint Files (P1GFICP1)

A request checkpoint file is created for each file transfer in Sterling Connect:Express. When a transfer is successful or when the request is purged by an operator, this file is deleted. If the request is interrupted, this file stays on the disk until the transfer is restarted and successfully ended, or until the request is purged by an operator. If the monitor is cold started, however, the checkpoint files for interrupted requests are not automatically deleted. The requests are omitted and lost, but they are not purged. You can use this utility to delete any remaining checkpoint files.

This program is executed in its own address space.

Implementing the P1GFICP1 Utility

This program calls the IDCAMS utility, so a SYSPRINT file is required, as shown below.

```
//SYSPRINT DD SYSOUT=*
```

The P1GFICP1 program is authorized (APF), and WTO messages (ROUTCDE=11) are not sent to the z/OS console.

Initialization Parameters

The program gets its parameters from the EXEC PARM field, as follows.

```
SSN= 'subsystem Name' , DELETE , CKI= 'Checkpoint files Index'
```

The table below describes the parameters in the EXEC PARM field.

Parameter	Description
SSN	Subsystem name in the form of TOM?.
DELETE	Action to be performed.
CKI Up to 17 characters	First index of the checkpoint files to be deleted. The full name structure is: 'cki'.ssn'*. * Example†: If SSN=TOM2 and CKI=PROD.CHK, the checkpoint name would be PROD.CHK.TOM2CHKP.A0000125. A0000125 is the transfer request number.

† Positions of parameters are fixed.

Process Description

First, the program builds a list of all files with a checkpoint file name that matches the pattern below.

```
'cki'.ssn'*. *
```

Sterling Connect:Express checks each file to see if it is associated with a request number, and any file with no request in the request table is deleted. Sterling Connect:Express looks for the requests with the L0B2Z20 module, and the file is deleted using IDCAMS.

Note: Sterling Connect:Express must be running to perform this process.

Viewing the Results

The table below lists the possible return codes sent by this utility.

Code	Description
0	Successful
4	'WARNING' – (invalid parameter, Monitor is not running ...)
8	ERROR (the maximum of checkpoint files entries is reached, invalid subsystem name, ...)
12	FATAL ERROR during processing

WTO Messages

The following table describes the conventions for WTO messages sent by this utility.

Character	Description
????????	Status or flag
++++++	Numeric field, a number, a count, a code
//////	Alphanumeric , partner name for example
CK	'Checkpoint'

The table below lists the possible messages for this utility.

P1GFICP1 Messages	
TOM+CP1 ERROR	////////.//////// LOCATE RC(DEC)=+++++++ R0=+++++++
TOM+CP1 ERROR	////////.//////// OBTAIN RC(DEC)=+++++++
TOM+CP1 ERROR	IDCAMS ++++++ CHECK //SYSPRINT
The following message found in the SYSPRINT file is normal: 'IKJ56225I DATA SET X.Y.Z ALREADY IN USE, TRY LATER...' The file is still allocated by the monitor although the transfer request is ended.	
TOM+CP1 ERROR	LIMITED TO STORAGE (INTERNAL LIMIT->STOP)
TOM+CP1 ERROR	LIMITED TO ++++++ ENTRIES (RUN AGAIN THE JOB)
NOTE: ONLY ++++++ ENTRIES WERE PROCESSED	
TOM+CP1 ERROR	LOGIC? (INTERNAL ERROR->STOP)
TOM+CP1 ERROR	OPEN //SNAP (USER ERROR, CHECK JCL)
TOM+CP1 ERROR	OPEN //WTO PRINT (USER ERROR, CHECK JCL)
TOM+CP1 ERROR	PARM ? (USER ERROR->STOP, CHECK PARM)
? = K - keyword missing or misplaced ? = L - PARM field missing or invalid length ? = N - invalid numeric field ? = M - 'MFY' option expected ? = P - parameter missing or misplaced	
TOM+CP1 LIMITED TO ++++++ ENTRIES-	(RERUN ONE MORE TIME)
TOM+CP1 NOTICE	DELETE APM CHECKPOINTS FOR CKI=/ DELETED NO REQUEST ACTIVE
TOM+CP1 NOTICE	KEPT REQUEST ACTIVE
TOM+CP1 NOTICE	NO DSN FOUND
TOM+CP1 NOTICE	NO MATCH
TOM+CP1 NOTICE	PROGRAM EXIT
TOM+CP1 NOTICE	TOTAL ++++++ DSN(S)
TOM+CP1 NOTICE	TOTAL ++++++ CK(S) MATCHED
TOM+CP1 NOTICE	TOTAL ++++++ CK(S) ACTIVE
TOM+CP1 NOTICE	TOTAL ++++++ CK(S) DELETED
TOM+CP1 SCANNED	+++++++ FILE(S)
TOM+CP1 SEVERE	PROGRAM ERROR
TOM+CP1 WARNING	FUNCTION INCOMPLETE
TOM+CP1 WARNING	IKJEHCIR R15(DEC)=+++++++
TOM+CP1 WARNING	CIR LOCATE RC (DEC)=+++++++ R0 (DEC) = ++++++
TOM+CP1 WARNING	IGNORED NOT SEQ. //////////.////////
TOM+CP1 WARNING	IGNORED/NOT A CK //////////.////////

Purging Transfer Requests (P1GFIRP1)

During transfer operations, some transfer requests stay in the Request Control Table (RCT) indefinitely. Since the size of the RCT is limited, it may be necessary to purge obsolete requests. The P1GFIRP1 program enables you to get a list of obsolete requests or to purge all requests for one Partner or group of Partners, or for one file or group of files, by age.

This program can be executed in its own address space.

Implementing the P1GFIRP1 Utility

The program gets a list of all transfer requests using the DISPLAY service of the L0B2Z20 interface. Then, requests that match the criteria are selected. If PURGE is requested, each selected request is purged using the MODIFY service of the L0B2Z20 interface.

P1GFIRP1 program is authorized (APF): WTO messages (ROUTCDE=11) are not sent to the z/OS console. This utility requires that Sterling Connect:Express be running.

Initialization Parameters

The utility can be launched in different ways, depending on the criteria, using the following EXEC PARM field.

```
SSN= 'Subsystem Name' , Option , Criteria = mask
```

The table below describes the parameters in the EXEC PARM.

Parameter	Description
SSN	Subsystem name in the form of TOM?.
Option	Action to be performed: PURGE for deleting transfer requests or CHECK for listing obsolete requests.
Criteria	One of the keywords from the following list.

The following table describes the criteria that you can use when defining parameters in the EXEC PARM.

Criteria†	Mask
TPA	1 to 8 characters: Criteria for matching transfer partner name – either one partner name or a pattern Example: TRFUSER
SPN	1 to 8 characters: Criteria for matching session partner name – either one partner name or a pattern Examples: PARTNER, PART
SFN	1 to 8 characters: Criteria for matching symbolic file name – either one file name or a pattern Examples: FILE, F
HRS	2 characters: Criteria for matching the age of the request, in hours (from 00 to 24) Examples: 05, 10

† Positions of Parameters are fixed.

Criteria†	Mask
DYS	2 characters: Criteria for matching the age of the request, in days (from 00 to 99) Examples: 05, 10
TRC	4 characters: Criteria for matching return code TRC. All the characters must be entered and you cannot use patterns like F*. Example: 2036
PRC	4 characters: Criteria for matching return code PRC. All the characters must be entered and you cannot use patterns like F*. Example: 2211
RQN	8 characters: Criteria for matching the request number. All the characters must be entered and you cannot use patterns like F*. Example: 00000129

† Positions of Parameters are fixed.

Viewing the Results

The table below lists the possible return codes sent by this utility:

Code	Description
0	Successful
4	'Warning' – Invalid Parameter, monitor not up ...
8	Anomaly – state unknown.
12	FATAL ERROR during processing

WTO Messages

The table below describes the conventions for WTO messages sent by this utility.

Character	Description
????????	Status or flag
+++++++	Numeric field, a number, a count, a code
////////	Alphanumeric , partner name for example
CK	'Checkpoint'

The following table lists possible messages for this utility.

P1GFIRP1 Messages			
TOM+RP1	ERROR	PARM	? (USER ERROR->STOP, CHECK PARM)

P1GFIRP1 Messages (Continued)<Continued>

? = K - keyword missing or misplaced
 ? = L - PARM field missing or invalid length
 ? = N - invalid numeric field
 ? = M - 'MFY' option expected
 ? = P - parameter missing or misplaced

TOM+RP1	ERROR	DISPLAY	RCT		(INTERNAL ERROR->STOP)
TOM+RP1	ERROR	LOGIC?	???		(INTERNAL ERROR->STOP)
TOM+RP1	ERROR	LOOP	RCT		(INTERNAL ERROR->STOP)
TOM+RP1	ERROR	OPEN	//SNAP	(USER ERROR, CHECK JCL)	
TOM+RP1	ERROR	OPEN	//WTOPRINT	(USER ERROR, CHECK JCL)	
TOM+RP1	ERROR	REQUEST	UNK. ST2:? ++++++++	FILE ////////////// PARTNER //////////////	
TOM+RP1	NOTICE	EMPTY	RCT		
TOM+RP1	NOTICE	MATCHED	+++++++	REQUEST(S)	
TOM+RP1	NOTICE	PROGRAM	EXIT		
TOM+RP1	NOTICE	'OPTION'	REQUESTS FOR SPN=/////		
TOM+RP1	NOTICE	'OPTION'	REQUESTS FOR SFN=/////		
TOM+RP1	NOTICE	'OPTION'	REQUESTS FOR HRS>=++		
TOM+RP1	NOTICE	'OPTION'	REQUESTS FOR DYS>=++		
TOM+RP1	NOTICE	'OPTION'	REQUESTS FOR RQN=+++++++		
TOM+RP1	NOTICE	PURGED	+++++++	REQUEST(S)	
TOM+RP1	NOTICE	REQUEST	PURGED	+++++++	
TOM+RP1	NOTICE	REQUEST	NOT PURGED	+++++++ T++++	
TOM+RP1	NOTICE	REQUEST	REQUEST ????????	+++++++ FILE "////////"	
TOM+RP1				PARTNER"////////"	
TOM+RP1		CREATED	+++++++	+++++++	
TOM+RP1	NOTICE	TOTAL	+++++++	REQUEST(S)	
TOM+RP1	SCANNED	+++++++	FILE(S)		
TOM+RP1	SEVERE	PROGRAM	ERROR		(INTERNAL ERROR->STOP)
TOM+RP1	WARNING	FUNCTION	INCOMPLETE		(IF NOT ALL REQUESTS PURGED)

Using the IDCAMS Utility (P1GFIIDC and P1GFIID0)

The P1GFIIDC utility provides a way to use IDCAMS in a procedure, and can perform one IDCAMS function at a time. The call is done only with an EXEC PARM field, so no SYSIN file is needed.

The P1GFIID0 program is used in the same way, but it does not return a code if an error occurs. This is used when you don't care if an error occurs and you want to continue with the process.

These programs can be executed in their own address space.

Implementing P1GFIIDC and P1GFIID0

P1GFIIDC can be used either in batch or in the L1GFIUE1 general exit process as the parameter of a \$PGMJ\$ keyword.

```
SYSUE1 Example---- $PGMJ$ P1GFIIDC 'PARMS'  
SYSUE1 Example---- $PGMJ$ P1GFIID0 'PARMS'
```

Both programs use standard parameters of the IDCAMS utility, and IDCAMS functions are called dynamically.

Note: This utility is used internally by Sterling Connect:Express for deleting temporary files such as *SYSPRM*[Ryhmmss] used in the PDS UNLOAD process with member selection. An extra PARM keyword has been added. It is specific and can only be used with P1GFIIDC and P1GFIID0, as shown below.

\$DELMEMS SYSDEL to delete the member file PDS(MEMBER) with // ***SYSDEL DD DSN=PDS (MEMBER)***.

Viewing the Results

The table below lists the possible return codes sent by this utility.

Code	Description
0	Successful
4	'WARNING' – return code from IDCAMS is in the SYSPRINT file
8	ERROR detected during processing

The following screen shows examples.

```
BATCH:
/*
//GO      EXEC      PGM=P1GFIIDC,
//      PARM=' $DELMEM$  SYSDEL '
//STEPLIB DD      DISP=SHR, DSN=INDEX1.TOMV???.LOADLIB
//SYSPRINT DD      SYSOUT=*
//SYSDEL  DD      DSN=USR.PDS (MEMBER) , DISP=SHR
//SYSUDUMP DD      SYSOUT=*

L1GFIUE1:
$PGMJ$  P1GFIIDC DEL &API
```

Managing Partners and Files Directories with Batch Processes (P0B2DIR)

This utility provides batch functions equivalent to those found in the TSO/ISPF Files and Partners directories. For each directory, you can:

- ❖ Create an entry – ADD function
- ❖ Update an entry – UPDATE function
- ❖ Delete an entry – DELETE function
- ❖ Create or update an entry – REPLACE function
- ❖ List of all entries – LIST function
- ❖ Update or not internal tables (PCT or FCT) – REFRESH option
- ❖ Checkpoint function – RESTART option
- ❖ Trace function –TT option

This program is executed in its own address space.

Implementing P0B2DIR

This program runs in a PL1 language environment. To update correctly, the JCL flow must point to the appropriate system files and the VSAM directory. Examples are provided in the *SAMPOPT* library \$P0B2DIP and \$P0D2DIF.

```
//GO DD PGM=P0B2DIR
//STEPLIB DD DISP=SHR,DSN=PROD.TOM410.LOADLIB <=== TOM
//* DSN=PLI.PLILINK.ESA430,DISP=SHR <== PL/1 TRANSIENT
// DSN=CEE.V1R5MO.SCEERUN,DISP=SHR
//*
//SYSPAR DD DISP=SHR,DSN=INDEX.TOM4.SYSPAR <=== VSAM
//*
//PLIDUMP DD SYSOUT=* <-- OPTIONAL FOR PLI DEBUGGING+TRACE
//SNAP DD SYSOUT=* <-- OPTIONAL FOR PLI DEBUGGING+TRACE
//SYSUDUMP DD SYSOUT=* <-- OPTIONAL FOR ASM DEBUGGING+TRACE
//SNAPDUMP DD SYSOUT=* <-- OPTIONAL FOR ASM DEBUGGING+TRACE
//SYSPRINT DD SYSOUT=* <=== FOR LISTING
//*-----
//SYSIN DD *
```

The SYSIN file has fields similar to those you find with the TSO/ISPF interface.

The REFRESH = YES option requires that Sterling Connect:Express be started. If REFRESH = NO, only the VSAM file is updated. The monitor is not required to be running.

Initialization Parameters

The program is executed from its SYSIN file and one entry is processed at a time.

```
//SYSIN DD *
SUBSYS                = 'TOM2',
FUNCTION              = 'REPLACE' ,
REFRESH               = 'YES',
TT                   = 'TT',

PARTNER.NAME          = 'Z2',
PARTNER.PASSWORD      = 'Z2',
PARTNER.NOTE          = 'NOTE';
```

The list below outlines the rules and guidelines for entries in the SYSIN file.

- ❖ Partner definition parameters are in the form PARTNER.*
- ❖ File definition parameters are in the form FILE.*
- ❖ Each Parameter has one parameter per line. A comma (',') at the end of the line is a continuation character, and a semicolon (';') indicates the end of the list.
- ❖ No comment line is authorized in the SYSIN file.
- ❖ If a parameter is duplicated, the second one is used.
- ❖ If a parameter is too long, it is truncated with no information message.
- ❖ A dash ('-') in a field can be used for clearing a field in the VSAM directory and in the internal control table (PCT or FCT). A blank in a field is equivalent to omitting this parameter. In this case, no update is done in the VSAM directory or in the internal control table (PCT or FCT).
- ❖ Unchanged fields can be omitted in with the Add, Update, and Replace functions. You can update one field in the Partner or File definition.
- ❖ If the option REFRESH=NO is set, no control is performed by Sterling Connect:Express. Only syntax controls and field value range controls are performed. During Sterling Connect:Express initialization, the control process could detect an error such as an invalid entry with status UNUSABLE. This entry can only be updated before being available for transfer operations.

Note: The FILE.TYPE field must contain a binary value, for example, FILE.TYPE='00000000B' for a sequential file type.

Process Description

The P0B2DIR utility checks parameters from the SYSIN file. If REFRESH=YES, parameters are sent to the monitor control process. If all controls are successful, the VSAM files and internal control tables are updated and a report is written that can include any of the following three message types:

- ❖ Messages from the utility about the syntax.
- ❖ Messages from the monitor interface.
- ❖ Messages from VSAM interface.

The table below lists the possible return codes sent by this utility.

Code	Description
0	Successful
4	'WARNING' – anomaly detected during processing
8	ERROR detected during processing

The next two screens show examples of definitions for a symbolic Partner and a symbolic File.

Definition of a Symbolic Partner

```
/*-----  
/* TOM: //SYSPAR AND PCT UPDATE  
/*-----  
//GO EXEC PGM=P0B2DIR  
//STEPLIB DD DISP=SHR,DSN=PROD.TOM410.LOADLIB <=== TOM  
/* DD DSN=PLI.PLILINK.ESA430,DISP=SHR <== PL/1 TRANSIENT  
// DD DSN=CEE.V1R5M0.SCEERUN,DISP=SHR  
/*  
//SYSPAR DD DISP=SHR,DSN=PROD.TOM4.SYSPAR <=== VSAM  
/*  
//PLIDUMP DD SYSOUT=* <-- OPTIONNAL FOR PLI DEBUGGING+TRACE  
//SNAP DD SYSOUT=* <-- OPTIONNAL FOR PLI DEBUGGING+TRACE  
//SYSUDUMP DD SYSOUT=* <-- OPTIONNAL FOR ASM DEBUGGING+TRACE  
//SNAPDUMP DD SYSOUT=* <-- OPTIONNAL FOR ASM DEBUGGING+TRACE  
//SYSPRINT DD SYSOUT=* <=== FOR LISTING  
/*-----  
//SYSIN DD *  
SUBSYS = 'TOM4',  
FUNCTION = 'REPLACE' ,  
REFRESH = 'YES',  
TT = 'TT',  
  
PARTNER.NAME = 'Z2',  
PARTNER.PASSWORD = 'Z2',  
PARTNER.STATE = 'E',  
PARTNER.ALIAS_NAME = '-',  
PARTNER.ALIAS_PASSWORD = '-',  
PARTNER.RACF_USER = '-',  
PARTNER.RACF_GROUP = '-',  
PARTNER.APM_CLASS = 'A',  
PARTNER.RESTART = 'Y',  
PARTNER.TYPE = 'T',  
PARTNER.PROTOCOL = '52',  
PARTNER.EFF_TOTAL = '004',  
PARTNER.EFF_IN = '002',  
PARTNER.EFF_OUT = '002',  
PARTNER.SECURITY = '-',  
PARTNER.SLD = '-',  
PARTNER.LINK_TYPE = 'M',  
PARTNER.LINK_LIST = 'XSI',  
PARTNER.SNA_LUNAME = 'LUNAME22',  
PARTNER.SNA_LOGMODE = '-',  
PARTNER.SNA_LOGDATA = '-',  
PARTNER.SNA_LU62_DISC = '-',  
PARTNER.X25_MSC = 'M',  
PARTNER.X25_DIAL = '123456789',  
PARTNER.X25_SUBAD = '98',  
PARTNER.X25_USER_DATA = 'C0',  
PARTNER.X25_GFA = '-',  
PARTNER.X25_TAXATION = '1',  
PARTNER.TCP_ADDRESS = '123.123.123.123',  
PARTNER.TCP_HOST = 'UNUSED',  
PARTNER.TCP_PORT = '7000',  
PARTNER.FTP_PROF = '-',  
PARTNER.FTP_PASV = '-',  
PARTNER.FTP_RIGHTS = '-',  
PARTNER.NOTE = 'NOTE';  
//  
/*=====
```


Definition of a Symbolic File

```

/*-----
/* TOM: //SYSFIL AND FCT UPDATE
/*-----
//GO      EXEC      PGM=POB2DIR
//STEPLIB DD      DISP=SHR,DSN=PROD.TOM410.LOADLIB <=== TOM
/*      DD      DSN=PLI.PLILINK.ESA430,DISP=SHR <== PL/1 TRANSIENT
//      DD      DSN=CEE.V1R5M0.SCEERUN,DISP=SHR
/*
//SYSPAR DD      DISP=SHR,DSN=PROD.TOM4.SYSPAR <=== VSAM
/*
//PLIDUMP DD      SYSOUT=* <-- OPTIONNAL FOR PLI DEBUGGING+TRACE
//SNAP    DD      SYSOUT=* <-- OPTIONNAL FOR PLI DEBUGGING+TRACE
//SYSUDUMP DD     SYSOUT=* <-- OPTIONNAL FOR ASM DEBUGGING+TRACE
//SNAPDUMP DD     SYSOUT=* <-- OPTIONNAL FOR ASM DEBUGGING+TRACE
//SYSPRINT DD     SYSOUT=* <=== FOR LISTING
/*-----
//SYSIN DD *
SUBSYS              = 'TOM4',
FUNCTION            = 'DELETE'
FUNCTION            = 'ADD',
FUNCTION            = 'UPDATE',
REFRESH            = 'YES',

FILE.NAME           = 'FILETEST',
FILE.STATE          = 'E',
FILE.DIRECTION      = '*',
FILE.PARTNER_SENDER = '*',
FILE.PARTNER_RECEIVER = '*',
FILE.PRIORITY       = '1',
FILE.DEFINITION     = 'D',
FILE.ALLOCATION      = '2',
FILE.TYPE           = '00000000'B, // '10001000' = VSAM
FILE.PRESENTATION   = '01',
FILE.MEMBER         = '-',
FILE.SECURITY       = '-',
FILE.DSN            = 'INDEX1.&FILENAM.&REQDAT.&REQTIM',
FILE.DISPOSITION    = 'NEW',
FILE.GDG            = '-',
FILE.UNIT           = '-',
FILE.VOLSER1        = '-',
FILE.VOLSER2        = '-',
FILE.VOLSER3        = '-',
FILE.VOLSER4        = '-',
FILE.VOLSER5        = '-',
FILE.SMS_DATA_STOR = '-',
FILE.SPACE_TYPE     = 'CYL',
FILE.SPACE1         = '0001',
FILE.SPACE2         = '0001',
FILE.DIRECTORY_COUNT = '-',
FILE.LRECL          = '00080',
FILE.BLKSIZE        = '08000',
FILE.RECFM          = 'FB',
FILE.RETENTION      = '-',
FILE.REMOTE_DSN     = '-',
FILE.FTP_OPT        = '-',
FILE.EXIT_START_SEND = 'L1GFIUE1',
FILE.COMMAND_START_SEND = 'S W',
FILE.EXIT_END_SEND  = 'L1EXEAE2',
FILE.COMMAND_END_SEND = 'S X',
FILE.EXIT_START_RECEIVE = 'L1GFIUE1',
FILE.COMMAND_START_RECEIVE = 'S Y',
FILE.EXIT_END_RECEIVE = 'L1EXEAE2',
FILE.COMMAND_END_RECEIVE = 'S Z';
/*=====

```


Supporting Lists, Tables, and Examples

This appendix provides reference lists of action keywords, dynamic variables, and error and severe messages. There are also examples of a SYSUE1 file and a SYSOUT file.

L1GFIUE1 Action Keywords

The following table lists the action keywords for the general transfer exit.

Keyword	Description	Parameters and Example
\$300\$	<p>Calls the standard utility P1B2P300. This utility performs actions on a File, Partner, or Request.</p> <p>Note: An action on the current request can result in an error if the monitor processes this request.</p>	<p>PARM field of the utility. Refer to the User Guide for more information.</p> <p>Example: S=&SSN/P=&PARTNID/H Disable the current partner</p>
\$ABEND\$	This keyword results in ABEND 001. (The 'ESTAE' of the exit is definitely disabled.)	No parameter
\$CAPS\$	All characters in SYSUE1 are set to upper case.	This is the default. No parameters.
\$CMD\$	The command input is performed. If an error occurs, the transfer is interrupted with the return codes TRC=4908 or 4008 and PRC =3312.	<p>Command and parameters of the command.</p> <p>Examples:</p> <ol style="list-style-type: none"> TSO Message with local variables &G1 and &L2 (defined by previous \$VAR\$): SEND 'ERROR &G1',USER=(&L2),LOGON z/OS Command with dynamic variable &DSN (expanded at transfer time): S PROCTEST D=&DSN
\$COND\$	<p>Defines a user condition, processed as a local variable.</p> <p>IF: defines a user variable that you can test in \$IF\$ cards placed behind.</p> <p>RC: defines a maximum return code value that is ignored. You can test return codes ignored in \$IF\$ cards placed behind.</p>	<p>IF:&1:2PARTNID, is replaced and can be placed anywhere. It is compared to the user condition mask of next \$IF\$ card, until next \$COND\$ IF: card is met.</p> <p>RC:0008, any return code less than or equal to 8 is ignored and compared to the return code condition mask of next \$IF\$ card, until next \$COND\$ RC: card is met.</p>

Keyword	Description	Parameters and Example
\$CTLEXC\$	Places processing under the control of the monitor. After setting this card to ON, any command placed after an \$IF\$ card is controlled so the current partner or file is included. The default is OFF, and the CTLEXC card is placed anywhere in the SYSCE1 file.	ON, to activate control OFF, to inactivate control Note: A partner is excluded if status is ENABLED.X\$ or DISABLED.X\$
\$DST\$	PeSIT protocol: a string is sent in the Pi4Bis parameter.	String to be sent (24 characters maximum)
\$DYA\$	The standard allocation program L1APMDYA is called. Allocation is performed from information received by the transfer protocol. Received files are blocked in a simple way. SMS files are not supported. For example, a fixed format 80 character record file is automatically allocated with a block size that is a multiple of 80, but less than 32760. LRECL=80, RECFM=FB, and BLKSIZE=32720.	The symbolic file must be defined with allocation rule = 3, the general exit called at beginning and end of transfer. With allocation rule=3, the user exit is responsible for both allocation and deallocation. Allocation: The only parameter is the data set name. The appropriate dynamic keyword is &DSN. \$IF\$ Start of transfer. \$DYA\$ &DSN Deallocation: \$IF\$End of transfer (OK or not). \$DYA\$ deallocation does not require the dsn.
\$ERR\$	This keyword is processed in case of error during the general exit. For example, a syntax error in the SYSUE1 file, an abend in a user program, a getmain problem, or no matching \$IF\$ conditions.	Command to be executed. Example: SEND '&SSN &AP UE1 ERR.,USER=(USR4) Send a TSO message with the subsystem name and the APM number to the user USR4.
\$EXIT\$	Calls a user program in the way an exit is called with the parameter structure D1B2RUEX. If an error occurs, forwards the TRC and PRC return codes.	Name of the user exit to be called Example: L1EX£AE2 Calls the standard trace exit. Note: L1GFIUE1 cannot call itself
\$FNFY\$	Calls the P1B2PNFY program to store a notification.	EXEC PARM field of P1B2PNFY. Example: IND=INDEX1.INDEX2
\$JCL\$	Calls program P1B2PJCL which starts a procedure with one parameter input. The following DD cards are required in the APM or EAS (FTP) procedure: //SYSJOB indicates the job to be started //SYSRPT DD SYSOUT=V,HOLD=YES //SYSRCH DD SYSOUT=(,INTRDR)	Parameter of the procedure. One single parameter. Example: N=&DSN An Example is provided in *SAMPLIB* EX£PJCL
\$LOG\$	Calls program L1B2LOG that writes a message in the SYSLOG file of the APM.	User message.
\$NC-IEX\$	If no beginning of transfer condition is found for the current transfer, no error is issued.	No parameters.
\$NC-TEX\$	If no end of transfer condition is found for the current transfer, no error is issued.	No parameters.
\$NC-SEL\$	If no initialization or termination of transfer condition is found for the current transfer, no error is issued.	No parameters.

Keyword	Description	Parameters and Example
\$NOCAPS\$	Lower case characters are retained. This is how you can send lower case characters in protocol fields with \$PI37\$ and \$PI99\$ keywords. The option is active until the next \$CAPS\$ keyword.	No parameters.
\$NOPI37\$	With PeSIT protocol, the PI37 parameter is set to BLANK. No dsn or user field is sent.	No parameter
\$NOSTAE\$	The ESTAE of L1GFIUE1 is activated. This results in a dump, if any problem occurs.	No parameter
\$NOSWAP\$	The APM or EAS is set to non swappable. This option can be useful in debugging.	No parameter
\$ORG\$	PeSIT protocol: a string is sent in the Pi3Bis parameter.	String to be sent (24 characters maximum).
\$PGM\$	<p>Calls a user program using the branch method. Register R1 points to a word with the address of the parameters of the program, according to IBM standards.</p> <p>Note: If a program requires a DD card DISP=NEW, it cannot be called simultaneously by two tasks of the same address space, and an allocation error can occur. The allocation must be dynamic, and the DDNAME must be calculated from a root concatenated with the number of the effector in which it is executing.</p>	<p>Name of the program followed by its parameters. The parameters of the program are given with a chain of characters, placed column 9, in the form 'Prog' 'Parameters'</p> <p>Example: L1EXSNAP &SSN&AP&EF&FILENAME If the transfer is executed in APM number 02, effector number 08 of TOMP, for symbolic file SYMBF, the parameter line will result in: TOMP0208SYMBF</p> <p>Note: L1GFIUE1 cannot call itself.</p>
\$PGMJ\$	<p>Calls a user program using the exec method. Register R1 points to a word with the length of the parameter field EXEC PARM, followed by a word with the address of the PARM field, according to IBM standards.</p> <p>Note: If a program requires a DD card DISP=NEW, it cannot be called simultaneously by two tasks of the same address space, and an allocation error can happen. The allocation must be dynamic, and the DDNAME must be calculated from a root concatenated with the number of the effector in which it is executing.</p>	<p>Name of the program followed by its parameters. The program is called in the form 'prog.' 'champ PARM'</p> <p>equivalent to EXEC PGM=pgm,PARM='Parameters'</p> <p>Examples:</p> <ol style="list-style-type: none"> 1. P1GFIID0 DEL &DSN Calls IDCAMS to delete the current file &DSN. If the file does not exist, no return code is set.) 2. L1GFITS1 MSG=HELLO &FILENAM , ULN=USR9,USR11,UER=USR8 Calls L1GFITS1 utility.
\$PI11\$	PeSIT protocol: A string is sent in the Pi11 parameter.	String to be sent (8 characters maximum).
\$PI12\$	PeSIT protocol: A string is sent in the Pi12 parameter.	String to be sent (76 characters maximum).
\$PI37\$	PeSIT protocol: A string is sent in the Pi37 parameter.	<p>String to be sent (80 characters maximum). Example: If \$VAR\$ is defined by L3:C:ùTRFù&PARTNIDù&FILENAM.TXT</p> <p>&L3 Pi37 will carry a file name in the PC form. Character 'ù' is for '\'.</p>
\$PI61\$	PeSIT protocol: A string is sent in the Pi61 parameter.	String to be sent (24 characters maximum).

Keyword	Description	Parameters and Example
\$PI62\$	PeSIT protocol: A string is sent in the Pi62 parameter.	String to be sent (24 characters maximum).
\$PI99\$	PeSIT protocol: A string is sent in the Pi99 parameters. The Partner must be of type Other.	String to be sent (254 characters maximum). You can place symbolic and environment variables in Pi99 field. Example: If \$VAR\$ is defined by L3:C:ùTRFù&PARTNIDù&FILENAM.TXT &L3 Pi99 will carry a file name in the PC form. Character 'ù' is for '\.
\$PI99RD\$	This keyword provides the name of a data set that you can use to read the Pi99 to send to the current PeSIT partner. The file must contain one fixed format 254-character record. The Partner must be of type Other.	Data set name Example: PROD.&FILENAM.PI99.D&DATE
\$PI99WD\$	This keyword provides the name of a data set that you can use to create and write the Pi99 received from the current PeSIT partner. The file is allocated with a fixed format, a record length of 254 characters and under control of SMS. The partner type must be of type Other. If SMS is not used it is possible to use keywords \$W-UNT\$, \$W-VOL\$ and \$W-RET\$.	Data set name Example: PROD.&FILENAM.PI99.&REQNUMB
\$PRC\$	You can force a PRC return code..	Value (valid for the protocol) of the return code. Examples: 312 216
\$REQ\$	Calls the P1B2PREQ program for making a transfer request. Note: Using the current data set can result in an error if the file is not yet deallocated by Sterling Connect:Express.	EXEC PARM field of P1B2PREQ. Example: SSN=&SSN, SFN=FICACK, SPN=&PARTNID Transfer request for the symbolic file FICACK with the current Partner. Other parameters are fixed in the directories.
\$REXX\$	Calls a user REXX procedure with its parameters. The following DD cards are required in the APM or EAS (FTP) procedure: //SYSEXEC DD points to your execs // DD points to isplib of Express //SYSTSPRT DD SYSOUT=V, HOLD=YES //SYSTSIN DD DUMMY, DCB=(LRECL=80, RECFM=FB)	Name of a procedure followed by its parameters, in the form: 'procedure' 'Parameters' Example: UE1MSG UID(&UID) DSN(&DSN) Calls the UE1MSG procedure with the requestor name and the current data set name.
\$SIM\$	Simulation: The command execution is simulated, and the result is written in the SYSOUT file 'UP....'.	Command to simulate the execution with the parameters: 'Command' 'Parameters' Example: S PROC F=&FILENAM, R=&REQNUMB, D=&DSN Dynamic variables are expanded and the string is written in SYSOUT for you to control.
\$SNFY\$	Calls the P1B2PNFY program to send a notification.	EXEC PARM field of P1B2PNFY. Example: SRV=1.2.3.4,PRT=1000, RCI=INDEX1.INDEX2

Keyword	Description	Parameters and Example
\$SUB\$	<p>A JCL is submitted and Dynamic variables are expanded from current information.</p> <p>This process gives you the most flexible way of sending the current information to the application.</p>	<p>Name of a procedure. When the dynamic variables are expanded, the job is submitted to the internal reader.</p> <ol style="list-style-type: none"> Examples: INDEX.&PARTNID.&FILENAM: Submits the procedure whose name depends on the current Partner and the current symbolic file. &DSN: Submits the received data set. INDEX.SUB.JCLLIB(&FILENAM): Submits the member whose name is the current symbolic file.
\$VAR\$	<p>This keyword enables you to define internal variables. Using this keyword, you can overcome the 80-character limit for each line in the file.</p> <p>The limit of an expanded line is 120 characters. A local variable (&Li) can be placed anywhere in the file and its value can be changed locally. A global variable (&Gi) is defined only once.</p>	<p>Any characters string, including dynamic variables Li:'string or Gi:'string"</p> <p>Examples: Global variable: G2:P&PRC,T&TRC,S&SRC,&SPN,&TYP,&CT3,&LNK,&A,RST=&RT,U=&UID</p> <p>Local variable: L1:USR0004,USR0008,USR0012</p> <p>SEND 'ERROR &G2' L1GFITS1 MSG=HELLO &FILENAM , ULN=&L1,UER=USR0001</p>
\$W-VOL\$	Used for new file allocation, without SMS. Must be used with \$PI99WD\$ keyword	Volume name
\$W-UNT\$	Used for new file allocation, without SMS. Must be used with \$PI99WD\$ keyword.	Unit name
\$W-RET\$	Used for new file allocation, without SMS. Must be used with \$PI99WD\$ keyword.	Number of retention days
\$WAIT\$	Results in a one minute timer.	No parameter

L1GFIUE1 Dynamic Variables

During processing, the general exit looks at input from the D1B2RUEX structure provided in the *MACLIB* library to resolve keywords. Keywords are replaced by the corresponding field in the input structure. If a requested field is blank or contains zeroes, it is replaced with 'NONE'

The following table lists all dynamic variables available with the general transfer exit, in alphabetical order. Keywords that are PeSIT specific are marked with an asterisk (*), and equivalent symbols are grouped.

Keyword	Lg	D1B2RUEX	Description
&A	1	UEXCNTYP	Access type (Incoming / Outgoing).

Keyword	Lg	D1B2RUEX	Description
&AP	2	UEXAPMNB	Number of the APM.
&BDATE &REQDAT	7	UEXDATE	Local date: Dymmdd.
&BTIME &REQTIM	7	UEXTIME	Local time: Hhhmss.
&CT3	3	UEXCALTY	Call type IEX / TEX.
&CTY	1	UEXCALTY	Call type Initialization / Termination.
&DATE	8	UEXDATE	Local date time YY/MM/DD-HH:MM:SS.
&DIAGI, &TRCX	5	UEXTRC	TRC + origin Locale (L) or remote (R). TRC=3001L or TRC=3001R.
&DIAGP, &PRC	3	UEXPRC	PRC.
&DIR	1	UEXRCT	Direction of the transfer (Transmission / Reception).
&DSN &FNAME	44	UEXDSN	Local data set name.
&DST *	8	U03DESTN U05DESTN	Destination of the transfer, truncated to 8 characters. Can be different than the session partner name.
&EF	2	UEXEFFNB	Effector number.
&EXTDSN	44	U03USDF U05USDF	Remote Data set name from the PeSIT Pi99. The 26 character ODETTE file name.
&EXTLAB &LAB	80	U03FLABL U05FLABL	PeSIT: File label, Pi37. ODETTE: The 26 character ODETTE file name.
&FA *		U03FTYP U05FTYP	File type, Pi11.
&FILENAM &IDF	8	UEXDDNM	File symbolic name.
&FNAME &DSN	44	UEXDSN	Local data set name.
&FTY	1	UEXALORG	File organization Sequential, Vsam, Pds.
&IDF &FILENAM	8	UEXDDNM	File symbolic name.
&IDT &REQNUMB	8	UEXREQNB	Local request number, Axxxxxxx, Bxxxxxxx....
&LAB &EXTLAB	80	U03FLABL U05FLABL	PeSIT: File label, Pi37. ODETTE: The 26 character ODETTE file name.
&LNK	1	UEXLNKTP	Type of network link (Sna / X25 / IP / T3270 / Clu6.2).
&MBR	8	U03USDF U05USDF	PDS member of the local file.
&NLV	1	UEXHNLVL	Level of notification for the current request.

Keyword	Lg	D1B2RUEX	Description
&ORG	8	U03ORIGN U05ORIGN	Origin of the transfer, truncated 8 characters. Can be different than the session partner name.
&PART &PARTNID &SIT,&RID, &SDEST	8	UEXPART	Session partner name.
&PARTNID &PART &SIT,&RID, &SDEST	8	UEXPART	Session partner name.
&PI11	2 8	U03FTYPE U05FTYPE	PeSIT protocol: Pi11 received from a PeSIT D or PeSIT E partner
&PI12	76	U03FNAME U05FNAME	PeSIT protocol: Pi12 received from a PeSIT D or PeSIT E partner
&PI37	80	U03FLABL U05FLABL	PeSIT protocol: Pi37 received from a PeSIT D or PeSIT E partner
&PI37NB	80	U03FLABL U05FLABL	PeSIT protocol: Pi37 received from a PeSIT D or PeSIT E partner. Blank trailer is suppressed
&PI61	24	U05ORIGN	PeSIT E protocol: Pi61 received from a PeSIT E partner
&PI62	24	U05ORIGN	PeSIT E protocol: Pi62 received from a PeSIT E partner
&PI99	44	U03FUSDF U05FUSDF	PeSIT protocol: 44 first characters of the Pi99 received from a PeSIT D or PeSIT E partner. The partner type must be of type Other.
&PRC, &DIAGP	3	UEXPRC	Return code PRC.
&PTY	1	UEXPARTY	Partner type (Tom / Other / Application)
&REQ	8	UEXREQN	Local request number – numeric format
&REQDAT &BDATE	7	UEXDATE	Local date: Dymmdd.
&REQNUMB &IDT	8	UEXREQN	Local request number, Axxxxxxx, Bxxxxxxx....
&REQTIM &BTIME	7	UEXTIME	Local time Hhhmmss.
&RID, &SIT, &PARTNID &PART, &SDEST	8	UEXPART	Session partner name.
&RT	1	UEXALRST	Transfer retry flag Yes / No.
&SDEST, &PARTNID &PART &SIT,&RID,	8	UEXPART	Session partner name.

Keyword	Lg	D1B2RUEX	Description
&SID &SSN	4	UEXSSNAM	Local subsystem Name.
&SIT, &RID, &PARTNID &PART, &SDEST	8	UEXPART	Session partner name.
&SPN	1	UEXPROTN	Protocol number 3 or 5 for PeSIT, 2 for Odette, 6 for FTP, 4 for ETEBAC3.
&SRC	4	UEXSRC	System return code.
&SSN &SID	4	UEXSSNAM	Local subsystem name.
&STY	1	UEXCNTYP	Type of connection Input / Output.
&TIME	8	UEXTIME	Local time Hhhmmss.
&TRC	4	UEXTRC	TRC return code.
&TRCX, &DIAGI	5	UEXTRC	TRC + origin: Locale (L) or Remote (R) TRC=3001L or TRC=3001R
&TRFID *	8	UEXTRFID	Transfer identification, pi13 editable hexadecimal (characters 0-9, A-F).
&TYP	1	UEXTYPE	Call type: A pplication / I nitialization / E nd / F ail / S ystem abend.
&UID	8	U05FUSDF	Name of the transfer requestor, user, job, or remote Ad Hoc user.
&USRVAR1	8	U03USDF U05USDF	Last index of the remote data set name. From PeSIT Pi99. The partner type must be TOM.
&USRVAR2	8	U03USDF U05USDF	Before last index of the remote data set name. From PeSIT Pi99. The partner type must be TOM.

L1GFICE1 Action Keywords

The following table lists the action keywords for the general connection exit.

Keyword	Description	Parameters and examples
\$300\$	Calls the standard utility P1B2P300. This acts on a File, Partner, or Request. Note: An action on the current request results in an error if the monitor processes this request.	PARM field of the utility. Refer to the User Guide for more information. Example: S=&SSN/P=&PARTNID/H disable the current partner
\$ABEND\$	This keyword results in ABEND 001. (The ESTAE of the exit is definitely disabled.)	No parameter
\$CAPS\$	All characters in SYSCE1 are set to upper case.	This is the default. No parameters.

Keyword	Description	Parameters and examples
\$CMD\$	The command input is performed. If an error occurs, the transfer is interrupted with the return code TRC=4608 and PRC =3312.	Command and parameters of the command. Examples: 1. TSO Message with local variables &G1 and &L2 (defined by previous \$VAR\$): SEND 'ERROR &G1',USER=(&L2),LOGON 2. z/OS Command with dynamic variable &DSN (expanded at transfer time): S PROCTEST D=&PARTNID
\$COND\$	Defines a user condition, processed as a local variable. It is placed anywhere. IF: defines a user variable that you can test in \$IF\$ cards placed behind a condition line. RC: defines a maximum return code value that is ignored. You can test return codes ignored in \$IF\$ cards placed behind.	IF:&1:2PARTNID, is replaced and compared to the user condition mask of next \$IF\$ cards, until the next \$COND\$ IF: card. RC:0008, any return code less equal 8 is ignored and compared to the return code condition mask of next \$IF\$ cards, until the next \$COND\$ RC: card.
\$CTLEXC\$	Places processing under the control of the monitor. After setting this card to ON, any command placed after an \$IF\$ card is first controlled so the current partner or file is included. The default is OFF, and the CTLEXC card can be placed anywhere in the SYSCE1 file.	ON, to activate control OFF, to inactivate control Note: A partner is excluded if it is in status ENABLED.X\$ or DISABLED.X\$
\$DST\$ \$PI4\$	PeSIT protocol: a string is sent in the Pi4 parameter.	String to be sent (24 characters maximum)
\$ERR\$	This keyword is processed in case of error during the general exit. For example, a syntax error in the SYSCE1 file, an abend in a user program, a getmain problem, or no matching \$IF\$ conditions occurs.	Command to be executed. Example: SEND '&SSN &AP UE1 ERR.,USER=(USR4) Send a TSO message with the subsystem name and the APM number to the user USR4.
\$EXIT\$	Calls a user program the same as an exit is called with the parameter structure D1B2RCNX. If an error occurs, the TRC and PRC return codes are forwarded.	Name of the user exit to be called. Note: L1GFICE1 cannot call itself
\$FNFY\$	Calls the P1B2PNFY program to store a notification.	EXEC PARM field of P1B2PNFY. Example: IND=INDEX1.INDEX2
\$IAD\$	This keyword is valid if the type of link is TCP/IP for an outbound connection. The IP address is used for establishing a session.	TCP/IP Address in the form a.b.c.d. If the type of link is '*' in the \$IF\$ card, it is automatically set to TCP/IP.
\$IHN\$	This keyword is valid if the type of link is TCP/IP for an outbound connection. The DNS is used for establishing a session.	TCP/IP DNS. If the type of link is '*' in the \$IF\$ card, it is automatically set to TCP/IP.
\$IPT\$	This keyword is valid if the type of link is TCP/IP for an outbound connection. The TCP/IP port number address is used for establishing session.	TCP/IP port number, 1 to 5 numeric characters.
\$LOG\$	Calls program the L1B2LOG that writes a message in the SYSLOG file of TOM.	User message
\$NC-CNX\$	If no matching condition is found for the current connection, no error is issued.	No parameter

Keyword	Description	Parameters and examples
\$NOCAPS\$	Lower case characters are retained. This is how you send lower case characters in protocol fields with \$PI4\$ and \$PI3\$ keywords. The option is active until the next \$CAPS\$ keyword is met.	No parameter
\$NOSTAE\$	The ESTAE of L1GFICE1 is activated. This activation results in a dump if any problem occurs.	No parameter
\$NOSWAP\$	The TOM or AFM is set to non-swappable. This option is useful in debugging.	No parameter
\$ORG\$ \$PI3\$	PeSIT protocol: a string is sent in the Pi3 parameter.	String to be sent (24 characters maximum).
\$PART\$	This keyword provides the name of a symbolic partner to use to manage an incoming request.	Partner name, 8 characters.
\$PGM\$	Calls a user program using the branch method. Register R1 points to a word with the address of the parameters of the program, according to IBM standards. Note: If a program requires a DD card DISP=NEW, it cannot be called simultaneously by two tasks of the same address space. An allocation error can occur. The allocation must be dynamic, and the DDNAME must be calculated from a root concatenated with the number of the effector in which it executes.	Name of the program followed by its parameters. The parameters of the program are given with a chain of characters, placed column 9, in the form Prog Parameters. Example: L1EXSNAP &SSN&AP&EF&PARTNID If the transfer is executed in APM number 02, effector number 08 of TOMP, for symbolic partner SYMBP, the parameter line results in: TOMP0208SYMBP Note: L1GFICE1 cannot call itself.
\$PGMJ\$	Calls a user program using the exec method. Register R1 points to a word with the length of the parameter field EXEC PARM, followed by a word with the address of the PARM field, according to IBM standards. Note: If a program requires a DD card DISP=NEW, it cannot be called simultaneously by two tasks of the same address space. An allocation error can occur. The allocation must be dynamic, and the DDNAME must be calculated from a root concatenated with the number of the effector in which it executes.	Name of the program followed by its parameters. The program is called in the form prog.champ PARM, and is equivalent to EXEC PGM=pgm,PARM=Parameters. Examples: L1GFITS1 MSG=HELLO &PARTNID , ULN=USR9,USr11,UER=USR8 Calls L1GFITS1 utility.
\$PRC\$	You can force a PRC return code.	Value (valid for the protocol) of the return code. Examples: 312 216
\$REQ\$	Calls the P1B2PREQ program for making a transfer request. Note: Using the current data set can result in an error if the file is not deallocated by Sterling Connect:Express.	EXEC PARM field of P1B2PREQ. Example: SSN=&SSN, SFN=FICACK,SPN=&PARTNID Transfer request for the symbolic file FICACK with the current Partner. Other parameters are fixed in the directories.

Keyword	Description	Parameters and examples
\$REXX\$	Calls a user REXX procedure with its parameters. The following DD cards are required in the APM or EAS (FTP) procedure: // DD points to isplib of Express //SYSTSPRT DD SYSOUT=V,HOLD=YES //SYSTSIN DD DUMMY,DCB=(LRECL=80,RECFM=FB)	Name of a procedure followed by its parameters, in the form: Procedure Parameters. Example: UE1MSG IAD(&IAD)PART(&PARTNID) Calls the UE1MSG procedure with the IP address and the current partner name.
\$SAD\$	This keyword is valid if the type of link is SNA for an outbound connection. The SNA address is used for establishing a session.	SNA Address, 8 characters. If the type of link is '*' in the \$IF\$ card, it is automatically set to SNA.
\$SIM\$	Simulation: The command execution is simulated, and the result is written in the SYSOUT file 'UP....'.	Command to simulate the execution with the parameters: Command Parameters. Example: S PROC F=&PARTNID, R=&REQNUMB, Dynamic variables are expanded and the string is written in SYSOUT for you to control.
\$SNFY\$	Calls the P1B2PNFY program to send a notification.	EXEC PARM field of P1B2PNFY. Example: SRV=1.2.3.4,PRT=1000, RCI=INDEX1.INDEX2
\$SUB\$	A JCL is submitted and Dynamic variables are expanded from the current information. This process gives you the most flexible way of sending the current information to the application.	Name of a procedure. When the dynamic variables are expanded, the job is submitted to the internal reader. 1. Examples: INDEX.&PARTNID: Submits the procedure whose name depends on the current Partner. 2. INDEX.SUB.JCLLIB(&PARTNID): Submits the member whose name is the current symbolic partner.
\$VAR\$	This keyword enables you to define internal variables. Use this keyword to overcome the 80-character limit for each line in the file. The limit of an expanded line is 120 characters. A local variable (&Li) is placed anywhere in the file and its value is changed locally. A global variable (&Gi) is defined only once.	Variables Li:string or Gi:string Examples: Global variable: G2:P&PRC,T&TRC,S&SRC,&SPN,&TYP,&CT3,&LNK ,&A Local variable: L1:USR0004,USR0008,USR0012 SEND 'ERROR &G2' L1GFITS1 MSG=HELLO &PARTNID , ULN=&L1,UER=USR0001
\$WAIT\$	Results in a one minute timer.	No parameter.
\$XAD\$	This keyword is valid if the type of link is X25 for an outbound connection. The X25 address is used for establishing session.	X25 Address, 15 characters. If the type of link is '*' in the \$IF\$ card, it is automatically set to X25.

L1GFICE1 Dynamic Variables

During processing, the general exit looks at input from the D1B2PCNX structure provided in the *MACLIB* library to resolve keywords. Keywords are replaced by the corresponding field in the input structure. If a requested field is blank or contains zeroes, it is replaced with 'NONE'.

The following table lists all dynamic variables available with the general connection exit, in alphabetical order. Keywords that are PeSIT specific are marked with an asterisk ('*') , and equivalent symbols are grouped.

Keyword	Lg	D1B2PCNX	Description
&A	1	CNXUTYPE	Access type (Incoming / Outgoing).
&AP	2	CNXAPMNB	Number of the APM. For FTP, this variable is associated with variable &EF: &AP&EF = Fnnn, where nnn indicates the FTP session number, from 1 to 128.
&BDATE &REQDAT	7	CNXDAT	Local date Dymmdd.
&BTIME			
&REQTIM	7	CNXTIM	Local time Hhhmss.
&CT3	3	CNXCALTY	Type of call CNX / OPC / CLC.
&CTY	1	CNXSTATU	Type of connection call / End session / Failed.
&DATE	8	CNXDAT	Local date YY/MM/DD.
&DST*	16 24	C03DESTN C05DESTN	PeSIT: Identity of called partner.
&DIAGI, &TRCX	5	CNXTRC	TRC + origin Local (L) or remote (R) TRC=2011L or TRC=2011R
&DIAGP, &PRC	3	CNXPRC	PRC
&EF	2	CNXEFFNB	Number of the effector. For FTP, this variable is associated with variable &EF: &AP&EF = Fnnn, where nnn indicates the FTP session number, from 1 to 128.
&IAD	15	CNXIPADR	IP Address (cnxlnktp = CNXTCP).
&IDT &REQNUMB	8	CNXREQNB	Local request number: Axxxxxxx or Bxxxxxxx.
&IHN	32	CNXIPHNM	TCP/IP host name (cnxlnktp = CNXTCP)
&LNK	1	CNXLNKTP	Type of link (Sna / X25 / IP)
&NRC	12	CNXNRC1 CNXNRC2	Network return code (Action) Network return code (Event).
&ORG*	16 24	C03ORIGN C05ORIGN	PeSIT: Identity of calling partner
&PART &PARTNID &SIT,&RID,&SDEST	8	CNXPARTN	Current symbolic partner
&PARTNID &PART &SIT,&RID, &SDEST	8	CNXPARTN	Current symbolic partner

Keyword	Lg	D1B2PCNX	Description
&PRC, &DIAGP	3	CNXPRC	Return code PRC (PeSIR: Pi2)
&PTY	1	CNXPRMOD	Type of partner (Tom / Other / Application)
&REQ	8	CNXREQN	Local request number - numeric format
&REQDAT &BDATE	7	CNXDAT	Local date Dyymmdd.
&REQNUMB &IDT	8	CNXREQN	Local request number: Axxxxxxx or Bxxxxxxx.
&REQTIM &BTIME	7	CNXTIM	Local time : Hhhmmss.
&RID, &SIT, &PARTNID &PART, &SDEST	8	CNXPARTN	Current symbolic partner
&SAD	8	CNXLUNM	SNA address (cnxlnktp = CNXSNA/CNXAPPC/CNX3270)
&SDEST, &PARTNID &PART &SIT,&RID,	8	CNXPARTN	Current symbolic partner
&SID &SSN	4	CNXSSNAM	Local subsystem name
&SIT, &RID, &PARTNID &PART, &SDEST	8	CNXPARTN	Current symbolic partner
&SPN	1	CNXPROTN	Protocol number (PeSIT: 3 or 5)
&SPT	1	CNXSPSTN	Session table number
&SSN &SID	4	CNXSSNAM	Local subsystem name
&STY	1	CNXUTYPE	Type of connection Input / Output
&TIME	8	CNXTIM	Local time: HH:MM:SS
&TRC	4	CNXTRC	TRC
&TRCX, &DIAGI	5	CNXTRC	TRC + origin Local (L) or remote (R) TRC=2011L or Upxxxxxx TRC=2011R
&TYP	1	CNXSTATU	Type of connection Call / End session / Failed
&XAD	15	CNXDIALN	x25 Address (cnxlnktp = CNXPCNE/CNXDATE)

Error and Severe Messages

Message	Description
'DCBO-UE1'	DCB overlay. Check parallelism. Contact support.
'ERROR ESTAE INIT'	ESTAE error. Contact support.
'ERROR MODESET NZ'	MODESET error , non zero. Contact support.
'ERROR MODESET Z'	MODESET error , zero. Check APF libraries. Contact support.
'ERROR PARAMETERS'	Invalid call. Check the message and documentation.
'ERROR SYSUE1 \$DYA\$'	L1APMDYA allocation module error. Check allocation rule and transfer direction
'ERROR SYSUE1 \$VAR\$'	Syntax error. Check the \$VAR\$ card.
'ERROR SYSUE1 \$VAR\$ RESET'	Syntax error. Check the \$VAR\$ card (for example a global variable cannot be changed).
'ERROR SYSUE1 CARD COUNT'	Syntax error. Check the number of cards.
'ERROR SYSUE1 KEYWORD'	Syntax error. Check the keyword.
'ERROR SYSUE1 KKK ...'	Syntax error. Check the condition 'KKK' in the \$IF\$ card.
'ERROR SYSUE1 LINK \$DYA\$'	L1APMDYA allocation module error. Check the LOADLIB. Contact support.
'ERROR SYSUE1 LINK \$JCL\$'	P1B2PJCL module error. Check the LOADLIB. Contact support.
'ERROR SYSUE1 LINK \$PGM\$'	User program error. Check the program.
'ERROR SYSUE1 LINK \$REQ\$'	P1B2PREQ module error. Check the LOADLIB. Contact support.
'ERROR SYSUE1 LINK \$REXX\$'	User REXX procedure. Check the REXX procedure.
'ERROR SYSUE1 LOAD \$EXIT\$'	User exit error. Check the exit.
'ERROR SYSUE1 SEQUENCE'	Syntax error. Check cards sequence (\$IF\$ with no conditions, two consecutive \$IF\$...)
'ERROR SYSUE1 SYMBOLIC'	Syntax error. Check the symbol.
'ERROR SYSUE1 TRUNCATED'	Syntax error. Check the number of symbol used.
'ERROR UEX.....'	D1B2RUEX structure error. Contact support.
'SEVERE CLOSE INTRDR ERR.'	CLOSE error on the internal reader. Contact support.
'SEVERE INTRDR ERR.DYN-.....'	Allocation error on the internal reader. Contact support.
'SEVERE OPEN INTRDR ERR.'	OPEN error on the internal reader. Contact support.
'SEVERE OPEN UP? ERR.'	OPEN error on the SYSPRINT file. Contact support.
'SEVERE READ SYSUE1 SYNAD'	READ error on the SYSUE1 file. BROWSE the file. Contact support.
'SEVERE SYSPRINT ERR.DYN-.....'	Allocation error on the SYSPRINT file. Contact support.
'SEVERE SYSUE1 CLOSE'	CLOSE error on the SYSUE1 file. Contact support.
'SEVERE SYSUE1 OPEN'	OPEN error on the SYSUE1 file. Contact support.

SYSUE1 File Example

```

* IF SOME INTERNAL PROCESS ERROR, PERFORM THIS COMMAND :
$ERR$ SEND '&SSN L1GFUE1 ERROR, &L, &FILENAME, &PARTNID', USER=(USR0004)
*****
* ASSIGN VALUES/VARIABLES TO LIST VARIABLES.
* GLOBAL LIST (&G) CANNOT BE CHANGED :
$VAR$ G1 >&FILENAM, &DIR: &PARTNID, &REQNUMB, &SSN, &DATE, &TIME
$VAR$ G2 P&PRC, T&TRC, S&SRC, &SPN, &TYP, &CT3, &RT, U=&UID
$VAR$ G3 DSN=&DSN
$VAR$ G4 EXTDSN=&EXTDSN
* LOCAL LIST (&L) CAN BE CHANGED ANYWHERE :
$VAR$ L1 USR0003, USR0004, USR0005, USR0008
$VAR$ L2 USR0004, USR0008
$VAR$ L4 USR0004
*****
*****SAMPLES WITH NORMAL DEFINED SYMBOLIC FILE-NAME*****
*****
$IF$ $***** SCIPSR** * R E F 3*** ** Y **
$EXIT$ L1APMCFJ
$IF$ ***** SCIPSR** * R E F 3*** ** Y **
$CMD$ SEND 'ERROR &G1', USER=(&L2), LOGON
$CMD$ SEND './. &G2', USER=(&L2), LOGON
*****
* F='FTYL', P='SCIPSR**', TOM3 RECEPTION, END, FAIL TRC 8***
$IF$ FTYL SCIPSR** 3 R E F 8*** ** Y **
*-----
* REAL CMD : 'SEND .....'
$CMD$ SEND '&G1', USER=(&L4), LOGON
$CMD$ SEND './. LN=&LNK SP=&SPN PT=&PTY ', USER=(&L4), LOGON
$CMD$ SEND './. U1=&USRVAR1 U2=&USRVAR2', USER=(&L4), LOGON
$CMD$ SEND './. &DSN &MBR FT=&FTY', USER=(&L4), LOGON
$CMD$ SEND './. OR=&ORG DE=&DST', USER=(&L4), LOGON
$REXX$ TYLREX F=&FILENAM P=&PARTNID RT=&RT TRC=&TRCX PRC=&PRC
$EXIT$ L1APMCFJ
* ANY FILE, ANY PARTNER, ANY FAIL CASE, EVEN AT RESTART
*-----
* SIMULATE: 'S USRPROC'
$SIM$ S USRPROC F=&FILENAM, P=&PARTNID, R=&REQNUMB, D=&DSN
* PERFORM : 'SEND .....'
$CMD$ SEND 'FAIL &G1', USER=(USR0009), LOGON
*****
* $ FILE, ANY PARTNER, ANY FAIL CASE, EVEN AT RESTART
$IF$ $***** $$ALL$$ * * * F **** ** Y **
*-----
* SIMULATE: 'S USRPROC'
*$SIM$ S USRPROC F=&FILENAM, P=&PARTNID, R=&REQNUMB, D=&DSN
* PERFORM : 'SEND .....'
$CMD$ SEND 'RESTARTING &G1', USER=(USR0009), LOGON
$CMD$ SEND './. &G2', USER=(USR0009), LOGON
$EXIT$ L1EXSNAP
* ANY FILE, ANY PARTNER, ANY FAIL CASE, EVEN AT RESTART
$IF$ $$ALL$$ $$ALL$$ * * * F **** ** Y **
*-----
* PERFORM : 'SEND .....'
$CMD$ SEND 'ANOMALY &G1', USER=(&UID), LOGON
$CMD$ SEND './.ANOMALY &G2', USER=(&UID), LOGON
$EXIT$ L1EXSNAP
*****

```

```

*****
$IF$ $***** SCIPSR* * R E D **** * N **
*-----
*          EXEC EXIT COMPARE
$EXIT$   L1APMCFJ
*****
*****
*          F='L1GFIUE1', P='SCIPSR***', ANY RECEPTION, END, FAIL TRC 8***, NO
$IF$ L1GFIUE1 SCIPSR** * R E F 8**** * N **
*-----
*          REAL CMD : 'SEND .....'
$CMD$    SEND 'ERROR APM REC P=&PARTNID,F=&FILENAM',USER=(USR0004),LOGON
*****
*****
*          F='FABEND', P='SCIPSR**', TOM4, TRANSMIT, END, DONE
$IF$ FABEND SCIPSR** 4 T E D **** * N **
*-----
$CMD$    SEND 'ABEND??? P=&PARTNID,F=&FILENAM',USER=(USR0004),LOGON
*          ACTION : ABEND IN EFFECTOR, WITH IMPLICIT NOSTAE STARTING HERE
$ABEND$
*****
*          F='RC1LOOPX', P='SCIPSR**', TOM4 T/R, START/END, DONE/FAIL
$IF$ RC1LOOPX SCIPSR** 4 * * * **** * Y **
*-----
*          ACTION : SNAP ALL ZONE (SINCE V218 PTF3: A STANDARD EXIT)
$EXIT$   L1EXSNAP
*          ACTION : COMMENTED WAIT 5*1MINUTE IN EFFECTOR
*$CMD$    SEND 'WAIT &G1',USER=(USR0004),LOGON
*$WAIT$
*$WAIT$
*$WAIT$
*$WAIT$
*$WAIT$
*****
*          F='***LOOP*', P='GFI*****', TOM* R, END, DONE
$IF$ RC1LOOP* GFI***** * R E D **** * Y **
*-----
*          ACTION : EXIT FOR LOOP
$EXIT$   L1GFIRC1
*          F='***LOOP*', P='GFI*****', TOM* T, END, DONE
$IF$ ***LOOP* GFI***** * T E D **** * Y **
*-----
*          ACTION : DEL FILE
*$CMD$    SEND 'DEL??? F=&FILENAM',USER=(USR0004),LOGON
$PGMJ$   P1GFIIDC DEL &DSN
*****
*****
*          IF SOME DUMP ...
$IF$ GFID**** $$ALL$$ * R S * **** * Y **
$CMD$    SEND '*DUMP*START &G1',USER=(&L1),LOGON
$CMD$    SEND '..../.. &G2',USER=(&L1),LOGON
$CMD$    SEND '..../.. &G3',USER=(&L2),LOGON
$CMD$    SEND '..../.. &G4',USER=(&L2),LOGON
$IF$ GFID**** $$ALL$$ * R E * **** * Y **
$CMD$    SEND '*DUMP*END &G1',USER=(&L1),LOGON
*****
*****
*          IF SOME MSG ...
$IF$ GFIMSG** $$ALL$$ * * S * **** * Y **
$CMD$    SEND '*MSG* &G1',USER=(&L1),LOGON
$CMD$    SEND '..../.. &G2',USER=(&L1),LOGON
$CMD$    SEND '..../.. &G3',USER=(&L2),LOGON
$CMD$    SEND '..../.. &G4',USER=(&L2),LOGON
*****

```

```

*****
* RESTRICT USER LIST (LOCAL &L2) :
$VAR$    L2 USR0004
*****
*   IF SOME SPECIAL
$IF$ $$$ALL$$ * R * * **** *N **
$CMD$     SEND '&FILENAM FROM &PARTNID ',USER=(&L2),LOGON
$PGMJ$    L1GFITS1 ULN=(RC0,&L1),MSG=&SSN&CT3&FILENAME&DSN,UER=USR0008
$EXIT$    L1EX#AE2
*****
*****SAMPLES WITH $$API$$ DEFINED SYMBOLIC FILE-NAME*****
*****
*   IF SOME CMD TO DO WITH &LAB (PI37 U0?FLABL), WITH SNAP
$IF$ PI37**** $$$ALL$$ * R S * **** *N **
$EXIT$    L1EXSNAP
$PGMJ$    L1GFITS1 MSG=HELLO &FILENAM,ULN=USR0009,USR0011,UER=USR0008
$CMD$     &LAB
*****
*****
*   IF SOME THING TO DO FOR SENDING A &LAB FILE TO &DST PARTNER
$IF$ FSEND*** $$$ALL$$ 4 R E D **** *N **
*   SEND THE &LAB DSN GIVEN BY CALLER TO &DST DESTINATION
$REQ$     SSN=&SSN,SPN=&DST,SPN=FSEND,DIR=T,TYP=N,CLS=A,PRT=0,DSN=&LAB
*****
*   IF SOME CMD TO DO WITH &LAB AND FOR ACKNOWLEDGMENT WITH &ORG
$IF$ FCMDLAB* $$$ALL$$ * R E D **** *N **
*   CALL PGM L1EXSNAP, R1 POINTS WORD POINTING 1 CHAR AFTER PGM NAME
$PGM$     L1EXSNAP &SSN&AP&EF&CT3&FILENAME&DSN...
*   CMD TO DO WITH &LAB (PI37 U0?FLABL)
$CMD$     &LAB
*   SEND BACK ACKNOWLEDGMENT BY P1B2PREQ TO &ORG SENDER
$REQ$     SSN=&SSN,SPN=&ORG,SPN=ACK,DSN=INDEX1.ACK,DIR=T,TYP=N,CLS=A,PRT
*****
*   IF SOME REQ TO DO WITH &LAB
$IF$ FREQLAB* $$$ALL$$ * R E D **** *N **
*   REQ TO DO WITH &LAB (PI37 U0?FLABL)
$REQ$     &LAB
*****
*   IF PREVIOUS 'ACK' FILE, PROCESS
$IF$ ACK***** $$$ALL$$ * R S D **** *N **
$CMD$     SEND 'RECEIVED &G1',USER=(USR0004),LOGON
*****

```

```

*****
*****SAMPLES WITH $$API$$ RULE 3 DEFINED SYMBOLIC FILE-NAME**
*****
*   STARTING HERE: FORCE DUMP IF ABEND FOR FOLLOWING PROCESS
*$NOSTAE$
*   STARTING HERE: FORCE NOSWAP APM DEFINITELY
$NOSWAP$
*****
*   F='FROUT**', P='SCIPSR***', TOM3 RECEPTION, START, DONE
$IF$ FROUTE** SCIPSR** 3 R S D **** ** N **
*-----
*   ALLOC FILE OF RULE 3 FOR RECEPTOR ONLY, BY L1APMDYA
$DYA$      &DSN
$EXIT$    L1EXSNAP
*****
*   F='FROUT**', P='SCIPSR***', TOM3 RECEPTION, END, DONE
$IF$ FROUTE** SCIPSR** 3 R E D **** ** N **
*-----
*   DESALLOC FILE ALWAYS FILE
$DYA$
$EXIT$    L1EXSNAP
*   SEND THE &DSN JUST RECEIVED TO &DST DESTINATION GIVEN BY CALLER
$REQ$    SSN=&SSN,SPN=&DST,SFN=F1,DIR=T,TYP=N,CLS=A,PRT=0,DSN=&DSN
*****
*   F='FROUT**', P='SCIPSR***', TOM3 RECEPTION,END, FAIL, AFTER RESTAR
$IF$ FROUTE** SCIPSR** 3 R E F 0000 000 Y **
*-----
*   DESALLOC FILE ALWAYS FILE
$DYA$
$EXIT$    L1EXSNAP
*   SEND THE &DSN JUST RECEIVED TO &DST DESTINATION GIVEN BY CALLER
$REQ$    SSN=&SSN,SPN=&DST,SFN=F1,DIR=T,TYP=N,CLS=A,PRT=0,DSN=&DSN
*****
*   F='FROUT**', P='SCIPSR***', TOM3 RECEPTION, END, FAIL, EVEN RESTART
$IF$ FROUTE** SCIPSR** 3 R E F **** ** Y **
*-----
*   DESALLOC FILE ALWAYS FILE, EVEN IF FAIL
$DYA$
$EXIT$    L1EXSNAP
*****
*   F='FROUT**', P='SCIPSR***', RECEPTION, END, FAIL, AFTER RESTAR
$IF$ FROUTE** SCIPSR** * * * * 0000 000 Y **
$CMD$    SEND 'TEST1300 &G1',USER=(USR0009)
$CMD$    SEND 'TEST1300 &G2',USER=(USR0009)
$CMD$    SEND 'TEST1300 &G3',USER=(USR0009)
$IF$ FROUTE** SCIPSR** * * * * **** 000 Y **
$CMD$    SEND 'TEST 300 &G1',USER=(USR0009)
$CMD$    SEND 'TEST 300 &G2',USER=(USR0009)
$CMD$    SEND 'TEST 300 &G3',USER=(USR0009)
*   REAL CMD : DISABLE FILE
$JCL$    N=&DSN
*   REAL CMD : ENABLE FILE
$300$    S=&SSN/F=&FILENAM/E
/*
*****
*
*   1           2           3           4           5
*2345678901234567890123456789012345678901234567890

```

L1GFIUE1 SYSOUT File Example

Lines are truncated in this document. On the right side of each line information includes:

- ❖ L1GFIUE1 module version number on the first line
- ❖ The corresponding SYSUE1 line number

The following example results of a simulation (a transfer done with the symbolic file name L1GFIUE1) with the SYSUE1 file example from the previous page.

*01201 134610 TOM4 L1GFIUE1 PESIT-E ./.	V?R?
*01201 134610 TOM4 L1GFIUE1 ./.	0057
ERR: (SIMULATE) \$ERR\$ SEND '&SSN L1GFIUE1 ERROR,&L,&FILENAME,&PARTNID',	0057
SEND 'TOM4 L1GFIUE1 ERROR,0057,L1GFIUE1,SCIPSR3',USER=(USR0004)	0057
UNUSED CHARS: 0063	0057
	0062
VAR: (SIMULATE) \$VAR\$ G1 >&FILENAM,&DIR: &PARTNID,&REQNUMB,&SSN,&DATE,&T	0062
	0063
VAR: (SIMULATE) \$VAR\$ G2 P&PRC,T&TRC,S&SRC,&SPN,&TYP,&CT3,&RT,U=&UID	0063
	0064
VAR: (SIMULATE) \$VAR\$ G3 DSN=&DSN	0064
	0065
VAR: (SIMULATE) \$VAR\$ G4 EXTDSN=&EXTDSN	0065
	0067
VAR: (SIMULATE) \$VAR\$ L1 USR0003,USR0004,USR0005,USR0008	0067
	0068
VAR: (SIMULATE) \$VAR\$ L2 USR0004,USR0008	0068
	0069
VAR: (SIMULATE) \$VAR\$ L4 USR0004	0069
	0075
IF: (SIMULATE) \$IF\$ \$***** SCIPSR** * R E F 3*** *** Y **	0075
	0076
CMD: (SIMULATE) \$EXIT\$ L1APMCFJ	0076
	0077
IF: (SIMULATE) \$IF\$ \$***** SCIPSR** * R E F 3*** *** Y **	0077
	0078
CMD: (SIMULATE) \$CMD\$ SEND 'ERROR &G1',USER=(&L2),LOGON	0078
SEND 'ERROR >&FILENAM,&DIR:&PARTNID,&REQNUMB,&SSN,&DATE,&TIME',USER=(USR000	0078
4,USR0008),LOGON	0078
UNUSED CHARS: 0035	0078
SEND 'ERROR >L1GFIUE1,R:SCIPSR3,00000001,TOM4,94/07/20,13:46:10',USER=(USR0	0078
004,USR0008),LOGON	0078
UNUSED CHARS: 0033	0078
	0079
CMD: (SIMULATE) \$CMD\$ SEND './. &G2',USER=(&L2),LOGON	0079
SEND './. P&PRC,T&TRC,S&SRC,&SPN,&TYP,&CT3,&RT,U=&UID',USER=(USR0004,USR000	0079
8),LOGON	0079
UNUSED CHARS: 0043	0079
SEND './. P000,T0000,S0000,5,E,TEX,N,U=NONE',USER=(USR0004,USR0008),LOGON	0079
UNUSED CHARS: 0053	0079
IF: (SIMULATE) \$IF\$ FTYL SCIPSR** 3 R E F 8*** *** Y **	0082
	0085
CMD: (SIMULATE) \$CMD\$ SEND '&G1',USER=(&L4),LOGON	0085
SEND '>&FILENAM,&DIR:&PARTNID,&REQNUMB,&SSN,&DATE,&TIME',USER=(USR0004),LOG	0085
ON	0085
UNUSED CHARS: 0049	0085
SEND '>L1GFIUE1,R:SCIPSR3,00000001,TOM4,94/07/20,13:46:10',USER=(USR0004),L	0085
OGON	0085
UNUSED CHARS: 0047	0085

```

CMD: (SIMULATE) $CMD$ SEND './. LN=&LNK SP=&SPN PT=&PTY ',USER=(&L4),LO 0086
SEND './. LN=S SP=5 PT=T ',USER=(USR0004),LOGON 0086
UNUSED CHARS: 0079 0086
SEND './. LN=S SP=5 PT=T ',USER=(USR0004),LOGON 0086
UNUSED CHARS: 0079 0086

CMD: (SIMULATE) $CMD$ SEND './. U1=&USRVAR1 U2=&USRVAR2',USER=(&L4),LOG 0087
SEND './. U1=A0000001 U2=H134608',USER=(USR0004),LOGON 0087
UNUSED CHARS: 0072 0087
SEND './. U1=A0000001 U2=H134608',USER=(USR0004),LOGON 0087
UNUSED CHARS: 0072 0087

CMD: (SIMULATE) $CMD$ SEND './. &DSN &MBR FT=&FTY',USER=(&L4),LOGON 0088
SEND './. INDEX1.L1GFIUE1.D940720.H134608.A0000001 NONE FT=S',USER=(USR000 0088
4),LOGON 0088
UNUSED CHARS: 0043 0088
SEND './. INDEX1.L1GFIUE1.D940720.H134608.A0000001 NONE FT=S',USER=(USR000 0088
4),LOGON 0088
UNUSED CHARS: 0043 0088

CMD: (SIMULATE) $CMD$ SEND './. OR=&ORG DE=&DST',USER=(&L4),LOGON 0089
SEND './. OR=SCIPSR3 DE=SCIPSR4',USER=(USR0004),LOGON 0089
UNUSED CHARS: 0073 0089
SEND './. OR=SCIPSR3 DE=SCIPSR4',USER=(USR0004),LOGON 0089
UNUSED CHARS: 0073 0089

CMD: (SIMULATE) $REXX$ TYLREX F=&FILENAM P=&PARTNID RT=&RT TRC=&TRCX PRC 0090
TYLREX F=L1GFIUE1 P=SCIPSR3 RT=N TRC=0000L PRC=000 0090
UNUSED CHARS: 0076 0090

CMD: (SIMULATE) $EXIT$ L1APMCFJ 0091

CMD: (SIMULATE) $SIM$ S USRPROC F=&FILENAM,P=&PARTNID,R=&REQNUMB,D=&DSN 0095
S USRPROC F=L1GFIUE1,P=SCIPSR3,R=00000001,D=INDEX1.L1GFIUE1.D940720.H13460 0095
8.A0000001 0095
UNUSED CHARS: 0041 0095

CMD: (SIMULATE) $CMD$ SEND 'FAIL &G1',USER=(USR0009),LOGON 0097
SEND 'FAIL >&FILENAM,&DIR:&PARTNID,&REQNUMB,&SSN,&DATE,&TIME',USER=(USR0009 0097
),LOGON 0097
UNUSED CHARS: 0044 0097
SEND 'FAIL >L1GFIUE1,R:SCIPSR3,00000001,TOM4,94/07/20,13:46:10',USER=(USR00 0097
09),LOGON 0097
UNUSED CHARS: 0042 0097

IF: (SIMULATE) $IF$ $***** $$$$ * * * F ***** Y ** 0102

CMD: (SIMULATE) $CMD$ SEND 'RESTARTING &G1',USER=(USR0009),LOGON 0107
SEND 'RESTARTING >&FILENAM,&DIR:&PARTNID,&REQNUMB,&SSN,&DATE,&TIME',USER=(P 0107
SR0009),LOGON 0107
UNUSED CHARS: 0038 0107
SEND 'RESTARTING >L1GFIUE1,R:SCIPSR3,00000001,TOM4,94/07/20,13:46:10',USER= 0107
(USR0009),LOGON 0107
UNUSED CHARS: 0036 0107

CMD: (SIMULATE) $CMD$ SEND './. &G2',USER=(USR0009),LOGON 0108
SEND './. P&PRC,T&TRC,S&SRC,&SPN,&TYP,&CT3,&RT,U=&UID',USER=(USR0009),LOGON 0108
UNUSED CHARS: 0051 0108
SEND './. P000,T0000,S0000,5,E,TEX,N,U=NONE',USER=(USR0009),LOGON 0108
UNUSED CHARS: 0061 0108

CMD: (SIMULATE) $EXIT$ L1EXSNAP 0109

```



```

IF: (SIMULATE) $IF$ $$ALL$$ $ALL$$ * * * F **** * Y ** 0111
0114
CMD: (SIMULATE) $CMD$ SEND 'ANOMALY &G1',USER=(&UID),LOGON 0114
SEND 'ANOMALY >&FILENAM,&DIR:&PARTNID,&REQNUMB,&SSN,&DATE,&TIME',USER=(NONE 0114
),LOGON 0114
UNUSED CHARS: 0044 0114
SEND 'ANOMALY >L1GFIUE1,R:SCIPSR3,00000001,TOM4,94/07/20,13:46:10',USER=(NO 0114
NE),LOGON 0114
UNUSED CHARS: 0042 0114
0115
CMD: (SIMULATE) $CMD$ SEND './.ANOMALY &G2',USER=(&UID),LOGON 0115
SEND './.ANOMALY P&PRC,T&TRC,S&SRC,&SPN,&TYP,&CT3,&RT,U=&UID',USER=(NONE),L 0115
OGON 0115
UNUSED CHARS: 0047 0115
SEND './.ANOMALY P000,T0000,S0000,5,E,TEX,N,U=NONE',USER=(NONE),LOGON 0115
UNUSED CHARS: 0057 0115
0116
CMD: (SIMULATE) $EXIT$ L1EXSNAP 0116
0119
IF: (SIMULATE) $IF$ $***** SCIPSR* * R E D **** * N ** 0119
0122
CMD: (SIMULATE) $EXIT$ L1APMCFJ 0122
0126
IF: (SIMULATE) $IF$ L1GFIUE1 SCIPSR** * R E F 8**** * N ** 0126
0129
CMD: (SIMULATE) $CMD$ SEND 'ERROR APM REC P=&PARTNID,F=&FILENAM',USER=( 0129
SEND 'ERROR APM REC P=SCIPSR3,F=L1GFIUE1',USER=(USR0004),LOGON 0129
UNUSED CHARS: 0064 0129
0133
IF: (SIMULATE) $IF$ FABEND SCIPSR** 4 T E D **** * N ** 0133
0135
CMD: (SIMULATE) $CMD$ SEND 'ABEND??? P=&PARTNID,F=&FILENAM',USER=(USR00 0135
SEND 'ABEND??? P=SCIPSR3,F=L1GFIUE1',USER=(USR0004),LOGON 0135
UNUSED CHARS: 0069 0135
0137
CMD: (SIMULATE) $ABEND$ 0137
0141
IF: (SIMULATE) $IF$ RC1LOOPX SCIPSR** 4 * * * **** * Y ** 0141
0144
CMD: (SIMULATE) $EXIT$ L1EXSNAP 0144
0154
IF: (SIMULATE) $IF$ RC1LOOP* GFI***** * R E D **** * Y ** 0154
0157
CMD: (SIMULATE) $EXIT$ L1GFIRC1 0157
0159
IF: (SIMULATE) $IF$ ***LOOP* GFI***** * T E D **** * Y ** 0159
0163
CMD: (SIMULATE) $PGMJ$ P1GFIIDC DEL &DSN 0163
P1GFIIDC DEL INDEX1.L1GFIUE1.D940720.H134608.A0000001 0163
UNUSED CHARS: 0072 0163
0167
IF: (SIMULATE) $IF$ GFID**** $$ALL$$ * R S * **** * Y ** 0167
0168
CMD: (SIMULATE) $CMD$ SEND '*DUMP*START &G1',USER=(&L1),LOGON 0168
SEND '*DUMP*START >&FILENAM,&DIR:&PARTNID,&REQNUMB,&SSN,&DATE,&TIME',USER=( 0168
USR0003,USR0004,USR0005,USR0008),LOGON 0168
UNUSED CHARS: 0013 0168
SEND '*DUMP*START >L1GFIUE1,R:SCIPSR3,00000001,TOM4,94/07/20,13:46:10',USER 0168
=(USR0003,USR0004,USR0005,USR0008),LOGON 0168
UNUSED CHARS: 0011 0168

```

```

CMD: (SIMULATE) $CMD$ SEND '..../.. &G2',USER=(&L1),LOGON 0169
SEND '..../.. P&PRC,T&TRC,S&SRC,&SPN,&TYP,&CT3,&RT,U=&UID',USER=(USR0003,USR 0169
0004,USR0005,USR0008),LOGON 0169
UNUSED CHARS: 0024 0169
SEND '..../.. P000,T0000,S0000,5,E,TEX,N,U=NONE',USER=(USR0003,USR0004,USR00 0169
05,USR0008),LOGON 0169
UNUSED CHARS: 0034 0169
0170

CMD: (SIMULATE) $CMD$ SEND '..../.. &G3',USER=(&L2),LOGON 0170
SEND '..../.. DSN=&DSN',USER=(USR0004,USR0008),LOGON 0170
UNUSED CHARS: 0075 0170
SEND '..../.. DSN=INDEX1.L1GFIUE1.D940720.H134608.A0000001',USER=(USR0004,P 0170
SR0008),LOGON 0170
UNUSED CHARS: 0038 0170
0171

CMD: (SIMULATE) $CMD$ SEND '..../.. &G4',USER=(&L2),LOGON 0171
SEND '..../.. EXTDSN=&EXTDSN',USER=(USR0004,USR0008),LOGON 0171
UNUSED CHARS: 0069 0171
SEND '..../.. EXTDSN=NONE',USER=(USR0004,USR0008),LOGON 0171
UNUSED CHARS: 0072 0171
0172

IF: (SIMULATE) $IF$ GFID**** $$ALL$$ * R E * **** * Y ** 0172
0173

CMD: (SIMULATE) $CMD$ SEND '*DUMP*END &G1',USER=(&L1),LOGON 0173
SEND '*DUMP*END >&FILENAM,&DIR:&PARTNID,&REQNUMB,&SSN,&DATE,&TIME',USER=(US 0173
R0003,USR0004,USR0005,USR0008),LOGON 0173
UNUSED CHARS: 0015 0173
SEND '*DUMP*END >L1GFIUE1,R:SCIPSR3,00000001,TOM4,94/07/20,13:46:10',USER=( 0173
USR0003,USR0004,USR0005,USR0008),LOGON 0173
UNUSED CHARS: 0013 0173
0177

IF: (SIMULATE) $IF$ GFIMSG** $$ALL$$ * * S * **** * Y ** 0177
0178

CMD: (SIMULATE) $CMD$ SEND '*MSG* &G1',USER=(&L1),LOGON 0178
SEND '*MSG* >&FILENAM,&DIR:&PARTNID,&REQNUMB,&SSN,&DATE,&TIME',USER=(USR000 0178
3,USR0004,USR0005,USR0008),LOGON 0178
UNUSED CHARS: 0019 0178
SEND '*MSG* >L1GFIUE1,R:SCIPSR3,00000001,TOM4,94/07/20,13:46:10',USER=(USR0 0178
003,USR0004,USR0005,USR0008),LOGON 0178
UNUSED CHARS: 0017 0178
0179

CMD: (SIMULATE) $CMD$ SEND '..../.. &G2',USER=(&L1),LOGON 0179
SEND '..../.. P&PRC,T&TRC,S&SRC,&SPN,&TYP,&CT3,&RT,U=&UID',USER=(USR0003,USR0 0179
004,USR0005,USR0008),LOGON 0179
UNUSED CHARS: 0025 0179
SEND '..../.. P000,T0000,S0000,5,E,TEX,N,U=NONE',USER=(USR0003,USR0004,USR000 0179
5,USR0008),LOGON 0179
UNUSED CHARS: 0035 0179
0180

CMD: (SIMULATE) $CMD$ SEND '..../.. &G3',USER=(&L2),LOGON 0180
SEND '..../.. DSN=&DSN',USER=(USR0004,USR0008),LOGON 0180
UNUSED CHARS: 0076 0180
SEND '..../.. DSN=INDEX1.L1GFIUE1.D940720.H134608.A0000001',USER=(USR0004,USR 0180
0008),LOGON 0180
UNUSED CHARS: 0039 0180
0181

CMD: (SIMULATE) $CMD$ SEND '..../.. &G4',USER=(&L2),LOGON 0181
SEND '..../.. EXTDSN=&EXTDSN',USER=(USR0004,USR0008),LOGON 0181
UNUSED CHARS: 0070 0181
SEND '..../.. EXTDSN=NONE',USER=(USR0004,USR0008),LOGON 0181
UNUSED CHARS: 0073 0181

```

```

VAR: (SIMULATE) $VAR$      L2 USR0004                                0185
                                                                    0189
IF: (SIMULATE) $IF$ $***** $$ALL$$ * R * * **** * N **          0189
                                                                    0190
CMD: (SIMULATE) $CMD$      SEND '&FILENAM FROM &PARTNID ',USER=(&L2),LOGON 0190
SEND 'L1GFIUE1 FROM SCIPSR3 ',USER=(USR0004),LOGON                  0190
UNUSED CHARS: 0076                                                  0190
SEND 'L1GFIUE1 FROM SCIPSR3 ',USER=(USR0004),LOGON                  0190
UNUSED CHARS: 0076                                                  0190
                                                                    0191
CMD: (SIMULATE) $PGMJ$     L1GFITS1 ULN=(RC0,&L1),MSG=&SSN&CT3&FILENAME&DSN, 0191
L1GFITS1 ULN=(RC0,USR0003,USR0004,USR0005,USR0008),MSG=TOM4TEXL1GFIUE1INDEX 0191
1.L1GFIUE1.D940720.H134608.A0000001,UER=USR0008                    0191
UNUSED CHARS: 0003                                                  0191
L1GFITS1 ULN=(RC0,USR0003,USR0004,USR0005,USR0008),MSG=TOM4TEXL1GFIUE1INDEX 0191
1.L1GFIUE1.D940720.H134608.A0000001,UER=USR0008                    0191
UNUSED CHARS: 0003                                                  0191
                                                                    0192
CMD: (SIMULATE) $EXIT$     L1EX#AE2                                  0192
                                                                    0197
IF: (SIMULATE) $IF$ PI37**** $$ALL$$ * R S * **** * N **          0197
                                                                    0198
CMD: (SIMULATE) $EXIT$     L1EXSNAP                                  0198
                                                                    0199
CMD: (SIMULATE) $PGMJ$     L1GFITS1 MSG=HELLO &FILENAM,ULN=USR0009,USR0011,U 0199
L1GFITS1 MSG=HELLO L1GFIUE1,ULN=USR0009,USR0011,UER=USR0008        0199
UNUSED CHARS: 0067                                                  0199
                                                                    0200
CMD: (SIMULATE) $CMD$      &LAB                                     0200
INDEX1.PS.F080.EMPTY                                                0200
UNUSED CHARS: 0105                                                  0200
INDEX1.PS.F080.EMPTY                                                0200
UNUSED CHARS: 0105                                                  0200
                                                                    0204
IF: (SIMULATE) $IF$ FSEND*** $$ALL$$ 4 R E D **** * N **          0204
                                                                    0206
CMD: (SIMULATE) $REQ$      SSN=&SSN,SPN=&DST,SFN=FSEND,DIR=T,TYP=N,CLS=A,PRT 0206
SSN=TOM4,SPN=SCIPSR4,SFN=FSEND,DIR=T,TYP=N,CLS=A,PRT=0,DSN=INDEX1.PS.F080. 0206
EMPTY                                                                0206
UNUSED CHARS: 0046                                                  0206
SSN=TOM4,SPN=SCIPSR4,SFN=FSEND,DIR=T,TYP=N,CLS=A,PRT=0,DSN=INDEX1.PS.F080. 0206
EMPTY                                                                0206
UNUSED CHARS: 0046                                                  0206
                                                                    0209
IF: (SIMULATE) $IF$ FCMDLAB* $$ALL$$ * R E D **** * N **          0209
                                                                    0211
CMD: (SIMULATE) $PGM$      L1EXSNAP &SSN&AP&EF&CT3&FILENAME&DSN... 0211
L1EXSNAP TOM40301TEXL1GFIUE1INDEX1.L1GFIUE1.D940720.H134608.A0000001... 0211
UNUSED CHARS: 0054                                                  0211
                                                                    0213
CMD: (SIMULATE) $CMD$      &LAB                                     0213
INDEX1.PS.F080.EMPTY                                                0213
UNUSED CHARS: 0105                                                  0213
INDEX1.PS.F080.EMPTY                                                0213
UNUSED CHARS: 0105                                                  0213
                                                                    0215
CMD: (SIMULATE) $REQ$      SSN=&SSN,SPN=&ORG,SFN=ACK,DSN=INDEX1.ACK,DIR=T,T 0215
SSN=TOM4,SPN=SCIPSR3,SFN=ACK,DSN=INDEX1.ACK,DIR=T,TYP=N,CLS=A,PRT 0215
UNUSED CHARS: 0060                                                  0215

```

```

IF: (SIMULATE) $IF$ FREQLAB* $$ALL$$ * R E D **** * N ** 0218
0220
CMD: (SIMULATE) $REQ$ &LAB 0220
INDEX1.PS.F080.EMPTY 0220
UNUSED CHARS: 0105 0220
INDEX1.PS.F080.EMPTY 0220
UNUSED CHARS: 0105 0220
0223
IF: (SIMULATE) $IF$ ACK***** $$ALL$$ * R S D **** * N ** 0223
0224
CMD: (SIMULATE) $CMD$ SEND 'RECEIVED &G1',USER=(USR0004),LOGON 0224
SEND 'RECEIVED >&FILENAM,&DIR:&PARTNID,&REQNUMB,&SSN,&DATE,&TIME',USER=(USR 0224
0004),LOGON 0224
UNUSED CHARS: 0040 0224
SEND 'RECEIVED >L1GFIUE1,R:SCIPSR3,00000001,TOM4,94/07/20,13:46:10',USER=(U 0224
SR0004),LOGON 0224
UNUSED CHARS: 0038 0224
0232
NSW: (SIMULATE) $NOSWAP$ 0232
0235
IF: (SIMULATE) $IF$ FROUTE** SCIPSR** 3 R S D **** * N ** 0235
0238
CMD: (SIMULATE) $DYA$ &DSN 0238
INDEX1.L1GFIUE1.D940720.H134608.A0000001 0238
UNUSED CHARS: 0085 0238
0239
CMD: (SIMULATE) $EXIT$ L1EXSNAP 0239
0242
IF: (SIMULATE) $IF$ FROUTE** SCIPSR** 3 R E D **** * N ** 0242
0245
CMD: (SIMULATE) $DYA$ 0245
0246
CMD: (SIMULATE) $EXIT$ L1EXSNAP 0246
0248
CMD: (SIMULATE) $REQ$ SSN=&SSN,SPN=&DST,SFN=F1,DIR=T,TYP=N,CLS=A,PRT=0, 0248
SSN=TOM4,SPN=SCIPSR4,SFN=F1,DIR=T,TYP=N,CLS=A,PRT=0,DSN=INDEX1.L1GFIUE1.D9 0248
40720.H134608.A0000001 0248
UNUSED CHARS: 0029 0248
0251
IF: (SIMULATE) $IF$ FROUTE** SCIPSR** 3 R E F 0000 000 Y ** 0251
0254
CMD: (SIMULATE) $DYA$ 0254
0255
CMD: (SIMULATE) $EXIT$ L1EXSNAP 0255
0257
CMD: (SIMULATE) $REQ$ SSN=&SSN,SPN=&DST,SFN=F1,DIR=T,TYP=N,CLS=A,PRT=0, 0257
SSN=TOM4,SPN=SCIPSR4,SFN=F1,DIR=T,TYP=N,CLS=A,PRT=0,DSN=INDEX1.L1GFIUE1.D9 0257
40720.H134608.A0000001 0257
UNUSED CHARS: 0029 0257
0260
IF: (SIMULATE) $IF$ FROUTE** SCIPSR** 3 R E F **** * Y ** 0260
0263
CMD: (SIMULATE) $DYA$ 0263
0264
CMD: (SIMULATE) $EXIT$ L1EXSNAP 0264
0268
IF: (SIMULATE) $IF$ FROUTE** SCIPSR** * * * * 0000 000 Y ** 0268
0268

```

```

CMD: (SIMULATE) $CMD$ SEND 'TEST1300 &G1',USER=(USR0009) 0269
SEND 'TEST1300 >&FILENAM, &DIR:&PARTNID, &REQNUMB, &SSN, &DATE, &TIME', USER=(USR 0269
0009) 0269
UNUSED CHARS: 0046 0269
SEND 'TEST1300 >L1GFIUE1,R:SCIPSR3,00000001,TOM4,94/07/20,13:46:10',USER=(U 0269
SR0009) 0269
UNUSED CHARS: 0044 0269
CMD: (SIMULATE) $CMD$ SEND 'TEST1300 &G2',USER=(USR0009) 0270
SEND 'TEST1300 P&PRC,T&TRC,S&SRC,&SPN,&TYP,&CT3,&RT,U=&UID',USER=(USR0009) 0270
UNUSED CHARS: 0052 0270
SEND 'TEST1300 P000,T0000,S0000,5,E,TEX,N,U=NONE',USER=(USR0009) 0270
UNUSED CHARS: 0062 0270
0271
CMD: (SIMULATE) $CMD$ SEND 'TEST1300 &G3',USER=(USR0009) 0271
SEND 'TEST1300 DSN=&DSN',USER=(USR0009) 0271
UNUSED CHARS: 0087 0271
SEND 'TEST1300 DSN=INDEX1.L1GFIUE1.D940720.H134608.A0000001',USER=(USR0009 0271
) 0271
UNUSED CHARS: 0050 0271
0272
IF: (SIMULATE) $IF$ FROUTE** SCIPSR** * * * * ***** 000 Y ** 0272
0273
CMD: (SIMULATE) $CMD$ SEND 'TEST 300 &G1',USER=(USR0009) 0273
SEND 'TEST 300 >&FILENAM, &DIR:&PARTNID, &REQNUMB, &SSN, &DATE, &TIME', USER=(USR 0273
0009) 0273
UNUSED CHARS: 0046 0273
SEND 'TEST 300 >L1GFIUE1,R:SCIPSR3,00000001,TOM4,94/07/20,13:46:10',USER=(U 0273
SR0009) 0273
UNUSED CHARS: 0044 0273
0274
CMD: (SIMULATE) $CMD$ SEND 'TEST 300 &G2',USER=(USR0009) 0274
SEND 'TEST 300 P&PRC,T&TRC,S&SRC,&SPN,&TYP,&CT3,&RT,U=&UID',USER=(USR0009) 0274
UNUSED CHARS: 0052 0274
SEND 'TEST 300 P000,T0000,S0000,5,E,TEX,N,U=NONE',USER=(USR0009) 0274
UNUSED CHARS: 0062 0274
0275
CMD: (SIMULATE) $CMD$ SEND 'TEST 300 &G3',USER=(USR0009) 0275
SEND 'TEST 300 DSN=&DSN',USER=(USR0009) 0275
UNUSED CHARS: 0087 0275
SEND 'TEST 300 DSN=INDEX1.L1GFIUE1.D940720.H134608.A0000001',USER=(USR0009 0275
) 0275
UNUSED CHARS: 0050 0275
0277
CMD: (SIMULATE) $JCL$ N=&DSN 0277
N=INDEX1.L1GFIUE1.D940720.H134608.A0000001 0277
UNUSED CHARS: 0083 0277
0279
CMD: (SIMULATE) $300$ S=&SSN/F=&FILENAM/E 0279
S=TOM4/F=L1GFIUE1/E 0279
UNUSED CHARS: 0107 0279
0280
(SIMULATE) EOF 0280
0289
RET0 RC=?? SIMULATE ALL 00000000 V.R.
V.R.
FLG:
TOM40301TEXI94/07/2013:46:10L1GFIUE1SCIPSR3 INDEX1.L1GFIUE1.D940720.H13460 V.R.
REOS
INT/EXT ID 00000001 01801636 0000/2116 0000/2199 V.R.

```

Using Environment Variables

This appendix describes how you can define long names for files and IP hosts.

Why to Use Long Names

Supporting HFS files means that file names can be much more than 44 characters long. This problem applies to *IP HOST* names, limited to 32 characters long as a Sterling Connect:Express parameter fields, and to the *Remote dsn / Pi99* , limited to 44 characters long as a Sterling Connect:Express parameter fields.

Sterling Connect:Express uses environment variables to support long names. The environment variables are specific to the monitor, and they are resolved when the name is processed. You can define variables in a file allocated to TOM address space using the ENVVAR DD card . All address spaces that need to process environment variables , such as the APM, the ANM, the AFM and the EAS, know this file.

The fields *Dsn local*, *IP HOST* and *Remote dsn/Pi99* can be extended up to 256 characters. They can contain several variables.

ENVVAR Environment Variables File

The environment variables file is defined in TOM JCL, using DD ENVVAR card. This is a sequential file, fixed format, record length less equal 1024 characters.

```
//SYSIN      DD      DISP=SHR, DSN=PROD.CEXPRESS.SYSIN(TOM4)
//SYJNL      DD      DISP=SHR, DSN=PROD.CEXPRESS.TOM4JNL
//SYLOG      DD      SYSOUT=V, HOLD=YES
//ENVVAR     DD      DISP=SHR, DSN=PROD.CEXPRESS.ENVVAR(TOM4)
```

The environment variable process can issue WTO messages prefixed by 'ZVAR', as shown in the example below, where the error is that the file record format is variable.

```
ZVAR004E OPEN ENVVAR ERROR RECFM: 00000080
```

These messages can be issued by any address space that processes variables, APM , ANM, AFM ou EAS. When a syntax error is detected, the process issues a warning and continues. The following example shows that a syntax error has been detected at line 00003 of the ENVVAR file: no '>' character has been found.

```
ZVAR006W ENVVAR SYNTAX ERROR : NO > 00003
```

If the variable cannot be resolved due to a syntax error, or because no corresponding definition exists, the process continues without resolving it.

Option 0 of TSO/ISPF interface enables the operator to access the ENVVAR file. Use option 'S' to edit the file, updates are dynamically available.

```
TOM4300----- INITIALIZATION 2/2 -----
OPTION ==> ?                                2009/04/01 07:27:27
4XX/TEST
      ? MONITOR ==> TOM3 NAMES INITIALIZATION ( AUTOMATIC --> YES ).
      TEMPORARY WORK-UNIT ==> SYSDA      , JES2-INTERFACE ---> ISF
      L LOGON-PROCEDURE, O OPTIONS, V ISPF INSTALLATION CHECKING.
----- S : CHECK FILES OF JOBTOM3   CSGB ACTIVE GLOBAL
V
- ISPLLIB      ==> PROD.CEXPRESS.ISPLLIB
- LOADLIB      ---> PROD.CEXPRESS.LOADLIB.PSR0003
-              --->
- SYSSNA       -> PROD.CEXPRESS.SYSPRM(L4SNA)
- SYSX25       -> PROD.CEXPRESS.SYSPRM(L4X25)
- SYSTCP       -> PROD.CEXPRESS.SYSPRM(L4TCP)
- SYSUE1       -> PROD.CEXPRESS.PARMLIB(SYSUE1)
- SYSCE1       ->
S ENVVAR       -> PROD.CEXPRESS.ENVVAR(TOM30)
- ANMSSL       ->
- AFMFTPE      ->
X EXIT, -PF3- FIN, -PF10/11- DEFILEMENT
```

Syntax and Processing of the Variables

To define a variable in ENVVAR file, use the following syntax :

```
<var>value to replace
```


The string 'var' can contain 1 to 8 characters, including blanks, excluding '>'. The string <var> must be placed in the name you want to extend: 'value to replace' will replace it when processed.

Variables are processed in the following situations:

1. •Transfer of an HFS file – data set name processed in APM for PeSIT and Odette, or EAS for Ftp.
2. •TCP/IP connection with host name – processed in ANM or AFM depending on the protocol.
3. •Sending and receiving PeSIT PI99 – processed in APM.
4. •Showing the variable in the TSO/ISPF screens (File definition, Partner definition, Journal)

Message	Description
ZVAR004E OPEN ENVVAR ERROR	The ENVVAR record format is invalid. The cause is indicated. The file transfer is not interrupted, but variables are not resolved
ZVAR006W ENVVAR SYNTAX ERROR	While processing, a syntax error has been detected – the error type and the line number are indicated. All possible variable resolution are completed.
ZVAR007W OVERFLOW, STRING TRUNCATED	While processing, an overflow has been detected: the result is more than 256 characters long: the result is truncated, the process stops.
ZVAR009W VARIABLE NOT FOUND	The variable shown in the message has no definition in the ENVVAR file. All possible resolution are completed

Examples of Use

You can use environment variables in the Dsn local field of the symbolic file definition for an HFS file, in the IP HOST field of the partner definition for a TCP/IP partner, and in the Remote Dsn/Pi99 field of the file definition or the transfer request. You can request the variable resolution in the screen using a command VAR.

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