

# **ROPES**

**Remote Online Print Executive System  
Version 14.0**

**User's Guide**

# PREFACE

This publication contains information necessary for the installation, maintenance and operation of the Remote Online Print Executive System (ROPES), a proprietary program product used to manage a network of printers in the CICS interactive environment. It provides data processing managers, system programmers, application programmers and operating personnel with the information required to effectively use this product.

Information in this publication is subject to significant change.

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| This edition applies to Version 14.0 of the program product Remote Online Print Executive System (ROPES) and to all subsequent versions and modifications until otherwise indicated in new editions or newsletters.

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# Introduction

## What This Manual Contains

This manual is intended to guide the ROPES end user through the steps required to:

- display the status of reports, printers and the ROPES product
- control ROPES printers
- use the JES retrieval facility (RSTU), and
- browse reports online

Each chapter in the manual addresses one or more of these subjects.

Other ROPES related activities are documented in the other ROPES manuals. The Related Publications lists those manuals and summarizes their contents.

## Related Publications

In addition to this manual, there are five other ROPES publications. Your installation was supplied with at least one copy of each of these manuals in Adobe Acrobat (PDF) format. You may print any copies you require for your company's use, but remember that this material is licensed to your company and may not be distributed outside of your organization.

### General Information Manual

This manual contains an introduction to ROPES with an overview of the functionality ROPES provides.

### Administrator's Guide

This manual is intended to guide the ROPES installer and administrator through the steps required to install ROPES, customize ROPES for your installation, establish and maintain the ROPES control files, archive report data, audit ROPES activities, account for ROPES usage, secure ROPES, and tailor and use the ROPES exits.

### Programmer's Guide

This manual is intended for programmers that will be interfacing application programs to ROPES through the ROPES Application Programming Interface. The ROPES sample programs are also documented here.

### Utilities Guide

This manual is intended for programmers that will be using the ROPES utility programs. The ROPES sample programs are also documented here.

### Messages and Codes

This manual is intended for administrators, programmers and end users that will be using the various functions of ROPES. It contains a complete list of the ROPES messages and codes with descriptions and suggested user actions when appropriate.



# Controlling ROPES Printers

## Introduction

This section is a guide for ROPES terminal operators. The ROPES terminal operator controls the ROPES online system. These controls include the starting and stopping of printing operations, the handling of exceptional conditions that require manual intervention and the routing and scheduling of report printing.

To perform these functions in a secure manner, three classes of terminal operators have been established:

- The printer operator - who may control the functions of any printers for which he is designated as the controller.
- The supervisory operator - who may control the function of any printer and the output of any report in the system.
- The master operator - who is responsible for ROPES start-up and shut-down.





# Operator Command Menu

```

--*-- ROPES OPERATOR COMMANDS --*--
- A PRTR 0000000000 REPORTID POSITION REPORT ON PRINTER TO SPECIFIED BUFFER
- B PRTR 0000000000 REPORTID BACKSPACE REPORT THE SPECIFIED NUMBER OF PAGES
- C PRTR REPORTID CANCEL A REPORT AT A PRINTER
- E PRTR REPORTID RELEASE A HELD REPORT
- F PRTR 0000000000 REPORTID FORWARD SPACE REPORT THE SPECIFIED NUMBER OF PAGES
- G PRTR TERM GIVE CONTROL OF A PRINTER TO ANOTHER TERMINAL
- H PRTR REPORTID HOLD A REPORT AT A PRINTER
- I PRTR INTERRUPT A PRINTER
- K PRTR REPORTID DELETE A REPORT FROM A PRINTER
- M PRTR REPORTID 100 CHANGE A REPORT PRIORITY
- P PRTR DRAIN A PRINTER
- Q PRTR FORM REQUEST A TEST/ALIGNMENT MESSAGE
- R PRTR REPORTID RESET A REPORT TO PRINT FROM THE FIRST PAGE
- S PRTR CCCCCCCC START A PRINTER AND SET THE CLASSES
- T PRT1 PRT2 REPORTID TRANSFER A REPORT BETWEEN PRINTERS
- W PRTR REPORTID ADD A REPORT TO A PRINTER
- X PRTR REPORTID 001 CHANGE A REPORT COPY COUNT
- Z REPORTID CLEAR A REPORT THROUGHOUT THE SYSTEM
REPLACE THE "-" WITH AN "X", SUPPLY THE REQUESTED INFORMATION, AND HIT ENTER.
SOOP/ <=== OR ENTER A SOOP/PROP COMMAND HERE

```

**Figure 1** ROPES Operator Command Menu

## Description

The ROPES Operator Command Menu gives you access, on a single screen, to all the Printer Operator (PROP) and Supervisory Operator (SOOP) functions of ROPES. The menu provides you with prompting for all the fields in each command, and will edit the input fields into a format suitable for execution by ROPES. An exit is provided to allow security checking of all commands before execution.

## Transaction Codes

Two transaction codes are provided for access to the ROPES Operator Command Menu. They are:

**RCMP** - for Printer Operator level operators; and  
**RCMS** - for Supervisory level operators.

No parameters are entered with the transaction code. All command-related input is typed into the menu.

## Menu Format

The Command Menu ([Figure 1](#) on page 9) contains three sections. The first section provides a list of all ROPES commands that are valid for the initial transaction code. The commands are listed

alphabetically. A brief description of the command is provided.

In front of each command code is a dash. You select a command by over-typing the dash with an "X". If more than one dash is over-typed, only the first one will be recognized.

After each command are fields for input data. The fields are tailored to the command, and are displayed to indicate the type of data required. Briefly, the fields are initialized as follows:

PRTR, PRT1 or PRT2

when a printer is required

REPORTID

when a report name is required

000 or 0000000000

when a number is required

CCCCCCCC

when a class list is required

TERM

when a terminal is required

**FORM**

when a Forms Control Block suffix is required

The second section of the display provides a place for a command to be entered manually. You may enter a command here if you wish, but any command selected from the first section will take precedence over this field. After selection, the formatted command will be displayed here.

The last section of the menu is used by the command processor for messages. The messages are documented in the messages section of this manual.

**Command Execution**

The command selected for execution will be processed exactly as described in the next part of this section.

**Termination**

This transaction is terminated by pressing CLEAR.

# Supervisory and Printer Operator Commands

The functions of the supervisory and printer operators are to control the routing and scheduling of report printing and the operation of the printers.

The printer operator (PROP) command functions are:

- PROP/A/prtr/0000000000/reportid  
reposition report to specified page;
- PROP/B/prtr/0000000000/reportid  
back space a report;
- PROP/C/prtr/reportid  
cancel a report;
- PROP/E/prtr/reportid  
release a held report;
- PROP/F/prtr/0000000000/reportid  
forward space a report;
- PROP/G/prtr/trmid  
give control of a printer to a terminal;
- PROP/H/prtr/reportid  
hold a report;
- PROP/I/prtr  
interrupt a printer;
- PROP/K/prtr/reportid  
remove a report from a printer;
- PROP/M/prtr/reportid/000  
change the priority of a report on a printer;
- PROP/P/prtr  
drain a printer;
- PROP/Q/prtr/form  
test a printer or align forms;
- PROP/R/prtr/reportid  
reset a report to its first page;
- PROP/S/prtr/ccccccc  
start a printer for a list of classes;
- PROP/T/prt1/prt2/reportid  
transfer reports between printers;

- PROP/W/prtr/reportid  
assign a report to a printer.
- PROP/X/prtr/reportid/000  
change the number of copies of a report printed at a printer.

Printer operator function requests will be accepted from a terminal when either:

- that terminal is the control terminal for the printer that is the subject of the command; or
- no terminal has yet assumed control of the subject printer.

The receipt of a PROP command for a printer that has no assigned control terminal causes the system to make the terminal entering the command the control terminal.

The format of supervisory operator commands is the same as the PROP commands, except that the transaction code is SOOP.

All printer operator functions may be entered for any printer or report by a supervisory operator using the SOOP command code. There is, additionally, one command that, generally, may be entered only by supervisory operators (though you may change this rule through the maintenance transactions):

SOOP/Z/reportid  
clear a report throughout the system.

All of the SOOP/PROP commands are described in detail below.

**FUNCTION:** Position To A Specific Buffer  
**COMMAND:** PROP/A/prtr/0000000000/reportid

This command will reposition the report “reportid” on printer “prtr” to buffer number “0000000000,” provided that the buffer is assigned to the report and begins with a form-feed character. The buffer number will be found in the first one to ten print position of every page generated by ROPES if buffer number printing was requested for the report. The value entered for “0000000000” must consist of from

one to ten digits. Leading zeros are not required but are permitted. If no report is specified, the report printing on the printer, if any, will be repositioned and printing will continue with the requested buffer. If the printer was interrupted before this command is entered, it will automatically be restarted. This command is not valid for empty reports.

**FUNCTION:** Back Space A Report  
**COMMAND:** PROP/B/prtr/000000000/reportid

This command will back space the report “reportid” “0000000000” pages on printer “prtr.” The value specified for “0000000000” must consist of one to ten digits. Leading zeros are not required but are permitted. If no report is specified, the report printing on the printer, if any, will be repositioned and printing will continue with the requested page and an acknowledgment message will be displayed. If the printer was interrupted before this command is entered, it will automatically be restarted. This command is not valid for empty reports.

**FUNCTION:** Cancel A Report  
**COMMAND:** PROP/C/prtr/reportid

This command is used to cancel the report “reportid” on printer “prtr.” The report need not be active.

The cancel command will set the status of the report to “canceled” for the printer specified. A canceled report that is currently active will stop printing at the end of the current buffer. ROPES will select another report for printing at the specified printer. Use the Reset command (R) to make the report available for printing at the specified printer after it has been canceled.

**FUNCTION:** Release A Held Report  
**COMMAND:** PROP/E/prtr/reportid

This command is used to release report “reportid” for printing on printer “prtr.” The report becomes eligible for print selection.

**FUNCTION:** Forward Space A Report  
**COMMAND:** PROP/F/prtr/000000000/reportid

This command will forward space the report “reportid” “0000000000” pages on printer “prtr.” “0000000000” must be entered as a one to ten digit

number. Leading zeros are not required but are permitted. If no report is specified, the report printing on the printer, if any, will be repositioned and printing will continue with the requested page. If the printer was interrupted before this command is entered, it will automatically be restarted. This command is not valid for empty reports.

**FUNCTION:** Give Control To A Terminal  
**COMMAND:** PROP/G/prtr/term

This command is used to give control of printer “prtr” to the terminal specified by “term.” The new control terminal will receive a message notifying the operator that the control of the printer has been transferred. The previous control terminal will no longer be permitted to enter PROP commands for the printer.

**FUNCTION:** Hold A Report  
**COMMAND:** PROP/H/prtr/reportid

Use this command to hold report “reportid” on printer “prtr.” The command takes effect immediately. If the report is printing, it is interrupted and another report will be selected.

Once a report has been held, a release command is required to make it available for selection on the specified printer.

**FUNCTION:** Interrupt A Printer  
**COMMAND:** PROP/I/prtr

This command is used to interrupt a printer after printing the current buffer. If no report is active, the printer, specified by “prtr,” is placed in “hold” status. If a report is active, the report controls will be set so that printing will resume at the top of the current page if no repositioning commands are issued.

**FUNCTION:** Remove Assigned Report  
**COMMAND:** PROP/K/prtr/reportid

This command will remove report “reportid” from the list of reports assigned to printer “prtr.” If the report is being printed, printing will stop at the end of the current buffer.

Once a report is removed from the printer assignment list, the report cannot be produced by that printer

unless it is restored with the Assign command (W).

**FUNCTION:** Change Report Priority  
**COMMAND:** PROP/M/prtr/reportid/000

This command will change the printing priority of the indicated report to the value specified. The value must be a three digit number in the range of 0 to 255. This priority change applies only at the specified printer.

**FUNCTION:** Drain A Printer  
**COMMAND:** PROP/P/prtr

This command is used to drain printer “prtr” after completely printing the current report. If no report is active, a message will be displayed and the printer will be placed in “hold” status immediately. Otherwise, the printer will be placed in “hold” status when the current report completes.

**FUNCTION:** Test Printer Or Align Forms  
**COMMAND:** PROP/Q/prtr/form

This command initiates the transmission of a test (or forms alignment) message to the printer specified by “prtr.” If specified, the four character “form” parameter is appended to the string “RO\$F” to indicate the name of the desired test message. If the default test message is desired, do not specify the “form” parameter or the “/” immediately preceding it. The default test message is contained in ROPES forms control block “RO\$F ”.

The test request takes effect immediately and will interrupt any other activity on the specified printer. The specified printer is placed in “hold” status upon completion of the test function to allow for alignment if required.

The test command is not valid for printers that use the Device Block DEVTYPE=LPRD setting.

**NOTE:** The paper in the printer should be positioned at the line corresponding to channel one on the forms page before issuing this command. To establish and maintain proper forms alignment, the following sequence is suggested:

1. Make certain that the printer is in a “HOLD” state;
2. Position the paper so that the line

corresponding to channel one on the forms page is ready to be printed;

3. Issue this command.

**FUNCTION:** Reset A Report  
**COMMAND:** PROP/R/prtr/reportid

This command will reset report “reportid” on printer “prtr” to its first page. If the report is currently printing, it will restart immediately. Otherwise, it will begin printing at its first page when it is next selected for printing.

**FUNCTION:** Start A Printer  
**COMMAND:** PROP/S/prtr/cccccccc

This command is used to start printer “prtr” and to set the report class list to “cccccccc.” The printer will be removed from “hold” status and will begin printing the highest priority report available in the class specified. If no class list is specified, the printer will start selecting reports based on the last class list provided, either from a previous start command or from the cold class list used during ROPES start up. If more than one class is specified, the class list is processed from left to right.

This command, when entered without classes, is also used to restart printing in response to a forms change message or after an interrupt command is entered.

**NOTE:** The paper in the printer should be positioned at the line corresponding to channel one on the forms page before issuing this command. To establish and maintain proper forms alignment, the following sequence is suggested:

1. Make certain that the printer is in a “HOLD” state;
2. Position the paper so that the line corresponding to channel one on the forms page is ready to be printed;
3. Issue this command.

**FUNCTION:** Transfer Reports  
**COMMAND:** PROP/T/prt1/prt2/reportid

This command will transfer the specified report “reportid” from the printer specified by “prt1” to the printer specified “prt2.” If the value “ALL” is

specified for the report name, all reports defined for “prt1” will be transferred to printer “prt2.” If the value “\*RET” is specified for the report name, then all reports that had been transferred to printer “prt1” from “prt2” will be transferred back. Thus, if you have transferred one or more reports from printer P001 to printer NP01, the command SOOP/T/NP01/P001/\*RET will return (transfer back) all reports on printer NP01 which were transferred from printer P001. The \*RET value is used for the report name argument whenever you want to “undo” a transfer.

A message will be produced at the requesting terminal indicating the success or failure of the transfer(s) specified. A completion message will also be generated.

The report(s) to be transferred must not be defined in the receiving printer’s report assignment list.

The parameters “prt1” and “prt2” must not specify the same printer.

Unsuccessful transfers can occur if the Printer Control Record (PCR) has insufficient space available for the report entries to be assigned to the printer.

The transferred report(s) are not available for printing at the sending printer unless they are later reassigned to the printer using the Assign command (W), or returned using the \*RET option as described above.

**FUNCTION:** Add Report To A Printer

**COMMAND:** PROP/W/prtr/reportid

This command will add report “reportid” to the assigned reports of printer “prtr.”

The specified report must have been previously defined to ROPES.

There must be sufficient space for the new report entry in the Printer Control Record (PCR) associated with the receiving printer.

The specified report must not already be assigned to the specified printer.

**FUNCTION:** Change Report Copy Count

**COMMAND:** PROP/X/prtr/reportid/000

This command will change the number of copies of the specified report that are to be printed. This change applies only to the indicated printer. The copy count value must be an integer from 1 to 999.

**FUNCTION:** Clear A Report

**COMMAND:** SOOP/Z/reportid

This command will clear all information printed or awaiting print for report “reportid” anywhere in the ROPES system.

If the specified report is printing anywhere in the system, it will stop upon completion of the current buffer. The specified report may be recreated. There is no way to recover the deleted information. If the specified report was closed due to fatal errors this will make it available for use. Disk space occupied by the report is made available for reuse.

# Master Operator Commands

The ROPES master operator issues the commands which start the online printing operation and which stop printing when required. Automatic initiation and termination may be installed in the CICS system initialization and termination processes. If this is done, the master operator need not start ROPES unless he has manually stopped printing during the current CICS execution.

There are four functions available to the master operator.

- **RSTA** start all printers.
- **RSTP** stop all printers.
- **ASTA** start the Alternate Facility.
- **ASTP** stop the Alternate Facility.
- **RSET** reset a printer.
- **R#OR** reorganize a report.
- **RADQ** free Alternate Facility ENQ.
- **SSTA** start the Stand-By Facility
- **SSTP** stop the Stand-By Facility

The following information provides detailed descriptions of the format and function of each of these commands.

**FUNCTION:** Start All Printers  
**COMMAND:** RSTA{/QUICK}

The ROPES master operator uses this command to start ROPES printing. A number of errors which affect only a single printer may occur. These error conditions will be logged, and processing will continue. The optional parameter, /QUICK, may be entered to change the ROPES status from STOPPED to STARTED without performing any of the other Start Up functions.

During startup, all printers and reports are placed in the state that they were in at system termination. Any printing that was in process will resume at the beginning of the page which was being printed when the interruption occurred unless the "HOLD ON WARM START" parameter has been specified as "Y" for the printer on the printer control record maintenance menu. If you have specified a time and request identifier for the Queue Reorganization program on Maintenance Menu, the Queue Reorganization task will be scheduled for execution.

The System Status flag, contained in the System Control record, is set to "S", indicating that ROPES is started.

This function can be automated by placing an entry for program ROPESTAR into your CICS Startup PLT. See "Customizing ROPES For Your Installation" in the Administrator's Guide for more information.

**FUNCTION:** Stop All Printers  
**COMMAND:** RSTP{/QUICK}

This command is used to stop printing upon completion of all current functions.

Printing will terminate immediately. The shut-down process is logged on the system console.

The optional parameter, /QUICK, may be entered to change the ROPES status from STARTED to STOPPED without performing any of the other Shut Down functions.

The System Status flag, contained in the System Control record is set to the "T" value, indicating that ROPES is stopped.

This function can be automated by placing an entry for program ROPESTOP into your CICS Shutdown PLT. See "Customizing ROPES For Your Installation" in the Administrator's Guide for more information.

**FUNCTION:** Start Alternate Facility  
**COMMAND:** ASTA

The ROPES master operator uses this command to start the ROPES Alternate Facility. The command will be rejected if the system is already up or if any serious errors occur.

This function may be automated by placing an entry for program ROPEALTF into your CICS Startup PLT. See "Customizing ROPES For Your Installation" in the Administrator's Guide for more information.

**FUNCTION:** Stop Alternate Facility  
**COMMAND:** ASTP

This command is used to stop the ROPES Alternate Facility upon completion of all current functions. The command will be rejected if the system is not active.

This function may be automated by placing an entry for program ROPEALTL into your CICS Shutdown PLT. See “Customizing ROPES For Your Installation” in the Administrator’s Guide for more information.

**FUNCTION:** Reset A Printer  
**COMMAND:** RSET/printerid

This command causes the specified printer’s control record to be reset to the conditions that would apply when the printer was first added to the system. The last message field is set to the value “Printer Reset By Operator” to indicate that this command has been used.

This command is supplied to provide a means for resetting control information in the printer’s control record that are not normally under the operator’s control. This function is intended for use in extreme circumstances when no other commands are being honored and you suspect that the control information may be corrupted.

**FUNCTION:** Reorganize A Report  
**COMMAND:** R#OR/reportid

This command allows you to invoke the ROPES Queue Reorganization program to perform its functions on the single report specified in the command. The report’s discard option, current print status and expiration information are used to determine what parts of the report are to be purged. You may enter this command at any time.

**FUNCTION:** Free Alternate Facility ENQ  
**COMMAND:** RADQ

This command allows you to free the Alternate Facility ENQ in the unlikely event that the Alternate Facility transaction abnormally terminates without the opportunity to release the ENQ itself. This is possible if the task is terminated in such a way as to make execution of its abend exit impossible. Should

this happen, CICS will hold the ENQ until it is shut down, preventing batch jobs from storing data on the Alternate Facility queue. Do not use this transaction unless you are sure that the Alternate Facility is not running and that the ENQ is being held by CICS. Improper use of this transaction may result in the destruction of the Alternate Facility data sets.

**FUNCTION:** Start Stand-By Facility  
**COMMAND:** SSTA

The ROPES master operator uses this command to start the ROPES Stand-By Facility. The command will be rejected if the system is already up or if any serious errors occur.

This function may be automated by placing an entry for program ROPESSTA into your CICS Startup PLT. See “Customizing ROPES For Your Installation” in the Administrator’s Guide for more information.

**FUNCTION:** Stop Stand-By Facility  
**COMMAND:** SSTP

This command is used to stop the ROPES Stand-By Facility upon completion of all current functions. The command will be rejected if the system is not active.

This function may be automated by placing an entry for program ROPESSTP into your CICS Shutdown PLT. See “Customizing ROPES For Your Installation” in the Administrator’s Guide for more information.



# Displaying Status Information

The Operator Display Transactions provide you with information about your ROPES resources and printer network.

The command functions available to your are as follows:

- **RORS** - Display A Report's Attributes
- **RORL** - Display A List Of All Reports
- **ROPO** - Display The Status Of A Printer You Control

- **ROPS** - Display The Status Of Any Printer
- **ROPN** - Display The Status Of The Printer Network
- **ROSS** - Display The Overall Status Of ROPES
- **ROAL** - Display A List Of All Reports In The Alternate Facility

Note: The contents of these displays may be affected by the setting of the SHOW EMPTY REPORTS option in the ROMT Browse Options panel, and the sorting options specified for the reports assigned to the printer.

```

----- R O P E S -----
**      REPORT NAME    --- REPORT01
**      RETENTION     ---      0
**      CLASS         ---      1
**      LINES         ---     61
**      PAGES         ---      2
**      FORM          ---
**      DISCARD       ---      2
**      ASSIGNED TO--- AX01 AX02 AX05 BTCH JESP P001 P002
P003 P004 P005 TST2

** 2001.186/14:12                                RORS/REPORT02

```

**Figure 2** Display A Report's Attributes

## RORS Transaction

**FUNCTION:** Display Report Attributes

**COMMAND:** RORS/reportid

This transaction displays ROPES report information such as status, line counts, and class.

**RORS** is the four character transaction code.

**reportid** must be a report name.

### Definitions of fields in the RORS display:

#### **REPORT NAME**

the name of the report.

#### **RETENTION**

the report data retention time in hours. A zero value indicates that expiration processing is not to be performed on this report.

#### **CLASS**

the class of the report.

#### **LINES**

the number of lines stored in the report.

#### **PAGES**

the number of pages stored in the report.

#### **FORM**

special form to be used when printing the report.

#### **DISCARD**

current discard option of the report.

#### **ASSIGNED TO**

the printers to which the report is assigned.

#### **TIME STAMP**

date and time of day.

#### **COMMAND**

The command input field, pre-loaded to cause the display of the next report.

----- R O P E S -----							
REPORT ID	CLASS	PRIORITY	LINES QUEUED	PAGES QUEUED	FORM SUFFIX	DISCARD/RETENTION	
BADDATA	A	10	97	15		2	0
COPYAT04	A	20	0	0	LAZR	6	10
COPYAT08	A	127	0	0		2	0
COPYAT09	A	30	0	0		2	0
COPYAX05	A	127	0	0		2	0
FISHER	A	40	2624	41		2	0
IDMSJ406	A	127	917	21		2	0
IDMSJ411	A	127	962	23		2	0
IDMSJ427	A	127	1049	25		2	0
IDMSJ479	A	127	766	20		2	0
IDMSJ517	A	127	849	21		2	0
IDMSJ525	A	127	880	22		2	0
IDMSJ527	A	127	1783	36		2	0
IDMSJ534	A	127	771	19		2	0
IPDSTEST	A	127	0	0		2	0
LTPEMP00	A	127	0	0		2	0
LTQEMP00	A	127	0	0		2	0
PEREMP02	A	127	0	0		2	0
** 2001.186/14:12				RORL/PERHLD02			

**Figure 3** Display A List Of All Reports

## RORL Transaction

**FUNCTION:** Display List Of All Reports

**COMMAND:** RORL/reportid

This transaction displays ROPES report information such as status, line counts, and class.

**RORL** is the four character transaction code.

**reportid** is optional. If specified, the first report matching the characters entered will start the display.

### FORM SUFFIX

special form to be used when printing the report.

### DISCARD/RETENTION

the current discard option value for the report and the retention time.

### TIME STAMP

Date and time of day.

### COMMAND

The command input field, pre-loaded to cause the display of the next report.

### Definition of fields in the RORL display:

#### REPORT ID

the name of the report.

#### CLASS

the class of the report.

#### PRIORITY

the priority of the report.

#### LINES QUEUED

the number of lines stored in the report.

#### PAGES QUEUED

the number of pages stored in the report.

```

----- R O P E S -----
** PRINTER AX01 ** CONTROL TERM. * ** CLASSES 1 ** STATUS IDLE
LAST MESSAGE: PRINTER SET TO IDLE BY AUTOMATIC START-UP.
REPORT CLASS PRIORITY LINES PAGES LINES PAGES STATUS FORM
NAME QUEUED QUEUED PRINTED PRINTED
202R0022 A 80 0 0 0 0 0 EMPTY
TESTDIST A 70 8074 202 0 0 HELD
SCOTTST A 60 0 0 0 0 0 EMPTY
REPORT02 A 50 61 2 0 0 HELD
FISHER A 40 2624 41 2624 41 PRINTED
COPYAT09 A 30 0 0 0 0 0 EMPTY
COPYAT04 A 20 0 0 0 0 0 EMPTY LAZR
BADATA A 10 97 15 7 0 PRINT READY
REPORT01 1 127 61 2 61 2 PRINTED
REPORT03 3 170 0 0 0 0 EMPTY
REPORT04 4 180 61 2 61 2 PRINTED

** 2001.186/14:14 ROPO/AX02/ /

```

Figure 4 Display The Status Of A Printer You Control

## ROPO Transaction

**FUNCTION:** Display Printer Status

**COMMAND:** ROPO/prtr/c/reportid

This transaction displays information consisting of the status of a ROPES printer and its associated reports. This transaction may only be entered from the Control Terminal of the specified printer.

**ROPO** is the four character transaction code.

**prtr** is optional. If entered, it must be four characters long and must be entered from the printer's control terminal. If the value is omitted, the first printer controlled by the input terminal will be displayed, and all other terminals under the same control will be presented in sequence, if requested.

**c** is optional. If used, it must be one character long and specifies the class of the ROPES reports associated with the printer that the operator wishes to display.

**reportid** is optional. If used, it must be a valid report name and specifies the report from which the operator wishes to start the display of reports for this printer.

### CONTROL TERM

the control terminal for the printer.

### CLASSES

the classes for which the printer was last started.

### STATUS

the current status of the printer. The printer status values are:

#### STOPPED

the printer is in hold status, which is caused when:

1. An Interrupt is issued;
2. A Drain is completed;
3. A Test message is issued; or
4. An I/O error occurs.

**NOTE:** A Start must be issued to remove the printer from hold status.

#### STOPPING

the printer is entering hold status, which is caused when one of the conditions listed above for STOPPED has occurred, and the device is in the process of reaching the desired state, but might be waiting for a response from the printer, as is the case with LPR printers.

#### DRAINING

a Drain was issued and is pending. When the drain completes the printer will go to "STOPPED" status.

**INTERRUPTED**  
the report was printing but has been interrupted.

**ACTIVE**  
The printer is printing.

**INTERRUPTING**  
the report was printing but is in the process of being interrupted.

**IDLE**  
The printer is waiting for work.

**PRINT READY**  
the report is not printing but data is ready to be printed.

**LAST MESSAGE**  
the text of the last message issued for the printer.

**FORM**  
the Forms Control Block used when printing the report.

**REPORT NAME**  
list of reports associated with the printer.

**TIME STAMP**  
Date and time of day.

**CLASS**  
the class of each report.

**COMMAND**  
The command input field, pre-loaded to cause the display of the next page or printer.

**PRIORITY**  
the priority of each report.

**LINES QUEUED**  
the number of lines in each report.

**PAGES QUEUED**  
the number of pages in the report.

**LINES PRINTED**  
the number of lines printed or reprinted.

**PAGES PRINTED**  
the number of pages printed or reprinted.

**STATUS**  
the current status of each report. The report status values are:

**HELD**  
a Hold command was issued, and the report is being held. A Release command is required to make the report available for selection on the specified printer.

**CANCELED**  
a Cancel command was issued. The report is set to canceled status.

**PRINTING**  
the report is being printed.

**EMPTY**  
the report is empty.

```

----- R O P E S -----
** PRINTER AX01 ** CONTROL TERM. * ** CLASSES 1 ** STATUS IDLE
LAST MESSAGE: PRINTER SET TO IDLE BY AUTOMATIC START-UP.
REPORT CLASS PRIORITY LINES BY PAGES LINES PAGES STATUS FORM
NAME QUEUED QUEUED PRINTED PRINTED
202R0022 A 80 0 0 0 0 0 EMPTY
TESTDIST A 70 8074 202 0 0 HELD
SCOTTST A 60 0 0 0 0 0 EMPTY
REPORT02 A 50 61 2 0 0 HELD 8LPI
FISHER A 40 2624 41 2624 41 PRINTED
COPYAT09 A 30 0 0 0 0 0 EMPTY
COPYAT04 A 20 0 0 0 0 0 EMPTY LAZR
BADATA A 10 97 15 7 0 PRINT READY
REPORT01 1 127 61 2 61 2 PRINTED
REPORT03 3 170 0 0 0 0 EMPTY
REPORT04 4 180 61 2 61 2 PRINTED

** 2001.186/14:16 ROPS/AX02/ /

```

**Figure 5** Display The Status Of Any Printer

## ROPS Transaction

**FUNCTION:** Display Printer Status  
**COMMAND:** ROPS/prtr/c/reportid

This transaction displays information consisting of the status of a ROPES printer and associated reports.

**ROPS** is the four character transaction code.

**prtr** is optional and may specify any printer in the ROPES system. If omitted, the first printer will be displayed.

**c** is optional. If used, it must be one character long and specifies the class of the ROPES reports associated with the printer that the operator wishes to display.

**reportid** is optional. If used, it must be a ROPES report name and specifies the report form which the operator wishes to start the display of reports associated with the printer.

Definition of fields in the ROPS display:

### PRINTER

the printer id.

### CONTROL TERM

the control terminal for the printer.

### CLASSES

the classes for which the printer was last started.

### STATUS

the current status of the printer. The printer status values are:

#### STOPPED

the printer is in hold status, which is caused when:

1. An Interrupt is issued;
2. A Drain is completed;
3. A Test message is issued; or
4. An I/O error occurs.

**NOTE:** A Start must be issued to remove the printer from hold status.

#### STOPPING

the printer is entering hold status, which is caused when one of the conditions listed above for STOPPED has occurred, and the device is in the process of reaching the desired state, but might be waiting for a response from the printer, as is the case with LPR printers.

#### DRAINING

a Drain (PROP/P/prtr) was issued and is pending. When the drain completes the printer will go to "STOPPED" status.

**PRINTING**

the report is now being printed.

**ACTIVE**

The printer is printing.

**PRINT READY**

the report is not printing but data is ready to be printed.

**IDLE**

The printer is waiting for work.

**FORM**

the Forms Control Block used when printing the report.

**LAST MESSAGE**

the text of the last message issued for the printer.

**TIME STAMP**

date and time of day.

**REPORT NAME**

list of reports associated with the printer.

**COMMAND**

the command input field, pre-loaded to cause the display of the next page or printer.

**CLASS**

the class of each report.

**PRIORITY**

the priority of each report.

**LINES QUEUED**

the number of lines in the report.

**PAGES QUEUED**

the number of pages in the report.

**LINES PRINTED**

the number of lines printed or reprinted.

**PAGES PRINTED**

the number of data pages printed or reprinted.

**STATUS**

is the current status of each report. The report status values are:

**HELD**

Hold command was issued, and the report is being held. Use the Release command to make the report available for selection on the specified printer.

**CANCELED**

A cancel command was issued.

**INTERRUPTED**

the report was printing but has been interrupted.

**INTERRUPTING**

the report was printing but is in the process of being interrupted.

----- R O P E S -----							
PRINTER ID	ACTIVE CLASSES	STATUS	REPORT NAME	LINES QUEUED	PAGES QUEUED	LINES PRINTED	PAGES FORM PRINTED
AT02	A	STOPPED					
AT03	1	STOPPED					
AX01	1	IDLE					
AX02		STOPPED					
AX05	A	IDLE					
BTCH	1	STARTING					
JESP	1	IDLE					
PTST		STOPPED					
P001		STOPPED					
P002		STOPPED					
P003		STOPPED					
P004		STOPPED					
P005		STOPPED					
TST1		STOPPED					
TST2		STOPPED					
				** 94.144/11:22		ROPN/	

**Figure 6** Display The Status Of The Printer Network

## ROPN Transaction

**FUNCTION:** Display Printer Network

**COMMAND:** ROPN/prtr

This transaction displays ROPES printer network status such as the reports being printed, line counts, page counts and class.

**ROPN** is the four character transaction code.

**prtr** is optional. If entered, the first printer id that matches the characters entered will start the network status display.

### Definitions of fields in the ROPN display:

#### **PRINTER ID**

the id of each printer in the network.

#### **ACTIVE CLASSES**

the list of classes for which the printer was last started.

#### **STATUS**

the current status of the printer. The printer status values are:

##### **STOPPED**

the printer is held as a result of:

1. an interrupt command;

2. a drain command;
3. a test message; or
4. an I/O error.

**NOTE:** A Start command must be issued to remove the printer from hold status.

#### **STOPPING**

the printer is entering hold status, which is caused when one of the conditions listed above for STOPPED has occurred, and the device is in the process of reaching the desired state, but might be waiting for a response from the printer, as is the case with LPR printers.

#### **DRAINING**

a Drain command was issued and is pending. When the drain completes the printer will go to "STOPPED" status.

#### **ACTIVE**

The printer is printing.

#### **IDLE**

The printer is waiting for work.

#### **REPORT NAME**

the name of the report being printed if the printer is not idle.



**LINES QUEUED**

the number of lines in the report.

**PAGES QUEUED**

the number of data pages in the report.

**LINES PRINTED**

the total number of lines printed for the report.  
This is inclusive of the number of lines  
backspaced and reprinted.

**PAGES PRINTED**

the total number of pages printed for the report.  
This is inclusive of the number of pages  
backspaced and reprinted.

**FORM**

the Forms Control Block suffix now in use.

**TIME STAMP**

date and time of day.

**COMMAND**

the command input field, pre-loaded to cause  
the display of the next report.

```

Jun 24, 2008 12:10pm          ROPES System Status Display          OUTPUT  R51RS01
-----
                                Operations Information

ROPES is started. There are    118 reports and    38 printers defined.
There are    132,222 lines and    2,901 pages on the queue.
Queue Reorganization Request ID is GARY    . Scheduled Time is 11:45.
The Alternate Facility is started. There are    118 reports defined.
There are          0 lines and          0 pages on the alternate queue.
The Spool Transfer Facility is started. The Standby Facility is stopped.
Task Exit For Screen Capture is ROPEZC41

                                Product Information

ROPES 13.0 Modification Level is 01.   Expiration Date is set to NEVER.
Authorized CPU(s): x00179 x10304          (where x can be
                                          any hex digit)

This 2094 processor has CPU ID:  01AD0E

CICS TS Release  2.3.0  running in  z/OS    1.8.0

ROPES Version 14.0          (C) Copyright 1991-2008 Axios Products, Inc.
-----
03 EXIT 04 RETN 12 PRNT

```

**Figure 7** Display The Overall Status of ROPES

## ROSS Transaction

**FUNCTION:** Display Status Of ROPES  
**COMMAND:** ROSS

This transaction displays system-wide information such as the number of ROPES reports, number of ROPES printers and queue utilization statistics (lines and pages). Alternate Facility status, SPOOL transfer status and product licensing information is also displayed.

**ROSS** is the four character transaction code.

### Definitions of fields in the ROSS display:

#### **ROPES is ...**

the status of ROPES is displayed. The value will be either STARTED or STOPPED. This status is set by the Automatic Start Up and Shut Down programs, either through their execution from the CICS PLT or through the use of the RSTA and RSTP transactions.

#### **There are ... reports and ... printers defined.**

the number of reports and printers defined to your ROPES system.

#### **There are ... lines and ... pages on the queue.**

the total number of lines and pages on queue.

#### **Queue Reorganization Request ID is ...**

the request id used by the on line queue reorganization task.

#### **Scheduled Time is ...**

the scheduled time for the on line queue reorganization. If set to 00:00, no on line reorganization is scheduled.

#### **The Alternate Facility is ...**

the status of the Alternate Facility. The status values are STARTED or STOPPED. This status is set by the Alternate Facility Automatic Start Up and Shut Down programs, either through their execution from the CICS PLT or through the use of the ASTA and ASTP transactions.

#### **There are ... reports defined.**

the number of reports defined on the Alternate Facility.

#### **There are ... lines and ... pages on the alternate queue.**

the total number of lines and pages on the Alternate Facility queue.

#### **The ROPES Spool Transfer Utility is ...**

the status of the Spool Transfer Facility is displayed. The value will be either STARTED or STOPPED. This status is set by the Spool Transfer Automatic Start Up and Shut Down programs, either through their execution from

the CICS PLT or through the use of the R\$TU or R\$TC transactions.

**The Standby Facility is ...**

the status of the Stand-By Facility. The status values are STARTED or STOPPED. This status is set by the Stand-By Facility Automatic Start Up and Shut Down programs, either through their execution from the CICS PLT or through the use of the SSTA and SSTP transactions.

The function keys available are shown across the bottom of the screen. You may press enter to refresh the display, END, RETN or CLEAR to terminate the transaction, or PRNT to put a copy of this screen in the report named COPYxxxx where xxxx is your CICS terminal identifier.

**Task Exit For Screen Capture is ...**

the status of the XKCREQ exit is displayed. The value will be either STARTED or STOPPED. This status is set by the Automatic Start Up and Shut Down programs, either through their execution from the CICS PLT or through the use of the RSTA and RSTP transactions.

**ROPES vvvvv Modification Level is ...**

the ROPES Version (vvvvv) and modification (PTF) level of your system is displayed.

**Expiration Date is ...**

the ROPES trial expiration date is displayed. If you are licensed, the value displayed is “not set,” and ROPES does not “expire.”

**Authorized CPUs: ...**

the CPU Id's of your licensed processors are displayed. If you are a licensed, the low-order five digits of the processors are shown. All processors in a multi-processor system are authorized, and all LPARs in an PR/SM system are authorized. If you are a trial customer, your current processor is authorized until the trial expires.

**This ... processor**

the processor type of the current processor is displayed.

**has CPU ID: ...**

the CPU ID of the first processor in the current CEC is displayed.

**CICS Release ...**

the CICS release, according to the CICS Inquire System command, is displayed.

**running in ...**

the operating system and version, according to the CICS Inquire System command, are displayed.

----- R O P E S -----						
REPORT ID	CLASS	PRIORITY	LINES QUEUED	PAGES QUEUED	FORM SUFFIX	DISCARD/RETENTION
BADDATA	A	127	0	0		2 0
COPYAT04	A	127	0	0		6 10
COPYAT08	A	127	0	0		2 0
COPYAT09	A	127	0	0		2 0
COPYAX05	A	127	0	0		2 0
FISHER	A	127	0	0		2 0
IDMSJ406	A	127	0	0		2 0
IDMSJ411	A	127	0	0		2 0
IDMSJ427	A	127	0	0		2 0
IDMSJ479	A	127	0	0		2 0
IDMSJ517	A	127	0	0		2 0
IDMSJ525	A	127	0	0		2 0
IDMSJ527	A	127	0	0		2 0
IDMSJ534	A	127	0	0		2 0
IPDSTEST	A	127	0	0		2 0
LTPEMP00	A	127	0	0		2 0
LTQEMP00	A	127	0	0		2 0
PEREMP02	A	127	0	0		2 0
** 2001.186/14:18				ROAL/PERHLD02		

**Figure 8** Display A List Of All Reports In The Alternate Facility

## ROAL Transaction

**FUNCTION:** Display Reports In The Alternate Facility

**COMMAND:** ROAL/reportid

This transaction displays report information such as status, line counts and class for the ROPES Alternate Facility.

**ROAL** is the four character transaction code.

**reportid** is optional. If specified, the first report that matches the characters entered will start the display.

### Definition of fields in the ROAL display:

#### **REPORT ID**

the name of the report.

#### **CLASS**

the class of the report.

#### **PRIORITY**

the priority of the report.

#### **LINES QUEUED**

the number of lines in the report.

#### **PAGES QUEUED**

the number of pages in the report.

#### **FORM SUFFIX**

the special form to be used when printing the report.

#### **DISCARD/RETENTION**

the current discard option value for the report and the retention time.

#### **TIME STAMP**

date and time of day.

#### **COMMAND**

the command input field, pre-loaded to cause the display of the next report.

# JES Retrieval

## Structure Of This Section

This section is a description of, and operating manual for, the ROPES Spool Transfer Utility. RSTU is used to retrieve data from JES.

It describes the software components which comprise the environment in which RSTU operates: Spool subsystem, CICS, ROPES, and RSTU itself. Then it describes the operation of RSTU, explains the transactions used to communicate with RSTU, and describes methods of operation. Finally, the Job Control Language required to use RSTU is described.

## RSTU Environment

### SPOOL Subsystems

The tremendous speed difference between the CPU and certain types of input/output devices (e.g., printers) makes it extremely inefficient to allow application programs to directly control these devices. It was long-ago realized that a program which managed these peripheral devices as its primary function offered other advantages, such as operational flexibility and data integrity. This gave rise to the "SPOOL" (Simultaneous Peripheral Operations On-Line) program. Over the years the functions of the spool program have expanded greatly. Today very few data processing installations could get along without some sort of spool subsystem to manage input, output, and job execution.

### CICS

The Customer Information Control System (CICS) is a widely-used teleprocessing monitor. This system is designed to allow users to distribute printers and terminals over a wide area and use the power of a large computer at many locations. But it is left to the user to manage this network of remote printers. Or at least that was the case until Axios did something about it.

## ROPES

The need for a system which manages CICS printers in a manner analogous to the way a Spool subsystem manages batch printers was met by Axios with the Remote Online Print Executive System (ROPES). ROPES controls CICS printers to free the application programmer from this chore. ROPES allows output to be sent throughout the on-line network under the full control of CICS terminal operators. It increases flexibility by allowing output to be dynamically rerouted as users' needs change and enhances integrity by preserving data across system failures.

Best of all, ROPES allows application programmers to write application programs instead of worrying about controlling printers. It does this by providing an application-independent interface between application programs and on-line printers. Batch programmers have been free from the problems of controlling printers for years; now on-line programmers can enjoy the same benefits with ROPES.

## RSTU

Despite the advantages of ROPES there has been one problem: application programs have had to use a specific interface to the ROPES system. Even though this interface is extremely flexible and easy to use, it can be a major effort to convert the many programs which are in use at an installation. The ROPES Spool Transfer Utility (RSTU) provides the solution to that problem.

The ROPES Spool Transfer Utility operates under CICS to transfer print data from the operating system Spool queues to ROPES reports. The print data is generated by application programs which place their print-destined output onto Spool queues for printing by the Spool subsystem. The ROPES Spool transfer Utility is used to retrieve designated print data from the spool subsystem and transfer it to ROPES for printing on CICS printers, display at CICS terminals, or routing to remote network nodes (e.g., a personal computer).

The ROPES Spool Transfer Utility provides the ability to add text to ROPES reports without modification to CICS, the Spool subsystem, ROPES, or application programs. Some minor modification to application job control language (JCL) may be required.

Data is transferred by “transfer processors.” These can be pre-defined during system installation, or defined by a terminal operator as needed. Transfer processors may be started by the terminal operator, or may be automatically started. More than one transfer processor may be active concurrently.

A processor may be started before print data is available on the spool queue. In this situation the processor may be instructed to wait for data to become available, or to terminate if no data is immediately available. A transfer processor may also be instructed to terminate when it has transferred all available data, or to remain active and wait for more data to become available.

RSTU is controlled by CICS terminal operators using menus generated by RSTU. Authorized terminal operators use these displays to:

- Start RSTU processing;
- Define transfer processors;
- Start transfer processors;
- Monitor transfer processors;
- Stop transfer processors;
- Stop RSTU processing.

The user may select print data to be transferred according to one or more of the following criteria:

- job name;
- job number;
- output class;
- output forms number (with job name or number);
- output destination (with class).

## RSTU Operation

The authorized terminal operator communicates with RSTU by means of CICS transactions. These transactions are used to start and stop RSTU processing and to start, monitor and stop transfer processors.

As used below, “rstu” and “xfer” are any installation-selected transaction codes. The transaction codes must be exactly four characters long and conform to standard CICS transaction naming conventions. The distribution tape assumes “rstu” is installed as “R\$TU” and that “xfer” is installed as “R\$TC”.

### RSTU Start Transaction

This transaction is used to initiate RSTU processing. This transaction should be used if RSTU automatic startup is not installed or to restart RSTU if the RSTU stop transaction is used. When invoked, RSTU startup is performed as described below under Automatic Operation. The RSTU Start transaction is invoked as follows:

- rstu/S          Start RSTU processing.

The transaction will respond with the message “The RSTU Startup Has Been Initiated”.

### RSTU Stop Transaction

This transaction is used to terminate RSTU processing. This transaction should be used if RSTU automatic termination is not installed, if a new version of the control table ROPEXCTM is to be installed or to recover from a sub-task processing problem. When invoked, RSTU termination is performed as described below under Automatic Operation. The RSTU Stop transaction is invoked as follows:

- rstu/T          Terminate RSTU processing.

The transaction will respond with the message “RSTU Has Been Terminated”.

**Note:** If neither /S nor /T is entered, the diagnostic message “Invalid Function. Use /S OR /T” will be displayed.

### Transfer Start Transaction

This transaction is used to start predefined transfer processors and to define and start other transfer processors. The transaction is invoked as follows:

- xfer/S/qualifier    Start transfer processors.

The qualifier is an optional one- to eight-character string which may be used to limit the contents of the display menu. The string is compared with the corresponding characters of the ROPES report name in each default entry of the ROPEXCTM table. Only those entries which match the qualifier will be displayed. Once the transaction is started with a qualifier the qualifier can not be altered. To change the qualifier, the transaction must be ended and a new qualifier must be entered. The length of the qualifier determines the number of characters that must match the default entry field before it will be displayed.

### Display Menu Format

The Transfer Start display always consists of a title line naming the display and two heading lines which name the display fields. Below the heading lines the display will contain processor definition lines. Each of these processor definition lines is used to define a single transfer processor. When the display first appears some lines may contain values in various fields. These lines are the processors defined when RSTU was installed (“default processors”). Blank lines are used by the operator to define other processors for startup. Refer to [Figure 9](#) on page [32](#), [Figure 10](#) on page [32](#), [Figure 11](#) on page [33](#) and [Figure 12](#) on page [33](#) for examples of the “TRANSFER STARTUP” display menu.

### Notes for [Figure 9](#) on page [32](#).

1. The displayed transfer processors (default processors) are the result of pre-definition by the programmer in charge of RSTU.
2. The character “>” in the “OPT” field points out blank processor entries available to the operator for defining additional processors.
3. The character “A” in the “OPT” field indicates processors predefined by the programmer in charge of RSTU and started either automatically or by an operator, and currently active.
4. Predefined processors need not have all required fields predefined unless they are defined to start automatically. (See “Automatic Operation” on page [41](#).) No processor will start until all required fields are completed by the operator.
5. The ROPES report names “\$JOBNAME” and “\$DCFNAME” are symbolic names; RSTU will construct report names.

### Notes for [Figure 10](#) on page [32](#).

1. The “>” characters are ignored as input. They must be replaced by “S” characters to start processors.
2. The operator may key into any blank or non-blank field.
3. The character “A” in the “OPT” field may have an “S” keyed over it by the operator. At least one selection field must be altered before “ENTER” is pressed, or an error will result.
4. No predefined field is permanently changed by operator entries. The next time the “xfer/S” transaction is invoked, the predefined field values will reappear. Permanent changes may only be made by the programmer in charge of RSTU.

### Notes for [Figure 11](#) on page [33](#).

1. See “Transfer Start Display Messages” in the Programmer’s Guide for a complete list of transaction messages.
2. In processors with multiple errors or omissions, only one error will be detected at a time.
3. Any processor selected for startup which is incorrectly defined is re-displayed with “S” in the “OPT” field except that in the case of duplicate selection sets (message “\*ALREADY ACTIVE\*”) the “S” is be removed.

### Notes for [Figure 12](#) on page [33](#).

1. Only processors predefined by the programmer in charge of RSTU can appear with an “A” in the “OPT” field on the “xfer/S” display. If any field is changed the processor will only appear on the “xfer/C” display.

The “xfer/C” display shows all active processors, whether predefined or not.

2. Any predefined processor which has become inactive will appear on the display exactly as it appeared before it was started, and may be restarted without change or altered and started as a new processor.

```

R$TC|S          -- SPOOL TRANSFER STARTUP MENU --
O OUT      OUT OUT  ROPES   JOB      JOB      NEW      WAIT  QUIT
P DESTID   CL  FORM RPT  NAME  NAME      NUMBER  CLS  DISP  WORK  DONE  MESSAGES

A TESTDST1 Q  TSTF  GTEST1  RSTUTEST          Q  R  N  Y
R000      H  STD.  REPORT01 TSOUSER1          A  R  Y  Y
R001      X  STD.  REPORT02          D  Y  Y
TESTDST2 Q  TSTF  $JOBNAME RSTUTEST          Q  R  N  Y
R002      H  STD.  REPORT01 TSOUSER1          A  R  Y  Y
R003      X  STD.  REPORT02          D  Y  Y
TESTDST3 Q  TSTF  $DCFNAM RSTUTEST          Q  R  N  Y
A R004      H  STD.  REPORT01 TSOUSER1          A  R  Y  Y
R005      X  STD.  REPORT02          D  Y  Y
TESTDST4 Q  TSTF  $XWRITER RSTUTEST          Q  R  N  Y
R006      H  STD.  REPORT01 TSOUSER1          A  R  Y  Y
R007      X  STD.  REPORT02          D  Y  Y
TESTDST5 Q  TSTF  GTEST1  RSTUTEST          Q  R  N  Y
R008      H  STD.  REPORT01 TSOUSER1          A  R  Y  Y
>
>
>
>
>

```

Figure 9 Start Example 1

```

R$TC|S          -- SPOOL TRANSFER STARTUP MENU --
O OUT      OUT OUT  ROPES   JOB      JOB      NEW      WAIT  QUIT
P DESTID   CL  FORM RPT  NAME  NAME      NUMBER  CLS  DISP  WORK  DONE  MESSAGES

A TESTDST1 Q  TSTF  GTEST1  RSTUTEST          Q  R  N  Y
R000      H  STD.  REPORT01 TSOUSER1          A  R  Y  Y
R001      X  STD.  REPORT02          D  Y  Y
S TESTDST2 Q  TSTF  $JOBNAME RSTUTEST          Q  R  N  Y
S R002      H  STD.  REPORT01 TSOUSER1          A  R  Y  Y
R003      X  STD.  REPORT02          D  Y  Y
TESTDST3 Q  TSTF  $DCFNAM RSTUTEST          Q  R  N  Y
A R004      H  STD.  REPORT01 TSOUSER1          A  R  Y  Y
R005      X  STD.  REPORT02          D  Y  Y
TESTDST4 Q  TSTF  $XWRITER RSTUTEST          Q  R  N  Y
R006      H  STD.  REPORT01 TSOUSER1          A  R  Y  Y
S R007      X  STD.  REPORT02          D  Y  Y
TESTDST5 Q  TSTF  GTEST1  RSTUTEST          Q  R  N  Y
R008      H  STD.  REPORT01 TSOUSER1          A  R  Y  Y
>
>
>
>
>

```

Figure 10 Start Example 2



```

R$TC|S                -- SPOOL TRANSFER STARTUP MENU --
O OUT      OUT OUT  ROPES   JOB      JOB      NEW      WAIT  QUIT
P DESTID   CL  FORM RPT  NAME   NAME      NUMBER  CLS  DISP  WORK  DONE  MESSAGES

TESTDST1 Q  TSTF  GTEST1  RSTUTEST
R000      H  STD.  REPORT01 TSOUSER1
R001      X  STD.  REPORT02
TESTDST2 Q  TSTF  $JOBNAME RSTUTEST
R002      H  STD.  REPORT01 TSOUSER1
R003      X  STD.  REPORT02
TESTDST3 Q  TSTF  $DCFNAM RSTUTEST
R004      H  STD.  REPORT01 TSOUSER1
R005      X  STD.  REPORT02
TESTDST4 Q  TSTF  $XWRITER RSTUTEST
R006      H  STD.  REPORT01 TSOUSER1
R007      X  STD.  REPORT02
TESTDST5 Q  TSTF  GTEST1  RSTUTEST
R008      H  STD.  REPORT01 TSOUSER1

>
>
>
>
>

```

Figure 11 Start Example 3

```

R$TC|S                -- SPOOL TRANSFER STARTUP MENU --
O OUT      OUT OUT  ROPES   JOB      JOB      NEW      WAIT  QUIT
P DESTID   CL  FORM RPT  NAME   NAME      NUMBER  CLS  DISP  WORK  DONE  MESSAGES

A TESTDST1 Q  TSTF  GTEST1  RSTUTEST
R000      H  STD.  REPORT01 TSOUSER1
R001      X  STD.  REPORT02
A TESTDST2 Q  TSTF  $JOBNAME RSTUTEST
A R002      H  STD.  REPORT01 TSOUSER1
R003      X  STD.  REPORT02
TESTDST3 Q  TSTF  $DCFNAM RSTUTEST
A R004      H  STD.  REPORT01 TSOUSER1
R005      X  STD.  REPORT02
TESTDST4 Q  TSTF  $XWRITER RSTUTEST
R006      H  STD.  REPORT01 TSOUSER1
A R007      X  STD.  REPORT02
TESTDST5 Q  TSTF  GTEST1  RSTUTEST
R008      H  STD.  REPORT01 TSOUSER1

>
>
>
>
>

```

Figure 12 Start Example 4

		QUIT/DONE?	
		Y	N
W		If no data is ready when the processor starts, it will wait. After all available data is transferred, it will terminate	The processor will remain active from the time it starts until the operator terminates it or until ROPES shuts down.
A	Y		
I			
T			
/			
W			This combination is not supported by RSTU
O			
R	N	If no data is ready when the processor starts, it will terminate. If data is ready, it will transfer all available data and terminate.	
K			
?			

**Figure 13** Processor Termination Options

## Processor Definition

A transfer processor is defined by a line entry on the “TRANSFER STARTUP” display menu. The processor entry may be predefined by the programmer in charge of RSTU, may be keyed in by the operator, or may result from a combination of the two. Any parameter value, even those of predefined processors, may be changed by keying a new value over the displayed value. When the operator is satisfied with the display parameter values, the transfer processor can be selected for startup. This is done by keying “S” in the “OPT” field of the processor entry selected.

## Processor Control Fields

The fields can be divided into two types: those used to select output for transfer, and those used to control the processors. The processor control fields and their uses are:

### OPT (Option Code)

An “A” appearing in this field indicates that a processor is active which was predefined by the programmer in charge of RSTU. This processor may have been defined to start automatically, or it may have been started by an operator. Key an “S” to signal a transfer processor to start when the “ENTER” key is pressed.

### NEW CLS (New Class)

Key a single character to select the Spool output class to which the data should be re-queued after transfer. If “DISP” is “R” and this field is left

blank the transferred data will be left in its original class and released from “hold” status. If “DISP” is “D” this field is ignored. Transferred data will never be placed in “hold” status on a Spool queue after successful transfer; be careful not to specify re-queuing to a class that is normally “held” or confusion may result.

### DISP (Disposition)

Key an “R” to re-queue the data to another spool subsystem output queue (specified by “NEW CLS” field), or key a “D” to delete the data from the Spool subsystem, after transfer. This field must be “R” or “D” to start the processor.

### WAIT/WORK? (Wait for Work?)

Key a “Y” to cause the processor to wait after startup until data becomes available for transfer, or an “N” to cause the processor to terminate if no data is available when the processor starts. This field controls termination before any data is transferred and interacts with “QUIT/DONE?” (see [Figure 13](#) on page 34). This field must be “Y” or “N” to start the processor.

### QUIT/DONE? (Quit when Done?)

Key a “Y” to cause the processor to terminate after a successful transfer if no data remains to be transferred, or an “N” to cause it to wait for more data after a transfer. This field controls termination after data has been successfully transferred. This field interacts with “WAIT/WORK?” (see [Figure 13](#) on page 34).

This field must be “Y” or “N” to start the processor.

#### MESSAGES (Transaction Messages)

See “TRANSFER START Display Messages” in the Programmer’s Guide.

### Data Selection Fields

The remaining fields on the display menu are used to select output for transfer and assign transfer destinations. One field is explicitly required: a ROPES report name must be specified before a transfer processor may be started. There are two ways to specify the name of the ROPES report(s) to which a processor is to transfer output: the name of an existing report may be given, or a symbolic report name may be given. If a symbolic name is given, RSTU will construct report names for you. Whether the report name is explicitly given or constructed from a symbolic name, there must be a ROPES report that matches the name or the processor will terminate.

The other fields are referred to as selection fields. The values of these fields determine the “selection set” for the processor. At least one of the five selection fields must be specified prior to processor initiation. The terminal operator will be prompted for a value if none is specified. The selection set for a processor may be as narrow as one data set from a specific job, or as broad as all output sent to a particular destination or class (and placed on a Spool “hold” queue, of course).

**Note:** a selection set composed of a form number alone or a destination alone is not supported by RSTU. The validity of specific selection sets will depend, in part on the JES level you are using.

When a selection field value is specified, it helps identify the Spool data desired. If any field is left blank, it is not used to help determine what to transfer. For example, leaving “OUT CLS” blank when a processor is started will result in output being transferred from any class which meets the other specified selection criteria. This is why at least one selection field must be specified; otherwise a single processor would transfer all output placed onto any Spool queue anywhere in the system.

The selection fields and their meanings are:

#### ROPES RPT NAME (Report Name)

Key the one to eight character name of the ROPES report to which the data is to be transferred, or one of the RSTU symbolic report names: “\$JOBNAME” “\$DCFNAME” or “\$XWRITER”. If the report name is explicitly specified, the named report receives the data, and must be an appendable report. If a symbolic report name is specified, RSTU will construct one or more report names based on attributes of the data selected for transfer.

“\$JOBNAME” will instruct the processor to transfer data to reports whose names match exactly the names of the jobs which generated the data. “\$DCFNAME” will instruct the processor to transfer data to reports whose names are constructed from the actual output destinations, output classes, and form numbers of the data selected for transfer. “\$XWRITER” will instruct the processor to transfer data to reports whose names match exactly the name of the external writer associated with the transferred data set.

Regardless of how the report name is supplied, there must be a ROPES report with that name or the transfer processor will terminate with an error message to the Activity Log, if one exists. See “ROPES Reports” in the Programmer’s Guide for a discussion of ROPES reports, including RSTU symbolic names and ROPES report definitions, and see “Activity Log Messages” in the Programmer’s Guide for a description of Activity Log error messages. This parameter must be specified to start a processor.

#### OUT DEST (Output Destination)

Key a one to eight-character code specifying the output destination from which data should be selected. The output destination consists of the characters “R” or “U” followed by three digits 000-255. This identifies “Remote Line nnn” or “User Destination nnn” as a selection parameter. Note that “R000” (Remote Line 0) is the local printer pool. The full eight-character JES3 destination may also be entered. If this parameter is omitted, destination will not be significant in the selection set. If the parameter is specified, then an output class must also be specified.

#### OUT CLS (Output Class)

Key a single character specifying the output class from which data should be selected. If this

parameter is omitted, class will not be significant in the selection set.

#### OUT FORM (Output Form)

Key from one to four characters specifying the output form number from which data should be selected. This parameter alone does not constitute a valid selection set. Key a job name or a job number or both if this field is specified.

#### JOB NAME (Job Name)

Key the one to eight character job name of the job selected for transfer. If this field is the only one keyed for a processor definition, the processor will transfer all output from that job to ROPES. This field interacts with "JOB NO." See "Symbolic Report Names" in the Administrator's Guide for information about the relationship between this field and symbolic ROPES report names.

#### JOB NO. (Job Number)

Key the five character job identifier of the job selected for transfer. The job identifier consists of the character "J" (JOB), "T" (TSU Time-Sharing User), or "S" (STC Started Task) followed by exactly four digits. The job number is generated by the Spool subsystem and is used throughout the system to uniquely identify the job. The four-digit number may be keyed without a letter prefix. In this case the letter "J" is assumed. If both the "JOB NO." and the "JOB NAME" fields are non-blank, the job, TSU, or STC identified by number must have the specified name. A mismatch between the fields will cause the processor to terminate and the writing of a message to the Activity Log, if one exists (see "Activity Log Messages" in the Programmer's Guide).

## Processor Startup

The transfer processor is actually started by pressing "ENTER", which will start up processors selected for startup on that display. A message will be displayed for each processor selected. For a list of messages see "Transfer Start Display Messages" in the Programmer's Guide.

If more processors have been predefined than fit on one screen, pressing "ENTER" again will display the next group of defined processors. Parameter values can then be examined and altered, and additional processors selected for startup. Pressing "ENTER"

will again start selected processors and display messages, and another "ENTER" will display the next screen (if any). This process can be repeated until all required transfer processors have been started or until all defined processor entries have been used.

The last screen displayed will contain blank lines to fill the screen; these lines may be used to define and start additional processors. Any line, even those containing predefined processors, may be keyed into. Changing any value displayed for a predefined processor defines a different processor. Changes to these lines are not saved by RSTU; the Transfer Control Table must be redefined to permanently change transfer processor parameter values. There can be at most one transfer processor active at any time for each selection set.

## Transfer Control Transaction

This transaction is used to monitor and control active transfer processors. The transaction is invoked as follows:

- xfer/C/qualifier      Control transfer processors.

The qualifier is an optional one- to eight-character string which may be used to limit the contents of the display menu. The string is compared with the corresponding characters of the ROPES report name in each active transfer entry. Only those entries which match the qualifier will be displayed.

Once the transaction is started with a qualifier, the qualifier can not be altered. To change the qualifier, the transaction must be ended and a new qualifier must be entered. The length of the qualifier determines the number of characters that must match the default entry field before it will be displayed.

## Display Menu Format

The Transfer Control display always consists of a title line naming the display and two heading lines which name the display fields. Below the heading lines the display will show a line for each transfer processor which is active when the transaction is initiated. The line entries are also used by the terminal operator to terminate transfer processors. Refer to [Figure 14](#) on page [38](#), [Figure 15](#) on page [38](#) and [Figure 16](#) on page [39](#) for examples of the "TRANSFER CONTROL" display menu.

**Notes for [Figure 14](#) on page [38](#).**

1. One line entry will appear for each active transfer processor.
2. “OUT DEST”, “OUT CLS”, “OUT FORM”, “ROPES RPT NAME”, “JOB NAME”, and “JOB#” fields contain the values keyed into the corresponding xfer/S display menu fields when the processor was started.
3. “CURRENT RPT NAME” is the current or most recent report to which a transfer is being or has been made.

**Notes for [Figure 15](#) on page [38](#).**

1. A processor entry with no “CURRENT RPT NAME” value has not yet selected data for transfer.
2. See “Transfer Control Display Messages” in the Programmer’s Guide for a complete list of transaction messages.
3. For the first two processors in the display, “D” and “I” mode termination would have exactly the same result, since neither is actually transferring data.
4. Any processor whose “ROPES RPT NAME” field is a symbolic name will have in its “CURRENT RPT NAME” field the name of the current or most recent report selected for transfer (or blanks if no transfer has yet been started). For “\$JOBNAME” the name of the job whose output is selected becomes the current report name, and for “\$DCFNAME” the destination, class, and form is used to generate a current report name (see “Symbolic Report Names” in the Administrator’s Guide).

**Notes for [Figure 16](#) on page [39](#).**

1. The remaining processor is still active.

```

R$TC|C          -- SPOOL TRANSFER CONTROL MENU --
O OUT      OUT OUT  ROPES   JOB      JOB      CURRENT  LINES
P DESTID   CL FORM REPORT  NAME      NUMBER  RPT NAME XFERD  MESSAGES
TESTDST1  Q TSTF GTEST1  RSTUTEST                WAITING
TESTDST2  Q TSTF $JOBNAME RSTUTEST                WAITING
R002      H STD. REPORT01 TSouser1                WAITING
R007      X STD. REPORT02                REPORT02  ACTIVE

```

**Figure 14** Control Example 1

```

R$TC|C          -- SPOOL TRANSFER CONTROL MENU --
O OUT      OUT OUT  ROPES   JOB      JOB      CURRENT  LINES
P DESTID   CL FORM REPORT  NAME      NUMBER  RPT NAME XFERD  MESSAGES
D TESTDST1 Q TSTF GTEST1  RSTUTEST                WAITING
I TESTDST2 Q TSTF $JOBNAME RSTUTEST                WAITING
I R002     H STD. REPORT01 TSouser1  REPORT01 00155 ACTIVE
R007     X STD. REPORT02                REPORT02 01923 ACTIVE

```

**Figure 15** Control Example 2

```

R$TC|C          -- SPOOL TRANSFER CONTROL MENU --
O OUT      OUT OUT  ROPES   JOB      JOB      CURRENT  LINES
P DESTID   CL FORM REPORT  NAME     NUMBER  RPT NAME  XFERD  MESSAGES
  R007     X STD. REPORT02                REPORT02 01923 ACTIVE

```

**Figure 16** Control Example 3

## Processor Status

The status of a processor is determined by inspecting the display menu. Every transfer processor active at the time of the transaction will be displayed, whether or not data is actually being transferred. The display fields and their meanings are:

### OPT (Option Code)

Key an “I” to signal interrupt mode termination, or a “D” to signal drain mode termination (see “Processor Termination” on page [40](#)).

### OUT DEST (Output Destination)

This field is identical to the corresponding field on the xfer/S display. It cannot be altered.

### OUT CLS (Output Class)

This field is identical to the corresponding field on the xfer/S display. It cannot be altered.

### OUT FORM (Output Form)

This field is identical to the corresponding field on the xfer/S display. It cannot be altered.

### ROPES RPT NAME (ROPES Report Name)

This field is identical to the corresponding field on the xfer/S display. It cannot be altered.

### JOB NAME (Job Name)

This field is identical to the corresponding field on the xfer/S display. It cannot be altered.

### JOB# (Job Number)

This field is identical to the “JOB No.” field on the xfer/S display. It cannot be altered.

### TASK# (CICS Task Number)

This field contains the CICS assigned task identifier for the transfer processor. Use this value to relate log messages to processor definitions, and to obtain CICS information on the processor.

### CURRENT RPT NAME (Current ROPES Report Name)

This field contains the name of the ROPES report to which the current or most recent transfer is or was made. If no transfer has been made yet by this processor the field will be blank. If “ROPES RPT NAME” defines a ROPES report explicitly, the fields will match; if a symbolic report name is specified, this field will contain the generated report name.

### LINES XFERED (Number of Lines Transferred)

This field contains a count of the lines transferred from the spool. If no transfer has occurred, this field will contain zeroes.

### MESSAGES (Transaction Messages)

See “Transfer Control Display Messages” in the Programmer’s Guide.

## Processor Termination

An active transfer processor may be terminated in either of two modes: “drain” mode or “interrupt” mode. Termination in drain mode allows the current transfer operation, if any, to complete before processor termination. Termination in interrupt mode forces the transfer processor to terminate immediately.

A processor is terminated by locating its entry on a “TRANSFER CONTROL” display and keying a termination code in the “OPT” field of that entry. There are two allowable termination codes: “D” for “drain” and “I” for “interrupt”. The processor is actually signaled to terminate when the “ENTER” key is pressed. All processors selected for termination on the current display are signaled at that time. A message will be displayed for each signaled processor. If more processors are active than will fit on a single display, pressing “ENTER” again will cause the next display to appear. The operator may display subsequent pages and optionally select and signal processors until all active processors have been displayed. Blank lines have no significance on this display.

If the transfer processor is not transferring data, then drain and interrupt modes are equivalent. A processor which has been signaled to drain may later be signaled to interrupt if it has not yet terminated. This is equivalent to signaling interrupt only.

Both modes of termination preserve data integrity. In a case where data is undergoing transfer at interrupt time, the data remains in the original Spool queue in its original state.

### Drain Mode

When a processor is signaled to terminate in drain mode, any transfer that may be in progress is allowed to complete normally. After transfer completion (or immediately, if no transfer is in progress), the transfer processor will terminate itself. A message will be written to the Activity Log, if one exists. All data transferred to ROPES will be available for printing, and the original data in the Spool subsystem will have been disposed of (re-queued or deleted) as specified in the processor definition.

### Interrupt Mode

When a processor is not transferring data, signaling the processor for interrupt termination has exactly the same effect as signaling it for drain termination (see

“Drain Mode” on page [40](#)). When a transfer processor which is transferring data is signaled to terminate in interrupt mode, then the data undergoing transfer is deleted from the ROPES queue. Nothing will be printed by ROPES, not even banner pages for that data set. Banner pages for the selection group of data sets may be printed. If a banner page is printed, it will indicate that the data transfer was interrupted. The data selected for transfer will remain intact on its original Spool queue; “DISP” and “NEW CLS” defined for the processor will have no effect. (See “Banner Processing” in the Administrator’s Guide for a detailed explanation of banner processing).

If the RSTU automatic shutdown facility is in operation (see “Automatic Operation” on page [41](#)), all active processors will be terminated in interrupt mode when automatic shutdown is signaled.

## Transfer Monitor Transaction

This transaction display is used to monitor and control active transfer processors from a continuously updated display. The transaction is invoked as follows:

- xfer/M/qualifier      Monitor    transfer  
   processors.

The qualifier is an optional one- to eight-character string which may be used to limit the contents of the display menu. The string is compared with the corresponding characters of the ROPES report name in each active transfer entry. Only those entries which match the qualifier will be displayed.

Once the transaction is started with a qualifier, the qualifier can not be altered. To change the qualifier, the transaction must be ended and a new qualifier must be entered. The length of the qualifier determines the number of characters that must match the default entry field before it will be displayed.

## Display Menu Format

The display produced is identical to that generated by the “TRANSFER CONTROL” transaction. You may terminate processors from this display in the same manner as you do from the “TRANSFER CONTROL” display.

This transaction refreshes the screen periodically. You set the refresh interval in the Transfer Control



Table, using the REFRESH= parameter. The refresh screen always begins displaying active transfers from the start of the Transfer Control Table. In order to see transfers that are displayed on a subsequent page, press the “ENTER” key, just as you do to page forward on the “TRANSFER CONTROL” display. When you page forward the refresh interval is restarted, allowing the full interval for you to examine the display and take any required actions.

The Transfer Monitor Transaction continues to refresh the display and process your action requests until you stop the processor. The processor is stopped by clearing the display screen and entering the following command:

- xfer/T Stop continuous monitoring.

## Automatic Operation

RSTU is capable of operation without any operator intervention. Transfer processors may be defined to start automatically. At shutdown, all active transfer processors are automatically terminated in interrupt mode.

## Startup

The Transfer Control Table contains an entry for each transfer processor which the user wishes predefined. These entries are defined using the ROPEXCT macro instruction (see “Tailoring RSTU” in the Administrator’s Guide). Coding “AUTO=Y” in the ROPEXCT macro used to define a processor will cause RSTU to automatically start that processor at RSTU start-up time.

## Control and Shutdown

All transfer processors, whether started automatically or by the operator, may be controlled using the “TRANSFER CONTROL” menu. Any active processor may be terminated using this menu. In addition, all transfer processors are terminated when RSTU is shut down. When RSTU shutdown occurs, all active transfer processors are signaled that immediate (interrupt mode) termination is required. RSTU termination is suspended until all transfer processors have terminated, enabling each processor to issue its termination log message and trailing banners. RSTU termination is invoked by ROPES automatic termination.

# Application Programming

## Carriage Control In ROPES Reports

RSTU will process data containing invalid carriage control characters. When an invalid control character is detected, the invalid control character will be changed to a blank (single space) and the retrieved data will be sent to ROPES.

It is possible for user application programs to access ROPES reports for the purpose of retrieving lines from the reports. Treatment of carriage control characters embedded in data which was transferred by RSTU may be significant in this instance. Regardless of the type of carriage control characters (machine control characters, ANSI control characters, or no control characters) in the data before transfer, transferred data will always have ANSI carriage control characters. In designing application programs which use this type of access to reports which may be used as destinations for transfers, this possible conversion by RSTU must be considered.

## JES Considerations

Since print data may be selected for transfer according to its Output Class and/or Destination, an installation may choose to designate one or more output classes or destinations for this purpose. Within an output class, several forms numbers may be used to segregate the data sets into distinct ROPES reports and retrieved using the \$DCFNAME facility.

In order to preserve the integrity of the print data being transferred, RSTU will, by default, transfer only print data which is on a “hold” queue. You may change this option by coding HELDOUT=NO in the system portion of the ROPEXCT macro in member ROPEXCTM. Please refer to the Customization section of this manual for more information. Print data may be explicitly placed onto a hold queue by the application programmer, who can code appropriate parameters in the application program job control language (JCL). The system programmer may also specify that output sent to certain output classes automatically be placed on a hold queue.

RSTU can be instructed to release for printing and optionally re-queue or delete print data automatically after each successful transfer. This is done by specifying appropriate values for the “DISP” and

“NEW CLS” parameters when a transfer processor is started.

These changes to job control language (destination, class, forms number, and hold) are the only modifications to application job control statements which may affect the operation of RSTU.

# Browsing Reports

## Introduction

ROPES Report Browse allows you to display ROPES reports on CICS terminals. Any ROPES report may be displayed, and may be scrolled forward, backward, left or right.

In the case where security is essential, you may, with a user-provided exit, prevent certain reports from being viewed.

ROPES Report Browse allows you to display data in a full screen format. You change the display by scrolling in any direction (up, down, left or right) by a half or full page, or by any number of lines (or columns). Scrolling is performed by pressing a Program Function key.

You perform ROPES Report Browse operations by entering primary commands in the COMMAND INPUT field located on line 2 of the display. For example, the FIND command is a primary command that scans data looking for a specific character string.

## Browse Display Format

The eight important areas of the Browse Display Screen are shown below. They are: Title; Caps; Page/Lines/Cols/Messages; Command Input; Scroll Amount; Columns; Data Area and PF Keys.

The eight display screen areas shown in [Figure 17](#) on page [52](#) are:

TITLE	identifies ROPES Browse and shows the Report Name (SYSTEMSG) being browsed.
CAPS	shows if you are scanning report data as either all upper case letters or as a mix of both upper and lower case letters.
PAGE/LINE/COLS /MESSAGES	normally shows the page number and line number of the first line displayed and the columns being displayed.

Short error messages or information messages are also displayed in this area, replacing the LINE/COLS information.

COMMAND INPUT	where Browse Commands (such as FIND) are entered.
SCROLL AMOUNT	where the current scroll amount is displayed. You can change the amount by over-typing the amount field.
COLUMNS	the column line will remain at the top of the Data Display Area and is useful in identifying columns to be used with the FIND command. The format is ----+----1----+----2----+--- -3---- where 1 is for 10, 2 is for 20, and the + identifies 5, 15, 25, etc.
DATA AREA	is 79 or 131 columns wide. Browse fills up the rest of the display screen. This area is protected and over typing of report lines is not permitted.
PF KEYS	shows the scroll functions and the pair of PF keys assigned to them. The PF keys for termination and Repeat FIND are also on this line.

## Browse Functions

### Scrolling

ROPES Report Browse allows you to scroll up and down through your report. Where the report lines are wider than the screen, scrolling to the right and left can be done.

The standard scroll commands and their corresponding PF key assignments are:

UP (PF7/19)	scroll towards the first line of the report.
-------------	--

DOWN (PF8/20)	scroll towards the last line of the report.
LEFT (PF10/22)	scroll towards the first column of the report line.
RIGHT (PF11/23)	scroll towards the last column of the report line.

These PF keys were chosen because their location on the 3 x 4 PF key pad corresponds to the arrows on the cursor positioning keys.

You may select an alternate set of PF key assignments, called the Data Entry Keyboard arrangement. In this configuration, the PF key assignments are:

UP (PF2)	scroll towards the first line of the report.
DOWN (PF6)	scroll towards the last line of the report.
LEFT (PF7)	scroll towards the first column of the report line.
RIGHT (PF8)	scroll towards the last column of the report line.

Scrolling can be combined with other actions by entering a command and then pressing a scroll PF key instead of the ENTER key. This permits both the action and the scroll to be performed.

If the amount in the scroll field is invalid when a scroll command is entered, an error message will be displayed. Either correct the scroll amount, or take an action other than scrolling.

To change the number of lines or columns being scrolled, change the scroll amount field.

The scroll amount is displayed in the SCROLL AMOUNT field on line 2. You can change the scroll amount by over typing the field with a new amount. When a scroll amount is entered, it will remain until you change it or until you begin a new function. Valid scroll amounts are:

SCROLL ===> PAGE OR P  
To scroll by one page.

SCROLL ===> HALF OR H  
To scroll by half a page.

SCROLL ===> nnn  
To scroll by the specified number of lines or columns.

SCROLL ===> MAX OR M  
To scroll to the top, bottom, left margin or right margin.

## Data Display After Scrolling

The initial screen that is displayed after the transaction and report name have been entered consists of a full screen of data either seventy-nine columns wide (1-79) or one hundred and thirty two columns wide (1-131) and twenty, twenty-eight, thirty-nine or twenty-three lines deep, depending on the model of terminal in use.

The chart below explains how the report is positioned for display when different scroll directions and values are set:

### DOWN

PAGE The next 20, 28, 39 or 23 lines are displayed or remaining lines, with BOTTOM OF REPORT is displayed. The column positions remain the same.

HALF The next 10, 15, 19 or 11 lines are displayed or remaining lines, with BOTTOM OF REPORT is displayed. The column positions remain the same.

MAX The last page of the report is displayed with BOTTOM OF REPORT. Column positions remain the same.

nnn The next 20, 28, 39 or 23 lines or remaining lines with BOTTOM OF REPORT are displayed nnn lines from first line of previous screen. The column positions remain the same.

### UP

PAGE The previous 20, 28, 39 or 23 lines are displayed or remaining lines with TOP OF REPORT is displayed. The column positions remain the same.

**HALF** The previous 10, 14, 19 or 11 lines are displayed or remain lines with TOP OF REPORT is displayed. The column positions remain the same.

**MAX** The first full page of the report is displayed with TOP OF REPORT. Column positions remain the same.

**nnn** The previous 20, 28, 39 or 23 lines or remaining lines with TOP OF REPORT are displayed, nnn lines from first line of previous screen. The column positions remain the same.

### LEFT

**PAGE** The previous 79 or 131 columns are displayed. If the current column is less than 79 or 131, columns 1 - 79 or 1 - 131 are displayed. The report lines remain the same.

**HALF** The previous 39 or 65 columns are displayed. If the current column is less than 39 or 65, columns 1 - 79 or 1 - 131 are displayed. The report lines remain the same.

**MAX** Columns 1 - 79 or 1 - 131 are displayed. Report lines remain the same.

**nnn** The starting column position is decremented by nnn columns and report lines 79 or 131 columns wide, starting from the new starting column, are displayed. When the resulting starting column position is negative or less than 79 or 131, columns 1 - 79 or 1 - 131 are displayed. The report lines remain the same.

### RIGHT

**PAGE** The next 79 or 131 columns will be displayed. If the current column is greater than 176 or 123, columns 176 - 255 or 123 - 255 will be displayed. The report lines remain the same.

**HALF** The next 39 or 65 columns will be displayed. If the current column is greater than 176 or 123, columns 176 - 255 or 123 - 255 will be displayed. The report lines remain the same.

**MAX** Columns 176 - 255 or 123 - 255 are displayed. The report lines remain the same.

**nnn** The starting column position is incremented by nnn columns and report lines 79 or 131 columns wide, starting from the new starting column, are displayed. When the resulting starting column position is greater than 176 or 123, then columns 176 - 255 or 123 - 255 are displayed. The report lines remain the same.

## Browse Terminal Operation

### Browse Start Up

The ROPES Report Browse transaction gives access to the report data of ROPES Reports located on the ROPES queue.

**FUNCTION:** Start ROPES Report Browse

**COMMAND:** BRPW/reportid

**BRPW** is the four character transaction code that supports the Alternate Screen size parameter. This version supports screen sizes of 24 x 80, 32 x 80, 43 x 80 and 27 x 132 (rows x columns).

**reportid** is required and must be a valid ROPES report name. The report should not be empty. If it is, you will receive a message and browse will not start.

If BRPW is unacceptable, another four character transaction code can be selected by the user, with its corresponding entry made in the PCT.

### Primary Commands

There are five commands which you can enter in the COMMAND INPUT field on line 2 of the browse data display.

**CAPS** To specify that you wish to look for a character string that may contain lower case letters.

**LABEL** To assign labels to a specified line.

**LOCATE** To scroll directly to a specified line.

**FIND** To find and display a character string.

**PRINT** To copy a section of the displayed report to another report.

### CAPS

When scanning report data, keep in mind that there will be cases where certain words you are looking for could be in lower case letters as well as capitals.

The CAPS command will dictate how ROPES is to conduct a search.

The formats of the CAPS command are:

COMMAND INPUT ==> CAPS ON

COMMAND INPUT ==> CAPS OFF

On is the default. When you enter CAPS ON we assume the character string that you are looking for with the FIND command is to be treated as all capitals.

When CAPS OFF is entered we look for the character string exactly as it was typed.

The CAPS command only affects the FIND command and when not specified, the default of CAPS ON is taken.

Example:

```
COMMAND INPUT ==> CAPS ON
      followed by
COMMAND INPUT ==> FIND Letters
```

causes BROWSE to look for "LETTERS"

COMMAND INPUT ==> CAPS OFF

followed by

COMMAND INPUT ==> FIND Letters

causes BROWSE to look for "Letters"

### LABEL

The LABEL command permits you to assign a label to the first line of the page you are viewing. The label starts with a "." (a period) and is followed by 1 to 7 characters.

Up to 25 labels may be assigned and a label may be reassigned, with the last label assignment overriding any previous one.

For example: .TOTALS is assigned to line 100. Later, you reassign .TOTALS to line 1333. When you issue a locate for that label, line 1333 will be put onto the screen.

You can also locate a line number directly.

Here is an example of how to use the LABEL command. While browsing a report you come across a line that interests you. Position the line until it is the first line on the screen and then enter the following in the Command Input field:

COMMAND INPUT ==> .LINE1

From now on you can view this line by issuing the LOCATE command for .LINE1 and it will be displayed as the first line on the screen.

Labels may also be used with the PRINT command to identify the first and last lines to print.

### LOCATE

The LOCATE command is used to display a specific line of the report being browsed. LOCATE can also be abbreviated, with LOC or L used in its place.

COMMAND INPUT ==> LOCATE 450

displays line 450

COMMAND INPUT ==> LOC .ERR

displays the line labeled ".ERR"

COMMAND INPUT ==> L .TOTAL

displays the line labeled ".TOTAL"

When locating a line number that is greater than the last line of the report, the last line of the report is displayed.

Locate can also be used to scroll through a report. By specifying LOCATE 0 you scroll to the beginning of a report and by specifying LOCATE 999999 you scroll to the end of a report.

## FIND

The FIND command's purpose is to find and display an occurrence of a character string in the report that is being browsed. FIND can be abbreviated by using the letter "F".

COMMAND INPUT ==> FIND XXX

finds the next "XXX"

The FIND command is part of a string that also includes the character string, boundaries (columns that the search is conducted between) and parameters. These components are discussed in depth in the following pages.

When only the character string is entered with FIND (F) the report is searched for the next occurrence of that string. If found, the cursor will be placed at the beginning of the string and a message will be displayed in the upper right corner of the screen. In the case when the character string is found to be on a line or part of a line that is not in view, BROWSE will automatically scroll, thereby bringing the string into view.

We recommend that you use the blinking alternate cursor to help you locate the found character string in the report text.

### **FIND Strings**

When a FIND command is issued, the string of characters that is to be located must be specified. All that is usually needed in this case is to enter FIND (or F) followed by the character string.

COMMAND INPUT ==> FIND STRING

In the case where you want to search for the same character string used in the previous FIND, an asterisk (\*) is used.

COMMAND INPUT ==> FIND \*

There are cases where the character string being sought does not lend itself to the examples given above.

Examples of this are:

- if blanks, commas or apostrophes are in the string.

- if looking for a word that is the same as a FIND parameter.
- if looking for a number.
- if looking for an asterisk (\*).

In such cases the character string should be entered within quotes. When in doubt, it is always valid to use quotes.

### **FIND Boundaries**

The columns that are searched by the FIND command can be limited by entering a pair of column numbers. These numbers indicate the columns to be searched and if the character string desired is completely contained within the columns, it will be found.

COMMAND INPUT ==> FIND  
"ABCDE" 1 50

In this example, the character string "ABCDE" will be searched for within columns 1-50 inclusive.

The rules for column specification are:

If no columns are specified, the next line is searched for the string between columns 1 and 255.

Column 2 must be greater than column 1; if not, an error message will be displayed.

When only one column is specified the second column defaults to 255.

### **FIND Parameters**

When using the FIND command to search for a character string, the next data line is examined. If the cursor is placed somewhere in the text, the search will start from that point.

The FIND command has 4 optional parameters that can be specified if you wish to control both the direction and scope of the search. These parameters are NEXT, PREV, FIRST, and LAST.

#### **NEXT**

NEXT is optional since it is the default of the FIND command.

COMMAND INPUT ==> FIND  
STRING NEXT

COMMAND INPUT ==> FIND  
STRING

Both scan for the next occurrence of STRING starting with the first line being displayed if the cursor is in line 2 of the display. If the cursor is within the text, the scan starts from the cursor position.

The cursor will be placed at the start of the character string if it is found. If you wish to continue the search, all that is required is to press the RFINd PF key. This will continue the search and can be repeated until the bottom of report has been reached.

#### PREV

Previous (PREV) is one of the optional FIND command parameters.

COMMAND INPUT ==> FIND  
STRING PREV

This command will scan for the previous occurrence of STRING.

The search for the character string "STRING" is carried out in one of two ways, depending on cursor positioning. If the cursor is still in line 2 then the search for "STRING" will begin at the end of the line before the first line that is displayed on the screen (from right to left). Otherwise, if the cursor is within the text, the search starts from that position, from right to left.

If the string is found, the cursor will be positioned at the start of the character string being sought and the message "STRING FOUND" is displayed in the upper right corner of screen.

If you wish to continue the search, press the RFINd PF key and the search will continue from right to left. This can be done until the top of report is displayed and the first line is scanned.

#### FIRST

First (FIRST) is another of the optional FIND command parameters and it will cause Browse to scan for the first occurrence of the character string.

COMMAND INPUT ==> FIND  
STRING FIRST

The search for the character string ("STRING" in the above example), is conducted by positioning to the first line of the report and searching that line from left to right within the columns specified.

If the string is found the cursor will be positioned at the start of the character string being sought and the message "STRING FOUND" is displayed in the upper right corner of the screen. (If the character string does not exist the message "STRING NOT FOUND" will be displayed).

Should you wish to continue the search, press the RFINd key. This will find the next occurrences of the string as they exist in the text (second, third and so on).

#### LAST

Last (LAST) is another of the optional FIND command parameters. It will cause Browse to scan for the last occurrence of the string.

COMMAND INPUT ==> FIND  
STRING LAST

The search for the character string, ("STRING" in the above example), is conducted by positioning to the last line of the report and searching that line from right to left within the columns specified.

If the string is found, the cursor will be positioned at the start of the character string being sought and the message "STRING FOUND" is displayed in the upper right corner of the screen.

If the first line of the report has been reached and searched without finding the string, the message "STRING NOT FOUND" will be displayed.

If you wish to continue the search, press the RFINd PF key and the search will continue



from right to left. This can be done until the top of report is displayed and the first line is scanned.

### Repeat FIND Keys

The repeat find (RFIND) command is used to repeat the FIND command last entered. This is accomplished by using the RFIND key (PF5/17 in the standard configuration, or PF2 in the Data Entry keyboard configuration).

The FIND command that is repeated searches from the cursor position whether it is in the header or in the report data.

Combining the repeat find key with certain FIND parameters has beneficial results. For example, issuing successive RFIND of the FIND FIRST command will locate all the instances of the character string specified.

### FIND Syntax Rules

The order in which these keyword parameters are specified is not critical. The same is true with the search boundaries (COLUMNS). They are to be separated by blanks. Quotes or apostrophes are not usually necessary but are always useful in avoiding any confusion between the character string being sought and the key words and/or boundaries.

It is important to check the spelling of the character string that you are looking for, especially in the case of lengthy ROPES reports, since time will be wasted in looking for an invalid character string.

The following examples illustrate the various ways that a FIND command string can be entered to look for the first occurrence of the word STRING between the columns 10 and 60.

```
COMMAND INPUT ==> FIND STRING
FIRST 10 60
```

```
COMMAND INPUT ==> FIND FIRST
STRING 10 60
```

```
COMMAND INPUT ==> F "STRING"
10 60 FIRST
```

```
COMMAND INPUT ==> F FIRST 10
"STRING" 60
```

```
COMMAND INPUT ==> F 10 60 FIRST
STRING
```

A practical use of this facility might be to “page” through the ROPES report, stopping at each top-of-form line. The top-of-form line is unique in that the first position of the line contains the carriage control character “1”. A FIND command that will allow you to skip to each page of your report would be specified as follows:

```
COMMAND INPUT ==> FIND "1" 1 1
NEXT
```

### PRINT

The PRINT command allows you to copy one or more lines from the report you are browsing into another ROPES report (or onto the end of the current report).

```
COMMAND INPUT ==> PRINT FIRST
LAST REPT
```

The PRINT command is part of a string that also includes the first and last line to be printed and the name of the report to receive the data. These parameters are discussed in detail below.

### PRINT Boundaries

You must specify the first and last lines to be printed. You may do so in three ways.

You may label the first and last lines using the LABEL command.

You may specify the first and last line numbers.

You may specify the keywords FIRST and LAST to indicate the first and last lines of the report, respectively.

Any combination of these three methods is valid, for example:

```

COMMAND INPUT ==> PRINT 1 100
REPT
COMMAND INPUT ==> PRINT .LINE1
LAST REPT
COMMAND INPUT ==> PRINT FIRST
1000 REPT
COMMAND INPUT ==> PRINT 200
LAST REPT

```

### ROPES Report Specification

Any empty or appendable report may be specified to receive the copied data.

### Cursor Positioning

It is important to understand the rules that govern the cursor's positioning while you are browsing a ROPES report.

When the cursor is placed in the COMMAND INPUT field and scrolling is carried out, the cursor remains there no matter what the direction or magnitude of the scroll.

When a FIND command is issued and the character string is found, the cursor will be placed at the first character of that string.

When the cursor is within the data area of the display (from either the issuance of a FIND command or user's own placement) and a scroll is then issued, the cursor will maintain its original placement taking into account the movement. In case the scroll has brought up a screen that does not have the cursor's last position (e.g., MAX scroll to left, right, top, bottom) the cursor is placed back in the COMMAND INPUT field.

### Browse Termination

ROPES Report Browse termination is handled by pressing one of the following keys: PF3, PF15, or CLEAR.

### Program Invocation of Browse

The Browse program may be invoked from your application programs or menus.

There are two methods for invoking Browse programmatically, depending on how you want to manage the video display mode.

To invoke Browse in the same video mode as the invoking program, use the **XCTL** method. If you want Browse to automatically switch to the alternate screen size value defined for your terminal, and then return to the screen size of the invoking task, use the **START** method. Both methods are described below.

### XCTL Method

To insure proper return to your application or menu after processing (browse is a pseudo-conversational transaction), you must pass a COMMAREA to browse indicating the name of the program to receive control at the end of the transaction. The COMMAREA format is as follows:

- Length - a two byte binary field (S9(4) COMP in COBOL) containing the exact length of the command field;
- Command - the browse command string, in the format tran/reportid. The report name must be padded with blanks to a length of 8 characters, but the length field does not include the padding characters;
- Program - the name of the program to receive control when the browse ends. The name must be padded with blanks to eight characters.

To invoke browse with this COMMAREA, your application must execute the following command:

```

EXEC CICS XCTL
      PROGRAM(ROPEBRPW)
      COMMAREA(caname)
      LENGTH(nnnn)

```

where:

**caname**

is the name of the COMMAREA that contains the transaction code, report name and return to program name;

**nnnn**

is the total length of the COMMAREA, including all padding characters.

Control will be returned to the program you indicate through the following command:

**EXEC CICS XCTL(programname)**

where:

**programname**

is the name of the program you specified in the COMMAREA. Your program must be designed to received control in this manner.

## START Method

To insure proper return to your application or menu after processing (browse is a pseudo-conversational transaction), you must pass a COMMAREA to browse indicating the transaction to receive control at the end of the transaction. The COMMAREA format is as follows:

- Length - a two byte binary field (S9(4) COMP in COBOL) containing the exact length of the command field;
- Command - the browse command string, in the format tran/reportid. The report name must be padded with blanks to a length of 8 characters, but the length field does not include the padding characters;
- Transaction - the literal #TRN, followed by the transaction code that browse is to invoke when the browse ends. The string must be padded with blanks to eight characters.

To invoke browse with this COMMAREA, your application must execute the following command:

**EXEC CICS START  
 TERMID(EIBTRMID)  
 TRANSID(BRPW)  
 FROM(caname)  
 LENGTH(nnnn)**

where:

**caname**

is the name of the COMMAREA that contains the transaction code, report name and return to program name;

**nnnn**

is the total length of the COMMAREA, including all padding characters.

Control will be returned to the program you indicate through the following command:

**EXEC CICS START(TRANSID)**

where:

**TRANSID**

is the transaction code you specified in the COMMAREA. Your transaction must be designed to received control in this manner.

```
ROPE$ REPORT BROW$E COPYAX03  CAP$ ON      PAGE      1 LINE      1 COL      2 80
COMMAND INPUT ==>                                SCROLL==>  PAGE
-----1-----2-----3-----4-----5-----6-----7-----+
      ROPE$ V11.0 SCREEN PRINT PROGRAM

ROPE$ SYSTEM MAINTENANCE

FUNCTION$ ARE:

SYSTEM:
      1 - UPDATE SYSTEM CONTROL INFORMATION
      2 - REORGANIZE ROPE$ QUEUE

REPORT$ :
      3 - ADD REPORT$
      4 - CHANGE REPORT DEFINITION (ENTER NAME BELOW)
      5 - DELETE REPORT (ENTER NAME BELOW)

PRINTERS:
      6 - ADD PRINTERS
      7 - CHANGE PRINTER DEFINITION (ENTER ID BELOW)
UP=PF7/19 DOWN=PF8/20 LEFT=PF10/22 RIGHT=PF11/23 END=PF3/15 RFIND=PF5/17
```

**Figure 17** Browse Screen

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