

CICS VSAM Recovery



User's Guide and Reference

Version 3 Release 1

CICS VSAM Recovery



User's Guide and Reference

Version 3 Release 1

Note

Before using this information and the product it supports, be sure to read the general information under "Notices" on page 123.

First edition (December 2001)

This edition applies to Version 3 Release 1 of CICS VSAM Recovery, Program Number 5655-H91, and to all subsequent releases and modifications until otherwise indicated in new editions. The changes for this edition are summarized under "Summary of Changes" on page xvii.

This edition replaces SH19-6970-01.

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Contents

Figures	vii
Tables	xi
About This Book	xiii
How You Use This Book	xiii
Operating Environment	xiii
Notes on Terminology	xiv
The CICSVR library	xiv
Accessing Messages Using LookAt	xv
How to Send Your Comments	xv
Summary of Changes	xvii
Summary of Changes for SH26-4127-00 CICSVR Version 3 Release 1 User's Guide and Reference	xvii
New Information	xvii
Moved Information	xvii
Summary of Changes for SH19-6970-01 CICSVR Version 2 Release 3 User's Guide and Reference	xviii
New Information	xviii
Chapter 1. Introducing CICSVR	1
Panel components	1
Pull-downs	2
Secondary windows	3
Function keys and shortcuts	3
Online help	5
Deciding when to run CICSVR	6
Chapter 2. Running CICSVR complete recovery	9
Tasks summary	9
Using the main menu	10
Specifying criteria to include for the VSAM sphere list	11
Selecting from the VSAM sphere list	12
Using the VSAM sphere list utilities pull-down for complete recovery	13
Providing VSAM sphere complete recovery parameters	15
Specifying the log stream type	17
Listing recovery job errors	18
Entering complete recovery parameters	19
Sequence checking	19
Defining the VSAM buffer pools	20
Defining exits	21
Updating the CICSVR default values	23
Submitting the job	23
Saving the generated JCL	24
Chapter 3. Running CICSVR forward recovery	25
Tasks summary	25
Using the main menu	26
Specifying criteria to include for the VSAM sphere list	27
Selecting from the VSAM sphere list	28
Using the VSAM sphere list utilities pull-down for forward recovery	29
Providing VSAM sphere forward recovery parameters	31

Specifying the log stream type	33
Listing recovery job errors	34
Entering forward recovery parameters for CICS V4	35
Sequence checking	35
Defining the VSAM buffer pools	36
Defining exits	37
Updating the CICSVR default values	39
Submitting the job	39
Saving the generated JCL	40

Chapter 4. Running CICSVR backout (CICS V4 Only).	41
Tasks summary	41
Using the main menu	42
Specifying criteria to include for the VSAM sphere list	43
Selecting from the VSAM sphere list	44
Using the VSAM sphere list utilities pull-down for backout	45
Providing VSAM sphere backout parameters	45
Listing backout job errors	46
Entering parameters for backout	47
Sequence checking	48
Defining the VSAM buffer pools	49
Defining exits	49
Updating the CICSVR default values	50
Submitting the job	50
Saving the generated JCL	51

Chapter 5. Working with the other VSAM sphere list pull-downs	53
Using the VSAM sphere list administrate pull-down	53
Deregistering a VSAM sphere from the RCDS	54
Using the VSAM sphere list tools pull-down	55
Using the VSAM sphere list list pull-down	56
Listing DFSMSHsm backups	56
Listing RLS details	57
Using the VSAM sphere list view pull-down	58
Specifying criteria to include for the VSAM sphere list	58
Sorting the VSAM sphere list	59
Using the VSAM sphere list help pull-down	60

Chapter 6. Selecting from the logs list	61
Using the logs list administrate pull-down	61
Deregistering a log from the RCDS	62
Providing information for the CICSVR archive utility	63
Using the logs list list pull-down	65
Listing log details	65
Using the logs list view pull-down	67
Specifying criteria to include for the log list	67
Sorting the log list	68
Using the logs list help pull-down	69

Chapter 7. Selecting from the log stream list	71
Using the log stream list panel Administrate pull-down	72
Deregistering a log stream entry from the RCDS	72
Providing information for the CICSVR automatic log stream deregister function	73
Using the log stream list panel List pull-down	75
List details	75

Listing SAM Copies	77
Listing SAM copy details	78
Using the log stream list view pull-down.	80
Specifying search criteria for the log stream list	80
Sorting the log stream list	81
Using the log stream list help pull-down.	82
Chapter 8. Selecting from the log of logs list.	83
Using the log of logs list administrate pull-down	84
Registering a log of logs in the RCDS	84
Deregistering a log of logs from the RCDS.	85
Using the log of logs list utilities pull-down	86
Using the log of logs list list pull-down	87
Listing log of logs details	87
Using the log of logs list view pull-down.	89
Specifying search criteria for the log of logs list	89
Sorting the log of logs list	90
Using the log of logs list help pull-down	91
Chapter 9. Getting the JCL skeleton	93
Chapter 10. Running CICSVR manually	95
Keeping manual records	95
What information is required?	95
Gathering the required information.	97
Producing a CICSVR work sheet	97
Data set naming conventions.	97
Starting CICSVR forward recovery and backout	98
Specifying logs in CICSVR	99
Allocating logs for forward recovery using JCL	99
Dynamically allocating logs for forward recovery	100
Allocating logs for backout using JCL (CICS V4 only)	101
Dynamically allocating logs for backout	102
Deciding which function to run.	102
Running a forward recovery job	104
Step 1. Closing the necessary CICS files.	104
Step 2. Restoring the backup	104
Step 3. Deciding which logs to use	105
Step 4. Preparing the CICSVR forward recovery job.	106
Step 5. Running the job and checking the results.	107
Step 6. Making the recovered data sets available.	108
Running a backout job	109
Step 1. Copying the data sets	109
Step 2. Getting the logs	109
Step 3. Preparing the CICSVR backout job	110
Step 4. Running the job and checking the results	111
Step 5. Making the backed-out data sets available	112
Chapter 11. Understanding CICSVR reports	113
RECOVER—DWWPRINT output	113
Report of log data set statistics	113
Report of recovered data sets statistics	114
Report of exit action statistics	115
Report of recovery progress.	116
BACKOUT—DWWPRINT output	117
Report of log statistics	117

Report of backed-out data set statistics	118
Report of exit action statistics	119
Report descriptions	119
MVS log stream statistics, log statistics, and journal data set statistics	119
Statistics of recovered or backed-out data sets.	120
Exit action statistics.	122
Recovery progress report	122
Notices	123
Programming Interface Information	124
Trademarks.	124
Glossary	125
Index	133

Figures

1. Components of a CICSVR Panel	1
2. An Example of a Pull-Down	2
3. An Example of a Secondary Window	3
4. CICS V4 CEMT INQUIRE DSNNAME Screen	6
5. Main Menu Panel	10
6. VSAM sphere list include secondary window.	11
7. VSAM Sphere List Panel	12
8. VSAM Sphere List—Utilities Pull-Down.	13
9. Log of Logs Scan Utility—DWWPRINT.	14
10. VSAM sphere parameters for complete recovery secondary window	15
11. Backup prompt list secondary window	16
12. Wait Secondary Window	17
13. Log stream type secondary window	18
14. Recovery Job Error List Secondary Window	18
15. Complete Recovery Parameters Secondary Window.	19
16. Sequence Checking Secondary Window	20
17. VSAM Buffer Pools Secondary Window	21
18. Exits Secondary Window (with MVS log streams)	22
19. Exits Secondary Window (without MVS log streams).	23
20. Default Update Verification Secondary Window.	23
21. Job Submission Secondary Window.	24
22. Save JCL secondary window	24
23. Main menu panel.	26
24. VSAM sphere list include window.	27
25. VSAM sphere list panel	28
26. VSAM sphere list—utilities pull-down	29
27. Log of logs scan utility—DWWPRINT	30
28. VSAM sphere parameters for forward recovery secondary window	31
29. Backup prompt list secondary window	32
30. Wait Secondary Window	33
31. Log stream type secondary window	34
32. Recovery job error list secondary window.	34
33. Forward recovery only parameters secondary window	35
34. Sequence checking secondary window.	36
35. VSAM buffer pools secondary window	37
36. Exits secondary window (with MVS log streams)	38
37. Exits secondary window (without MVS log streams)	39
38. Default update verification secondary window	39
39. Job submission secondary window	40
40. Save JCL secondary window	40
41. Main Menu Panel	42
42. VSAM Sphere List Include Window	43
43. VSAM Sphere List Panel	44
44. VSAM Sphere List—Utilities Pull-Down.	45
45. VSAM Sphere Parameters for Backout Secondary Window	46
46. Wait Secondary Window	46
47. Recovery Job Error List Secondary Window	47
48. Backout Parameters Secondary Window	47
49. Sequence Checking Secondary Window	48
50. VSAM Buffer Pools Secondary Window	49
51. Exits Secondary Window	50
52. Default Update Verification Secondary Window.	50
53. Job Submission Secondary Window.	51

54. Save JCL	51
55. VSAM sphere list—Administrate pull-down	53
56. VSAM sphere deregister verification secondary window	54
57. VSAM sphere. List—Tools pull-down	55
58. VSAM sphere list—List pull-down	56
59. Backup prompt list secondary window	57
60. VSAM sphere RLS details list	57
61. VSAM sphere list—View pull-down	58
62. VSAM sphere list include secondary window	59
63. VSAM sphere list sort secondary window	59
64. VSAM Sphere List—Help Pull-Down.	60
65. Log list panel	61
66. Log list—Administrate pull-down	62
67. Log deregister verification secondary window	63
68. Automatic log deregister secondary window	63
69. Log list—List pull-down	65
70. Log details list secondary window.	66
71. Log list—View pull-down	67
72. Log list include secondary window	68
73. Log list sort secondary window.	68
74. Logs list-Help pull-down	69
75. Log stream list panel	71
76. Log stream list Administrate pull-down	72
77. Log stream deregister secondary window	73
78. SAM copy deregister verification secondary window	73
79. Automatic log stream deregister secondary window	74
80. Log stream list—List pull-down.	75
81. Log stream details list secondary window	76
82. SAM copy details list secondary window	77
83. CICSVR SAM copy list secondary window	78
84. SAM copy details list secondary window	79
85. Log stream List—View pull-down	80
86. Log stream list include secondary window	81
87. Log stream list sort secondary window	81
88. Log stream List—Help pull-down	82
89. Log of logs list panel	83
90. Log of logs list—Administrate pull-down	84
91. Log of logs register secondary window	85
92. Log of logs deregister secondary window	85
93. Log of logs list—utilities pull-down	86
94. Log of logs list—list pull-down	87
95. Log of logs details list secondary window	88
96. Log of logs list—view pull-down	89
97. Log of logs list Include secondary window	90
98. Log of logs list sort secondary window	90
99. Log of logs list—Help pull-down	91
100. JCL skeleton	93
101. Sample JCL to run CICSVR forward recovery and backout	98
102. Allocating logs for forward recovery using JCL statements	100
103. Dynamically allocating logs for forward recovery	100
104. Allocating Logs for Backout using JCL Statements	101
105. Dynamically allocating logs for backout	102
106. CICS V4 CEMT INQUIRE DSNAME Screen	103
107. CICS V4 CEMT INQUIRE FILE Screen	104
108. CICS V4 CEMT INQUIRE FILE Screen	104
109. Sample CICSVR RECOVER job.	106

110. Sample CICSVR BACKOUT Job	110
111. RECOVER—Log statistics	113
112. RECOVER—statistics of recovered data sets	114
113. RECOVER—exit action statistics	115
114. RECOVER—progress report	116
115. BACKOUT—journal data set statistics.	117
116. BACKOUT—statistics of data sets that have been backed out.	118
117. BACKOUT—Exit Action Statistics	119
118. Recovered data set statistics report – Failures section	121

Tables

1. Information Required for Recovery or Backout 97

About This Book

This book describes how you use CICS VSAM Recovery Version 3 Release 1 (CICSVR), Program Number 5655-H91, as an automated recovery tool in your organization. This publication is for people who are responsible for the recovery of VSAM data sets.

How You Use This Book

Use this book for guidance on how you use an automated VSAM recovery and backout strategy for CICSVR. This book contains the following:

- “Chapter 1. Introducing CICSVR” on page 1, introduces CICSVR and explains the ISPF panel driven components (pull-downs, secondary windows, function keys and shortcuts, and online help) available.
- “Chapter 2. Running CICSVR complete recovery” on page 9, describes how to utilize the complete recovery function to restore, forward recover, and backout data as needed.
- “Chapter 3. Running CICSVR forward recovery” on page 25, provides details on the forward recovery function using the ISPF panels.
- “Chapter 4. Running CICSVR backout (CICS V4 Only)” on page 41, contains details about using the CICSVR backout function.
- “Chapter 5. Working with the other VSAM sphere list pull-downs” on page 53, contains information on various pull-downs on the VSAM sphere list panel.
- “Chapter 6. Selecting from the logs list” on page 61, contains information concerning the log list used to show all the CICS V4 logs registered in the RCDS.
- “Chapter 7. Selecting from the log stream list” on page 71, provides information on the use and the manipulation of MVS log streams and CICSVR SAM copies of MVS log streams.
- “Chapter 8. Selecting from the log of logs list” on page 83, provides specifics concerning the use and manipulation of the log of logs.
- “Chapter 9. Getting the JCL skeleton” on page 93, describes how to invoke the ISPF/PDF editor to get a JCL skeleton to be used to conform to your organization’s standards.
- “Chapter 10. Running CICSVR manually” on page 95, offers step-by-step instructions for manually recovering VSAM spheres without using the ISPF dialog interface.
- “Chapter 11. Understanding CICSVR reports” on page 113, contains details concerning statistical reports.

Operating Environment

CICSVR uses logs to recovery your VSAM data. CICSVR supports:

- MVS log streams
- CICS V4 forward recovery logs
- CICS/MVS journal-format logs

You need not have CICS installed or running when you perform recovery. If you are recovering VSAM record level sharing (RLS) data, RLS must be active on the system the recovery is run on.

For the software requirements for CICSVR, refer to *CICSVR V3R1 Implementation Guide*.

Notes on Terminology

CICS Transaction Server is used when referring to the CICS element of CICS Transaction Server for z/OS or CICS Transaction Server for OS/390.

CICS V4 is used for Customer Information Control System/Enterprise System Architecture Version 4.

CICS is used when referring to all versions (CICS V4 and CICS Transaction Server).

The term *log* is used to describe any of these:

- MVS log streams
- CICSVR SAM copies of MVS log streams
- CICS V4 forward-recovery logs
- CICS system log

The CICSVR library

IBM provides access to unlicensed CICSVR softcopy books on the Internet. To find CICSVR books on the Internet, if you are using z/OS, first go to the z/OS home page at:

<http://www.ibm.com/servers/eserver/zseries/zos>

If you are using OS/390, go to the OS/390 home page at:

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From either of these Web sites, you can link directly to the CICSVR softcopy books by selecting the **Library** icon.

Publication Title	Order Number
<i>CICSVR V3R1 Implementation Guide</i>	SH26-4126
<i>CICSVR V3R1 User's Guide and Reference</i>	SH26-4127
<i>CICSVR V3R1 Messages and Problem Determination</i>	SH26-4128
<i>CICSVR V3R1 Program Directory</i>	GI11-1232
<i>CICSVR V3R1 Program Directory, the Japanese NLS Feature</i>	GI11-1233

You can also link to IBM Direct to order additional copies of the *CICSVR V3R1 Implementation Guide*.

These online CICSVR books are distributed on CD-ROM:

Publication Title	Order Number
<i>z/OS Software Products Collection,</i>	SK3T-4270
<i>OS/390 Collection,</i>	SK2T-6700
<i>OS/390 PDF Library Collection,</i>	SK2T-6718
<i>IBM Transaction Processing and Data Collection,</i>	SK2T-0730

Accessing Messages Using LookAt

LookAt is an online facility that allows you to look up explanations for z/OS and OS/390 messages and system abends.

Using LookAt to find information is faster than a conventional search because LookAt goes directly to the explanation.

LookAt can be accessed from the Internet or from a TSO command line.

You can use LookAt on the Internet at:

<http://www.ibm.com/servers/eserver/zseries/zos/bkserv/lookat/lookat.html>

To use LookAt as a TSO command, LookAt must be installed on your host system. You can obtain the LookAt code for TSO from the LookAt Web site by clicking on **News and Help** or from the *z/OS Collection*, SK3T-4269.

To find a message explanation from a TSO command line, simply enter: **lookat message-id** as in the following example:

```
lookat iec192i
```

This results in direct access to the message explanation for message IEC192I.

To find a message explanation from the LookAt Web site, simply enter the message ID. You can select the release if needed.

Note: Some messages have information in more than one book. For example, IEC192I has routing and descriptor codes listed in *OS/390 MVS Routing and Descriptor Codes*. For such messages, LookAt prompts you to choose which book to open.

How to Send Your Comments

Your feedback is important in helping to provide the most accurate and high-quality information. If you have any comments about this book or any other CICSVR documentation:

- Send your comments by e-mail to:
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Summary of Changes

This book contains terminology, maintenance, and editorial changes. Technical changes or additions to the text and illustrations are indicated by a vertical line to the left of the change.

You may notice changes in the style and structure of some content in this book—for example, headings that use uppercase for the first letter of initial words only or procedures that have a different look and format. The changes are ongoing improvements to the consistency and retrievability of information in our books.

Summary of Changes for SH26-4127-00 CICSVR Version 3 Release 1 User's Guide and Reference

This book contains information previously presented in *IBM CICS VSAM Recovery MVS/ESA V2R3 User's Guide and Reference*.

The following sections summarize the changes to that information.

New Information

This edition included the following new information:

- The main menu panel has updated in “Chapter 2. Running CICSVR complete recovery” on page 9, “Chapter 3. Running CICSVR forward recovery” on page 25, and “Chapter 4. Running CICSVR backout (CICS V4 Only)” on page 41.
- A new section, “Specifying criteria to include for the VSAM sphere list” on page 11, has been added.
- Figure 62 on page 59 has been updated.
- Figure 75 on page 71 has been updated.
- A new section, “Using the log stream list panel Administrate pull-down” on page 72, has been added.
- A new section, “Deregistering a log stream entry from the RCDS” on page 72, has been added.
- A new section, “Providing information for the CICSVR automatic log stream deregister function” on page 73, has been added.
- Figure 80 on page 75 has been updated.
- Figure 83 on page 78 has been updated.
- Figure 82 on page 77 has been updated.
- Figure 78 on page 73 has been updated.
- Figure 85 on page 80 has been updated.
- Figure 88 on page 82 has been updated.
- Figure 91 on page 85 has been updated.
- Figure 100 on page 93 has been updated.

Moved Information

The CICSVR command reference information previously presented in *IBM CICS VSAM Recovery MVS/ESA V2R3 User's Guide and Reference* has been moved to *CICS VSAM Recovery V3R1 Implementation Guide*.

Summary of Changes for SH19-6970-01 CICSVR Version 2 Release 3 User's Guide and Reference

The following are changes to this publication. Except for editorial changes, updates to this edition are marked with a vertical bar (|) to the left of the change.

New Information

Here are the major changes:

General

These are now referred to as *logs*:

- MVS log streams
- CICSVR QSAM copies of MVS log streams
- CICS V4 forward recovery logs
- CICS/MVS journal-format logs
- CICS system logs

Where sample CICS commands are shown, the format of the command for CICS V4 Version 4 Release 1 is used. For the equivalent command format in CICS Transaction Server, CICS V4 Version 3, or for CICS/MVS, refer to *CICS—Supplied Transactions* in the appropriate CICS library.

The CICSVR ISPF dialog interface now supports VSAM record level sharing (RLS).

CICSVR can now recover variable relative-record data sets. (VRRDS).

- | | |
|-------------------|---|
| Chapter 1 | Explanations of the new items in the CICSVR ISPF dialog interface have been added. |
| Chapter 2 | Changes have been made to CICSVR complete recovery. |
| Chapter 3 | Changes have been made to CICSVR forward recovery. |
| Chapter 4 | Information about backout in CICS Transaction Server has been added. |
| Chapter 5 | VSAM RLS options have been added. |
| Chapter 7 | A chapter explaining how to use copied log streams with CICSVR has been added. |
| Chapter 8 | A chapter explaining how to use log of logs with CICSVR has been added. |
| Chapter 9 | The CICSVR JCL skeleton has been updated. |
| Chapter 10 | Sample JCL has been updated. |
| Chapter 11 | The description of the ALLOCATE command has been updated.
The description of the BACKOUT command has been updated.
New keyword values have been added to the DEFEXIT command.
The RECOVER command has been expanded.
These new commands have been added: <ul style="list-style-type: none">• MVSLOG• VSAMSTART• VSAMEND |

- Chapter 12** CICSVR reports have been updated and a new report has been added.
- Bibliography** Book references have been updated and new books have been added.
- Glossary** Entries have been added and updated.

Chapter 1. Introducing CICSVR

This chapter describes how CICSVR helps you recover your VSAM data without specialist knowledge or expertise. The CICSVR Interactive System Productivity Facility (ISPF) dialog interface constructs the recovery jobs that you need to recover your VSAM data.

The CICSVR ISPF dialog interface conforms to Systems Application Architecture (SAA), Common User Access (CUA) guidelines, and is object-action orientated. This means that you select an object on the panel, and then select an action to apply to that object. The panels contain such components as menu bars, pull-downs, and secondary windows. See the “Glossary” on page 125 for an explanation of these CUA terms. For a more detailed description of CUA terminology, refer to *Common User Access: Basic Interface Design Guide* in the *Systems Application Architecture* library.

Panel components

Each panel in the interface consists of several components. To help explain the components, Figure 1 shows an example of the CICSVR VSAM sphere list panel.

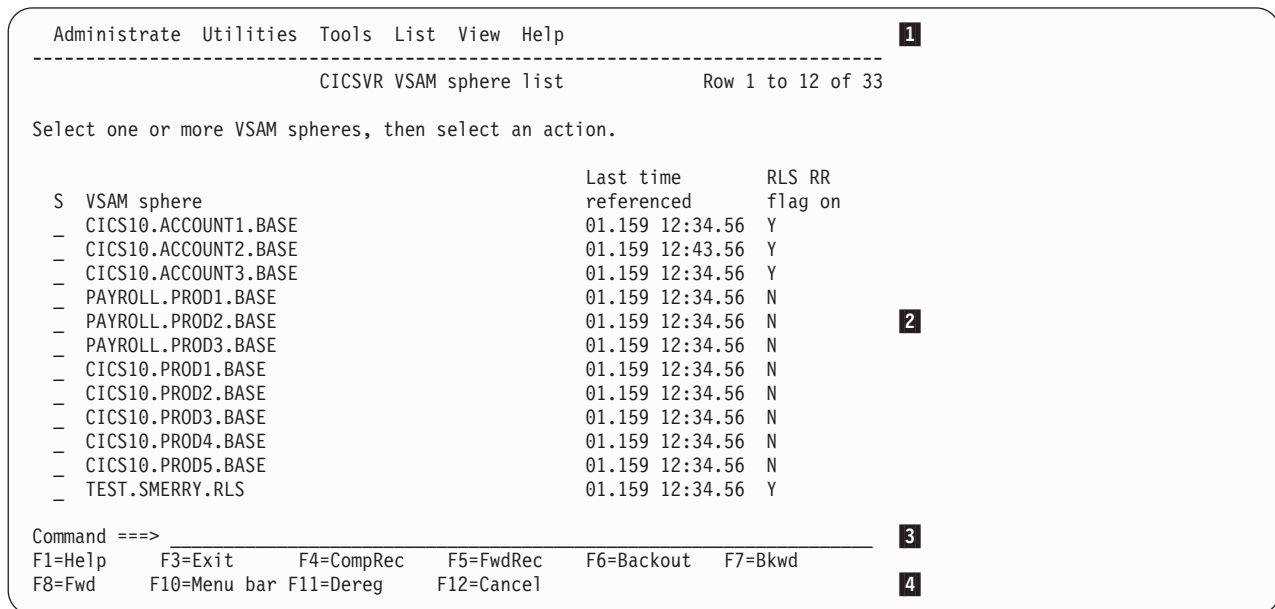


Figure 1. Components of a CICSVR Panel

The highlighted items in Figure 1 are:

- 1** The **menu bar** at the top of the panel consists of a list of choices—or pull-downs—that represent groups of related actions that you can select. (See the description of pull-downs on page 2.)
- 2** The **scrollable area** is where you interact with the dialog. This begins below the menu bar and occupies most of the panel or secondary window. It can contain selection fields, display fields, and entry fields.

- 3 The **command area** lets you enter, for example, system commands or CICSVR shortcut commands, without leaving the CICSVR ISPF dialog interface.
- 4 The **function key area**, at the bottom of the panel, lets you perform actions by pressing a function key. (See “Function keys and shortcuts” on page 3 for an explanation of the function keys in the CICSVR ISPF dialog interface.)

Pull-downs

A pull-down appears when you select a choice from the menu bar. It overlays a part of the panel under the choice (Figure 2). This example shows the Utilities pull-down from the CICSVR VSAM sphere list panel:

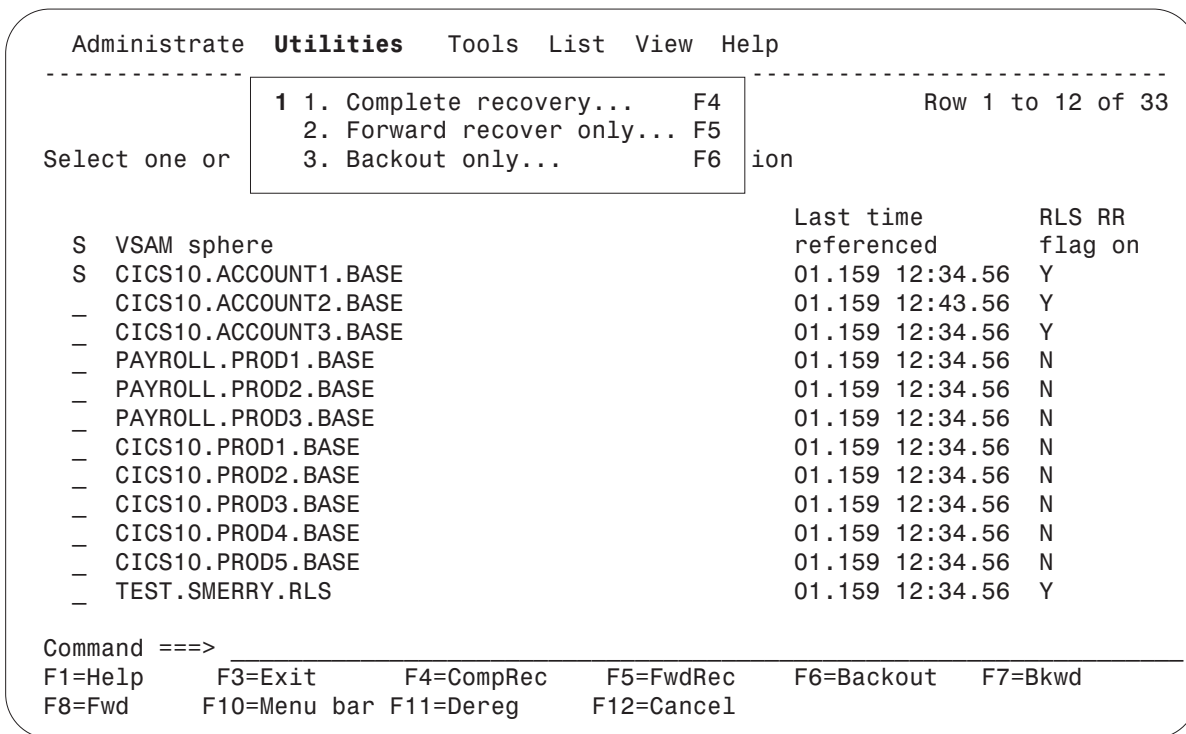


Figure 2. An Example of a Pull-Down

The pull-downs you can select from the CICSVR panels are:

Administrate Lets you manage VSAM spheres and logs. This pull-down is available on these panels:

- CICSVR VSAM sphere list
- CICSVR list of logs
- CICSVR log of logs list
- CICSVR list of log streams

Utilities Lets you specify the type of CICSVR recovery you want to run (CICSVR VSAM sphere list) or scan the log of logs (CICSVR log of logs list). This pull-down is available on these panels:

- CICSVR VSAM sphere list
- CICSVR log of logs list

Tools	Lets you run VSAM record level sharing (RLS) functions. This pull-down is available on the CICSVR VSAM sphere list panel.
List	Lets you list different objects that are relevant to the panel you select it from.
View	Lets you restrict or sort the list of objects that appear.
Help	Gives you relevant help information from the following sources: <ul style="list-style-type: none"> • CICSVR main menu • CICSVR VSAM sphere list • CICSVR log list • CICSVR log of logs list • CICSVR log streams list

Secondary windows

When you select an option from a pull-down, you get a secondary window. A secondary window does not have a menu bar. Figure 3 shows an example of the CICSVR sequence checking secondary window.

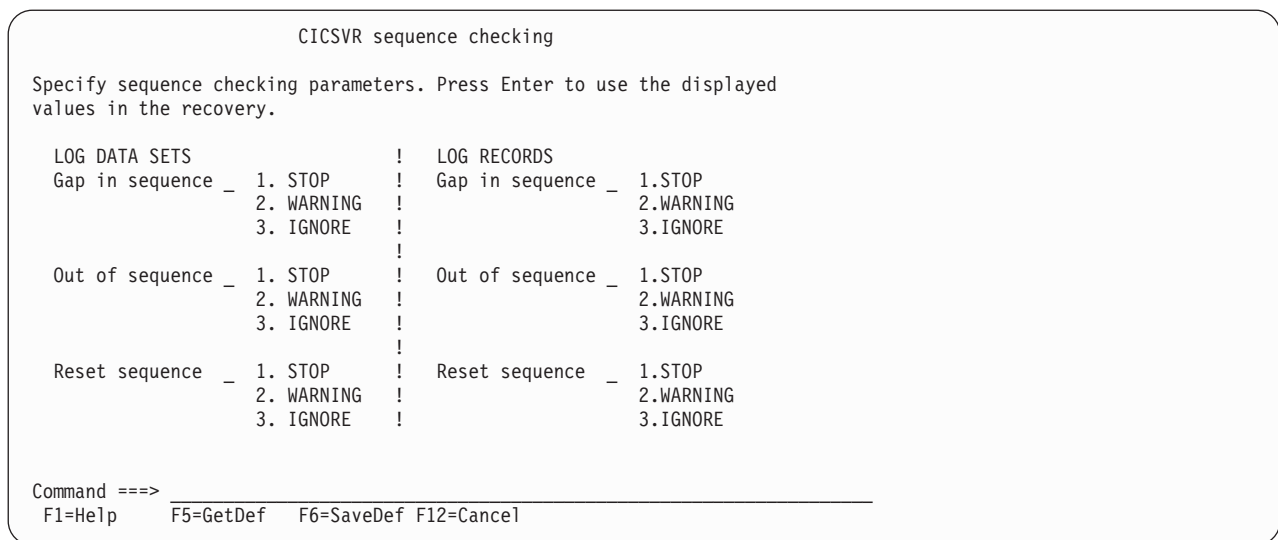


Figure 3. An Example of a Secondary Window

Function keys and shortcuts

The three groups of function keys that you can use in the CICSVR ISPF dialog interface are:

Standard function keys

These standard function keys are available in all panels and secondary windows:

F1=Help Lets you get specific information about an item or field, or the help facility itself.

F12=Cancel Exits the current panel or secondary window.

If you run CICSVR under ISPF/Program Development Facility (ISPF/PDF), you can also use the standard ISPF function keys to split the screen (F2) and to switch to another screen (F9).

Other function keys

These function keys are available in some CICSVR panels and secondary windows in the ISPF dialog interface. They are only available in the panels and secondary windows that contain objects to which they refer. For example, the menu bar key (F10) is only available in panels with a menu bar. The keys are:

- F3=Exit** Ends a function and removes from the screen the panel associated with that function. The exit key is available in panels with a menu bar.
- F4=Prompt** Gives you a secondary window that contains a list of input values, from which you can select one item for input. Place the cursor on the relevant field before you press F4. The input field is followed by the plus symbol (+) showing that prompt data is available for this field. This function key is available in secondary windows that contain prompt fields.
- F5=GetDef** Lets you set the input fields to the CICSVR default value. This function key is available in secondary windows where defaults are used.
- F5=Edit** Lets you edit log format parameters. This function key is available in the CICSVR log format list secondary window.
- F6=SaveDef** Lets you save the displayed values in a secondary window. This function key is available in panels where defaults are used.
- F7=prevVSAM** Lets you return to the previous CICSVR VSAM sphere parameters secondary window.
- F7=Bkwd** Scrolls the information in the panel or secondary window one screen backward. This function key is available in panels and secondary windows with scrollable data.
- F8=Fwd** Scrolls the information in the panel or secondary window one screen forward. This function key is available in panels and secondary windows with scrollable data.
- F10=Menu bar** Moves the cursor to and from the menu bar. This function key is available in panels with a menu bar.

Shortcut function keys

Use these keys to perform an action that is available from a menu.

- F4=CompRec** Has the same function as the Complete recovery choice on the Utilities pull-down. It is only available on the CICSVR VSAM sphere list panel.
- F4=ListDet** Has the same function as the List details choice on the List pull-down of the panel you select F4 from. It is available on these panels:
- CICSVR log list
 - CICSVR log of logs list
 - CICSVR SAM copy list
 - CICSVR log stream list
- F5=FwdRec** Has the same function as the Forward recover only choice on the Utilities pull-down. It is available only on the CICSVR VSAM sphere list panel.

F5=ListSAM	Has the same function as the List SAM copies choice on the List pull-down. It is available only on the CICSVR log stream list panel.
F5=Relate	Lets you relate a new VSAM path to an old path. It is available only on the CICSVR path list secondary window.
F5=Scan	Lets you scan the log of logs. It is available only on the CICSVR log of logs list panel.
F6=Backout	Has the same function as the Backout only choice on the Utilities pull-down. It is available only on the CICSVR VSAM sphere list panel.
F6=Register	Has the same function as the Register choice on the Administrate pull-down. It is available only on the CICSVR log of logs list panel.
F11=Dereg	Lets you deregister an item from the recovery control data set (RCDS). It is available in these panels: <ul style="list-style-type: none"> • CICSVR VSAM sphere list • CICSVR log list • CICSVR log of logs list • CICSVR log streams list

Shortcut commands

Type these commands on the command line to perform an action from a pull-down choice.

Backout	Has the same function as the Backout only choice on the Utilities pull-down. It can only be used on the CICSVR VSAM sphere list panel.
Comprec	Has the same function as the Complete recovery choice on the Utilities pull-down. It can only be used on the CICSVR VSAM sphere list panel.
Dereg	Has the same function as the Deregister choice on the Administrate pull-down. It can only be used on panels containing items that can be deregistered.
Fwdrec	Has the same function as the Forward recover only choice on the Utilities pull-down. It can only be used on the CICSVR VSAM sphere list panel.
ListDet	Has the same function as the List details choice on the List pull-down.
ListSAM	Has the same function as the List SAM copies choice on the List pull-down. It can only be used on the CICSVR log stream list panel.
Register	Has the same function as the Register choice on the Administrate pull-down. It can only be used on the CICSVR log of logs list panel.
Scan	Has the same function as the Scan choice on the Utilities pull-down. It can only be used on the CICSVR log of logs list panel.

Online help

To get online help, press F1. The kind of help you get depends on the task you are doing when you request the help and the position of the cursor.

If the cursor is on a part of a panel or secondary window, the help gives general information about the tasks you can perform at this point in the ISPF dialog interface.

If a message appears, press F1 to get help for that message. To get help for the panel or secondary window, press F2 from within message help.

Help appears as a choice on the menu bar of these panels:

- CICSVR main menu
- CICSVR VSAM sphere list
- CICSVR log list
- CICSVR log of logs list
- CICSVR log streams list

The associated help pull-down choices are:

Using help	Tells you how to use CICSVR online help.
General help	Provides general information about the panel and the tasks you can perform on the panel.
Index	Contains a list of available help information, in alphabetical order.
Keys help	Displays a list of function key assignments for a panel.
Product information	Provides product copyright information.

See also “Using the VSAM sphere list help pull-down” on page 60.

Deciding when to run CICSVR

The CICSVR complete recovery function can correct two types of problems:

- Physical damage or loss
- Uncommitted updates

A data set might have both problems.

To recover your VSAM data, you do not need to know what type of damage the data set has sustained, because CICSVR complete recovery detects this for you and constructs the recovery job that is appropriate to your problem:

- Forward recovery, if the data set is physically damaged or lost.
- Backout, if the data set contains uncommitted updates.
- Forward recovery followed by backout if the VSAM sphere has the two problems.

If you want to find out if the data set contains uncommitted updates that were not backed out because dynamic transaction backout (DTB) or emergency restart backout failed, in CICS V4 you can find out by checking the status of the data set:

```
CEMT INQUIRE DSNAME (TEST.STEVEM.CICS1)
```

If you get the response in Figure 4, backout has failed, and the data set contains uncommitted updates.

```
CEMT I DSNAME
STATUS: RESULTS - OVERTYPE TO MODIFY
DSN( TEST.STEVEM.CICS1 ) Failed
```

Figure 4. CICS V4 CEMT INQUIRE DSNAME Screen

This CICS V4 message also shows that the backout has failed:

DFHFC0922A

applid Base data set closed, batch backout needed for PAYROLL.BASE

If this message is not issued, CICSVR will not construct a backout job for you. CICSVR will only back out uncommitted changes after this message has been issued. This message can be issued after DTB, or after emergency restart, depending on which one of these backouts failed.

These responses and this error message mean that the data set has uncommitted updates, or that it has uncommitted updates and is either physically lost or damaged.

Note for CICS Transaction Server.

In CICS Transaction Server for OS/390 Release 1, this message is not produced. CICS Transaction Server recovery manager, VSAM RLS, and the MVS/ESA system logger combine to provide online backout failure support.

For more information about VSAM RLS, refer to *CICSVR V3R1 Implementation Guide*.

In special situations you might want to run one of the other CICSVR functions:

- Forward recovery only
- Backout only

Chapter 2. Running CICSVR complete recovery

This chapter describes how to use the CICSVR complete recovery function. Complete recovery consists of a DFSMSHsm or DFSMSdss copy or restore, forward recovery, and backout (CICS V4 only), if needed. The panels and secondary windows shown here are in the sequence that they appear for a complete recovery run. You need not use all the panels and secondary windows every time you run complete recovery. You can bypass some of them by using the default values.

Tasks summary

Perform the following sequence of tasks to create and run a CICSVR complete recovery job:

1. Update the RCDS with the latest information. With CICS TS, the log of logs scan utility is automatically executed when using the CICSVR dialog to create the recovery job. With CICS V4, make sure the logs associated with the VSAM spheres that you want to recover are archived.
2. Select option 5 from the main menu and customize the JCL skeleton (see “Chapter 9. Getting the JCL skeleton” on page 93) if this is the first time you have run CICSVR.
3. Select option 1 from the main menu.
4. A secondary window appears that allows you to specify search criteria for the list of VSAM spheres. Specify the search criteria and press enter.
5. A list of VSAM spheres that match the entered search criteria appears. Select the VSAM spheres that you want to recover.
6. Select the Utilities pull-down from the menu bar and choose option 1, or press the CompRec key (F4). A secondary window appears.
7. Enter the recovery parameters in the secondary window for the VSAM sphere that is displayed. Repeat this step until you have supplied the recovery parameters for all of the selected VSAM spheres.
After the last panel in the sequence appears, you will be asked to wait while the complete recovery job is being constructed.
8. A secondary window appears that allows you to change the parameters that CICSVR specifies in the complete recovery job. Select and change any of the listed parameters.
9. Submit the job that CICSVR creates for you.

The rest of this chapter describes each task.

Using the main menu

When you start CICSVR, the main menu appears (Figure 5). From this panel, you can select:

- A list of VSAM spheres (Figure 7 on page 12)
- A list of CICS V4 logs (Figure 65 on page 61)
- A list of MVS log streams and CICSVR copied log streams (Figure 75 on page 71)
- A list of registered log of logs (Figure 89 on page 83)
- The JCL skeleton (Figure 100 on page 93)

If this is the first time you have run CICSVR, select option 5 to customize the JCL skeleton (see “Chapter 9. Getting the JCL skeleton” on page 93).

To begin complete recovery:

1. Select option 1 and press Enter.

```
Help
-----
CICSVR main menu
Command ==> _____
Select one and press Enter.

    1. List of VSAM spheres
    2. List of logs (CICS V4)
    3. List of log streams (CICS TS)
    4. List of registered log of logs (CICS TS)
    5. JCL skeleton

(C) Copyright IBM Corp. 1991, 2001. All rights reserved.
F1=Help   F3=Exit   F10=Menu bar F12=Cancel
```

Figure 5. Main Menu Panel

Specifying criteria to include for the VSAM sphere list

When you select option 1 from the main menu (Figure 5 on page 10), the VSAM sphere list include secondary window appears (Figure 6).

Use this secondary window to filter the VSAM spheres that will appear on the VSAM sphere list by data set name. If you do not include any search criteria, all registered VSAM spheres will appear on the VSAM sphere list.

For detailed help information, press the Help key (F1).

```
-----  
CICSVR VSAM sphere list include  
Command ==> _____  
Specify search criteria to include in the VSAM sphere list, then press  
Enter.  
VSAM sphere . . . . . * _____  
  
F1=Help   F12=Cancel  
-----
```

Figure 6. VSAM sphere list include secondary window

Selecting from the VSAM sphere list

After you have entered the VSAM sphere search criteria, the CICSVR VSAM sphere list panel (Figure 7) will be displayed with a list of all CICSVR registered VSAM spheres that matched the search criteria. Type S beside all of the VSAM spheres that you want to perform a complete recovery on.

```
Administrate Utilities Tools List View Help
-----
CICSVR VSAM sphere list                               Row 1 to 12 of 33

Select one or more VSAM spheres, then select an action.

S VSAM sphere                                         Last time      RLS RR
- CICS10.ACCOUNT1.BASE                               01.159 12:34.56 Y
- CICS10.ACCOUNT2.BASE                               01.159 12:43.56 Y
- CICS10.ACCOUNT3.BASE                               01.159 12:34.56 Y
- PAYROLL.PROD1.BASE                                 01.159 12:34.56 N
- PAYROLL.PROD2.BASE                                 01.159 12:34.56 N
- PAYROLL.PROD3.BASE                                 01.159 12:34.56 N
- CICS10.PROD1.BASE                                  01.159 12:34.56 N
- CICS10.PROD2.BASE                                  01.159 12:34.56 N
- CICS10.PROD3.BASE                                  01.159 12:34.56 N
- CICS10.PROD4.BASE                                  01.159 12:34.56 N
- CICS10.PROD5.BASE                                  01.159 12:34.56 N
- TEST.SMERRY.RLS                                   01.159 12:34.56 Y

Command ==>>> _____
F1=Help   F3=Exit   F4=CompRec F5=FwdRec F6=Backout F7=Bkwd
F8=Fwd    F10=Menu bar F11=Dereg F12=Cancel
```

Figure 7. VSAM Sphere List Panel. Use S in the first column to select a VSAM sphere.

From the CICSVR VSAM sphere list panel, you can select an action by using one of the shortcut function keys, or select any of these pull-downs from the menu bar.

- Administrate
- Utilities
- Tools
- List
- View
- Help

Using the VSAM sphere list utilities pull-down for complete recovery

After you have selected all of the VSAM spheres that you want to perform a complete recovery on, press F10 to get to the menu bar. Then place the cursor under Utilities and press Enter.

Figure 8 shows the CICSVR VSAM sphere list panel utilities pull-down.

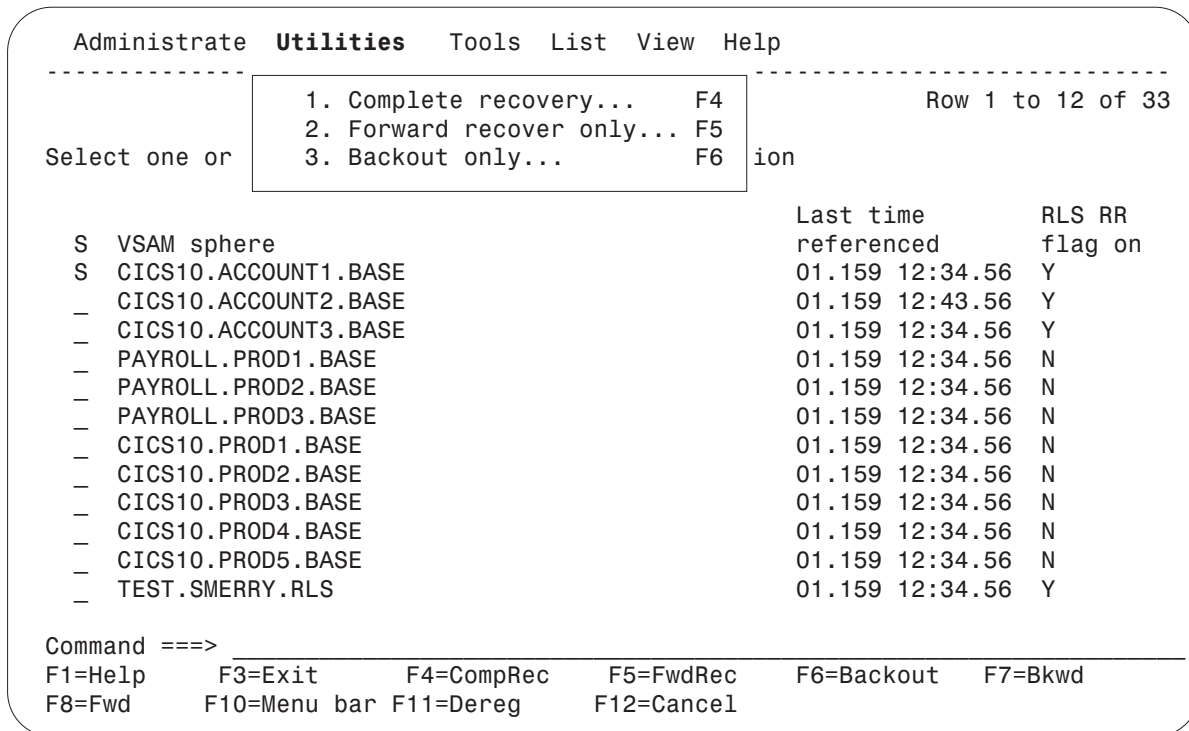


Figure 8. VSAM Sphere List—Utilities Pull-Down

From this pull-down, you can select “Complete recovery” for the VSAM spheres that you selected by using one of these methods:

- Select option 1.
- Move the cursor to the complete recovery item in the pull-down, and press Enter.

To get information about each menu pull-down item, move the cursor to an item and press the Help key (F1).

You may also choose a complete recovery for the selected VSAM spheres by either:

- Typing the CICSVR shortcut command **CompRec** on the command line.
- Pressing the CICSVR complete recovery shortcut function key **F4**.

If you have log of logs registered in the RCDS, CICSVR scans the logs. If the logs were successfully scanned, CICSVR presents the results as an ISPF browse of the DWWPRINT data set (Figure 9 on page 14). If any messages were written to the DWWMSG data set during the scan, the DWWMSG data set is opened for browse.

STATISTICS FOR A LOG OF LOGS SCAN

=====

```

LOG OF LOGS NAME      : CICSVR1.MVSLOG.L0L1
FIRST TIME GMT        : 01.157 12:00:59
LAST TIME GMT         : 01.159 12:00:59
FIRST TIME LOCAL      : 01.157 12:00:59
LAST TIME LOCAL       : 01.159 12:00:59
FIRST BLOCK NUMBER    :                43282
LAST BLOCK NUMBER     :                67382

```

VSAM DATA SET STATISTICS

=====

VSAM DATA SET NAME	CICSID	FCT NAME	OPEN DATE/TIME	CLOSE DATE/TIME	MVS LOG STREAM NAME
CICSPROD.ACC.VSAMA	CICSPROD	BASEA	01.157 12:00:00	01.159 12:11:10	CICSVR1.MVSLOG
CICSPROD.ACC.VSAMB	CICSPROD	BASE2	01.157 12:00:00		CICSVR1.MVSLOG
CICSPROD.ACC.VSAMC	CICSPROD	BASE3	01.157 12:00:00		CICSVR1.MVSLOG

- LOG OF LOGS SCAN UTILITY

DATE : 01/06/07

TIME : 11:01:09

PAGE : 2

INFORMATION FOR A FORWARD RECOVERY OF CICSPROD.ACC.VSAMA

=====

JOB STEP 1

```

START TIME GMT  STOP TIME GMT
-----
01.157 12:00:00 01.158 12:11:10
MVS LOG STREAMS NEEDED

```

CICSVR1.MVSLOG

CICSVR - LOG OF LOGS SCAN UTILITY

DATE : 01/06/07

TIME : 11:01:09

PAGE : 3

INFORMATION FOR A FORWARD RECOVERY OF CICSPROD.ACC.VSAMB

=====

JOB STEP 1

```

START TIME GMT  STOP TIME GMT
-----
01.157 12:00:00 01.158 11:01:11
MVS LOG STREAMS NEEDED

```

CICSVR1.MVSLOG

CICSVR - LOG OF LOGS SCAN UTILITY

DATE : 01/06/07

TIME : 11:01:09

PAGE : 4

INFORMATION FOR A FORWARD RECOVERY OF CICSPROD.ACC.VSAMC

=====

JOB STEP 1

```

START TIME GMT  STOP TIME GMT
-----
01.157 12:00:00 01.158 11:01:11
MVS LOG STREAMS NEEDED

```

CICSVR1.MVSLOG

Figure 9. Log of Logs Scan Utility—DWWPRINT

Press F8 to scroll through the log of logs list report. Press F3 to continue with complete recovery.

Providing VSAM sphere complete recovery parameters

When you have selected a complete recovery for the selected VSAM spheres, the VSAM sphere parameters secondary window (Figure 10) appears.

```
CICSVR VSAM sphere parameters

Press F4 when the cursor is in the Backup time field to get a list of data
set backup times. Press Enter to continue.

VSAM sphere . . . . . : CICS10.ACCOUNT1.BASE

New VSAM sphere name . . _____

Forward recovery start time . . _____ (YY.DDD HH:MM:SS)

Forward recovery stop time . . _____ (YY.DDD HH:MM:SS)

Backup time . . . . . _____ + (YY.DDD HH:MM:SS)

Time format                Backup type
__ 1. Local                 __ 1. None
  2. GMT                    2. Logical
                             3. Full volume dump

Volume for restore _____ Unit for restore . . . . . _____
Command ==> _____
```

Figure 10. VSAM sphere parameters for complete recovery secondary window

Note: If the PF-Keys overlay the volume and unit fields on your CICSVR VSAM sphere parameters secondary window, type PFSHOW OFF on the command line. This command will hide the PF-Keys until you issue the command PFSHOW ON.

Here you can specify the following VSAM sphere parameters for inclusion in the complete recovery run:

- A new name for the recovered VSAM sphere
- The start time for forward recovery
- The stop time for forward recovery
- The backup time
- The backup type
- The time format used on the log (if you are using MVS log streams or QSAM copies of MVS log streams)
- The volume for the restored copy of the data set (if the backup is a DFSMSHsm logical backup or a DFSMSHsm full volume dump)
- The unit for the restored copy of the data set (if the backup is a DFSMSHsm logical backup or a DFSMSHsm full volume dump)

Note: For DFSMSHsm, if the data set you are recovering is SMS-managed, the volume and unit values are ignored.

When you first enter this secondary window, the CICSVR default values are displayed. Also, if a logical backup exists for the VSAM sphere, the backup time of the most recent logical backup will appear in the backup time field and forward recovery start time field.

Press:

- F4** To get a list of DFSMSHsm and DFSMSdss backups (Figure 11). The cursor must be on the backup time field.
- F5** To get the default values from the recovery control data set (RCDS).
- F6** To save the currently displayed time format. The default update verification secondary window (Figure 20 on page 23) appears.
- F7** To go back to the previous VSAM sphere.

For detailed help information about any of these fields, move the cursor to the field and press the Help key (F1).

Listing DFSMSHsm and DFSMSdss backups

Figure 11 shows the secondary window that appears if you press the Prompt key (F4) on the backup time field of the CICSVR VSAM sphere parameters secondary window.

```

CICSVR backup prompt list          Row 1 to 3 of 3
Command ==> _____
Select one backup time, then press Enter.
VSAM sphere . . . : PAYROLL.BASE

----- Data set backup information -----
S  Date      Time      Gen Ver  BW0 RLS      Recovery point      Product
  01.248  05:13:32  01  001  NO  NO      Date      Time      Type
-  01.248  05:11:06           NO  NO           LOCAL  DSSLD
-  01.248  05:09:38           NO  NO           LOCAL  DSSLC
***** Bottom of data *****

F1=Help   F7=Bkwd   F8=Fwd   F12=Cancel

```

Figure 11. Backup prompt list secondary window. Use S in the first column to select a backup.

This secondary window shows a list of DFSMSHsm and DFSMSdss backups for the sphere. Select the backup that you need from this list and press enter.

For general help information, press the Help key (F1).

Recovering with DFSMSHsm or DFSMSdss backups

During a complete recovery run, CICSVR restores the VSAM sphere from a DFSMSHsm or DFSMSdss backup, if one exists for the VSAM sphere that you are recovering. The latest DFSMSHsm or DFSMSdss backup will appear as the default in the VSAM sphere parameters secondary window. If you provide a new VSAM sphere name in this secondary window, the recovered data set will have this name.

Recovering with DFSMShsm backups

If you have selected a DFSMShsm backup for the VSAM sphere, CICSVR will restore the VSAM sphere from the DFSMShsm backup during the complete recovery job run. If you provide a new VSAM sphere name on the CICSVR VSAM sphere parameters secondary window, the VSAM sphere will be restored and recovered to this name.

Recovering with DFSMShsm full volume dumps

If you are using a DFSMShsm full volume dump, these dumps will not appear in the backup list. Enter 3 in the Backup type field, and enter the date of the full volume dump for the recovery in the backup time field in the VSAM sphere parameters secondary window. If you entered a name on the new VSAM sphere name field, this will be the name of the recovered data set.

Recovering with DFSMSdss logical copies

If you have selected a DFSMSdss logical copy from the backup list, during the complete recovery job run CICSVR will copy and rename the backup to the name of the VSAM sphere. If you provide a new VSAM sphere name on the CICSVR VSAM sphere parameters secondary window, the backup will be copied to the new VSAM sphere name that was specified.

Recovering with DFSMSdss logical dumps

If you have selected a DFSMSdss logical dump from the backup list, CICSVR will restore the VSAM sphere from the DFSMSdss logical dump during the complete recovery job run. If you provide a new VSAM sphere name on the CICSVR VSAM sphere parameters secondary window, the backup will be restored to the new VSAM sphere name that was specified.

Note: CICSVR can process DFSMShsm or DFSMSdss backups, full volume dumps, and non-DFSMShsm or non-DFSMSdss backups in the same run.

For more information about using DFSMShsm and DFSMSdss with CICSVR, refer to *CICSVR V3R1 Implementation Guide*.

CICSVR wait secondary window

After you have entered the recovery parameters for every selected VSAM sphere, the CICSVR wait secondary window (Figure 12) appears.

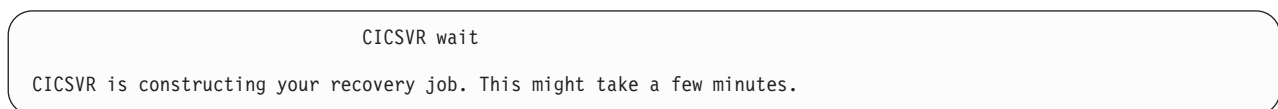


Figure 12. Wait Secondary Window

Specifying the log stream type

After you have entered the complete recovery parameters for all of the previously selected VSAM spheres, and if one or more of the selected spheres has an associated MVS log stream, the CICSVR log stream type secondary window (Figure 13 on page 18) appears. Use this secondary window to select the type of log stream (MVS log stream or QSAM copy of the MVS log stream) that you would like CICSVR to use during construction of the complete recovery job. This selection will only apply to the VSAM spheres that have an associated MVS log stream. Refer to *CICSVR V3R1 Implementation Guide* for more information about using the LOGSTREAMCOPY command to create a QSAM copy of an MVS log stream.

```

CICSVR log stream type

Specify log stream type. Press Enter to continue the job creation.

Log stream type . . . 1. MVS logger log stream
                    2. QSAM copy

Command ==> _____
F1=Help    F5=GetDef  F6=SaveDef  F12=Cancel

```

Figure 13. Log stream type secondary window

Use this secondary window to specify the type of MVS log stream that CICSVR should use for this recovery job.

When you first enter this secondary window, the CICSVR default values are displayed. Press F5 to get the default values from the recovery control data set (RCDS). Press F6 to save the currently displayed values; the default update verification secondary window (Figure 20 on page 23) will then appear.

For detailed help information, move the cursor to a field and press the Help key (F1).

Listing recovery job errors

If CICSVR detects errors while constructing the complete recovery job, the CICSVR recovery job error list secondary window appears.

Use this secondary window (Figure 14) to obtain information about errors found during the construction of the complete recovery job.

```

CICSVR recovery job error list          Row 1 to 3 of 3

Select one or more errors, then press Enter to get more information about
the error.

S  Error                Data set
-  Overlapping recover  CICS10.ACCOUNT1.BASE
-  Unknown ddname      LOG01.CICS10.D96159.T203000
-  Log sequence error  LOG05.CICS10.D96159.T224559
*****BOTTOM OF DATA*****

Command ==> _____
F1=Help    F7=Bkwd   F8=Fwd    F12=Cancel

```

Figure 14. Recovery Job Error List Secondary Window. Use S in the first column to select an error.

Select an error to get a secondary window that contains a detailed description of the error.

For general help information, press the Help key (F1).

Entering complete recovery parameters

Before the complete recovery job is created, you have the option to change the parameters that CICSVR will use in the complete recovery job creation. You can define the following parameters for your complete recovery job:

- Sequence checking (CICS V4 only)
- VSAM buffer pools
- CICSVR exits

Use the CICSVR complete recovery secondary window (Figure 15) to select the CICSVR parameters that you wish to change. A secondary window for each parameter selected will appear to allow you to change the values. The secondary window for each selected parameter will appear in the order in which they appear on the CICSVR complete recovery secondary window (Figure 15).

```
CICSVR complete recovery

Press Enter to create a job with default values. Or, select one or more
choices below, and press Enter to override current values.

  S Recovery and backout parameters related to:
  - Sequence checking
  - VSAM buffer pools
  - CICSVR exits

Command ==> _____
F1=Help   F12=Cancel
```

Figure 15. Complete Recovery Parameters Secondary Window. Use S in the first column to select a parameter.

After you have changed the parameters that CICSVR will use in the complete recovery job, you will return to the CICSVR complete recovery secondary window (Figure 15).

To create the complete recovery job, press enter without any of the parameters selected. CICSVR will use any previously changed parameters in the job construction.

Note: You are not required to change any of the CICSVR parameters listed in the CICSVR complete recovery secondary window (Figure 15). CICSVR will use the default values when creating the complete recovery job if you did not change any parameters.

For detailed help information about any of these choices, move the cursor to the field and press the Help key (F1).

Sequence checking

If you selected Sequence checking from the CICSVR complete recovery secondary window (Figure 15), the CICSVR sequence checking secondary window (Figure 16 on page 20) appears.

Use this secondary window (Figure 16 on page 20) to set sequence checking parameters for your CICSVR run. The sequence checking parameters only apply to CICS V4 logs.

```

CICSVR sequence checking

Specify sequence checking parameters. Press Enter to use the displayed
values in the recovery.

LOG DATA SETS          ! LOG RECORDS
Gap in sequence 1  1. STOP      ! Gap in sequence 1  1.STOP
                  2. WARNING   !                      2.WARNING
                  3. IGNORE    !                      3.IGNORE
                  !
Out of sequence 1  1. STOP      ! Out of sequence 1  1.STOP
                  2. WARNING   !                      2.WARNING
                  3. IGNORE    !                      3.IGNORE
                  !
Reset sequence 1  1. STOP      ! Reset sequence 1  1.STOP
                  2. WARNING   !                      2.WARNING
                  3. IGNORE    !                      3.IGNORE

Command ==> _____
F1=Help   F5=GetDef  F6=SaveDef F12=Cancel

```

Figure 16. Sequence Checking Secondary Window

When you first enter this secondary window, the CICSVR default values are displayed. Press F5 to get the default values from the recovery control data set (RCDS). Press F6 to save the currently displayed values; the default update verification secondary window (Figure 20 on page 23) will then appear.

Note: Use this secondary window only if you want to force CICSVR to use logs that are not in time sequence order, or logs that contain old data.

For detailed help information about any of these parameters, move the cursor to the field and press the Help key (F1).

Defining the VSAM buffer pools

If you selected VSAM buffer pools from the CICSVR complete recovery secondary window (Figure 15 on page 19), the CICSVR VSAM buffer pools secondary window (Figure 17 on page 21) appears.

Use this secondary window (Figure 17 on page 21) to tune your CICSVR run by changing the number of buffers in the VSAM buffer pools.

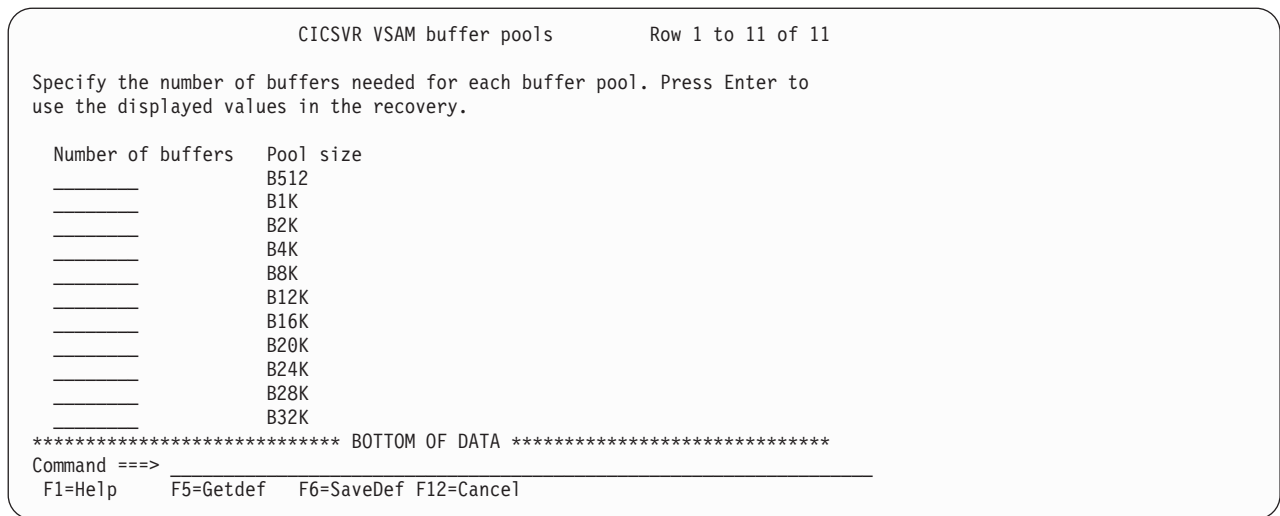


Figure 17. VSAM Buffer Pools Secondary Window

When you first enter this secondary window, the CICSVR default values are displayed. Press F5 to get the default values from the RCDS. Press F6 to save the currently displayed values; the default update verification secondary window (Figure 20 on page 23) will then appear.

For detailed help information about any of these fields, move the cursor to the field and press the Help key (F1).

Defining exits

If you selected CICSVR exits from the CICSVR complete recovery secondary window (Figure 15 on page 19), the CICSVR exits secondary window appears.

Use the CICSVR exits secondary window to define which CICSVR exits you want to use in this complete recovery run.

For more information about CICSVR exits, refer to *CICSVR V3R1 Implementation Guide*.

CICS Transaction Server

If one or more of the VSAM spheres that you previously selected for complete recovery uses MVS log streams or QSAM copies of MVS log streams, the CICSVR exits secondary window shown in Figure 18 on page 22 is displayed allowing you to define exits for the complete recovery job.

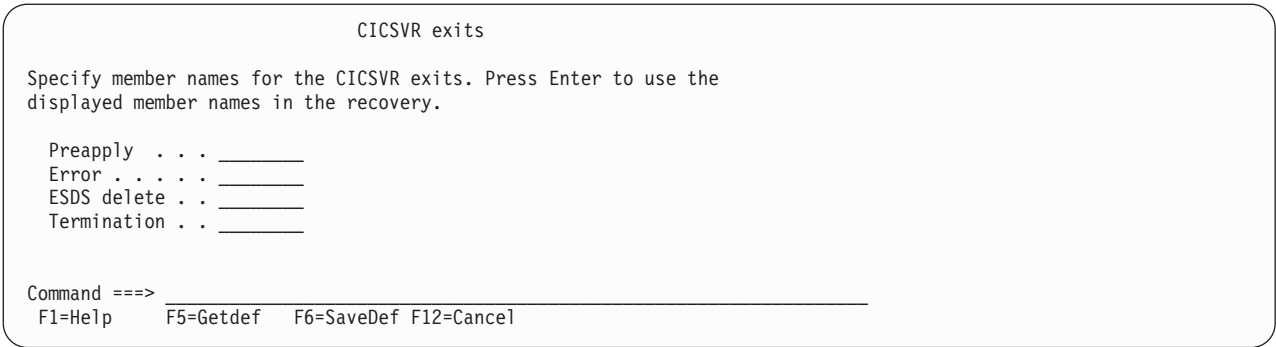


Figure 18. Exits Secondary Window (with MVS log streams)

When you first enter this secondary window, the CICSVR default values are displayed. Press F5 to get the default values from the RCDS. Press F6 to save the currently displayed values; the default update verification secondary window (Figure 20 on page 23) will then appear.

For detailed help information about any of these fields, move the cursor to the field and press the Help key (F1).

CICS V4

If none of the VSAM spheres that you previously selected for complete recovery use MVS log streams or QSAM copies of MVS log streams, the CICSVR exits secondary window shown in Figure 19 on page 23 is displayed allowing you to define exits for the complete recovery job.

The number of parameters in the parameter list that CICSVR passes to the preapply exit program increased in CICSVR Version 2 Release 3 from previous releases. Also, the format of the LOG parameter, (one of the parameters that CICSVR passes in the parameter list to the preapply exit program) was changed in CICSVR 2.3. If you specify the name of a preapply exit program that was created using the preapply parameter list format defined in releases of CICSVR earlier than CICSVR 2.3, specify option 1 (Old) in the option field that is next to the preapply member field. If you specify the name of a preapply exit program that was created using the current preapply parameter list format, specify option 2 (New) in the option field.

Note: The preapply parameter list format defined in CICSVR releases earlier than CICSVR 2.3 is only compatible with CICS V4 logs. If you want to use a preapply exit program with CICS TS log streams, the preapply exit program must use the current preapply parameter list format.

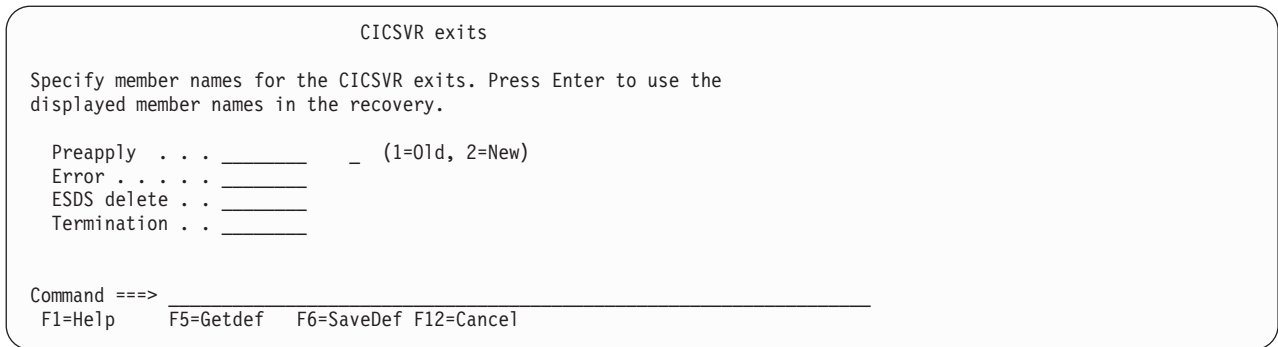


Figure 19. Exits Secondary Window (without MVS log streams)

When you first enter this secondary window, the CICSVR default values are displayed. Press F5 to get the default values from the RCDS. Press F6 to save the currently displayed values; the default update verification secondary window (Figure 20) will then appear.

For detailed help information about any of these fields, move the cursor to the field and press the Help key (F1).

Updating the CICSVR default values

Use this secondary window to confirm an update to the CICSVR command default values.

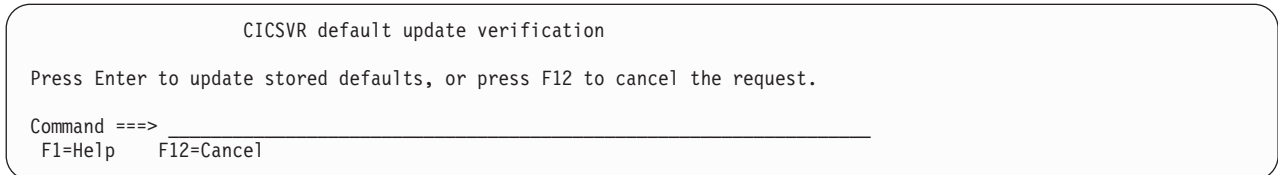


Figure 20. Default Update Verification Secondary Window

For help information press the Help key (F1).

Submitting the job

After the recovery job has been constructed, the CICSVR job submission secondary window (Figure 21 on page 24) will appear. Use this secondary window to submit, browse, or edit the job. Select option 4 to save the recovery job that CICSVR generated for you. Select option 5 to return to the VSAM sphere list.

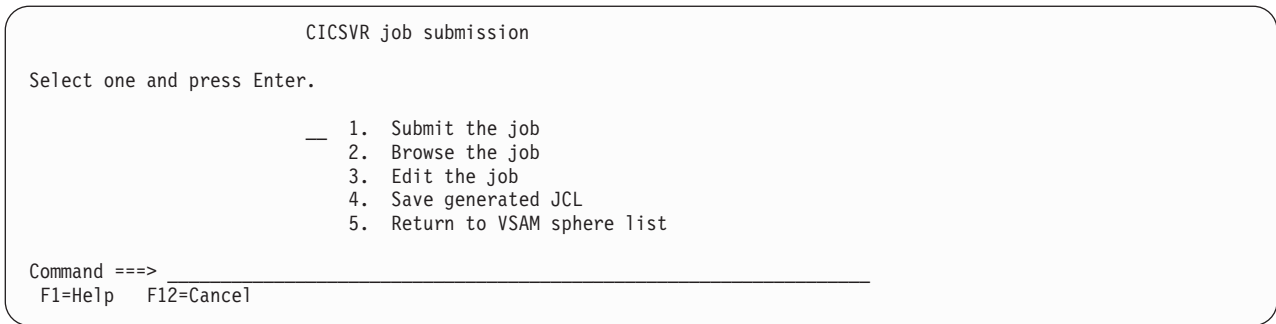


Figure 21. Job Submission Secondary Window

For detailed help information about any of these options, move the cursor to the field and press the Help key (F1).

Saving the generated JCL

This secondary window (Figure 22) appears if you selected option 4 from the CICSVR job submission secondary window (Figure 21).

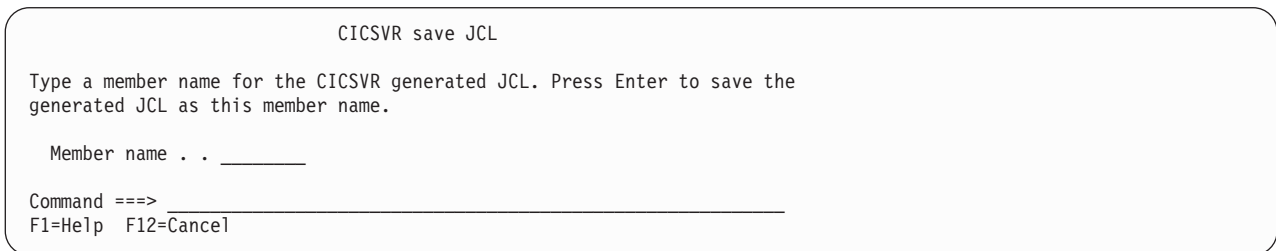


Figure 22. Save JCL secondary window

Here you can specify the member name that CICSVR will save the generated recovery job as. The member will be saved in the data set you allocated to the ddname ISPFIL.

Chapter 3. Running CICSVR forward recovery

This chapter describes how to use the CICSVR forward recovery function. The CICSVR forward recovery only function consists of a DFSMSHsm or DFSMSdss copy or restore and forward recovery. The panels and secondary windows shown here are in the sequence that they appear for a forward recovery run. You need not use all the panels and secondary windows every time you run forward recovery. You can bypass some of them by using the default values.

Tasks summary

Perform the following sequence of tasks to create and run a CICSVR forward recovery job:

1. Update the RCDS with the latest information. With CICS TS, the log of logs scan utility is automatically executed when using the CICSVR dialog to create the recovery job. With CICS V4, make sure the logs associated with the VSAM spheres that you want to recover are archived.
2. Select option 5 from the main menu and customize the JCL skeleton (see "Chapter 9. Getting the JCL skeleton" on page 93) if this is the first time you have run CICSVR.
3. Select option 1 from the main menu.
4. A secondary window appears that allows you to specify search criteria for the list of VSAM spheres. Specify the search criteria and press enter.
5. A list of VSAM spheres that match the entered search criteria appears. Select the VSAM spheres that you want to recover.
6. Select the Utilities pull-down from the menu bar and choose option 2, or press the FwdRec key (F5). A secondary window appears.
7. Enter the recovery parameters in the secondary window for the VSAM sphere that is displayed. Repeat this step until you have supplied the recovery parameters for all of the selected VSAM spheres.
After the last panel in the sequence appears, you will be asked to wait while the forward recovery job is being constructed.
8. A secondary window appears that allows you to change the parameters that CICSVR specifies in the forward recovery job. Select and change any of the listed parameters.
9. Submit the job that CICSVR creates for you.

The rest of this chapter describes each task.

Using the main menu

When you start CICSVR, the main menu appears (Figure 23). From this panel, you can select:

- A list of VSAM spheres
- A list of CICS V4 logs (Figure 65 on page 61)
- A list of MVS log streams and CICSVR copied log streams (Figure 75 on page 71)
- A list of registered log of logs (Figure 89 on page 83)
- The JCL skeleton (Figure 100 on page 93)

If this is the first time you have run CICSVR, select option 5 to customize the JCL skeleton (see “Chapter 9. Getting the JCL skeleton” on page 93).

To begin forward recovery:

1. Select option 1 and press Enter.

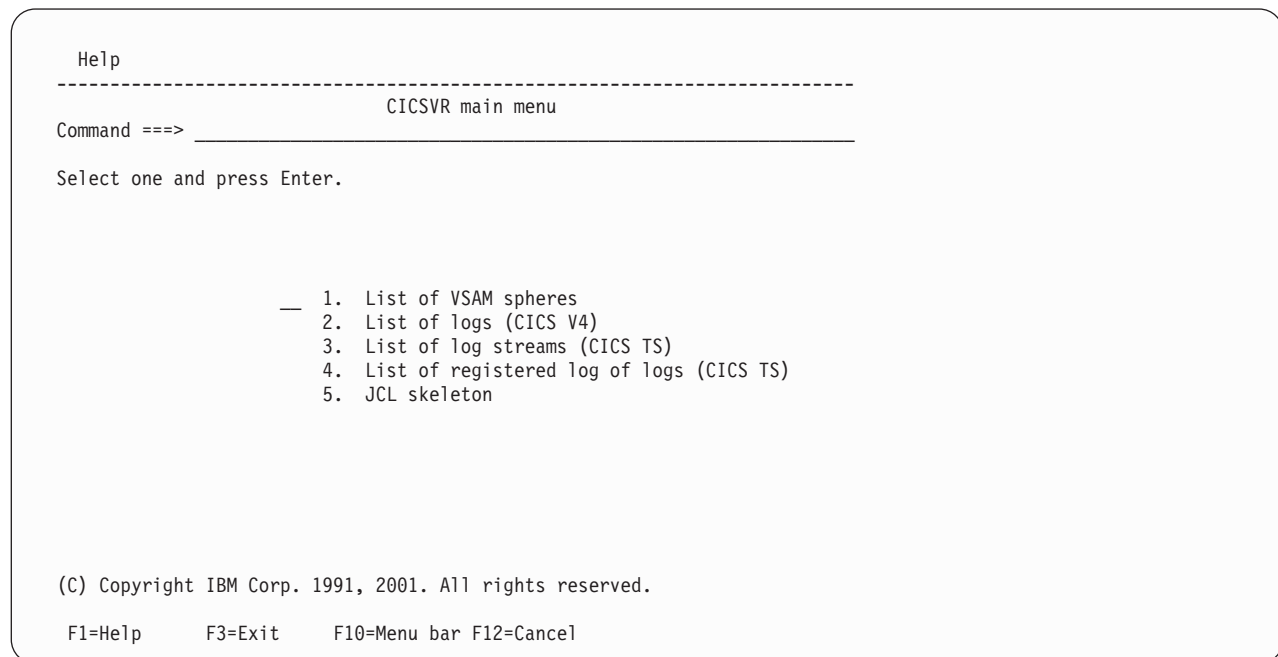


Figure 23. Main menu panel

Specifying criteria to include for the VSAM sphere list

When you select option 1 from the main menu (Figure 23 on page 26), the VSAM sphere list include secondary window appears (Figure 24).

Use this secondary window to filter the VSAM spheres that will appear on the VSAM sphere list by data set name. If you do not include any search criteria, all registered VSAM spheres will appear on the VSAM sphere list.

For detailed help information, press the Help key (F1).

```
-----  
CICSVR VSAM sphere list include  
Command ==> _____  
Specify search criteria to include in the VSAM sphere list, then press  
Enter.  
VSAM sphere . . . . . * _____  
  
F1=Help   F12=Cancel  
-----
```

Figure 24. VSAM sphere list include window

Selecting from the VSAM sphere list

After you have entered the VSAM sphere search criteria, the CICSVR VSAM sphere list panel (Figure 25), will be displayed with a list of all CICSVR registered VSAM spheres that matched the search criteria. Type S beside all of the VSAM spheres that you want to perform a forward recovery on.

```
Administrate Utilities Tools List View Help
-----
CICSVR VSAM sphere list                      Row 1 to 12 of 33

Select one or more VSAM spheres, then select an action.

S VSAM sphere                                Last time      RLS RR
- CICS10.ACCOUNT1.BASE                       01.159 12:34.56 Y
- CICS10.ACCOUNT2.BASE                       01.159 12:43.56 Y
- CICS10.ACCOUNT3.BASE                       01.159 12:34.56 Y
- PAYROLL.PROD1.BASE                         01.159 12:34.56 N
- PAYROLL.PROD2.BASE                         01.159 12:34.56 N
- PAYROLL.PROD3.BASE                         01.159 12:34.56 N
- CICS10.PROD1.BASE                          01.159 12:34.56 N
- CICS10.PROD2.BASE                          01.159 12:34.56 N
- CICS10.PROD3.BASE                          01.159 12:34.56 N
- CICS10.PROD4.BASE                          01.159 12:34.56 N
- CICS10.PROD5.BASE                          01.159 12:34.56 N
- TEST.SMERRY.RLS                           01.159 12:34.56 Y

Command ==>>> _____
F1=Help      F3=Exit      F4=CompRec  F5=FwdRec   F6=Backout  F7=Bkwd
F8=Fwd       F10=Menu Bar F11=Dereg   F12=Cancel
```

Figure 25. VSAM sphere list panel. Use S in the first column to select a VSAM sphere.

From the CICSVR VSAM sphere list panel, you can select an action by using one of the shortcut function keys, or select any of these pull-downs from the menu bar.

- Administrate
- Utilities
- List
- View
- Help

Using the VSAM sphere list utilities pull-down for forward recovery

After you have selected all of the VSAM spheres that you want to perform a forward recovery on, press F10 to get to the menu bar. Then place the cursor under Utilities and press Enter.

Figure 26 shows the CICSVR VSAM sphere list panel Utilities pull-down.

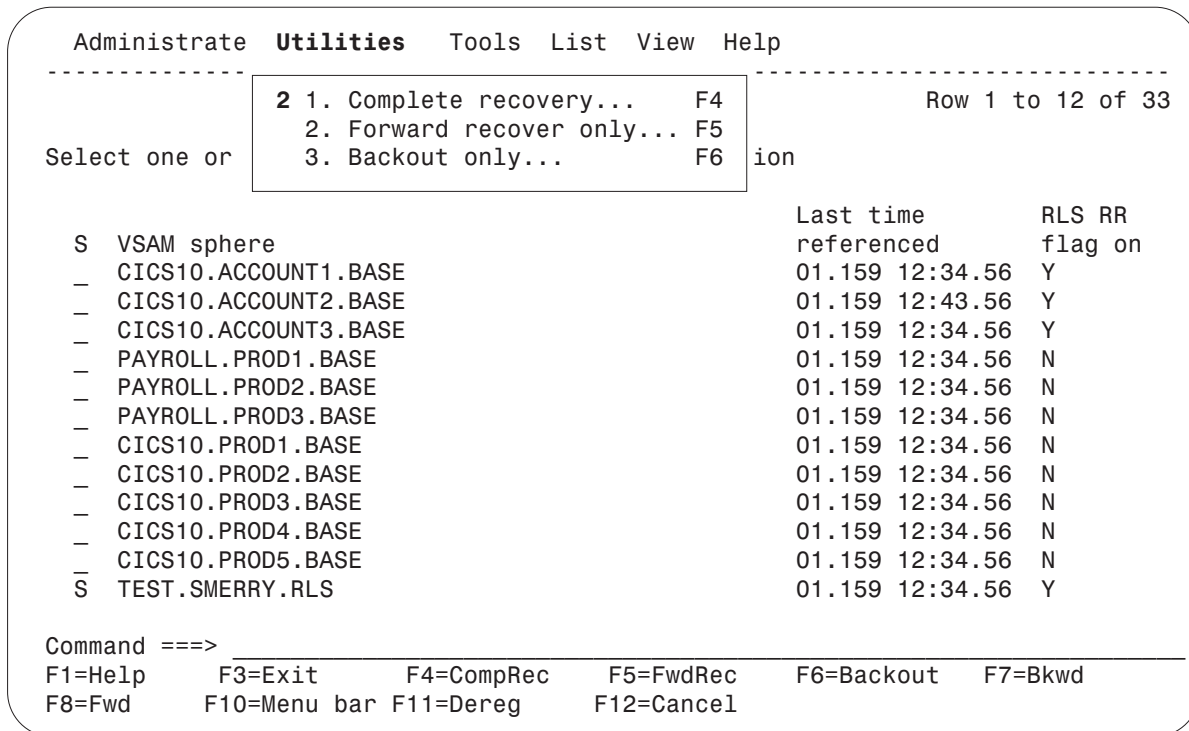


Figure 26. VSAM sphere list—utilities pull-down

From this pull-down, you can select “Forward recovery only” for the VSAM spheres that you selected by using one of these methods:

- Select option 2.
- Move the cursor to the Forward recovery only item in the pull-down, and press Enter.

To get information about each menu pull-down item, move the cursor to an item and press the Help key (F1).

You may also choose a forward recovery for the selected VSAM spheres by either:

- Typing the CICSVR shortcut command **FwdRec** on the command line.
- Pressing the CICSVR forward recovery shortcut function key **F5**.

If you have log of logs registered in the RCDS, CICSVR scans the logs. If the logs were successfully scanned, CICSVR presents the results as an ISPF browse of the DWWPRINT data set. If any messages were written to the DWWMSG data set during the scan, the DWWMSG data set is opened for browse.

STATISTICS FOR A LOG OF LOGS SCAN

=====

LOG OF LOGS NAME : CICSVR1.MVSLOG.L0L1
 FIRST TIME GMT : 01.157 12:00:59
 LAST TIME GMT : 01.159 12:00:59
 FIRST TIME LOCAL : 01.157 12:00:59
 LAST TIME LOCAL : 01.159 12:00:59
 FIRST BLOCK NUMBER : 43282
 LAST BLOCK NUMBER : 67382

VSAM DATA SET STATISTICS

=====

VSAM DATA SET NAME	CICSID	FCT NAME	OPEN DATE/TIME	CLOSE DATE/TIME	MVS LOG STREAM NAME
CICSPROD.ACC.VSAMA	CICSPROD	BASEA	01.157 12:00:00	01.159 12:11:10	CICSVR1.MVSLOG
CICSPROD.ACC.VSAMB	CICSPROD	BASE2	01.157 12:00:00		CICSVR1.MVSLOG
CICSPROD.ACC.VSAMC	CICSPROD	BASE3	01.157 12:00:00		CICSVR1.MVSLOG

- LOG OF LOGS SCAN UTILITY

DATE : 01/06/07

TIME : 11:01:09

PAGE : 2

INFORMATION FOR A FORWARD RECOVERY OF CICSPROD.ACC.VSAMA

=====

JOB STEP 1

START TIME GMT STOP TIME GMT

 01.157 12:00:00 01.158 12:11:10
 MVS LOG STREAMS NEEDED

CICSVR1.MVSLOG

CICSVR - LOG OF LOGS SCAN UTILITY

DATE : 01/06/07

TIME : 11:01:09

PAGE : 3

INFORMATION FOR A FORWARD RECOVERY OF CICSPROD.ACC.VSAMB

=====

JOB STEP 1

START TIME GMT STOP TIME GMT

 01.157 12:00:00 01.158 11:01:11
 MVS LOG STREAMS NEEDED

CICSVR1.MVSLOG

CICSVR - LOG OF LOGS SCAN UTILITY

DATE : 01/06/07

TIME : 11:01:09

PAGE : 4

INFORMATION FOR A FORWARD RECOVERY OF CICSPROD.ACC.VSAMC

=====

JOB STEP 1

START TIME GMT STOP TIME GMT

 01.157 12:00:00 01.158 11:01:11
 MVS LOG STREAMS NEEDED

CICSVR1.MVSLOG

Figure 27. Log of logs scan utility—DWWPRINT

Press F8 to scroll through the log of logs list report. Press F3 to continue with forward recovery.

Providing VSAM sphere forward recovery parameters

When you have selected a forward recovery for the selected VSAM spheres, the VSAM sphere parameters secondary window (Figure 28) appears.

```
CICSVR VSAM sphere parameters

Press F4 when the cursor is in the Backup time field to get a list of data
set backup times. Press Enter to continue.

VSAM sphere . . . . . : CICS10.ACCOUNT1.BASE

New VSAM sphere name . . _____

Forward recovery start time . . _____ (YY.DDD HH:MM:SS)

Forward recovery stop time . . _____ (YY.DDD HH:MM:SS)

Backup time . . . . . _____ + (YY.DDD HH:MM:SS)

Time format                Backup type
__ 1. Local                 __ 1. None
  2. GMT                    2. Logical
                             3. Full volume dump

Volume for restore _____ Unit for restore . . . . . _____
Command ==> _____
```

Figure 28. VSAM sphere parameters for forward recovery secondary window

Note: If the PF-Keys overlay the volume and unit fields on your CICSVR VSAM sphere parameters secondary window, type PFSHOW OFF on the command line. This command will hide the PF-Keys until you issue the command PFSHOW ON.

Here you can specify the following VSAM sphere parameters for inclusion in the forward recovery run:

- A new name for the recovered VSAM sphere
- The start time for forward recovery
- The stop time for forward recovery
- The backup time
- The backup type
- The time format used on the log (if you are using MVS log streams or QSAM copies of MVS log streams)
- The volume for the restored copy of the data set (if the backup is a DFSMSHsm logical backup or a DFSMSHsm full volume dump)
- The unit for the restored copy of the data set (if the backup is a DFSMSHsm logical backup or a DFSMSHsm full volume dump)

Note: For DFSMSHsm, if the data set you are recovering is SMS-managed, the volume and unit values are ignored.

When you first enter this secondary window, the CICSVR default values are displayed. Also, if a logical backup exists for the VSAM sphere, the backup time of the most recent logical backup will appear in the backup time field and forward recovery start time field.

Press:

- F4** To get a list of DFSMSHsm and DFSMSdss backups. The cursor must be on the backup time field.
- F5** To get the default values from the recovery control data set (RCDS).
- F6** To save the currently displayed values. The default update verification secondary window, Figure 38 on page 39, appears.
- F7** To go back to the previous VSAM sphere.

For detailed help information about any of these fields, move the cursor to the field and press the Help key (F1).

Listing DFSMSHsm and DFSMSdss backups

Figure 29 shows the secondary window that appears if you press the Prompt key (F4) on the backup time field of the CICSVR VSAM sphere parameters secondary window.

```

                                CICSVR backup prompt list                Row 1 to 3 of 3
Command ==> _____

Select one backup time, then press Enter.

VSAM sphere . . . : PAYROLL.BASE

----- Data set backup information -----
S  Date      Time      Gen Ver  BW0 RLS      Recovery point      Product
-  01.248    05:13:32  01  001  NO  NO      Date      Time      Type
-  01.248    05:11:06          NO  NO      LOCAL  DSSLD
-  01.248    05:09:38          NO  NO      LOCAL  DSSLC
***** Bottom of data *****

F1=Help    F7=Bkwd    F8=Fwd     F12=Cancel
```

Figure 29. Backup prompt list secondary window. Use S in the first column to select a backup.

This secondary window shows a list of DFSMSHsm and DFSMSdss backups for the sphere. Select the backup that you need from this list and press enter.

For general help information, press the Help key (F1).

Recovering with DFSMSHsm or DFSMSdss backups

During a forward recovery run, CICSVR restores the VSAM sphere from a DFSMSHsm or DFSMSdss backup, if one exists for the VSAM sphere that you are recovering. The latest DFSMSHsm or DFSMSdss backup will appear as the default in the VSAM sphere parameters secondary window. If you provide a new VSAM sphere name in this secondary window, the recovered data set will have this name.

Recovering with DFSMSHsm backups

If you have selected a DFSMSHsm backup for the VSAM sphere, CICSVR will restore the VSAM sphere from the DFSMSHsm backup during the forward recovery

job run. If you provide a new VSAM sphere name on the CICSVR VSAM sphere parameters secondary window, the VSAM sphere will be restored and recovered to this name.

Recovering with DFSMShsm full volume dumps

If you are using a DFSMShsm full volume dump, these dumps will not appear in the backup list. Enter 3 in the Backup type field, and enter the date of the full volume dump for the recovery in the backup time field in the VSAM sphere parameters secondary window. If you entered a name on the new VSAM sphere name field, this will be the name of the recovered data set.

Recovering with DFSMSdss logical copies

If you have selected a DFSMSdss logical copy from the backup list, during the forward recovery job run CICSVR will copy and rename the backup to the name of the VSAM sphere. If you provide a new VSAM sphere name on the CICSVR VSAM sphere parameters secondary window, the backup will be copied to the new VSAM sphere name that was specified.

Recovering with DFSMSdss logical dumps

If you have selected a DFSMSdss logical dump from the backup list, CICSVR will restore the VSAM sphere from the DFSMSdss logical dump during the forward recovery job run. If you provide a new VSAM sphere name on the CICSVR VSAM sphere parameters secondary window, the backup will be restored to the new VSAM sphere name that was specified.

Note: CICSVR can process DFSMShsm or DFSMSdss backups, full volume dumps, and non-DFSMShsm or non-DFSMSdss backups in the same run.

For more information about using DFSMShsm and DFSMSdss with CICSVR, refer to *CICSVR V3R1 Implementation Guide*.

CICSVR wait secondary window

After you have entered the recovery parameters for every selected VSAM sphere, the CICSVR wait secondary window (Figure 30) appears.

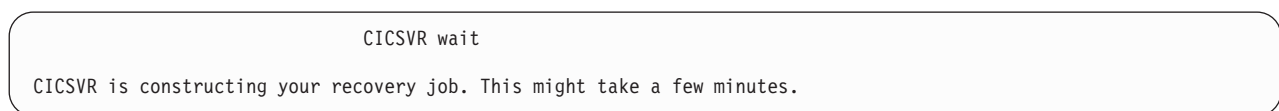


Figure 30. Wait Secondary Window

Specifying the log stream type

After you have entered the forward recovery parameters for all of the previously selected VSAM spheres, and if one or more of the selected spheres has an associated MVS log stream, the CICSVR log stream type secondary window (Figure 31 on page 34) appears. Use this secondary window to select the type of log stream (MVS log stream or QSAM copy of the MVS log stream) that you would like CICSVR to use during construction of the forward recovery job. This selection will only apply to the VSAM spheres that have an associated MVS log stream. Refer to *CICSVR V3R1 Implementation Guide* for more information about using the LOGSTREAMCOPY command to create a QSAM copy of an MVS log stream.

```

CICSVR log stream type

Specify log stream type. Press Enter to continue the job creation.

Log stream type . . _ 1. MVS logger log stream
                    2. QSAM copy

Command ==> _____
F1=Help    F5=GetDef  F6=SaveDef  F12=Cancel

```

Figure 31. Log stream type secondary window

Use this secondary window to specify the type of MVS log stream that CICSVR should use for this recovery job.

When you first enter this secondary window, the CICSVR default values are displayed. Press F5 to get the default values from the recovery control data set (RCDS). Press F6 to save the currently displayed values; the default update verification secondary window (Figure 38 on page 39) will then appear.

For detailed help information, move the cursor to a field and press the Help key (F1).

Listing recovery job errors

If CICSVR detects errors while constructing the forward recovery job, the CICSVR recovery job error list secondary window appears.

Use this secondary window (Figure 32) to obtain information about errors found during the construction of the forward recovery job.

```

CICSVR recovery job error list          Row 1 to 3 of 3

Select one or more errors, then press Enter to get more information about
the error.

S  Error                Data set
-  Overlapping recover  TEST.SMERRY.RLS
-  Unknown ddname       PROD.MILLER.RLS
-  Log sequence error   LOG05.CICS10.D96159.T224559
*****BOTTOM OF DATA*****

Command ==> _____
F1=Help    F7=Bkwd   F8=Fwd    F12=Cancel

```

Figure 32. Recovery job error list secondary window. Use S in the first column to select an error.

Select an error to get a secondary window that contains a detailed description of the error.

For general help information, press the Help key (F1).

Entering forward recovery parameters for CICS V4

Before the forward recovery job is created, you have the option to change the CICSVR parameters that will be used in the recovery job creation. You can define the following CICSVR parameters for your forward recovery job:

- Sequence checking (CICS V4 only)
- VSAM buffer pools
- CICSVR exits

Use the CICSVR forward recovery only secondary window (Figure 33) to select the CICSVR parameters that you wish to change. A secondary window for each parameter selected will appear to allow you to change the values. The parameter secondary windows will appear in the order in which they appear on the CICSVR forward recovery only secondary window (Figure 33).

```
CICSVR forward recovery only

Press Enter to create a job with default values. Or select one or more
choices below, and press Enter to override current values.

  S Forward recovery parameters related to:
  - Sequence checking
  - VSAM buffer pools
  - CICSVR exits

Command ==> _____
F1=Help   F12=Cancel
```

Figure 33. Forward recovery only parameters secondary window. Use S in the first column to select a choice.

After you have changed the parameters that CICSVR will use in the forward recovery job, you will return to the CICSVR forward recovery only secondary window (Figure 33).

To create the recovery job, press enter without any of the parameters selected. CICSVR will use any previously changed parameters in the job construction.

Note: You are not required to change any of the CICSVR parameters listed in the CICSVR forward recovery only secondary window (Figure 33). CICSVR will use the default values when creating the recovery job if you did not change any parameters.

For detailed help information about any of these choices, move the cursor to the field and press the Help key (F1).

Sequence checking

If you selected Sequence checking from the CICSVR forward recovery only secondary window (Figure 33), the CICSVR sequence checking secondary window (Figure 34 on page 36) appears.

Use this secondary window (Figure 34 on page 36) to set sequence checking parameters for your CICSVR run. The sequence checking parameters only apply to CICS V4 logs.

```

CICSVR sequence checking

Specify sequence checking parameters. Press Enter to use the displayed
values in the recovery.

LOG DATA SETS          ! LOG RECORDS
Gap in sequence 1 1. STOP      ! Gap in sequence 1 1.STOP
                  2. WARNING   !                   2.WARNING
                  3. IGNORE    !                   3.IGNORE
                  !
Out of sequence 1 1. STOP      ! Out of sequence 1 1.STOP
                  2. WARNING   !                   2.WARNING
                  3. IGNORE    !                   3.IGNORE
                  !
Reset sequence 1 1. STOP      ! Reset sequence 1 1.STOP
                  2. WARNING   !                   2.WARNING
                  3. IGNORE    !                   3.IGNORE

Command ==> _____
F1=Help   F5=GetDef  F6=SaveDef F12=Cancel

```

Figure 34. Sequence checking secondary window

When you first enter this secondary window, the CICSVR default values are displayed. Press F5 to get the default values from the recovery control data set (RCDS). Press F6 to save the currently displayed values; the default update verification secondary window (Figure 38 on page 39) will then appear.

Note: Use this secondary window only if you want to force CICSVR to use logs that are not in time sequence order, or logs that contain old data.

For detailed help information about any of these parameters, move the cursor to the field and press the Help key (F1).

Defining the VSAM buffer pools

If you selected VSAM buffer pools from the CICSVR forward recovery only secondary window (Figure 33 on page 35), the CICSVR VSAM buffer pools secondary window (Figure 35 on page 37) appears.

Use this secondary window (Figure 35 on page 37) to tune your CICSVR run by changing the number of buffers in the VSAM buffer pools.

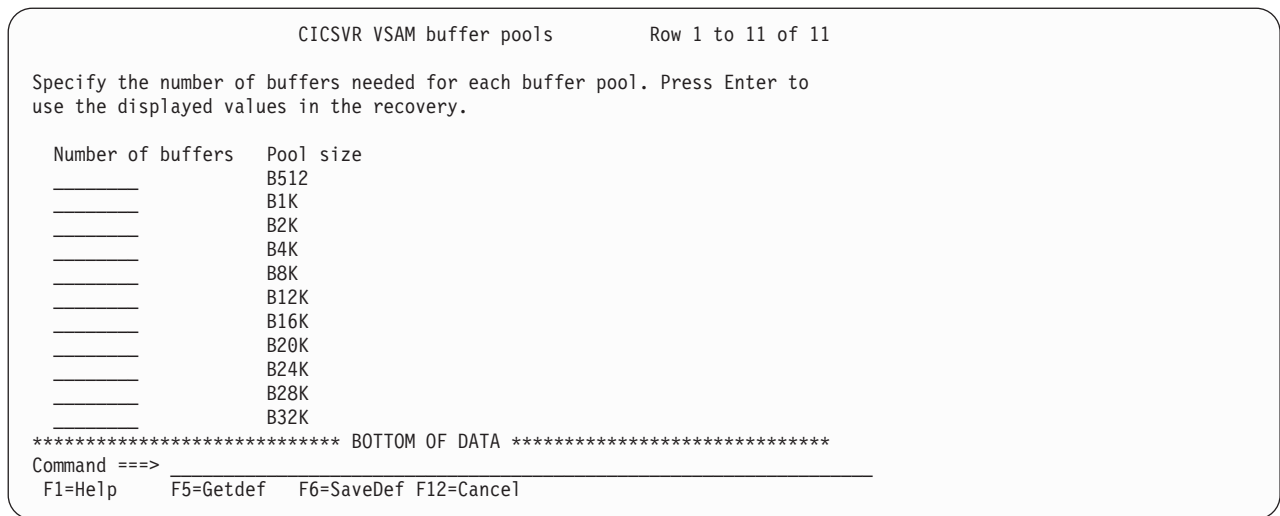


Figure 35. VSAM buffer pools secondary window

When you first enter this secondary window, the CICSVR default values are displayed. Press F5 to get the default values from the RCDS. Press F6 to save the currently displayed values; the default update verification secondary window (Figure 38 on page 39) will then appear.

For detailed help information about any of these fields, move the cursor to the field and press the Help key (F1).

Defining exits

If you selected CICSVR exits from the CICSVR forward recovery only secondary window (Figure 33 on page 35), the CICSVR exits secondary window appears.

Use the CICSVR exits secondary window to define which CICSVR exits you want to use in this recovery run.

For more information about CICSVR exits, refer to *CICSVR V3R1 Implementation Guide*.

CICS Transaction Server

If one or more of the VSAM spheres that you previously selected for forward recovery uses MVS log streams or QSAM copies of MVS log streams, the CICSVR exits secondary window shown in Figure 36 on page 38 is displayed allowing you to define exits for the forward recovery job.

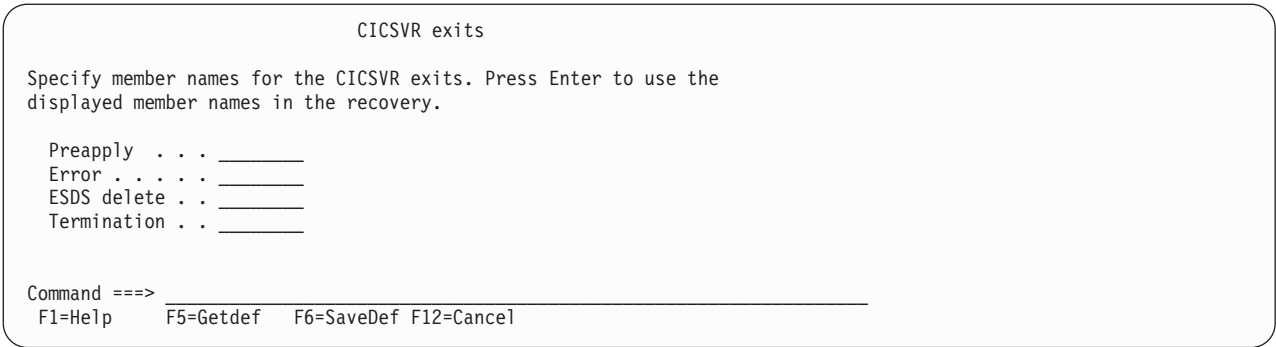


Figure 36. Exits secondary window (with MVS log streams)

When you first enter this secondary window, the CICSVR default values are displayed. Press F5 to get the default values from the RCDS. Press F6 to save the currently displayed values; the default update verification secondary window (Figure 20 on page 23) will then appear.

For detailed help information about any of these fields, move the cursor to the field and press the Help key (F1).

CICS V4

If none of the VSAM spheres that you previously selected for forward recovery use MVS log streams or QSAM copies of MVS log streams, the CICSVR exits secondary window shown in Figure 37 on page 39 is displayed allowing you to define exits for the recovery job.

The number of parameters in the parameter list that CICSVR passes to the preapply exit program increased in CICSVR Version 2 Release 3 from previous releases. Also, the format of the LOG parameter, (one of the parameters that CICSVR passes in the parameter list to the preapply exit program) was changed in CICSVR 2.3. If you specify the name of a preapply exit program that was created using the preapply parameter list format defined in releases of CICSVR earlier than CICSVR 2.3, specify option 1 (Old) in the option field that is next to the preapply member field. If you specify the name of a preapply exit program that was created using the current preapply parameter list format, specify option 2 (New) in the option field.

Note: The preapply parameter list format defined in CICSVR releases earlier than CICSVR 2.3 is only compatible with CICS V4 logs. If you want to use a preapply exit program with CICS TS log streams, the preapply exit program must use the current preapply parameter list format.

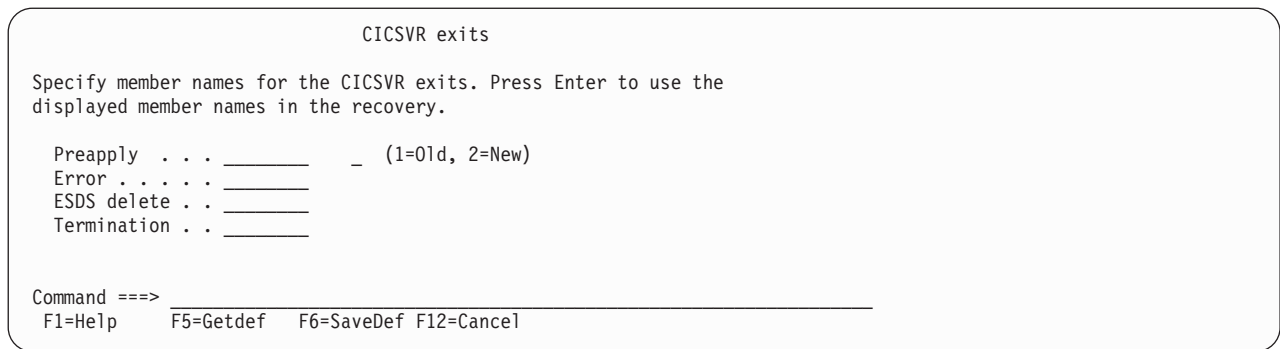


Figure 37. Exits secondary window (without MVS log streams)

When you first enter this secondary window, the CICSVR default values are displayed. Press F5 to get the default values from the RCDS. Press F6 to save the currently displayed values; the default update verification secondary window (Figure 20 on page 23) will then appear.

For detailed help information about any of these fields, move the cursor to the field and press the Help key (F1).

Updating the CICSVR default values

Use this secondary window to confirm an update to the CICSVR command default values.

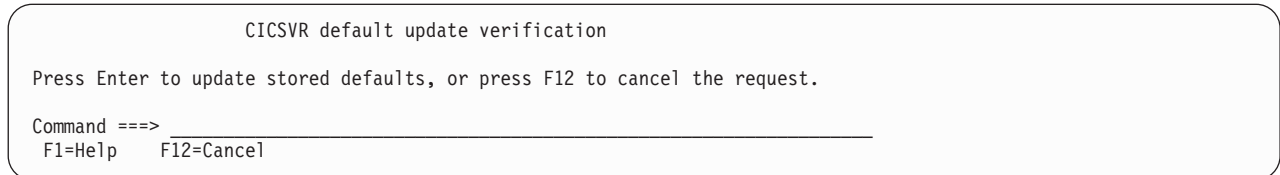


Figure 38. Default update verification secondary window

For help information, press the Help key (F1).

Submitting the job

After the recovery job has been constructed, the CICSVR job submission secondary window (Figure 39) will appear. Use this secondary window to submit, browse, or edit the job. Select option 4 to save the recovery job that CICSVR generated for you. Select option 5 to return to the VSAM sphere list.

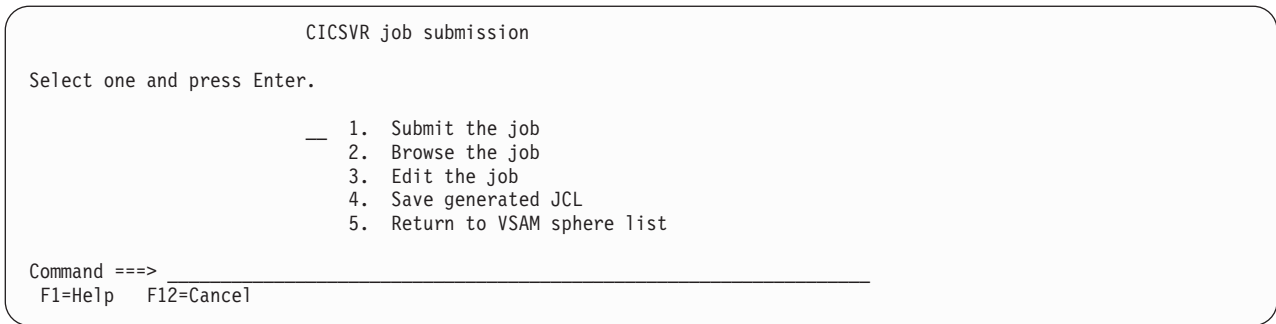


Figure 39. Job submission secondary window

For detailed help information about any of these options, move the cursor to the field and press the Help key (F1).

Saving the generated JCL

This secondary window (Figure 40) appears if you selected Option 4 from the CICSVR job submission secondary window (Figure 39).

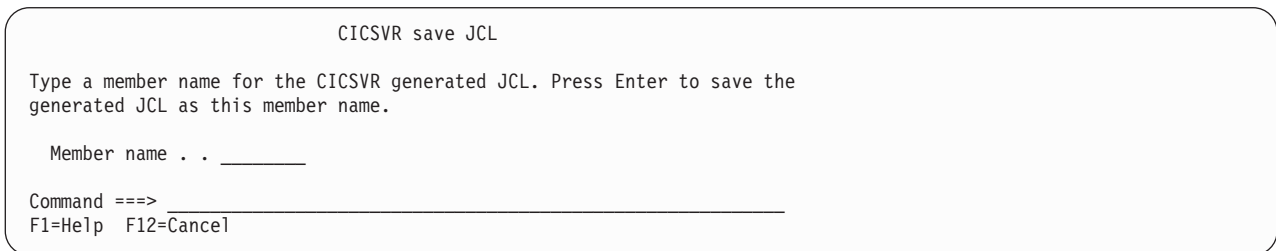


Figure 40. Save JCL secondary window

Here you can specify the member name that CICSVR will save the generated recovery job as. The member will be saved in the data set you allocated to the ddname ISPFILF.

Chapter 4. Running CICSVR backout (CICS V4 Only)

This chapter describes how to use the CICSVR backout function. The CICSVR backout function will back out uncommitted units of work on a VSAM sphere that was updated by CICS V4. The panels and secondary windows shown here are in the sequence that they will appear for a backout run. You need not use all the panels and secondary windows every time you run backout. You can bypass some of them by using the default values.

Note for CICS Transaction Server.

The CICSVR backout function will back out uncommitted units of work (LUW) on a VSAM sphere that was updated by CICS V4. VSAM spheres that were updated by CICS Transaction Server do not require a CICSVR backout because the CICS Transaction Server recovery manager, VSAM RLS, and the MVS/ESA system logger combine to provide online backout failure support. For more information, refer to the *CICSVR V3R1 Implementation Guide*.

Tasks summary

Perform the following sequence of tasks to create and run a CICSVR backout job:

1. Update the RCDS with the latest information. Do this by archiving the relevant logs associated with the VSAM spheres that you want to backout.
2. Select option 5 from the main menu and customize the JCL skeleton (see “Chapter 9. Getting the JCL skeleton” on page 93) if this is the first time you have run CICSVR.
3. Select option 1 from the main menu.
4. A secondary window appears that allows you to specify search criteria for the list of VSAM spheres. Specify the search criteria and press enter.
5. A list of VSAM spheres that match the entered search criteria appears. Select the VSAM spheres that you want to backout.
6. Select the Utilities pull-down from the menu bar and choose option 3, or press the Backout key (F6). A secondary window appears.
7. Enter the backout parameters in the secondary window for the VSAM sphere that is displayed. Repeat this step until you have supplied the backout parameters for all of the selected VSAM spheres.
After the last panel in the sequence appears, you will be asked to wait while the backout job is being constructed.
8. A secondary window appears that allows you to change the parameters that CICSVR specifies in the backout job. Select and change any of the listed parameters.
9. Submit the job that CICSVR creates for you.

The rest of this chapter describes each task.

Using the main menu

When you start CICSVR, the main menu appears (Figure 41). From this panel, you can select:

- A list of VSAM spheres
- A list of CICS V4 logs (Figure 65 on page 61)
- A list of MVS log streams and CICSVR copied log streams (Figure 75 on page 71)
- A list of registered log of logs (Figure 89 on page 83)
- The JCL skeleton (Figure 100 on page 93)

If this is the first time you have run CICSVR, select option 5 to customize the JCL skeleton (see “Chapter 9. Getting the JCL skeleton” on page 93).

To begin backout:

1. Select option 1 and press Enter.

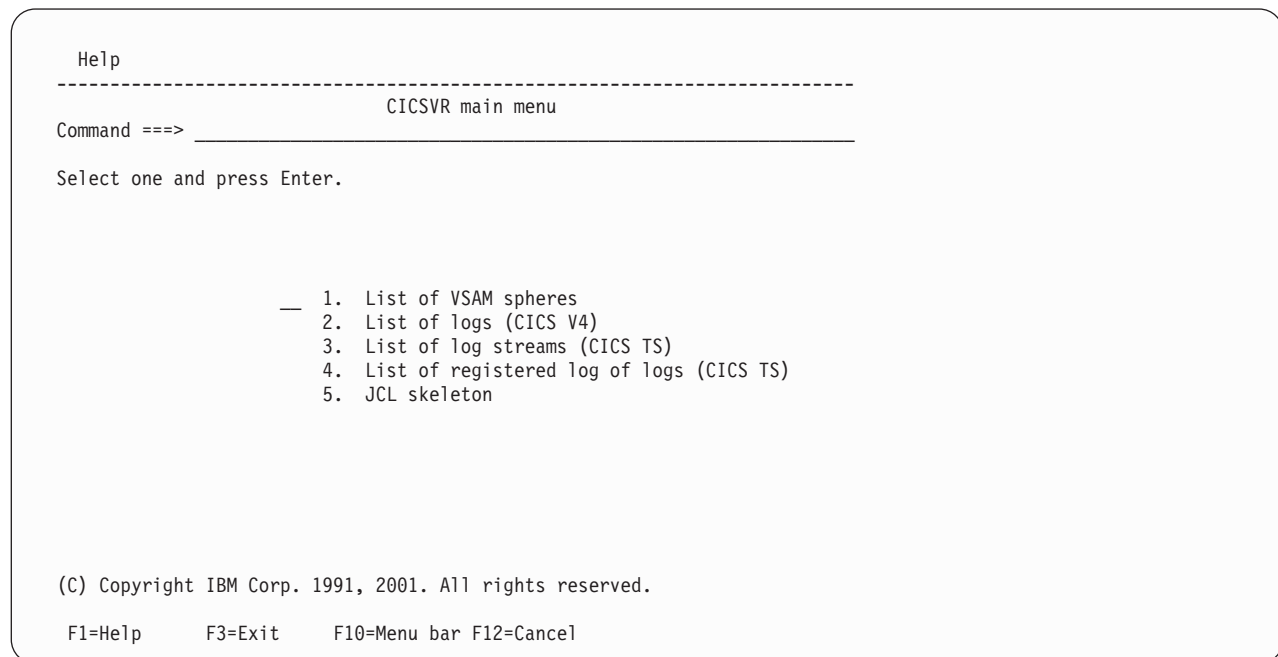


Figure 41. Main Menu Panel

Specifying criteria to include for the VSAM sphere list

When you select option 1 from the main menu (Figure 41 on page 42), the VSAM sphere list include secondary window appears (Figure 42).

Use this secondary window to filter the VSAM spheres that will appear on the VSAM sphere list by data set name. If you do not include any search criteria, all registered VSAM spheres will appear on the VSAM sphere list.

For detailed help information, press the Help key (F1).

```
-----  
CICSVR VSAM sphere list include  
Command ==> _____  
Specify search criteria to include in the VSAM sphere list, then press  
Enter.  
VSAM sphere . . . . . * _____  
  
F1=Help   F12=Cancel  
-----
```

Figure 42. VSAM Sphere List Include Window

Selecting from the VSAM sphere list

After you have entered the VSAM sphere search criteria, the CICSVR VSAM sphere list panel (Figure 43) will be displayed with a list of all CICSVR registered VSAM spheres that matched the search criteria. Type S beside all of the VSAM spheres that you want to perform a backout on.

```
Administrate Utilities Tools List View Help
-----
CICSVR VSAM sphere list                               Row 1 to 12 of 33

Select one or more VSAM spheres, then select an action.

S VSAM sphere                                         Last time      RLS RR
- CICS10.ACCOUNT1.BASE                               01.159 12:34.56 Y
- CICS10.ACCOUNT2.BASE                               01.159 12:43.56 Y
- CICS10.ACCOUNT3.BASE                               01.159 12:34.56 Y
- PAYROLL.PROD1.BASE                                 01.159 12:34.56 N
- PAYROLL.PROD2.BASE                                 01.159 12:34.56 N
- PAYROLL.PROD3.BASE                                 01.159 12:34.56 N
- CICS10.PROD1.BASE                                  01.159 12:34.56 N
- CICS10.PROD2.BASE                                  01.159 12:34.56 N
- CICS10.PROD3.BASE                                  01.159 12:34.56 N
- CICS10.PROD4.BASE                                  01.159 12:34.56 N
- CICS10.PROD5.BASE                                  01.159 12:34.56 N
- TEST.SMERRY.RLS                                    01.159 12:34.56 Y

Command ==> _____
F1=Help   F3=Exit   F4=CompRec F5=FwdRec F6=Backout F7=Bkwd
F8=Fwd    F10=Menu bar F11=Dereg F12=Cancel
```

Figure 43. VSAM Sphere List Panel. Use S in the first column to select a VSAM sphere.

From the CICSVR VSAM sphere list panel, you can select an action by using one of the shortcut function keys, or select any of these pull-downs from the menu bar.

- Administrate
- Utilities
- List
- View
- Help

Using the VSAM sphere list utilities pull-down for backout

After you have selected all of the VSAM spheres that you want to perform a backout on, press F10 to get to the menu bar. Then place the cursor under Utilities and press Enter.

Figure 44 shows the CICSVR VSAM sphere list panel Utilities pull-down.

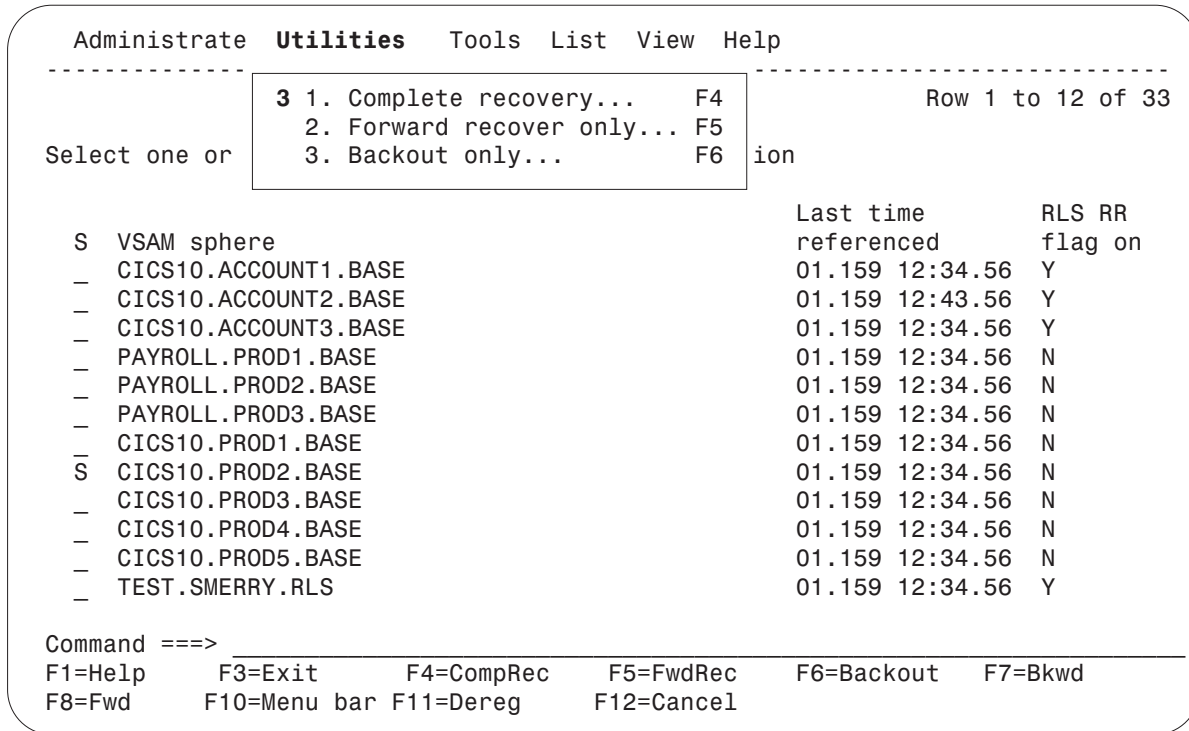


Figure 44. VSAM Sphere List—Utilities Pull-Down

From this pull-down, you can select “Backout” for the VSAM spheres that you selected by using one of these methods:

- Select option 3.
- Move the cursor to the backout item in the pull-down, and press Enter.

To get information about each menu pull-down item, move the cursor to an item and press the Help key (F1).

You may also choose a backout for the selected VSAM spheres by either:

- Typing the CICSVR shortcut command **Backout** on the command line.
- Pressing the CICSVR backout shortcut function key **F6**.

To get information about each menu pull-down choice, move the cursor to an item and press the Help key (F1).

Providing VSAM sphere backout parameters

When you have selected a backout for the selected VSAM spheres, the VSAM sphere parameters secondary window (Figure 45 on page 46) appears.

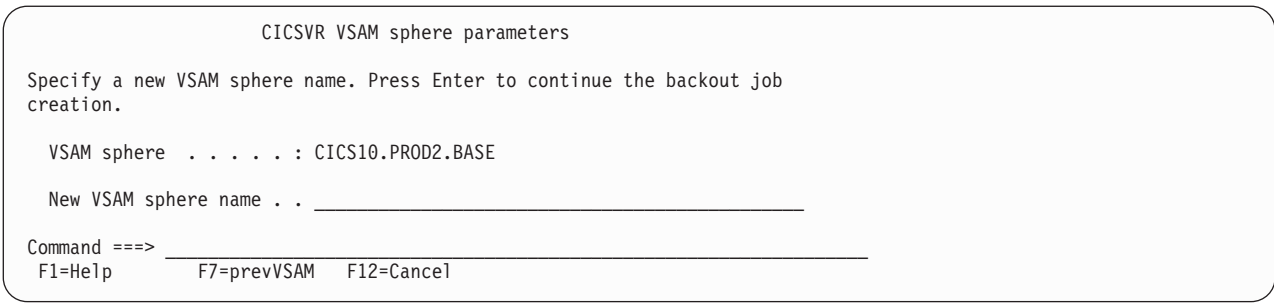


Figure 45. VSAM Sphere Parameters for Backout Secondary Window

Here, you can specify a new name for the backed-out VSAM sphere.

Press the prevVSAM function key (F7) to return to the previous VSAM sphere.

For detailed help information, move the cursor to a field and press the Help key (F1).

CICSVR wait secondary window
After you have entered the backout parameters for every selected VSAM sphere, the CICSVR wait secondary window (Figure 46) appears.

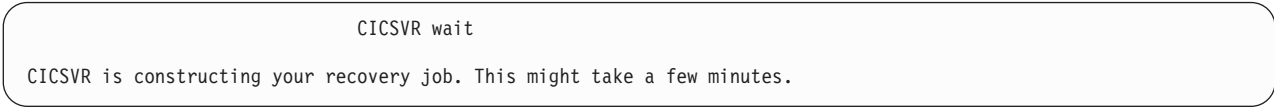


Figure 46. Wait Secondary Window

Listing backout job errors

If CICSVR detects errors while constructing the backout job, the CICSVR recovery job error list secondary window appears.

Use this secondary window (Figure 47 on page 47) to obtain information about errors found during the construction of the backout job.

```

CICSVR recovery job error list          Row 1 to 4 of 4

Select one or more errors, then press Enter to get more information about
the error.

S  Error                               Data set
-  No BOFL I found                     CIC10.PROD2.BASE
-  No BOFL III found                   CIC10.PROD5.BASE
-  Unknown ddname                      LOG01.CIC10.D01159.T203000
-  Log sequence error                  LOG05.CIC10.D01159.T224559
*****BOTTOM OF DATA*****

Command ==> _____
F1=Help   F7=Bkwd   F8=Fwd   F12=Cancel

```

Figure 47. Recovery Job Error List Secondary Window. Use S in the first column to select an error.

Select an error to get a secondary window that contains a detailed description of the error.

For general help information, press the Help key (F1).

Entering parameters for backout

Before the backout job is created, you have the option to change the parameters that CICSVR will use in the backout job creation. You can define the following parameters for your backout job:

- Sequence checking (CICS V4 only)
- VSAM buffer pools
- CICSVR exits

Use the CICSVR backout only secondary window (Figure 48) to select the CICSVR parameters that you wish to change. A secondary window for each parameter selected will appear to allow you to change the values. The secondary window for each selected parameter will appear in the order in which they appear on the CICSVR backout only secondary window (Figure 48).

```

CICSVR backout only

Press Enter to create a job with default values. Or, select one or more
choices below, and press Enter to override current values.

S  Backout only parameters related to:
-  Sequence checking
-  VSAM buffer pools
-  CICSVR exits

Command ==> _____
F1=Help   F12=Cancel

```

Figure 48. Backout Parameters Secondary Window

After you have changed the parameters that CICSVR will use in the backout job, you will return to the CICSVR backout only secondary window (Figure 48).

To create the backout job, press enter without any of the parameters selected. CICSVR will use any previously changed parameters in the job construction.

Note: You are not required to change any of the CICSVR parameters listed in the CICSVR backout only secondary window (Figure 48 on page 47). CICSVR will use the default values when creating the backout job if you did not change any parameters.

For detailed help information about any of these choices, move the cursor to the field and press the Help key (F1).

Sequence checking

If you selected Sequence checking from the CICSVR backout only secondary window (Figure 48 on page 47), the CICSVR sequence checking secondary window (Figure 49) appears.

Use this secondary window (Figure 49) to set sequence checking parameters for your CICSVR run. The sequence checking parameters only apply to CICS V4 logs.

CICSVR sequence checking

Specify sequence checking parameters. Press Enter to use the displayed values in the recovery.

LOG DATA SETS		!	LOG RECORDS		
Gap in sequence 1	1. STOP	!	Gap in sequence 1	1.STOP	
	2. WARNING	!		2.WARNING	
	3. IGNORE	!		3.IGNORE	
		!			
Out of sequence 1	1. STOP	!	Out of sequence 1	1.STOP	
	2. WARNING	!		2.WARNING	
	3. IGNORE	!		3.IGNORE	
		!			
Reset sequence 1	1. STOP	!	Reset sequence 1	1.STOP	
	2. WARNING	!		2.WARNING	
	3. IGNORE	!		3.IGNORE	

Command ==> _____

F1=Help F5=GetDef F6=SaveDef F12=Cancel

Figure 49. Sequence Checking Secondary Window

When you first enter this secondary window, the CICSVR default values are displayed. Press F5 to get the default values from the recovery control data set (RCDS). Press F6 to save the currently displayed values; the default update verification secondary window (Figure 52) will then appear.

Note: Use this secondary window only if you want to force CICSVR to use logs that are not in time sequence order, or logs that contain old data.

For detailed help information about any of these parameters, move the cursor to the field and press the Help key (F1).

Defining the VSAM buffer pools

If you selected VSAM buffer pools from the CICSVR backout only secondary window (Figure 48 on page 47), the CICSVR VSAM buffer pools secondary window (Figure 50) appears.

Use this secondary window (Figure 50) to tune your CICSVR run by changing the number of buffers in the VSAM buffer pools.

```

                                CICSVR VSAM buffer pools                Row 1 to 11 of 11

Specify the number of buffers needed for each buffer pool. Press Enter to
use the displayed values in the recovery.

Number of buffers  Pool size
-----          -
-----          B512
-----          B1K
-----          B2K
-----          B4K
-----          B8K
-----          B12K
-----          B16K
-----          B20K
-----          B24K
-----          B28K
-----          B32K
***** BOTTOM OF DATA *****
Command ==> _____
F1=Help   F5=Getdef  F6=SaveDef F12=Cancel
```

Figure 50. VSAM Buffer Pools Secondary Window

When you first enter this secondary window, the CICSVR default values are displayed. Press F5 to get the default values from the RCDS. Press F6 to save the currently displayed values; the default update verification secondary window (Figure 52) will then appear.

For detailed help information about any of these fields, move the cursor to the field and press the Help key (F1).

Defining exits

If you selected CICSVR exits from the CICSVR backout only secondary window (Figure 48 on page 47), the CICSVR exits secondary window Figure 51 on page 50 appears.

Use the CICSVR exits secondary window to define which CICSVR exits you want to use in this backout run.

The number of parameters in the parameter list that CICSVR passes to the preapply exit program increased in CICSVR Version 2 Release 3 from previous releases. Also, the format of the LOG parameter, (one of the parameters that CICSVR passes in the parameter list to the preapply exit program) was changed in CICSVR 2.3. If you specify the name of a preapply exit program that was created using the preapply parameter list format defined in releases of CICSVR earlier than CICSVR 2.3, specify option 1 (Old) in the option field that is next to the preapply member field. If you specify the name of a preapply exit program that was created using the current preapply parameter list format, specify option 2 (New) in the option field.

Note: The preapply parameter list format defined in CICSVR releases earlier than CICSVR 2.3 is only compatible with CICS V4 logs. If you want to use a preapply exit program with CICS TS log streams, the preapply exit program must use the current preapply parameter list format.

For more information about CICSVR exits, refer to *CICSVR V3R1 Implementation Guide*.

```

                                CICSVR exits

Specify member names for the CICSVR exits. Press Enter to use the
displayed member names in the recovery.

Preapply . . . _____ _ (1=Old, 2=New)
Error . . . . . _____
ESDS delete . . _____
Termination . . _____

Command ===> _____
F1=Help    F5=Getdef  F6=SaveDef F12=Cancel
```

Figure 51. Exits Secondary Window

When you first enter this secondary window, the CICSVR default values are displayed. Press F5 to get the default values from the RCDS. Press F6 to save the currently displayed values; the default update verification secondary window (Figure 52) will then appear.

For detailed help information about any of these fields, move the cursor to the field and press the Help key (F1).

Updating the CICSVR default values

Use this secondary window (Figure 52) to confirm an update to the CICSVR command default values.

```

                                CICSVR default update verification

Press Enter to update stored defaults, or press F12 to cancel the request.

Command ===> _____
F1=Help    F12=Cancel
```

Figure 52. Default Update Verification Secondary Window

For help information, press the Help key (F1).

Submitting the job

After the backout job has been constructed, the CICSVR job submission secondary window (Figure 53 on page 51) will appear. Use this secondary window to submit, browse, or edit the job. Select option 4 to save the backout job that CICSVR generated for you. Select option 5 to return to the VSAM sphere list.

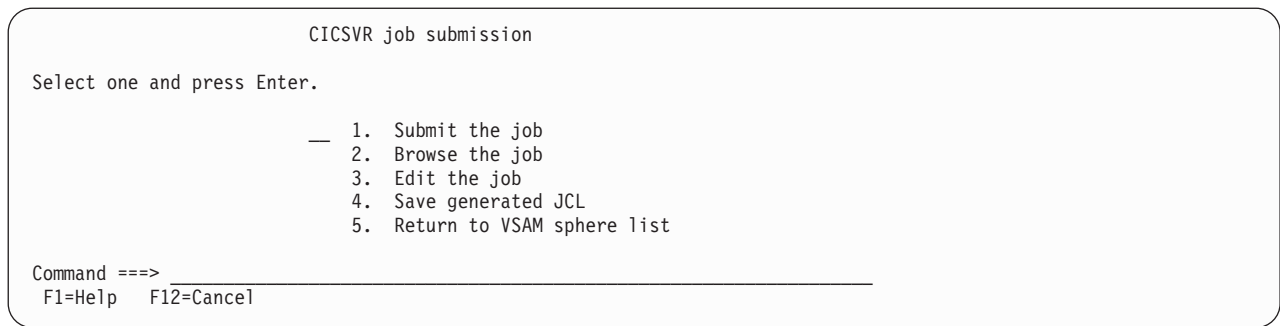


Figure 53. Job Submission Secondary Window

For detailed help information about any of these choices, move the cursor to the field and press the Help key (F1).

Saving the generated JCL

This secondary window (Figure 54) appears if you selected option 4 from the CICSVR job submission secondary window (Figure 53).

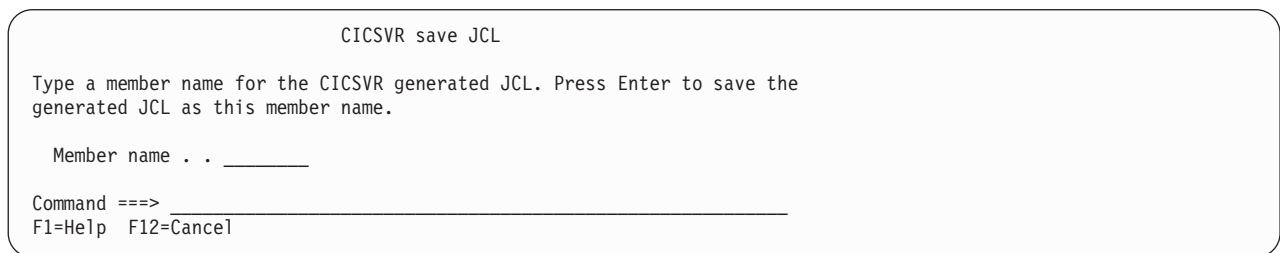


Figure 54. Save JCL

Here you can specify the member name that CICSVR will save the generated backout job as. The member will be saved in the data set you allocated to the ddname ISPFIL.

Chapter 5. Working with the other VSAM sphere list pull-downs

So far, only the utilities pull-down on the VSAM sphere list panel has been discussed, but CICSVR offers other pull-downs on the VSAM sphere list panel allowing you to perform additional functions on the selected spheres. This chapter describes the additional pull-down functions that allow you to:

- Deregister the selected VSAM spheres from the recovery control data set (RCDS)
- Set VSAM RLS options for the selected VSAM spheres
- List DFSMSHsm and DFSMSdss backups for the selected VSAM spheres.
- List VSAM RLS details for the selected VSAM spheres
- Redisplay the list of VSAM spheres by specifying all CICSVR registered VSAM spheres appear, by specifying search criteria, or by specifying sort criteria.
- Get help information

Using the VSAM sphere list administrate pull-down

To deregister a VSAM sphere:

1. On the CICSVR VSAM sphere list panel, type S beside the VSAM spheres that you want to deregister.
2. Press F10 to get to the menu bar, place the cursor under Administrate and press Enter.

Figure 55 shows the CICSVR VSAM sphere list panel Administrate pull-down.

Administrate Utilities Tools List View Help

1 1. Deregister... F11 ICSVR VSAM sphere list Row 1 to 12 of 33
2. Exit F3

res, then select an action.

S	VSAM sphere	Last time referenced	RLS RR flag on
—	CICS10.ACCOUNT1.BASE	01.159 12:34.56	Y
—	CICS10.ACCOUNT2.BASE	01.159 12:43.56	Y
—	CICS10.ACCOUNT3.BASE	01.159 12:34.56	Y
—	PAYROLL.PROD1.BASE	01.159 12:34.56	N
—	PAYROLL.PROD2.BASE	01.159 12:34.56	N
—	PAYROLL.PROD3.BASE	01.159 12:34.56	N
—	CICS10.PROD1.BASE	01.159 12:34.56	N
—	CICS10.PROD2.BASE	01.159 12:34.56	N
—	CICS10.PROD3.BASE	01.159 12:34.56	N
—	CICS10.PROD4.BASE	01.159 12:34.56	N
—	CICS10.PROD5.BASE	01.159 12:34.56	N
—	TEST.SMERRY.RLS	01.159 12:34.56	Y

Command ==> _____

F1=Help F3=Exit F4=CompRec F5=FwdRec F6=Backout F7=Bkwd
F8=Fwd F10=Menu bar F11=Dereg F12=Cancel

Figure 55. VSAM sphere list—Administrate pull-down

From this pull-down (Figure 55 on page 53), you can deregister a VSAM sphere from the RCDS by using one of these methods:

- Select option 1.
- Press the Dereg key (F11).
- Type dereg on the command line.
- Move the cursor to the Deregister item in the pull-down and press Enter.

Select option 2 to leave the panel.

To get information about each menu pull-down choice, move the cursor to an item and press the Help key (F1).

Deregistering a VSAM sphere from the RCDS

This secondary window (Figure 56) appears for every VSAM sphere that you have selected to deregister from the CICSVR VSAM sphere list panel, shown in Figure 7 on page 12.

```
CICSVR VSAM sphere deregister verification

Press Enter to deregister the VSAM sphere, or press F12 to cancel the
request.

VSAM sphere . : CICS10.PROD.BASE

Command ==> _____
F1=Help   F12=Cancel
```

Figure 56. VSAM sphere deregister verification secondary window

Press Enter to deregister the VSAM sphere from the RCDS. To get help information, press the Help key (F1).

Using the VSAM sphere list tools pull-down

To use the Tools pull-down, as shown in Figure 57:

1. On the CICSVR VSAM sphere list panel, type S beside the VSAM sphere that you want to work with.
2. Press F10 to get to the menu bar, place the cursor under Tools and press Enter.

```

Administrate Utilities Tools List View Help
-----
Select one or more VSAM
-----
1. Turn on RLS recovery required 1 to 11 of 11
2. Turn off RLS recovery required
3. Unbind RLS lock
4. Bind RLS lock
5. Reset BWO bits to zero

S VSAM sphere referenced RLS RR flag on
- CICS10.ACCOUNT1.BASE 01.159 12:34:56 Y
- CICS10.ACCOUNT2.BASE 01.159 12:43:56 Y
- CICS10.ACCOUNT3.BASE 01.159 12:34:56 Y
- PAYROLL.PROD1.BASE 01.159 12:34:56 N
- PAYROLL.PROD2.BASE 01.159 12:34:56 N
- PAYROLL.PROD3.BASE 01.159 12:34:56 N
- CICS10.PROD1.BASE 01.159 12:34:56 N
- CICS10.PROD2.BASE 01.159 12:34:56 N
- CICS10.PROD3.BASE 01.159 12:34:56 N
- CICS10.PROD4.BASE 01.159 12:34:56 N
- TEST.SMERRY.RLS 01.159 12:34:56 Y
***** Bottom of data *****
Command ==>
F1=Help F3=Exit F4=CompRec F5=FwdRec F6=Backout F7=Bkwd
F8=Fwd F10=Menu bar F11=Dereg F12=Cancel

```

Figure 57. VSAM sphere. List—Tools pull-down

From this pull-down, you can set RLS options for the VSAM spheres that you selected by using one of these methods:

- Select the option you need
- Move the cursor to the item in the pull-down, and press Enter.

To get information about each menu pull-down choice, move the cursor to an item and press the Help key (F1).

Using the VSAM sphere list list pull-down

Figure 61 shows the VSAM sphere list panel List pull-down.

```
Administrate Utilities Tools List View Help
-----
                                CICS  1. List backups...  Row 1 to 12 of 33
                                -  2. List RLS details...
Select one or more VSAM spheres

S VSAM sphere                Last time      RLS RR
- CICS10.ACCOUNT1.BASE      01.159 12:34.56 Y
- CICS10.ACCOUNT2.BASE      01.159 12:43.56 Y
- CICS10.ACCOUNT3.BASE      01.159 12:34.56 Y
- PAYROLL.PROD1.BASE        01.159 12:34.56 N
- PAYROLL.PROD2.BASE        01.159 12:34.56 N
- PAYROLL.PROD3.BASE        01.159 12:34.56 N
S CICS10.PROD1.BASE         01.159 12:34.56 N
- CICS10.PROD2.BASE         01.159 12:34.56 N
- CICS10.PROD3.BASE         01.159 12:34.56 N
- CICS10.PROD4.BASE         01.159 12:34.56 N
- CICS10.PROD5.BASE         01.159 12:34.56 N
- TEST.SMERRY.RLS          01.159 12:34.56 Y

Command ==>>>
F1=Help      F3=Exit      F4=CompRec   F5=FwdRec    F6=Backout   F7=Bkwd
F8=Fwd       F10=Menu bar F11=Dereg    F12=Cancel
```

Figure 58. VSAM sphere list—List pull-down

Use this pull-down to select a list of backups.

To get information about the menu pull-down choice, move the cursor to the item and press the Help key (F1).

Listing DFSMSHsm backups

Figure 59 shows the secondary window that appears if you select the List backups option from the List pull-down. DFSMSHsm volume dumps will not appear in this list. This secondary window appears once for every VSAM sphere that you selected.

```

CICSVR backup prompt list                               Row 1 to 3 of 3
Command ==> _____
Select one backup time, then press Enter.
VSAM sphere . . . : PAYROLL.BASE

----- Data set backup information -----
S  Date      Time      Gen  Ver  BWO  RLS      Recovery point      Product
  Date      Time      no.  no.      NO   NO      Date      Time      Type
-  01.248    05:13:32    01   001    NO   NO      LOCAL    HSMLB
-  01.248    05:11:06      NO   NO      LOCAL    DSSLD
-  01.248    05:09:38      NO   NO      LOCAL    DSSLC
***** Bottom of data *****

F1=Help   F7=Bkwd   F8=Fwd   F12=Cancel

```

Figure 59. Backup prompt list secondary window. Use S in the first column to select a backup.

For help information, press the Help key (F1).

Listing RLS details

Figure 60 shows the secondary window that appears if you select the List RLS details option from the List pull-down. This secondary window appears once for every VSAM sphere that you selected.

```

CICSVR VSAM sphere RLS details list

Press Enter to show the RLS details list for the next VSAM sphere. Or,
press F12 to cancel the list sequence.

VSAM sphere . . . . . : CICS10.PROD1.BASE
MVS log stream . . . . : CICS10.PROD1.LOGSTREAM
RLS recovery required . : NO

Command ==> _____
F1=Help  F12=Cancel

```

Figure 60. VSAM sphere RLS details list

For help information, press the Help key (F1).

Using the VSAM sphere list view pull-down

Figure 61 shows the VSAM sphere list panel View pull-down.

```
Administrate Utilities Tools List View Help
-----
                                CICSVR VSA
Select one or more VSAM spheres, then
-----
1. All
2. Include...
3. Sort...
-----
Row 1 to 12 of 33

S VSAM sphere                Last time          RLS RR
- CICS10.ACCOUNT1.BASE      referenced         flag on
- CICS10.ACCOUNT2.BASE      01.159 12:34.56  Y
- CICS10.ACCOUNT3.BASE      01.159 12:43.56  Y
- CICS10.ACCOUNT3.BASE      01.159 12:34.56  Y
- PAYROLL.PROD1.BASE        01.159 12:34.56  N
- PAYROLL.PROD2.BASE        01.159 12:34.56  N
- PAYROLL.PROD3.BASE        01.159 12:34.56  N
S CICS10.PROD1.BASE         01.159 12:34.56  N
- CICS10.PROD2.BASE         01.159 12:34.56  N
- CICS10.PROD3.BASE         01.159 12:34.56  N
- CICS10.PROD4.BASE         01.159 12:34.56  N
- CICS10.PROD5.BASE         01.159 12:34.56  N
- TEST.SMERRY.RLS          01.159 12:34.56  Y

Command ==>>>
F1=Help      F3=Exit      F4=CompRec   F5=FwdRec    F6=Backout   F7=Bkwd
F8=Fwd       F10=Menu bar F11=Dereg   F12=Cancel
```

Figure 61. VSAM sphere list—View pull-down

Use this pull-down to redisplay the list of VSAM spheres. You can list all CICSVR registered VSAM spheres, specify search criteria for the list of VSAM spheres, and specify sort criteria for the list of VSAM spheres. On the pull-down, either type in a number or move the cursor to the item and press Enter.

Select option 1 from this pull-down to redisplay the list of VSAM spheres with all CICSVR registered VSAM spheres.

To get information about each menu pull-down choice, move the cursor to an item and press the Help key (F1).

Specifying criteria to include for the VSAM sphere list

Select option 2 from this pull-down (Figure 61) to get this secondary window (Figure 62 on page 59).

Use this secondary window to specify search criteria for the list of VSAM spheres, Figure 7 on page 12. If you do not include information here, a list containing all possible data will be constructed.

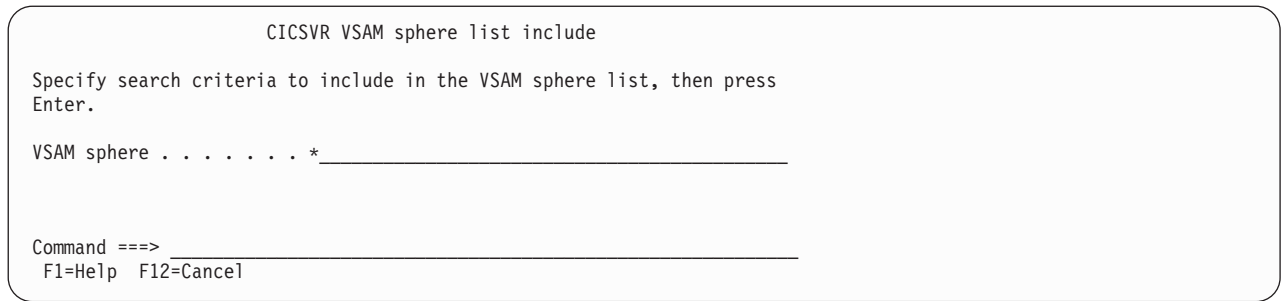


Figure 62. VSAM sphere list include secondary window

To get help information, press the Help key (F1).

Sorting the VSAM sphere list

Select option 3 from the VSAM sphere list View pull-down to get this secondary window (Figure 63).

Use this secondary window to sort the contents of what appears in the VSAM sphere list panel (Figure 7 on page 12).

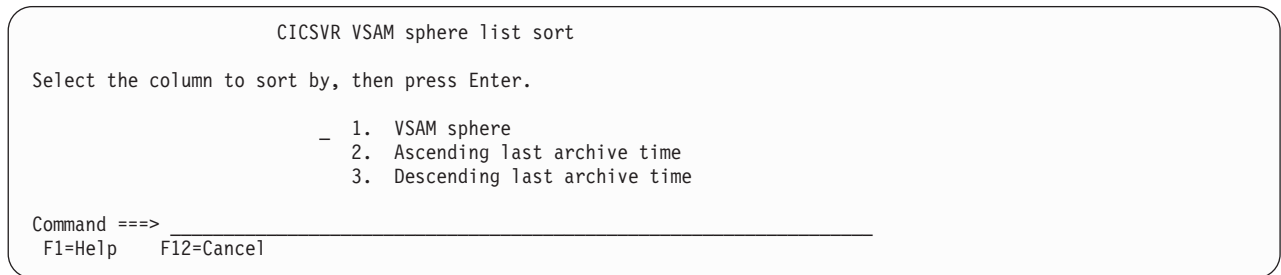


Figure 63. VSAM sphere list sort secondary window

For detailed help information about these options, move the cursor to the input field and press the Help key (F1).

Using the VSAM sphere list help pull-down

Figure 64 shows the VSAM sphere list panel Help pull-down.

Use this pull-down to get help information.

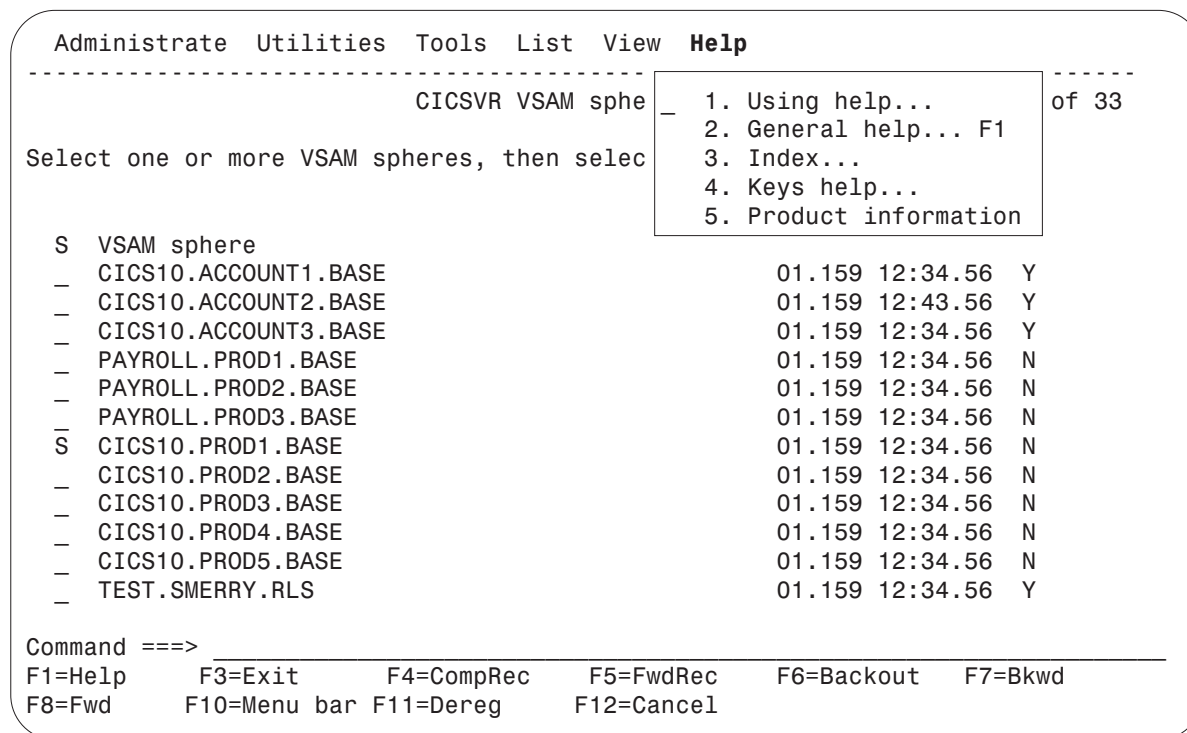


Figure 64. VSAM Sphere List—Help Pull-Down

On the pull-down, either type in a number or move the cursor to the item and press Enter.

The associated help pull-down choices are:

- | | |
|----------------------------|--|
| Using help | Tells you how to use CICSVR online help. |
| General help | Provides general information about the panel and the tasks you can perform on the panel. |
| Index | Contains a list of available help information, in alphabetical order. |
| Keys help | Displays a list of function key assignments for a panel. |
| Product information | Provides product copyright information. |

To get information about each menu pull-down choice, move the cursor to an item and press the Help key (F1).

Chapter 6. Selecting from the logs list

If you select option 2 from the main menu, the list of logs panel (Figure 65) appears.

```
Administrate List View Help
-----
CICSVR log list                               Row 1 to 5 of 5
Select one or more logs, then select an action.

S  Log name                                Log  Close  Error
   LOG02.CICS01.D96160.T203000            ID   date  /Info
-   LOG02.CICS02.D96160.T203100            02   01.158 X
-   LOG05.CICS02.D96160.T203130            05   01.158
-   LOG03.CICS02.D96160.T203200            03   01.159 X
-   LOG03.CICS01.D96160.T203300            03   01.159
***** BOTTOM OF DATA *****

Command ==>
F1=Help      F3=Exit    F4=ListDet  F7=Bkwd    F8=Fwd     F10=Menu bar
F11=Dereg   F12=Cancel
```

Figure 65. Log list panel. Use S in the first column to select a log.

In this panel, a list of all CICS V4 logs that are registered in the RCDS appears.

You can manipulate which logs appear, and the order in which they appear, by using the View pull-down (Figure 71 on page 67). If no logs qualify, an empty list appears.

From the log list panel, you can select an action by using one of the shortcut function keys, or select these pull-downs from the menu bar:

- Administrate
- List
- View
- Help

For general help information, press the Help key (F1).

Using the logs list administrate pull-down

Figure 66 shows the log list panel Administrate pull-down.

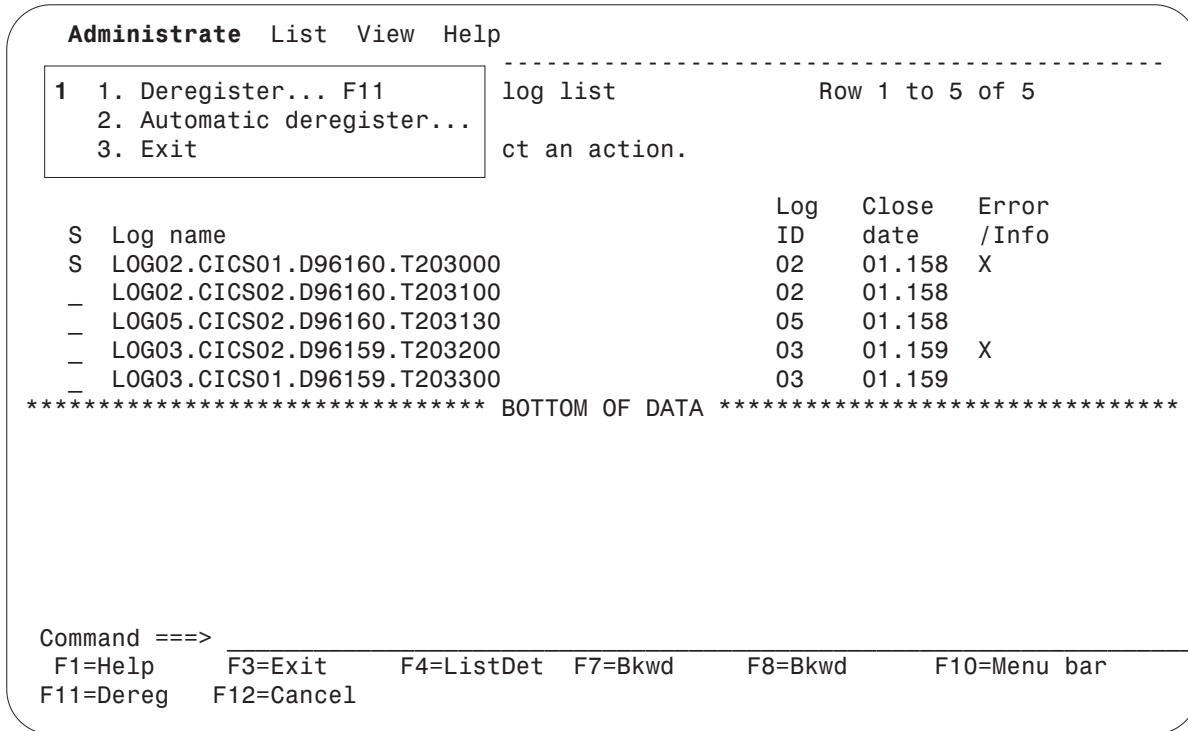


Figure 66. Log list—Administrat pull-down

From this pull-down, you can deregister a log from the RCDS by using one of these methods:

- Select option 1.
- Press the Dereg key (F11).
- Type dereg on the command line.
- Move the cursor to the Deregister item in the pull-down and press Enter.

You can specify automatic deregister criteria by using one of these methods:

- Select option 2.
- Move the cursor to the Automatic deregister item in the pull-down and press Enter.

Select option 3 to leave the panel.

To get information about each menu pull-down choice, move the cursor to an item and press the Help key (F1).

Deregistering a log from the RCDS

Select option 1 from the Administrat pull-down to get the secondary window shown in Figure 67 on page 63.

This secondary window will appear for every log that you select from the log list panel (Figure 65 on page 61).

```

CICSVR log deregister verification

Select an option and press Enter or press F12 to cancel the request.

Log . . . . . : LOG02.CICS01.D96244.T203000

Close time . . . . : 01.159 20:30:00

    1. Deregister the log
    2. Deregister and delete the log (uncatalog if tape)

Command ==> _____
F1=Help   F12=Cancel

```

Figure 67. Log deregister verification secondary window

To deregister the log, select option 1. All information that was written to the RCDS at archive time will be deleted.

To remove information about the log from the RCDS and to uncatalog and delete the log, select option 2.

To get help information, press the Help key (F1).

Providing information for the CICSVR archive utility

Select option 2 from the Administrate pull-down to get the secondary window shown in Figure 68. Use this secondary window (Figure 68) to specify parameters to be used by the CICSVR archive utility.

```

CICSVR automatic log deregister

Specify the automatic deregister criteria for logs, then press Enter. Or,
leave both fields blank, then press Enter to turn off the automatic
deregister function.

Automatic deregister . . : ON

Retention period . . . . 30   (Number of days)

Uncatalog and delete . . . 1   (1=Yes, 2=No)

Command ==> _____
F1=Help   F12=Cancel

```

Figure 68. Automatic log deregister secondary window

This figure displays sample user-entered values but the default values for this secondary window are:

- OFF for automatic deregister
- blank for the retention period
- blank for the uncatalog and delete.

The sample data in this secondary window will cause the logs to be automatically deregistered from the RCDS after 30 days, when the CICSVR archive utility is started. The logs are also uncataloged and deleted.

| Automatic deregister applies to all logs meeting the criteria and is not restricted to
| the CICSID or JID specified in the archive job.

For information about the CICSVR archive utility, refer to *CICSVR V3R1 Implementation Guide*.

To get help information, press the Help key (F1).

Using the logs list list pull-down

Figure 69 shows the log list panel List pull-down.

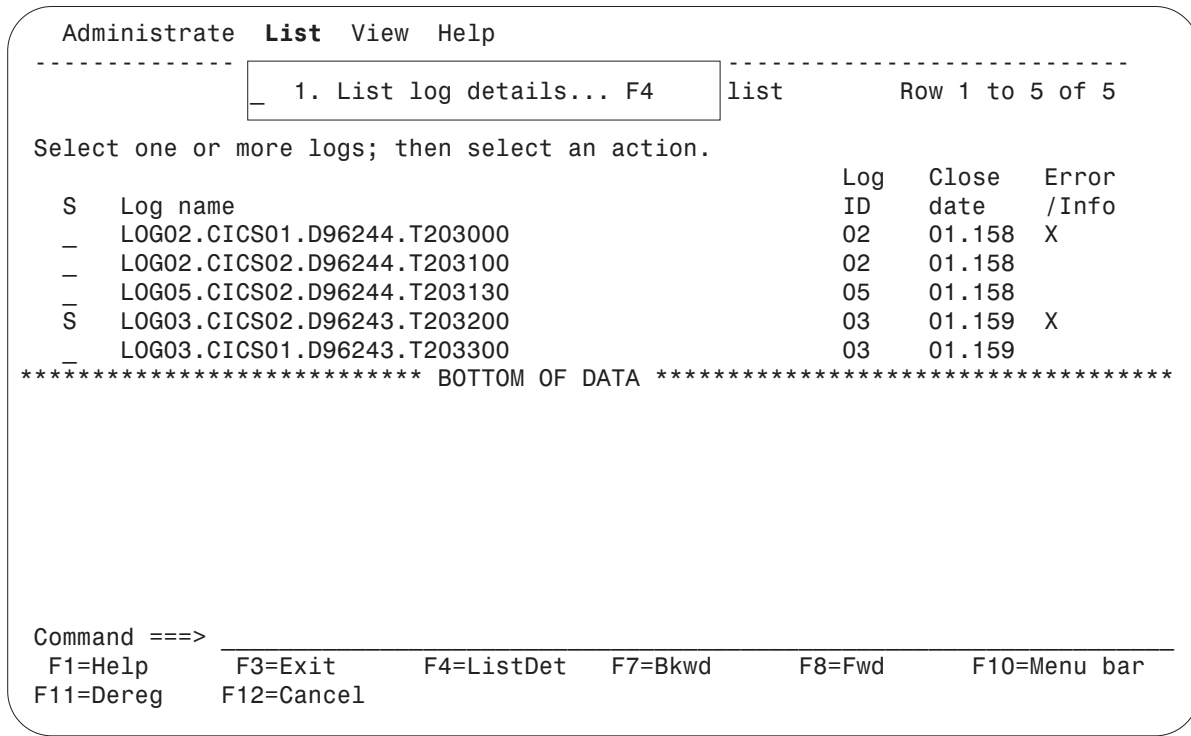


Figure 69. Log list—List pull-down

From this pull-down, you can list details about logs using one of these methods:

- Select option 1.
- Press the ListDet key (F4).
- Type listdet on the command line.
- Move the cursor to the item in the pull-down and press Enter.

Use this pull-down to show details about logs stored in the RCDS.

To get information about the menu pull-down choice, move the cursor to the item and press the Help key (F1).

Listing log details

Select option 1 and the CICSVR log details list secondary window (Figure 70) appears.

```
CICSVR log details list                               Row 1 to 1 of 1

Press Enter to show the log details list for the next log. Or press F12 to
cancel the list sequence.

Log name . . . . . : LOG03.CICS02.D96159.T203200
Open date and time . . : 01.159 12:01:00
Close date and time . . : 01.159 20:30:59
Log origin . . . . . : Other
CICS applid . . . . . : CICS02

---Errors/Info found for this log-----
Log-record formats are inconsistent. See message DWW1236-7W
***** BOTTOM OF DATA *****

Command ==> _____
F1=Help   F7=Bkwd   F8=Fwd   F12=Cancel
```

Figure 70. Log details list secondary window

This secondary window shows details about the log from the CICSVR archive utility. If errors are found for a log, the details include a reference to the relevant message in *CICSVR V3R1 Messages and Problem Determination*.

To get detailed help information, move the cursor to a field and press the Help key (F1).

Using the logs list view pull-down

Figure 71 shows the log list panel View pull-down.

```
Administrate List View Help
-----
Select one or more  1. All
                    2. Include...
                    3. Sort...
                    d log list          Row 1 to 5 of 5
                    ction.

S  Log name          Log  Close  Error
  LOG02.CICS01.D96158.T203000  02  01.158  X
  LOG02.CICS02.D96158.T203100  02  01.158
  LOG05.CICS02.D96158.T203130  05  01.158
  LOG03.CICS02.D96159.T203200  03  01.159  X
  LOG03.CICS01.D96159.T203300  03  01.159
***** BOTTOM OF DATA *****

Command ==>
F1=Help      F3=Exit      F4=ListDet   F7=Bkwd      F8=Fwd       F10=Menu bar
F11=Dereg    F12=Cancel
```

Figure 71. Log list—View pull-down

Use this pull-down to provide include and sort criteria input to the log list panel, and then to redisplay the updated list.

Use one of these methods to select a choice:

- Select the option you need.
- Move the cursor to the item in the pull-down and press Enter.

Select option 1 to redisplay the log list with all logs registered to CICSVR.

To get information about each menu pull-down choice, move the cursor to an item and press the Help key (F1).

Specifying criteria to include for the log list

Select option 2 from the log list View pull-down, and the CICSVR log list include secondary window appears (Figure 72 on page 68).

Use this secondary window to specify include-criteria input to the log list panel (Figure 65 on page 61). If you do not include information here, a list containing all possible data will be constructed.

```

CICSVR log list include

Specify criteria to include in the log list, then press Enter.

Log name . . . . . _____
CICS applid . . . . _____
Log ID . . . . . _ (1 - 99)
Log error . . . . . _ (1=Yes, 2=No)
Close before . . . . _____ (YY.DDD HH:MM:SS)
Close after . . . . _____ (YY.DDD HH:MM:SS)
Open before . . . . _____ (YY.DDD HH:MM:SS)
Open after . . . . _____ (YY.DDD HH:MM:SS)

Command ==> _____
F1=Help   F12=Cancel

```

Figure 72. Log list include secondary window

To get detailed help information, move the cursor to a field and press the Help key (F1).

Sorting the log list

Select option 3 from the log list View pull-down and this secondary window appears (Figure 73). Use this secondary window to sort the contents of what appears in the log list panel (Figure 65 on page 61).

```

CICSVR log list sort

Select the column to sort by, then press Enter.

  1_ 1. Log name
     2. Log ID (identification)
     3. Ascending close date
     4. Descending close date
     5. Log error

Command ==> _____
F1=Help   F12=Cancel

```

Figure 73. Log list sort secondary window

To get help information, move the cursor to the input field and press the Help key (F1).

Using the logs list help pull-down

Figure 74 shows the logs list panel Help pull-down.

Use this pull-down to get help information.

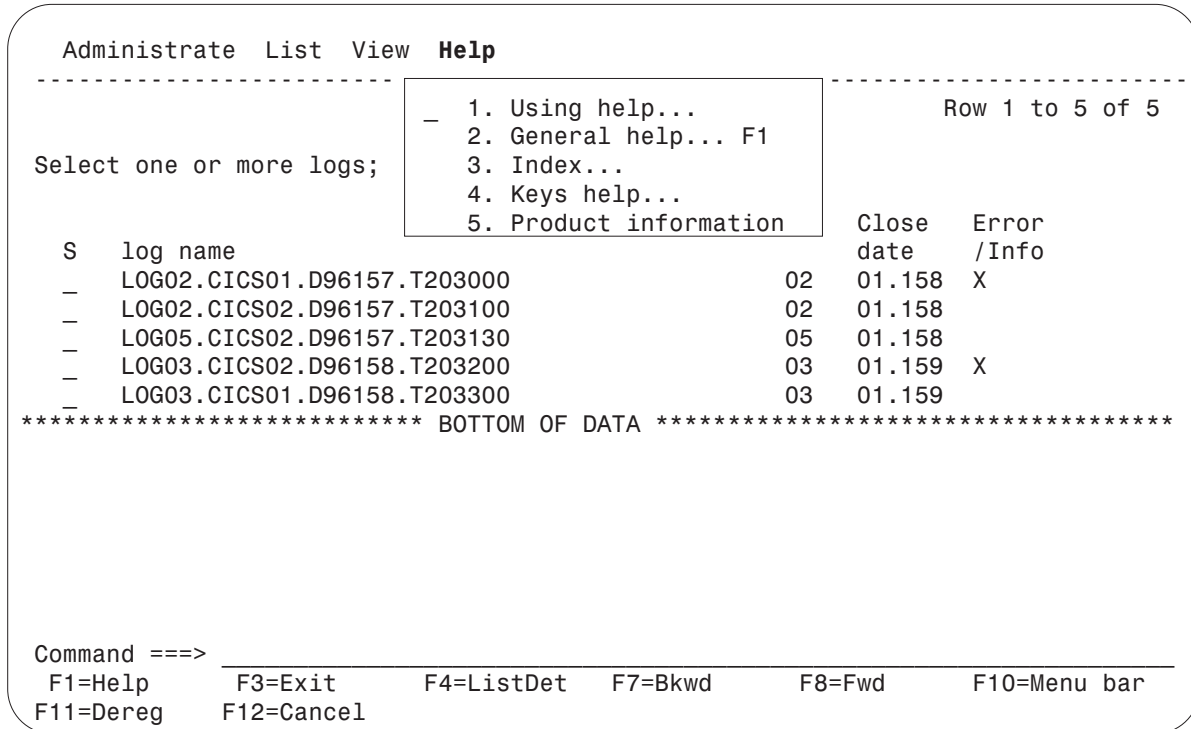


Figure 74. Logs list-Help pull-down

Use one of these methods to select a help choice:

- Select the option you need.
- Move the cursor to the item in the pull-down and press Enter.

The associated help pull-down choices are:

Using help	Tells you how to use CICSVR online help.
General help	Provides general information about the panel and the tasks you can perform on the panel.
Index	Contains a list of available help information, in alphabetical order.
Keys help	Displays a list of function key assignments for a panel.
Product information	Provides product copyright information.

To get information about each menu pull-down choice, move the cursor to an item and press the Help key (F1).

Chapter 7. Selecting from the log stream list

If you select option 3 from the main menu, a list of MVS log streams and CICSVR copies of MVS log streams appears.

```
Administrate List View Help
-----
CICSVR log stream list                               Row 1 to 10 of 10
Command ==> _____

Select one or more log streams, then select an action. This list contains log
streams and CICSVR log stream copies. Log streams do not have a copied date
and time.

  S Log stream                                     Copied until (GMT)
  - CICS10.PROD1.LOGSTRM
  - CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST01          01.159 08:31:21
  - CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST02          01.159 08:33:45
  - CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST03          01.159 08:34:09
  - CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST04          01.159 08:37:12
  - CICS10.PROD2.LOGSTRM
  - CICS10.PROD2.LOGSTRM.COPY1                    01.159 08:45:12
  - CICS11.PROD1.LOGSTRM.QSAM                      01.159 08:45:12
  - CICS11.PROD2.LOGSTRM.SAMCOPY                   01.159 08:45:12
  - CICS11.PROD3.LOGSTRM.SAMCOPY                   01.159 08:45:12
***** Bottom of data *****

  F1=Help      F3=Exit      F4=ListDet    F5=ListSAM    F7=Bkwd      F8=Fwd
  F10=Menu bar F11=Dereg    F12=Cancel
```

Figure 75. Log stream list panel. Use S in the first column to select a log stream.

On this panel, a list of all MVS log streams and SAM copies of log streams that are registered in the recovery control data set (RCDS) appears.

Note: MVS log streams will not have a date and time in the Copied until field.

You can manipulate which and in what order log streams and log stream copies appear by using the View pull-down (Figure 80 on page 75). If there are not any log streams or log stream copies that match your entered search criteria (if you selected option 2 from the View pull-down), the list of log streams will be empty.

From the log stream list panel, you can select an action by using one of the shortcut function keys, or you can select these pull-downs from the menu bar:

- Administrate
- List
- View
- Help

For general help information, press the Help key (F1).

Using the log stream list panel Administrate pull-down

Figure 76 shows the log stream list panel Administrate pull-down.

```
Administrate List View Help
-----
- 1. Deregister ...      F11  log stream list          Row 1 to 10 of 10
- 2. Automatic deregister
- 3. Exit                F3
en select an action. This list contains log
streams and CICSVR log stream copies. Log streams do not have a copied date
and time.

S Log stream                               Copied until (GMT)
- CICS10.PROD1.LOGSTRM
- CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST01     01.159 08:31:21
- CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST02     01.159 08:33:45
- CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST03     01.159 08:34:09
- CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST04     01.159 08:37:12
- CICS10.PROD2.LOGSTRM
- CICS10.PROD2.LOGSTRM.COPY1                01.159 08:45:12
- CICS11.PROD1.LOGSTRM.QSAM                 01.159 08:45:12
- CICS11.PROD2.LOGSTRM.SAMCOPY              01.159 08:45:12
- CICS11.PROD3.LOGSTRM.SAMCOPY              01.159 08:45:12
***** Bottom of data *****

F1=Help      F3=Exit      F4=ListDet  F5=ListSAM  F7=Bkwd     F8=Fwd
F10=Menu bar F11=Dereg    F12=Cancel
```

Figure 76. Log stream list Administrate pull-down

From this pull-down, you can deregister a log stream entry from the RCDS by using one of these methods:

- Select option 1
- Press the Dereg key (F11)
- Move the cursor to the Deregister item in the pull-down and press Enter

From this pull-down, you can specify the automatic deregistration criteria for the log stream copies and log stream blocks by using one of these methods:

- Select option 2
- Move the cursor to the Automatic deregistration item in the pull-down and press Enter

Select option 3 to leave the panel.

To get help information about each menu pull-down choice, move the cursor to an item and press the Help key (F1).

Deregistering a log stream entry from the RCDS

Select option 1 from the Administrate pull-down to get the secondary windows shown in Figure 77 on page 73 and Figure 78 on page 73.

```

CICSVR log stream deregister
Command ==> _____
Press Enter to deregister the log stream. Or, press F12 to cancel the
request.

Log stream . . . . : CICS10.PROD2.LOGSTRM

F1=Help   F12=Cancel
-----

```

Figure 77. Log stream deregister secondary window

This secondary window appears for every MVS log stream that you select from the log stream list panel.

To deregister the log stream, press Enter.

To get help information, press the Help key (F1).

```

CICSVR SAM copy deregister verification
Command ==> _____
Select an action and press Enter to deregister the SAM copy. Or, press
to cancel the request.

SAM copy . . . . . : CICS11.PROD1.LOGSTRM.QSAM

__ 1. Deregister the SAM copy
__ 2. Deregister and delete the SAM copy (uncatalog if tape )

F1=Help   F12=Cancel

```

Figure 78. SAM copy deregister verification secondary window

This secondary window appears for every log stream copy that you select from the log stream list panel. To deregister the SAM copy, select option 1. All information that was written to the RCDS during the log stream copy will be deleted.

To remove information about the SAM copy from the RCDS and to uncatalog and delete the copy, select option 2.

To get help information, press the Help key (F1).

Providing information for the CICSVR automatic log stream deregister function

Select option 2 from the Administrative pull-down to get the secondary window shown in Figure 79 on page 74. Use this secondary window to specify the parameters to be used by the CICSVR log of logs scan function.

```

CICSVR automatic log stream deregister
Command ==>

Specify the automatic deregister criteria for log stream blocks and log
stream copies, then press ENTER. Or, leave all fields blank, then press
ENTER to turn off the automatic deregister function.

Automatic deregister . . . . : ON

Retention period for blocks   005 (Number of days)

Retention period for copies   010 (Number of days)

Uncatalog and delete . . . . . 1 (1=Yes, 2=No)

F1=Help   F12=Cancel

```

Figure 79. Automatic log stream deregister secondary window

This figure displays sample user-entered values but the default values for this secondary window are:

- OFF for automatic deletion
- Blank for the retention period for blocks
- Blank for the retention period for copies
- Blank for the uncatalog and delete

The sample data in this secondary window shows the current settings for automatic deletion of log stream blocks and automatic deregistration of log stream copies. When the log of logs scan is run, the current settings will be used, causing the deletion of log stream blocks that are older than 5 days and the deregistration and deletion of the log stream copies that were created more than 10 days ago. For information about the CICSVR log of logs scan utility, refer to *CICSVR V3R1 Implementation Guide*.

For help information, press the Help key (F1).

Using the log stream list panel List pull-down

Figure 80 shows the log stream list panel List pull-down.

```
Administrate List View Help
-----
Command ==> | - 1. List details...   F4 | ist          Row 1 to 10 of 10
              | 2. List SAM copies ... F5 |
              | 3. Exit               F3 |
Select one or _____ action. This list contains log
streams and CICSVR log stream copies. Log streams do not have a copied date
and time.

S Log stream                               Copied until (GMT)
- CICS10.PROD1.LOGSTRM
- CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST01    01.159 08:31:21
- CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST02    01.159 08:33:45
- CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST03    01.159 08:34:09
- CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST04    01.159 08:37:12
- CICS10.PROD2.LOGSTRM
- CICS10.PROD2.LOGSTRM.COPY1              01.159 08:45:12
- CICS11.PROD1.LOGSTRM.QSAM               01.159 08:45:12
- CICS11.PROD2.LOGSTRM.SAMCOPY           01.159 08:45:12
- CICS11.PROD3.LOGSTRM.SAMCOPY           01.159 08:45:12
***** Bottom of data *****

F1=Help    F3=Exit    F4=ListDet  F5=ListSAM  F7=Bkwd    F8=Fwd
F10=Menu bar F11=Dereg  F12=Cancel
```

Figure 80. Log stream list—List pull-down

List details

From the List pull-down, you can list details about the selected log streams and log stream copies by using one of the following methods:

- Select option 1
- Move the cursor to the List details item in the List pull-down and press Enter

To get information about a menu pull-down choice, move the cursor to an item, and press the Help key (F1).

You may also list details about the selected log streams and log stream copies by either:

- Typing the CICSVR shortcut command *listdet* on the command line
- Pressing the CICSVR list details shortcut function key F4

For each MVS log stream that you have selected, the CICSVR log stream details list secondary window (Figure 81) appears.

```
CICSVR log stream details list          Row 1 to 3 of 3
Command ==> _____

Select one or more errors, then press Enter to get more information. Or,
press Enter to show the log stream details list for the next selected log
stream. Or, press F12 to cancel the list sequence.

Log stream . . . . : CICS10.PROD1.LOGSTRM
First block number : 1013
Last block number  : 7331
First time copied  : 01.159 07:10:14 (local)
                   01.159 06:10:14 (GMT)
Last time copied   : 01.159 18:13:14 (local)
                   01.159 17:13:14 (GMT)
Last copy time . . : 01.159 16:59:23 (GMT)

S Information & error
- Error while trying to connect to log stream.
- I/O error on log stream.
- Sequence error on log stream.
***** Bottom of data *****

F1=Help   F7=Bkwd   F8=Fwd    F12=Cancel
```

Figure 81. Log stream details list secondary window

This secondary window will appear for each selected MVS log stream. If errors have been found for the log stream, a message for each error will appear.

Place an S in the column next to each error message that you would like more information about. A secondary window will appear for each selected error and will contain a detailed description of the error along with a reference to the relevant message in *CICSVR V3R1 Messages and Problem Determination*.

Attention: If you have selected an MVS log stream that has not been copied by the CICSVR log stream copy utility, the details on this secondary window will not contain any data.

To get detailed help information, move the cursor to a field and press the Help key (F1).

For each log stream copy that you have selected, the CICSVR SAM copy details list secondary window (Figure 82) appears.

```

                                CICSVR SAM copy details list
Command ==> _____

Press Enter to show the SAM copy details list for the next SAM copy. Or
press F12 to cancel the list sequence.

Log stream . . . . : CICS10.PROD4.LOGSTRM
SAM copy . . . . . : CICS10.PROD4.QSAMCOPY
First block number : 21063
Last block number  : 93048
First time . . . . : 01.159 12:13:14 (local)
                   01.159 13:13:14 (GMT)
Last time . . . . . : 01.159 18:13:14 (local)
                   01.159 19:13:14 (GMT)
Copy time . . . . . : 01.159 23:59:14 (GMT)
No. of CICS record : 234
Copy number . . . . : 1
Copied records . . . : All (All/CICS)
F1=Help   F12=Cancel
_____
```

Figure 82. SAM copy details list secondary window

This secondary window will appear for each selected copied log stream.

To get detailed help information, move the cursor to a field and press the Help key (F1).

Listing SAM Copies

From the List pull-down, you can list SAM copies of MVS log streams by using one of the following methods:

- Select option 2
- Move the cursor to the List SAM copies item in the List pull-down and press Enter

To get information about a menu pull-down choice, move the cursor to an item, and press the Help key (F1).

You may also list SAM copies of the selected MVS log streams by either:

- Typing the CICSVR shortcut command ListSAM on the command line
- Pressing the CICSVR list SAM copies shortcut function key F5

For each MVS log stream that you have selected, the CICSVR SAM copy list secondary window (Figure 83) appears.

```

                                CICSVR SAM copy list                Row 1 to 4 of 4
Command ==> _____
Select one or more SAM copies, then select an action.

Log stream . . . . : CICS10.PROD1.LOGSTRM

S SAM log stream copy                Copy time (GMT)
- CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST01    01.159 08:31:21
- CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST02    01.159 08:33:45
- CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST03    01.159 08:34:09
- CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST04    01.159 08:37:12
***** Bottom of data *****

F1=Help   F4=ListDet  F7=Bkwd   F8=Fwd    F11=Dereg  F12=Cancel
```

Figure 83. CICSVR SAM copy list secondary window

This secondary window will appear for each MVS log stream that you have selected. If you selected a log stream copy for the list SAM copies action, this secondary window will be displayed (Figure 83) for the MVS log stream that it was copied from.

From this secondary window you may select one or more log stream copies by placing an S in the first column. You then may perform the following actions on the selected log stream copies:

- List details
- Deregister

To list details of the selected log stream copies, either press F4 or type *listdet* on the command line. The CICSVR SAM copy details list secondary window, previously shown in Figure 81, appears for each selected log stream copy.

To deregister the selected log stream copies, either press F11 or type *dereg* on the command line. The CICSVR SAM copy deregister verification secondary window, previously shown in Figure 78 on page 73, appears for each selected log stream copy.

For general help information, press the Help key (F1).

Listing SAM copy details

Figure 84 on page 79 shows the secondary window that appears if you press F4 in the SAM copy list secondary window (Figure 83). This secondary window appears once for every SAM copy that you select.

```

                                CICSVR SAM copy details list
Command ==> _____

Press Enter to show the SAM copy details list for the next SAM copy. Or
press F12 to cancel the list sequence.

Log stream . . . . : CICS10.PROD4.LOGSTRM
SAM copy . . . . . : CICS10.PROD4.QSAMCOPY
First block number : 21063
Last block number  : 93048
First time . . . . : 01.159 12:13:14 (local)
                   01.159 13:13:14 (GMT)
Last time . . . . . : 01.159 18:13:14 (local)
                   01.159 19:13:14 (GMT)
Copy time . . . . . : 01.159 23:59:14 (GMT)
No. of CICS record : 234
Copy number . . . . : 1
Copied records . . . : All (All/CICS)
F1=Help   F12=Cancel
_____
```

Figure 84. SAM copy details list secondary window

For help information, press the Help key (F1).

Using the log stream list view pull-down

Figure 85 shows the log stream list panel View pull-down.

```
Administrate List View Help
-----
Command ==> | - 1. All | ream list Row 1 to 10 of 10
              | 2. Include... |
              | 3. Sort... |
Select one or more ----- ct an action. This list contains log
streams and CICSVR log stream copies. Log streams do not have a copied date
and time.

S Log stream Copied until (GMT)
- CICS10.PROD1.LOGSTRM
- CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST01 01.159 08:31:21
- CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST02 01.159 08:33:45
- CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST03 01.159 08:34:09
- CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST04 01.159 08:37:12
- CICS10.PROD2.LOGSTRM
- CICS10.PROD2.LOGSTRM.COPY1 01.159 08:45:12
- CICS11.PROD1.LOGSTRM.QSAM 01.159 08:45:12
- CICS11.PROD2.LOGSTRM.SAMCOPY 01.159 08:45:12
- CICS11.PROD3.LOGSTRM.SAMCOPY 01.159 08:45:12
***** Bottom of data *****

F1=Help F3=Exit F4=ListDet F5=ListSAM F7=Bkwd F8=Fwd
F10=Menu bar F11=Dereg F12=Cancel
```

Figure 85. Log stream List—View pull-down

Use this pull-down to redisplay the log stream list by specifying search or sort criteria.

Use one of these methods to select a choice:

- Select the option you need.
- Move the cursor to the item in the pull-down and press Enter.

Select option 1 to redisplay the log stream list with all CICSVR registered MVS log streams and log stream copies.

To get information about each menu pull-down choice, move the cursor to an item and press the Help key (F1).

Specifying search criteria for the log stream list

Select option 2 from the log stream list View pull-down, and the CICSVR log stream list include secondary window appears (Figure 86 on page 81).

Use this secondary window to specify search criteria input to the log stream list panel (Figure 75 on page 71). If you do not include information here, a list containing all possible data will be constructed.

```
CICSVR log stream list include

Specify search criteria to include in the log stream list, then press
Enter.

Log stream . . . . . CIC10.PROD1.LOGSTRM

Command ==> _____
F1=Help F12=Cancel
```

Figure 86. Log stream list include secondary window

To get detailed help information, move the cursor to a field and press the Help key (F1).

Sorting the log stream list

Select option 3 from the log stream list View pull-down and this secondary window appears (Figure 87).

Use this secondary window to sort the contents of what appears in the log stream list panel (Figure 75 on page 71).

```
CICSVR log stream list sort

Select the column to sort by, then press Enter.

  1. Log stream
  2. Ascending copied-until time
  3. Descending copied-until time

Command ==> _____
F1=Help F12=Cancel
```

Figure 87. Log stream list sort secondary window

To get help information, move the cursor to the input field and press the Help key (F1).

Using the log stream list help pull-down

Figure 88 shows the log stream list panel Help pull-down. Use this pull-down to get help information.

```

Administrate List View Help
-----
Command ==>          - 1. Using help...          Row 1 to 10 of 10
                    - 2. General help... F1
                    - 3. Index...
Select one or more log st  4. Keys help...      his list contains log
streams and CICSVR log st  5. Product information  have a copied date
and time.
-----

S Log stream                Copied until (GMT)
- CICS10.PROD1.LOGSTRM
- CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST01 01.159 08:31:21
- CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST02 01.159 08:33:45
- CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST03 01.159 08:34:09
- CICS10.PROD1.LOGSTRM.QSAMCOPY.TEST04 01.159 08:37:12
- CICS10.PROD2.LOGSTRM
- CICS10.PROD2.LOGSTRM.COPY1          01.159 08:45:12
- CICS11.PROD1.LOGSTRM.QSAM          01.159 08:45:12
- CICS11.PROD2.LOGSTRM.SAMCOPY       01.159 08:45:12
- CICS11.PROD3.LOGSTRM.SAMCOPY       01.159 08:45:12
***** Bottom of data *****

F1=Help      F3=Exit      F4=ListDet  F5=ListSAM  F7=Bkwd     F8=Fwd
F10=Menu bar F11=Dereg    F12=Cancel

```

Figure 88. Log stream List—Help pull-down

Use one of these methods to select a help choice:

- Select the option you need.
- Move the cursor to the item in the pull-down and press Enter.

The associated help pull-down choices are:

Using help	Tells you how to use CICSVR online help.
General help	Provides general information about the panel and the tasks you can perform on the panel.
Index	Contains a list of available help information in alphabetical order.
Keys help	Displays a list of function key assignments for a panel.
Product information	Provides product copyright information.

To get information about each menu pull-down choice, move the cursor to an item and press the Help key (F1).

Chapter 8. Selecting from the log of logs list

If you select option 4 from the main menu, the list of log of logs (Figure 89) appears.

```
Administrate Utilities List View Help
-----
CICSVR log of logs list          Row 1 to 5 of 5

Select one or more logs of logs, then select an action.

S  Log of logs                Last scan
   CICS10.LOGOFLOG           01.159 12:10  DWWSYS1
-  CICS11.LOGOFLOG           01.159 12:23  DWWSYS2
-  CICS12.LOGOFLOG           01.159 12:43  DWWSYS3
-  CICS13.LOGOFLOG           01.159 14:02  DWWSYS4
-  CICS14.LOGOFLOG           01.159 16:53  DWWSYS5
*****BOTTOM OF DATA*****

Command ==>
F1=Help      F3=Exit      F4=ListDet   F5=Scan      F6=Register  F7=Bkwd
F8=Fwd       F10=Menu bar F11=Dereg   F12=Cancel
```

Figure 89. Log of logs list panel. Use S in the first column to select a log of logs.

In this panel, a list of all log of logs that are registered in the RCDS appears.

You can manipulate which log of logs appear, and the order in which they appear, by using the View pull-down (Figure 96 on page 89). If no log of logs qualify, an empty list appears.

From the log of logs list panel, you can select an action by using one of the shortcut function keys, or select these pull-downs from the menu bar:

- Administrate
- Utilities
- List
- View
- Help

For general help information, press the Help key (F1).

Using the log of logs list administrate pull-down

Figure 90 shows the log of logs list panel Administrate pull-down.

```
Administrate Utilities List View Help
-----
1 1. Register... F6 ICSVR log of logs list Row 1 to 5 of 5
  2. Deregister...F11
  3. Exit F3 gs, then select an action.

S Log of logs Last scan
- CICS10.LOGOFLOG 01.159 12:10 DWWSYS1
- CICS11.LOGOFLOG 01.159 12:23 DWWSYS2
- CICS12.LOGOFLOG 01.159 12:43 DWWSYS3
- CICS13.LOGOFLOG 01.159 14:02 DWWSYS4
- CICS14.LOGOFLOG 01.159 16:53 DWWSYS5
*****BOTTOM OF DATA*****

Command ==>
F1=Help F3=Exit F4=ListDet F5=Scan F6=Register F7=Bkwd
F8=Fwd F10=Menu bar F11=Dereg F12=Cancel
```

Figure 90. Log of logs list—Administrate pull-down

From this pull-down, you can register a log of logs to the RCDS by using one of these methods:

- Select option 1.
- Press the Register key (F6).
- Type register on the command line.
- Move the cursor to the Register item in the pull-down and press Enter.

You can deregister a log of logs from the RCDS by using one of these methods:

- Select option 2.
- Press the Dereg key (F11).
- Type dereg on the command line.
- Move the cursor to the Deregister item in the pull-down and press Enter.

To get information about each menu pull-down choice, move the cursor to an item and press the Help key (F1).

Registering a log of logs in the RCDS

Select option 1 from the Administrate pull-down to get the secondary window shown in Figure 91 on page 85.

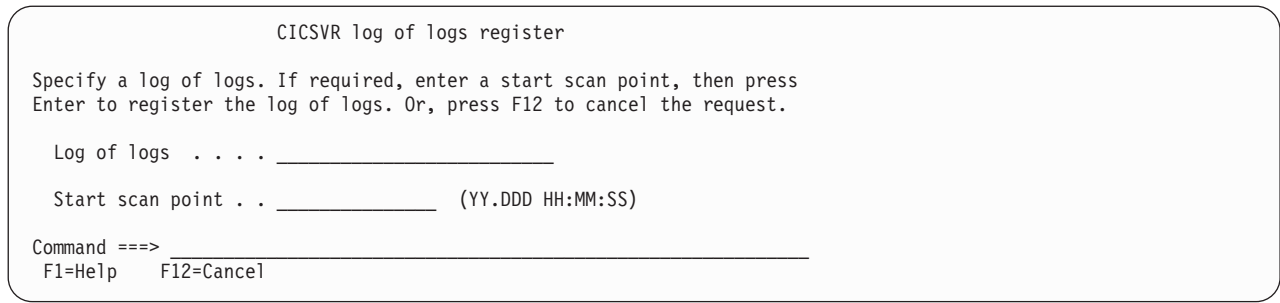


Figure 91. Log of logs register secondary window

To register the log of logs in the RCDS, select option 1.

To get help information, press the Help key (F1).

Deregistering a log of logs from the RCDS

Select option 2 from the Administrate pull-down to get the secondary window shown in Figure 92.

This secondary window (Figure 92) appears for every log of logs that you select from the log of logs list panel (Figure 89 on page 83).

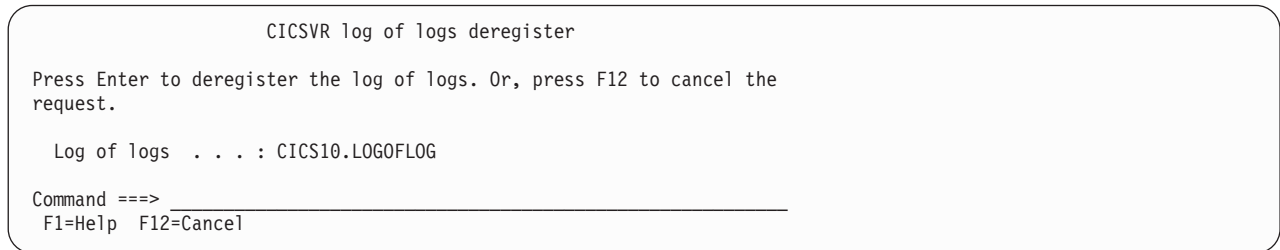


Figure 92. Log of logs deregister secondary window

To deregister the log of logs, select option 2. All information about the selected log of logs will be deleted from the RCDS.

To get help information, press the Help key (F1).

Using the log of logs list utilities pull-down

Figure 93 shows the log of logs list panel Utilities pull-down.

```
Administrate Utilities List View Help
-----
_ 1. Scan all          F5  gs list          Row 1 to 5 of 5
-----
Select one or more logs of logs, then select an action.

          Last scan
S Log of logs          time (GMT)  DD name
_ CICS10.LOGOFLOG     96.159 12:10 DWWSYS1
_ CICS11.LOGOFLOG     96.159 12:23 DWWSYS2
_ CICS12.LOGOFLOG     96.159 12:43 DWWSYS3
_ CICS13.LOGOFLOG     96.159 14:02 DWWSYS4
_ CICS14.LOGOFLOG     96.159 16:53 DWWSYS5
*****BOTTOM OF DATA*****

Command ==>
F1=Help      F3=Exit      F4=ListDet   F5=Scan      F6=Register  F7=Bkwd
F8=Fwd       F10=Menu bar F11=Dereg   F12=Cancel
```

Figure 93. Log of logs list—utilities pull-down

From this pull-down, you can start an online scan of all the log of logs in the log of logs list panel (Figure 89 on page 83) using one of these methods:

- Select option 1.
- Press the Scan key (F5).
- Type scan on the command line.
- Move the cursor to the item in the pull-down and press Enter.

The scan function of CICSVR will scan every log of logs that is registered with CICSVR.

To get information about the menu pull-down choice, move the cursor to the item and press the Help key (F1).

Using the log of logs list list pull-down

Figure 94 shows the log of logs list panel List pull-down.

```
Administrate Utilities List View Help
-----
_ 1. List details... F4 Row 1 to 5 of 5

Select one or more log of logs, then select an action.

S Log of logs Last scan
_ CICS10.LOGOFLOG 01.159 12:10 DWWSYS1
_ CICS11.LOGOFLOG 01.159 12:23 DWWSYS2
_ CICS12.LOGOFLOG 01.159 12:43 DWWSYS3
_ CICS13.LOGOFLOG 01.159 14:02 DWWSYS4
_ CICS14.LOGOFLOG 01.159 16:53 DWWSYS5
*****BOTTOM OF DATA*****

Command ==>
F1=Help F3=Exit F4=ListDet F5=Scan F6=Register F7=Bkwd
F8=Fwd F10=Menu bar F11=Dereg F12=Cancel
```

Figure 94. Log of logs list—list pull-down

From this pull-down, you can list details about log of logs using one of these methods:

- Select option 1.
- Press the ListDet key (F4).
- Type listdet on the command line.
- Move the cursor to the item in the pull-down and press Enter.

Use this pull-down to show details about log of logs stored in the RCDS.

To get information about the menu pull-down choice, move the cursor to the item and press the Help key (F1).

Listing log of logs details

Select option 1 and the CICSVR log of logs details list secondary window (Figure 95) appears.

Select one or more errors, then press Enter to get more information. Or, press Enter to show the log of logs list for the next selected log of logs. Or, press F12 to cancel the list sequence.

```
Log of logs . . . : CICS10.LOGOFLOG
First block number : 1010
Last block number  : 2512
First timestamp . . : 01.159 12:13:14 (local)
                   : 01.159 13:13:14 (GMT)
Last timestamp . . : 01.159 18:13:14 (local)
                   : 01.159 19:13:14 (GMT)
Last scan time . . : 01.159 23:59:14 (GMT)
```

S Information & error

```
_ Log of logs inactive
_ Error while trying to connect to log of logs
_ I/O error on log of logs
_ Sequence error on log of logs
```

***** BOTTOM OF DATA *****

Command ==> _____

F1=Help F7=Bkwd F8=Fwd F12=Cancel

Figure 95. Log of logs details list secondary window

This secondary window will appear for each selected log of logs. If errors have been found for the log of logs, a message for each error will appear.

Place an S in the column next to each error message that you would like more information about. A secondary window will appear for each selected error and will contain a detailed description of the error along with a reference to the relevant message in *CICSVR V3R1 Messages and Problem Determination*.

To get detailed help information, move the cursor to a field and press the Help key (F1).

Using the log of logs list view pull-down

Figure 96 shows the log of logs list panel View pull-down.

Use this pull-down to redisplay the log of logs list by specifying search or sort criteria.

Select option 1 to redisplay the log of logs list with all CICSVR registered log of logs.

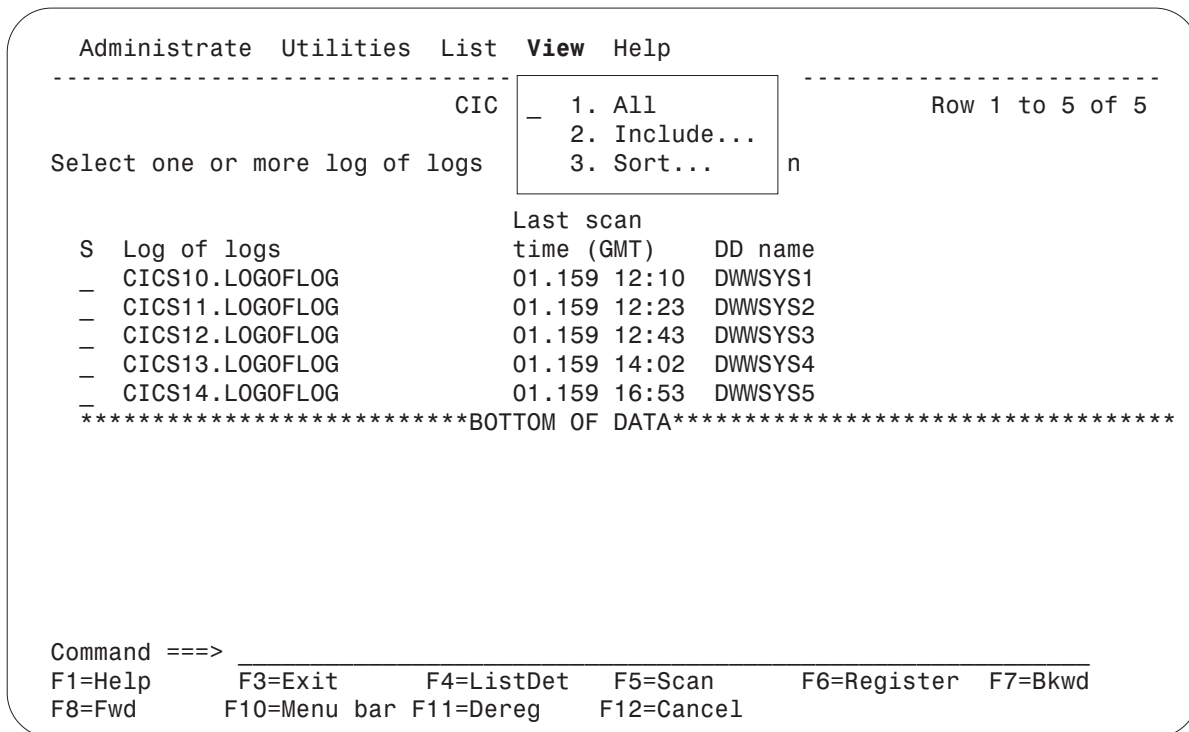


Figure 96. Log of logs list—view pull-down

Use one of these methods to select a choice:

- Select the option you need.
- Move the cursor to the item in the pull-down and press Enter.

To get information about each menu pull-down choice, move the cursor to an item and press the Help key (F1).

Specifying search criteria for the log of logs list

Select option 2 from the log of logs list View pull-down and the CICSVR log of logs list include secondary window appears (Figure 97 on page 90).

Use this secondary window to specify include-criteria input to the log of logs list panel (Figure 97 on page 90). If you do not specify any search criteria here, a list of all CICSVR registered log of logs will be constructed.

```
CICSVR log of logs list include

Specify search criteria to include in the log of logs list, then press
Enter.

Log of logs . . . . CICSI0.LOGOFLOG

Scanned after . . . _____ (YY.DDD HH:MM:SS)
Scanned before . . . _____ (YY.DDD HH:MM:SS)

Command ==> _____
F1=Help F12=Cancel
```

Figure 97. Log of logs list Include secondary window

To get detailed help information, move the cursor to a field and press the Help key (F1).

Sorting the log of logs list

Select option 3 from the log of logs list View pull-down and this secondary window appears (Figure 98). Use this secondary window to sort the contents of what appears on the log of logs list panel.

```
CICSVR log of logs list sort

Select the column to sort by, then press Enter.

      1. Log of logs
      2. Ascending last scan time
      3. Descending last scan time

Command ==> _____
F1=Help F12=Cancel
```

Figure 98. Log of logs list sort secondary window

To get help information, move the cursor to the input field and press the Help key (F1).

Using the log of logs list help pull-down

Figure 99 shows the log of logs list panel Help pull-down.

Use this pull-down to get help information.

```
Administrate Utilities List View Help
-----
CICS log - 1. Using help... 1 TO 12 OF 33
          2. General help... F1
Select one or more log of logs, then 3. Index...
                                        4. Keys help...
                                        5. Product information
                                        -----
S Log of logs Las tim
- CICS10.LOGOFLOG 01.159 12:10 DWWSYS1
- CICS11.LOGOFLOG 01.159 12:23 DWWSYS2
- CICS12.LOGOFLOG 01.159 12:43 DWWSYS3
- CICS13.LOGOFLOG 01.159 14:02 DWWSYS4
- CICS14.LOGOFLOG 01.159 16:53 DWWSYS5
*****BOTTOM OF DATA*****

Command ==>
F1=Help      F3=Exit      F4=ListDet   F5=Scan     F6=Register  F7=Bkwd
F8=Fwd      F10=Menu bar F11=Dereg   F12=Cancel
```

Figure 99. Log of logs list—Help pull-down

Use one of these methods to select a help choice:

- Select the option you need.
- Move the cursor to the item in the pull-down and press Enter.

The associated help pull-down choices are:

Using help	Tells you how to use CICSVR online help.
General help	Provides general information about the panel and the tasks you can perform on the panel.
Index	Contains a list of available help information, in alphabetical order.
Keys help	Displays a list of function key assignments for a panel.
Product information	Provides product copyright information.

To get information about each menu pull-down choice, move the cursor to an item and press the Help key (F1).

Chapter 9. Getting the JCL skeleton

Select option 5 from the main menu to invoke an ISPF/PDF edit of the JCL skeleton (Figure 100):

```
)CM PROPRIETARY V3 STATEMENT
)CM LICENSED MATERIALS - PROPERTY OF IBM
)CM 5655-H91
)CM (C) COPYRIGHT 1996,2001 IBM CORP.
)CM END PROPRIETARY V3 STATEMENT
)CM *****
)CM
)CM Add the JOB statement to meet your system requirements.
)CM
)CM Do not remove the &JOBCHAR variable in the JOB name.
)CM
)CM Change the DSN value in STEPLIB DD to the name of your
)CM CICSVR library.
)CM
)CM Change RCDS DSN name in DWWCON1, DWWCON2, and DWWCON3 DDs
)CM to what you have defined.
)CM
)CM *****
)CM
)CM //TESTGFS&JOBCHAR JOB (ACCOUNT),MSGLEVEL=(1,1),NOTIFY=USERID,
)CM // MSGCLASS=X,CLASS=A,REGION=4M
)CM //DWW PROC
)CM //RECOVER EXEC PGM=DWWCO
)CM //STEPLIB DD DSN=DWW.SDWWLOAD,DISP=SHR
)CM //DWWMSG DD SYSOUT=*
)CM //DWWPRINT DD SYSOUT=*
)CM //DWWCON1 DD DSN=DWW.DWWCON1,DISP=SHR
)CM //DWWCON2 DD DSN=DWW.DWWCON2,DISP=SHR
)CM //DWWCON3 DD DSN=DWW.DWWCON3,DISP=SHR
)CM // PEND
)CM /* END OF PROC
```

Figure 100. JCL skeleton

This JCL skeleton will be used when creating a recovery or backout job using the CICSVR panels.

Here you can edit the CICSVR JCL skeleton information to conform to the standards in your organization. For more information about customizing the JCL skeleton, refer to *CICSVR V3R1 Implementation Guide*.

When you leave the editor, you go back to the CICSVR main menu.

Chapter 10. Running CICSVR manually

This chapter contains a step-by-step description of how you use CICSVR to manually recover VSAM spheres, without using the Interactive System Productivity Facility (ISPF) dialog interface.

You might need to run CICSVR in this way if all three recovery control data sets (RCDSS) become unavailable. You might also need to run CICSVR manually during migration from an earlier release of CICSVR. Refer to *CICSVR V3R1 Implementation Guide* for information about migrating from earlier CICSVR releases.

Use this chapter to:

- Plan the procedures to be followed when a problem occurs
- Manually prepare jobs in advance

For an explanation of the capabilities and limitations of CICSVR, refer to *CICSVR V3R1 Implementation Guide*.

Keeping manual records

If you have to use CICSVR without the automation provided with the recovery control data set and the ISPF dialog interface, you need access to accurate records relating to logs and VSAM spheres.

In a large installation, keeping records of VSAM spheres, backup copies, and archived logs is often the responsibility of different groups. For example:

- Computer operations support
- Database support
- Production support
- Computer operations
- Media library

If this is the case in your organization, ensure that the activities of these different groups are coordinated to get the records required.

Note: The report produced from the CICSVR archive utility and CICSVR log of logs scan utility can provide you with many of the details required to run CICSVR manually. Specify RECOVERYREPORT(YES) as a keyword in the CICSVR archive or log of logs to produce this report.:

```
RECOVERYREPORT(YES)
```

in the CICSVR archive utility or the log of logs scan utility.

For more information about the CICSVR archive utility, and information about scanning the log of logs, refer to *CICSVR V3R1 Implementation Guide*.

What information is required?

To manually recover VSAM data sets, you must prepare several jobs. All the information you require must be quickly and easily available.

Record or get access to the following information:

- VSAM sphere information.

Record this information about the VSAM spheres:

- Components of each VSAM sphere.

This can be a table that lists, for each base cluster, the alternate-index (AIX) data set names and the path names. You need this information for the job that re-creates your VSAM sphere.

Finding the information when you need it at recovery time may be an alternative to maintaining this table. If the disk is not lost, you can use the access method services (AMS) LISTCAT command. Alternatively, you can use the printed output from the latest backup job for the sphere.

- File names of VSAM sphere components.

If you do not allocate CICS files dynamically, this can be a list of all base clusters, showing the CICS file names for the base cluster and the paths. You can get this information from the CICS file control table (FCT).

If you use dynamic allocation, you can get this information when required by entering this CICS command for the base cluster and for each path:

```
CEMT INQUIRE FILE (*) DSNAME(dsname)
```

You need this information during recovery, to close relevant files and to inquire about the status of files.

- The log or log stream that is used for forward recovery of each VSAM sphere.

This can be a table that lists all VSAM base clusters, and shows which log or log stream the after-images are on. You need this information to help you find the relevant MVS log stream or archived log.

You can list the VSAM clusters when required, by using this CICS command:

```
CEMT INQUIRE DSNAME(base dsname)
```

- Backup information.

Each time you make a backup of a sphere, record this information:

- Base-cluster data set name
- Whether the backup is a backup-while-open (BWO) copy
- Whether the VSAM sphere supports VSAM RLS
- AIX data set names, if backed up
- Date and time of backup
- Backup data set name
- Serial numbers for backup data set volumes
- Location of physical volumes
- Name of backup utility

This information lets you find the correct backup volume and specify the required keywords in the recovery job.

- Forward recovery log information. In order to create a CICSVR forward recovery job manually for a VSAM sphere you must have the following information about the forward recovery log (CICS TS) or archived journal (CICS V4) for the VSAM sphere that you want to recover.
 - CICS application identifier (APPLID)
 - CICS log ID
 - Log close time
 - Date and time the log was opened
 - Archived-log data set name
 - Serial numbers for archived-log data set volumes
 - MVS log stream name if you are using MVS/ESA and CICS Transaction Server
 - Location of physical volumes

The CICSVR archive utility report or the log of log scan utility report provides most of this information. This information lets you find the correct archived logs

or MVS log streams and specify their data set names in the recovery job. For more information about the CICSVR archive utility and log of logs scan utility, refer to *CICSVR V3R1 Implementation Guide*.

Gathering the required information

When a problem has occurred, you can perform recovery or backout if you know this information:

- Name of the base cluster
- Date and time the problem occurred

Starting with this information, your record-keeping system must give all the information needed to create the recovery or backout jobs. It can be useful to have a form detailing the information required for the recovery. You will need at least the information shown in Table 1 (the data recorded in the table is sample data only).

Table 1. Information Required for Recovery or Backout

General information	
Is the CICSVR recovery function required?	NO
Is the CICSVR backout function required?	NO
Data set name of damaged base cluster.	PAYROLL.BASE
Data set name of paths.	PAYROLL.PATH1
Base cluster file names.	PAYROLL
Path file names.	PAYP1
Forward recovery	
Data set name of backup to be restored.	PAYROLL.BASE.BACKUP
Date and time the backup was made.	01159.2000
Is the backup a BWO copy?	NO
Data set names of logs.	MVSLOG1.PROD.SYS1
Date and time the earliest log was opened.	01159/0800
Record format, if you are using CICS/MVS.	N/A
Backout	
Data set names of logs.	MVSLOG1.PROD.SYS1

Once you have decided which function you have to run and have the required information available, you can start the recovery process.

Producing a CICSVR work sheet

At the time a problem occurs, information about the problem must be communicated to the personnel who will perform the recovery or backout run. One way to ensure the information is available is to use a work sheet. This form should describe the requirements in enough detail that the recovery and backout jobs can be prepared and run successfully.

Data set naming conventions

Give unique names to the logs and backup data sets so that you can easily distinguish them from the operational data sets.

If you have no suitable naming convention, create one for all future backups and logs. MVS data set names can be 1–44 characters, divided into qualifiers of up to 8 characters. Here are some examples:

clustername.BU.Ddate.Ttime

For backup data sets of VSAM base cluster *clustername*.

logstreamname.COPY1.Ddate.Ttime

For the first copy of an MVS log stream *logstreamname*. The date and time might be the time that the copy was made.

Here are examples of data set names that follow these naming conventions:

PAYROLL.BASE.BU.D01159.T235205 A backup data set

PAYROLL.LOGSTREAM.COPY1.D01200.T232145 A copy of an MVS log stream

Starting CICSVR forward recovery and backout

You start the forward recovery and backout functions by running the required JCL and providing the CICSVR commands you require as parameters on the DWWIN DD statement. Figure 101 shows the JCL that is required to manually run CICSVR commands.

```
//CICSVR JOB job statement 1
//COMMAND EXEC PGM=DWWCO 2
//STEPLIB DD DSN=DWW.SDWWLOAD,DISP=SHR 3
//DWWLOAD DD DSN=DWW.OPTIONAL.LOAD,DISP=SHR 4
//DWWMSG DD SYSOUT=* 5
//DWWPRINT DD SYSOUT=* 6
//DWWLOG DD DSN=LOG03.COPY1.D01159.T221500, 7
// UNIT=TAPE,VOL=SER=123456,DISP=OLD
//DWWIN DD * 8
.
.
CICSVR commands
.
/*
//
```

Figure 101. Sample JCL to run CICSVR forward recovery and backout

Here is an explanation of the JCL statements in Figure 101:

- 1** The JOB statement should specify a minimum region size of 2048KB.
- 2** The program to be run is DWWCO. The prefix DWW always refers to CICSVR.
- 3** Supply the name of the CICSVR load library.
- 4** DWWLOAD is optional, and defines the alternate load library to STEPLIB, once DWWCO has been loaded. After DWWCO initialization, all following module loads (supplementary CICSVR modules and CICSVR exits) will be from this load library.
- 5** DWWMSG defines the output data set that will contain the messages produced by CICSVR. This is usually defined as a SYSOUT data set.

The DCB parameters for this data set are RECFM=FBA and LRECL=133. The block size can be provided on the DWWMSG DD statement and must be a multiple of 133. The default is 133.

- 6** DWWPRINT defines the output data set that will contain the reports produced by CICSVR. This is usually defined as a SYSOUT data set.

The DCB parameters for this data set are RECFM=FBA and LRECL=133. The block size can be provided on the DWWPRINT DD statement and must be a multiple of 133. The default is 133.

- 7** For CICSVR RECOVER processing, DWWLOG specifies the name of the log. Multiple logs can be specified, but they must be in the correct sequence (with the earliest first) and concatenated to the ddname DWWLOG.

For CICSVR BACKOUT, DWWLOG can define a maximum of 11 system logs. Each log must be defined with a separate DD statement. This is DWWLOG, followed by the range DWWLOG0–DWWLOG9. See “Specifying logs in CICSVR” for more details.

Alternatively, you can use the CICSVR command ALLOCATE to dynamically allocate logs.

- 8** DWWIN defines the input data set containing the CICSVR commands. You can either specify a sequential data set with 80-byte, fixed-length records, or include the CICSVR commands in-stream.

Specifying logs in CICSVR

You can specify logs in CICSVR either through DD statements in the JCL or by dynamically allocating them using the ALLOCATE command. The RECOVER and BACKOUT DD specifications for logs differ.

For a RECOVER run, the logs must be concatenated to the single ddname DWWLOG, with the earliest specified first, as shown in Figure 102 on page 100. Figure 103 on page 100 illustrates the dynamic allocation method.

For a BACKOUT run, the first log must be allocated to the ddname DWWLOG, and following logs allocated to the ddname DWWLOG n . The earliest log is allocated to DWWLOG, the next to DWWLOG0, and so on, up to DWWLOG9, if required. Figure 104 on page 101 illustrates the JCL method, and Figure 105 on page 102 shows the dynamic allocation method.

Allocating logs for forward recovery using JCL

Figure 102 on page 100 shows a sample job for running CICSVR forward recovery with logs allocated using JCL statements.

```

//RECOVER JOB job statement
//COMMAND EXEC PGM=DWACO
//STEPLIB DD DSN=DWW.SDWWLOAD,DISP=SHR
//DWWMSG DD SYSOUT=*
//DWWPRINT DD SYSOUT=*
//DWWLOG DD DSN=LOG01.COPY1.D01159.T135030,UNIT=TAPE, 1
//
//          DD DSN=LOG01.COPY1.D01159.T180034,UNIT=TAPE, 2
//          DD DSN=LOG01.CICSA,DISP=OLD 3
//DWWIN DD *
        RECOVER SPHERE(PAYROLL.BASE) -
        APPLYCA

/*
//

```

Figure 102. Allocating logs for forward recovery using JCL statements

All logs must be allocated to the single ddname, DWWLOG. The numbered items in this job are described as follows:

- 1** This archived log is on tape and contains the earliest after-images required for this forward recovery run.
- 2** The second log defined is also an archived tape log. It will contain records written later than those on the preceding log.
- 3** The last log defined for this run is an active disk log. It contains the latest after-images that are required to forward recover this VSAM sphere. The cataloged log was switched before this run.

You can reduce the time it takes to perform a forward recovery for specific VSAM spheres by setting up change accumulation for those spheres. For more information, see *CICSVR V3R1 Implementation Guide*, section “Setting up CICSVR change accumulation”.

Dynamically allocating logs for forward recovery

Figure 103 shows a sample job for running CICSVR forward recovery with logs dynamically allocated.

```

//RECOVER JOB job statement
//COMMAND EXEC PGM=DWACO
//STEPLIB DD DSN=DWW.SDWWLOAD,DISP=SHR
//DWWMSG DD SYSOUT=*
//DWWPRINT DD SYSOUT=*
//DWWIN DD *
        ALLOCATE LOG(LOG01.COPY1.D01159.T135029 - 1
                   LOG01.COPY1.D01159.T180034 -
                   LOG01.CICSA) -
                   VOLUME(876543 876544 *) - 2
                   UNIT(TAPE TAPE *) 3
        RECOVER SPHERE(PAYROLL.BASE) -
        APPLYCA

/*
//

```

Figure 103. Dynamically allocating logs for forward recovery

Logs are dynamically allocated, using the CICSVR ALLOCATE command. The RECOVER job illustrated here would produce the same recovery results as the job illustrating log allocation using JCL statements in Figure 102 on page 100. The numbered items in this job are:

- 1** The ALLOCATE statement and LOG keyword describe three logs. The logs are specified in ascending date/time order. The last log defined for this run is an active disk log. It contains the latest after-images that are required to forward recover this VSAM sphere. The third log is cataloged. It was switched before this run.
- 2** The VOLUME statement describes the first two logs as being uncataloged and provides the appropriate volume serial numbers. An asterisk (*) specifies the volume for the third log. This tells CICSVR that the log is cataloged.
- 3** The UNIT statement describes the first two logs as being uncataloged and on tape. An asterisk (*) is specified as the unit for the third log, indicating to CICSVR that the log is cataloged.

You can reduce the time it takes to perform a forward recovery for specific VSAM spheres by setting up change accumulation for those spheres. For more information, see *CICSVR V3R1 Implementation Guide*, section “Setting up CICSVR change accumulation”.

Allocating logs for backout using JCL (CICS V4 only)

Figure 104 shows a sample job for running CICSVR backout with logs allocated using JCL statements. The logs in this case are CICS system logs.

```

//BACKOUT JOB job statement
//COMMAND EXEC PGM=DWWCO
//STEPLIB DD DSN=DWW.SDWWLOAD,DISP=SHR
//DWWMSG DD SYSOUT=*
//DWWPRINT DD SYSOUT=*
//DWWLOG DD DSN=LOG01.COPY1.D01159.T135023,UNIT=TAPE, 1
// VOL=SER=876543,DISP=OLD
//DWWLOG0 DD DSN=LOG01.COPY1.D01159.T180034,UNIT=TAPE, 2
// VOL=SER=876544,DISP=OLD
//DWWLOG1 DD DSN=LOG01.CICSA,DISP=OLD 3
//DWWIN DD *
BACKOUT SPHERE(PAYROLL.BASE)

/*
//

```

Figure 104. Allocating Logs for Backout using JCL Statements

The earliest log is allocated to DWWLOG, the next to DWWLOG0, and so on, up to DWWLOG9, if required. The logs must be in the correct sequence (with the earliest specified first). CICSVR reads the log backward. The numbered items in this job are:

- 1** This archived log is on tape and contains the earliest after-images required for this backout run.
- 2** The second log defined is also an archived tape log. It will contain records written later than those on the preceding log.
- 3** The last log defined for this run is an active disk log. It contains the latest after-images that are required to back out this VSAM sphere. The log is

cataloged and was switched before this run, after ensuring that all files that failed dynamic transaction backout (DTB) or emergency restart backout were closed.

Dynamically allocating logs for backout

Figure 105 shows a sample job for running CICSVR backout with logs dynamically allocated. The logs in this case are CICS system logs.

```
//BACKOUT JOB job statement
//COMMAND EXEC PGM=DWWCO
//STEPLIB DD DSN=DWW.SDWWLOAD,DISP=SHR
//DWWMSG DD SYSOUT=*
//DWWPRINT DD SYSOUT=*
//DWWIN DD *
          ALLOCATE LOG(LOG01.COPY1.D01159.T135030 - 1
                     LOG01.COPY1.D01159.T180043 - 2
                     LOG01.CICSA) - 2
                     VOLUME(876543 876544 *) - 3
                     UNIT(TAPE TAPE *) 3
          BACKOUT SPHERE(PAYROLL.BASE)

/*
//
```

Figure 105. Dynamically allocating logs for backout

Logs are dynamically allocated, using the CICSVR ALLOCATE command. The BACKOUT job illustrated here would produce the same recovery results as the job illustrating log allocation using JCL statements in Figure 104 on page 101. The numbered items in this job are:

- 1** The ALLOCATE statement and LOG keyword describe three logs. The logs are specified in ascending date/time order. The last log defined for this run is an active disk log. It contains the latest before-images that are required to forward recover this VSAM sphere. The cataloged log was switched before this run, after ensuring that all files that failed DTB or emergency restart backout were closed.
- 2** The VOLUME statement describes the first two logs as being uncataloged and provides the appropriate volume serial numbers. An asterisk (*) specifies the volume for the third log. This tells CICSVR that the log is cataloged.
- 3** The UNIT statement describes the first two logs as being uncataloged and on tape. An asterisk (*) specifies the unit for the third log, indicating to CICSVR that the log is cataloged.

Note: All logs needed for CICSVR recovery or backout must be provided in a single run. Splitting the logs needed for recovery into several CICSVR runs might cause loss of data integrity without warning.

Deciding which function to run

Follow this procedure before you run CICSVR:

1. Decide what damage has occurred. CICSVR can correct two types of problems:
 - Physical damage or loss
 - Uncommitted updates

A data set might have both problems.

You will probably know if the data set is lost or damaged. But, you also must know if it contains uncommitted updates that were not backed out because DTB or emergency restart backout failed. In CICS V4, you can find out by checking the status of the data set:

```
CEMT INQUIRE DSNAME (PAYROLL.BASE)
```

If you get this response (Figure 106), backout has failed, and the data set contains uncommitted updates:

```
CEMT I DSNAME
STATUS: RESULTS - OVERTYPE TO MODIFY
DSN( PAYROLL.BASE ) Fai
```

Figure 106. CICS V4 CEMT INQUIRE DSNAME Screen

This CICS V4 message also shows that the backout has failed:

DFHFC0922A

applid Base data set closed, batch backout needed for PAYROLL.BASE

If this message is not issued, there is no point in running CICSVR backout. CICSVR will only back out uncommitted changes after this message has been issued. This message can be issued after DTB, or after emergency restart, depending on which one of these backouts failed.

These responses and error message mean that the data set has uncommitted updates, or that it has uncommitted updates and is either physically lost or damaged.

Note for CICS Transaction Server

In CICS Transaction Server for OS/390 Release 1, this message is not produced. CICS Transaction Server recovery manager, VSAM RLS, and the MVS/ESA system logger combine to provide online backout failure support.

For more information about RLS, refer to *CICSVR V3R1 Implementation Guide*.

1. Decide which CICSVR function you must run after you have identified the type of damage:
 - Forward recovery, if the data set is physically damaged or lost.
 - Backout, if the data set contains uncommitted updates.
 - Complete recovery, if the data set has the two problems. If CICSVR detects that backout is not needed, the complete recovery function will construct a job consisting of forward recovery, but not backout.

2. Decide when to run CICSVR.

You should run CICSVR only while CICS is active, or after you have closed CICS in a controlled manner. For information on how you force a CICS abend if a CICS/MVS transaction backout or emergency restart backout fails, refer to the discussion on CICS global user exits in *CICSVR V3R1 Implementation Guide*.

Running a forward recovery job

Perform the following procedure for forward recovery of a VSAM sphere:

1. Close the necessary CICS files.
2. Restore the VSAM base cluster.
3. Ensure that you have archived copies available of all the logs you need.
4. Write the JCL to run the CICSVR recovery function.
5. Run the job and check the results.
6. Make the recovered data sets available to CICS.

Explanations of these steps, for data set PAYROLL.*, follow.

Step 1. Closing the necessary CICS files

If online backout failed in CICS V4, the affected files will be automatically closed. If online backout did not fail, or it failed in CICS/MVS, the affected files might be open. Find out which files to close, and close them. Use this command in CICS V4:

```
CEMT INQUIRE FILE (ALL) DSNAME (PAYROLL.*)
```

Use this command in CICS/MVS:

```
CEMT INQUIRE FILE (PAYROLL.*)
```

CICS tells you the names of all files for the base cluster and paths whose names start with PAYROLL. The examples shown here (Figure 107 and Figure 108) are for CICS V4, but the file display for CICS/MVS is similar.

```
CEMT IN FILE
STATUS: RESULTS - OVERTYPE TO MODIFY
Fil(PAYROLLB) Vsa Ope Ena Rea Upd Add Bro Del  ___ Sha
          Dsn( PAYROLL.BASE ) Max( 00000000 )
Fil(PAYP1 ) Vsa Ope Ena Rea Upd Add Bro Del  ___ Sha
          Dsn( PAYROLL.PATH1 ) Max( 00000000 )
```

Figure 107. CICS V4 CEMT INQUIRE FILE Screen

You can then close the data sets by typing over the Ope parameter.

```
CEMT IN FILE
STATUS: RESULTS - OVERTYPE TO MODIFY
Fil(PAYROLLB) Vsa ClO Ena Rea Upd Add Bro Del  ___ Sha
          Dsn( PAYROLL.BASE ) Max( 00000000 )
Fil(PAYP1 ) Vsa ClO Ena Rea Upd Add Bro Del  ___ Sha
          Dsn( PAYROLL.PATH1 ) Max( 00000000 )
```

Figure 108. CICS V4 CEMT INQUIRE FILE Screen

Step 2. Restoring the backup

Restore the latest backup copy as a VSAM data set, using the utility or program that was used to back it up.

Follow these rules for data set name, data set characteristics, and AIXs:

- Data set name.
The restored data set can have the same data set name as the original data set (for example, PAYROLL.BASE), or it can have a different data set name (for example, PAYROLL.RESTORED). The choice depends on your procedures. It makes no difference to the CICSVR recovery function which way you do this. But, if you are performing the restore on a data set with a name that differs from the one recorded on the log, use the NEWSPHERE keyword of the RECOVER command.
- Data set characteristics.
The restored data set must have the same data set characteristics as the original data set.
Use the RELATE command if updates have been made via the path on CICS/MVS logs, and the path data set name of the restored backup copy of the path is different from the data set name of the originally logged path. If you are recovering from CICS V4 logs or MVS log streams, the CICSVR recovery function checks the characteristics of the restored data set compared with the characteristics of the original data set, which it gets from the log. The characteristics that are checked are:
 - Control interval size
 - Maximum record size
 - Key length and offset
 - Data set type (that is, relative-record data set (RRDS), variable relative-record data set (VRRDS), key-sequenced data set (KSDS), or entry-sequenced data set (ESDS))

Step 3. Deciding which logs to use

To recover the base cluster and AIXs, CICSVR must have access to all log records written after the backup was made.

To make the correct logs available:

1. Decide which log to use.

If you know the log to use, go to the next step. If you do not know which log to use, you can find out by looking at the CICS file definition for the base cluster using either of these commands:

```
CEDA VIEW FILE (PAYROLLB)
CEMT INQUIRE DSNAME(PAYROLL.BASE)
```

2. Ensure you have logs covering the entire time period.

The logs must cover the period:

- Starting before any files for the VSAM sphere were opened after the backup was made
- Ending after the last time the files were closed by CICS

3. Check the first log in relation to the backup.

Find out if the first log begins before the backup was made. To do this, check your records of when the backup was made, and when the first log was opened.

If the first log begins before the backup was made, you must restrict CICSVR so that it only processes records that were written after the backup was made. You do this using the STARTTIME keyword for the RECOVER command.

4. Archive the logs, if required.

You should archive your logs for input to the CICSVR run. But, if you use current active logs, ensure that the information you require for your recovery run is not overwritten.

Find out if the active or passive log contains records for the damaged base cluster. Records might be written any time up to the moment that all files for the base cluster and paths are closed.

If there are records on the logs or if you are unsure, archive the logs

Before you archive the active log, ensure that all files for the base cluster and paths are closed. If there are other VSAM data sets to be recovered that also use this log, ensure that their files are closed as well.

If you use automatic archiving, switch it to submit an archive job:

```
CEMT SET JOURNALNUM (01) ADVANCE
```

Step 4. Preparing the CICSVR forward recovery job

You can use this CICSVR forward recovery job, suitably modified for your specific situation.

Sample CICSVR Forward Recovery Job

Figure 109 shows a sample job for running CICSVR recovery.

```
//RECOVER JOB job statement
//COMMAND EXEC PGM=DWVCO
//STEPLIB DD DSN=DWV.SDWWLOAD,DISP=SHR
//DWWMSG DD SYSOUT=*
//DWWPRINT DD SYSOUT=*
//DWWIN DD *
        ALLOC LOG(CICSA.COPIED.MVSL0G1)
        BLDVRP B4K(200) B2K(100)
        RECOVER SPHERE(PAYROLL.BASE) -
                STARTTIME(01.159/22.23.00) -
                STOPTIME(01.159/22.29.59) -
                NEWSPHERE(PAYROLL.BASE.COPY) -
                APPLYCA
/*
//
```

Figure 109. Sample CICSVR RECOVER job

Here is an explanation of each of the CICSVR RECOVER commands in Figure 109:

- 1** This ALLOCATE command defines a QSAM copy of an MVS log stream to CICSVR.
- 2** The optional BLDVRP command is included to improve performance for this run. The BLDVRP parameters have been determined after listing the CI size of the data and index components of the PAYROLL data set.
- 3** The name of the VSAM sphere as recorded in the log is defined here.
- 4** The optional STARTTIME keyword has been specified. This tells the CICSVR RECOVER function to disregard all log records earlier than the time and date specified in STARTTIME.
- 5** The optional STOPTIME keyword has been specified. This tells the CICSVR RECOVER function to disregard all log records later than the time and date specified in STOPTIME.
- 6** The optional NEWSPHERE keyword has been specified. This tells the CICSVR RECOVER function that the name of the data set to be recovered differs from the name recorded on the log.

- 7 The optional APPLYCA keyword has been specified. This tells CICSVR to use the change accumulation data set (if one was set up for this VSAM sphere) in conjunction with the forward recovery log to speed up the forward recovery.

The resulting recovered data set might contain uncommitted updates, depending on how the original data set was damaged. You remove these uncommitted updates by running the CICSVR backout function.

Step 5. Running the job and checking the results

Read this section before submitting the CICSVR forward recovery job. To run the job and check the results:

1. Check your work.

Before you submit the job, check that you have correctly specified the data set names and STARTTIME/STOPTIME keywords (if required). The CICSVR recovery function cannot detect all types of specification errors, so you must ensure that the specifications are correct.

Note: If you recorded in fixed-record format on CICS/MVS logs, ensure that you supply the information needed using the FCTCOMP command.

Use the RELATE command if updates have been made via the path on CICS/MVS logs, and the path data set name of the restored backup copy of the path is different from the data set name of the originally logged path.

Also, ensure that you have followed the rest of the instructions and suggestions in this step.

2. Submit the job.
3. Check the job output.

When recovery processing has finished, look at the recovery report for failures, warning messages, or error messages. If any appear, take the proper action where required.

In CICS V4, when you are recovering to a restored data set that was backed up using BWO, *record not found* and *duplicate record* messages are not reported, but statistics indicating these conditions will appear in the report. You can analyze and act on these messages if you have provided an error exit for this purpose. The CICSVR error exit is invoked for all types of VSAM errors.

CICSVR messages start with DWW. These messages should appear:

DWW0010I

CICSVR is started at *yy/mm/dd hh:mm:ss*.

DWW0011I

CICSVR processing complete. Maximum condition code is *cc*

If error messages appear instead, there are two possibilities:

- CICSVR terminated during syntax checking.
Here, just correct the commands that were in error, and resubmit the CICSVR job.
- CICSVR found errors after starting to update the VSAM data set. The CICSVR report will show that updates were made.

Decide if you want to accept the error messages and use the CICSVR output, or if you want to correct the problems and rerun CICSVR.

Attention

Do not rerun CICSVR until you delete the VSAM data set that CICSVR updated and restore a new copy of the backup; otherwise, you might be running on a partially updated VSAM data set.

1. Check the results.

When the messages indicate that commands have been executed successfully, it is still possible that forward recovery was not correct. CICSVR applies updates that it finds on the logs to the restored backup copy. It cannot detect, for example, if you specified the wrong log, or if you forgot to archive the final log. So check the results before making the recovered data sets available to CICS.

a. Check the CICSVR statistics report to see whether the number of records that have been updated seems reasonable.

b. Check the recovered data set.

You should check the recovered data sets (base cluster and alternate indexes) before making them available to CICS users. You can do this, for example, by printing selected portions of the data set.

2. Rerun CICSVR, if needed.

If you must rerun CICSVR, after it has updated the data set being recovered:

a. Correct the problems

b. Restore a new copy of the backup

c. Submit the CICSVR recovery job

Step 6. Making the recovered data sets available

Here are the steps to follow to make the recovered data sets available:

1. If there are no uncommitted updates, put the data sets online to CICS.

When you began this recovery, you had to investigate whether the base cluster had uncommitted updates. If there are no uncommitted updates on the data set, you can now finish the recovery by performing these steps:

a. Rename the recovered data sets, if needed.

This step is needed only if the recovered data sets (base cluster and alternate indexes) have different names than the original CICS data sets and you used the RELATE command and the NEWSPHERE keyword of the RECOVER command. Here, you must delete the original base cluster and indexes. Then rename the recovered base cluster and indexes so that they can be accessed by CICS.

b. Make a backup copy of the data sets, using your standard backup procedures.

This step is optional, and whether you do this will depend on your general backup procedures. If you do not make a backup, you can still recover from a later failure. If another failure occurs, you follow the same procedure, using the original backup and all required logs.

c. Open the files to CICS.

Make all files for the base cluster and paths to AIXs available to CICS users. For example:

```
CEMT SET FILE (PAYROLLB) OPEN
CEMT SET FILE (PAYP1) OPEN
```

Recovery is now completed.

2. If there are uncommitted updates, run the CICSVR backout function.

Running a backout job

The CICSVR backout function works only after DTB or emergency restart backout has failed and CICS has closed all affected files.

Note: This function is available only if you are running CICS V4.

Note for CICS Transaction Server

CICS Transaction Server recovery manager, VSAM RLS, and the MVS/ESA system logger combine to provide online backout failure support.

For more information about RLS, refer to *CICSVR V3R1 Implementation Guide*.

Perform the following procedure for backout of a VSAM sphere:

1. Make a copy of the base cluster and AIXs to be backed out (this step is optional).
2. Ensure you have archived copies available of all the logs that you need.
3. Write the JCL to run the CICSVR backout function.
4. Run the job and check the results.
5. Make the backed-out data sets available.

Explanations of these steps, for data set PAYROLL.*, follow.

Step 1. Copying the data sets

In this step, you make a copy of the data set to be backed out and its AIXs.

This step is optional. It provides protection against operational errors, for example, if you somehow damage or lose the data set and must re-create it. You can omit this step because, if you do lose the data set, you can use the CICSVR forward recovery function to re-create it from a backup.

Step 2. Getting the logs

You must make the correct logs available to CICSVR. They must cover the following periods:

- Starting at or before the last successful synchronization point of a transaction that updated the data set and was in-flight when the failure occurred
- Ending after the files for the base cluster and paths were closed following the backout failure

Follow these steps to get the logs:

1. Archive the active log.

After a DTB failure, or a backout failure during emergency restart, archive the active log. Do not archive it until CICS has closed all affected files.

You should archive the log for input to the CICSVR run. But, if you use the current active log, ensure that the information you require for your recovery run is not overwritten.

- a. First, check that all files that failed backout are closed. This includes files for the base cluster and paths you are backing out, plus files for other base clusters and paths that also failed backout. You can check this with these commands:

```
CEMT INQUIRE FILE (ALL) DSNAME(PAYROLL.BASE) CLOSED
CEMT INQUIRE FILE (ALL) DSNAME(PAYROLL.PATH1) CLOSED
```

If any file is open, wait until it is closed before going to the next step. CICS will not close a file until all transactions that are accessing it have completed. You might need to purge tasks.

- b. When you are sure that all files are closed, switch and archive the log. If you use automatic archiving, switch it to submit an archive job:

```
CEMT SET JOURNALNUM (01) ADVANCE
```

2. For failure of DTB, ensure you have earlier logs.

If there are long-running transactions that must be backed out, you might need the previous log or logs, in addition to the active log. But you need never go back farther than the beginning of the CICS run during which DTB failed.

Ensure these logs are available.

3. If emergency restart backout fails, ensure you have the logs from the CICS run where the original problem occurred.

You will need the log that was active when the system failed. You might also need earlier logs from that CICS run, depending on whether long-running transactions must be backed out. You also need the logs from intermediate CICS sessions.

Ensure these logs are available.

Step 3. Preparing the CICSVR backout job

You can use this CICSVR backout job, suitably modified for your specific situation.

Sample CICSVR backout job

Figure 110 shows a sample job to run CICSVR backout.

```
//BACKOUT JOB job statement
//COMMAND EXEC PGM=DWWCO
//STEPLIB DD DSN=DWW.SDWWLOAD,DISP=SHR
//DWWMSG DD SYSOUT=*
//DWWPRINT DD SYSOUT=*
//DWWIN DD *
        ALLOC LOG(LOG01.D01159 LOG01.D01159)
        BLDVRP B8K(100) B1K(200)
        BACKOUT SPHERE(PAYROLL.BASE) -
                STARTTIME(01.159/06.25.00) -
                NEWSPHERE(PAYROLL.BASE.COPY)
/*
//
```

Figure 110. Sample CICSVR BACKOUT Job

Here is an explanation of each of the CICSVR BACKOUT commands in Figure 110:

- 1** This ALLOCATE command defines two logs to the CICSVR run.
- 2** The optional BLDVRP command is included to improve performance for this

run. The BLDVRP parameters have been determined after listing the CI size of the data and index components of the PAYROLL data set.

- 3** The name of the VSAM sphere to be backed out, as recorded on the logs, is defined here.
- 4** The optional STARTTIME keyword has been specified. This tells CICSVR to disregard all log records earlier than the time and date specified in STARTTIME.
- 5** The optional NEWSPHERE keyword has been specified. This tells CICSVR that the name of the data set to be backed out differs from the name recorded on the log.

Step 4. Running the job and checking the results

Read this section before submitting the CICSVR backout job. To run the job and check the results:

1. Check your work.

Before you submit the job, check that you have correctly specified the data set names. CICSVR cannot detect all types of specification errors, so you must ensure that the specifications are correct.

Also, ensure that you have followed previous relevant instructions and suggestions.

2. Submit the job.
3. Check for console messages during CICSVR execution.

CICSVR can tell, from the records on the log, when backout is completed (that is, when all uncommitted updates have been backed out). If CICSVR has read all the logs that were provided, and still has not completed the backout, it issues this message to the MVS operator console.

DWW0500A

Additional logs needed to finish backout. Enter name of a log or STOP.

If this message appears, enter a reply on the MVS operator console. Specify the cataloged data set name of the log data set that was archived before the earliest one specified in the job.

You will also get this message if the data set that you are trying to process need not be backed out.

1. Check the job output.

Check the messages issued by the function:

DWW0010I

CICSVR is started at *yy/mm/dd hh:mm:ss*.

DWW0011I

CICSVR processing complete. Maximum condition code is *cc*

These messages mean that CICSVR found all records that were needed to finish the backout successfully.

If warning messages appear instead, decide if you want to accept the messages and results, or if you want to correct problems and rerun the job.

1. Check the statistics report.

You can check the statistics report to see whether the number of records that have been updated appears reasonable.

2. Check the backed-out data sets (optional).
You can check the backed-out data sets before making them available to CICS users. This should not be needed if the return code was 0 and the statistics report was acceptable.
3. Rerun CICSVR, if needed.
If you must rerun CICSVR, after it has updated the data set being backed-out:
 - a. Correct the problems
 - b. Restore a new copy of the backup
 - c. Submit the CICSVR backout job

Step 5. Making the backed-out data sets available

Follow these steps to make the data sets that have been backed out available:

1. Make a backup copy of the data sets, using your standard backup procedures.
This is required to maintain the ability to recover if a problem should occur after backout. CICSVR is like any batch program because it updates a VSAM data set and does not record the updates on a CICS log.

2. Tell CICS that backout is completed.

Tell CICS to reset the backout status for the base cluster. The command to use is:

```
CEMT SET DSNAME(PAYROLL.BASE) NORMAL
```

This lets you enable and open the files for the base cluster and all paths.

CICS cannot check that backout has actually been successfully completed, so do not enter this command until you are sure that you want the data sets back online to CICS.

3. Enable and open the files.

Enable the files before they can be opened by an application. Use either of these sets of commands to enable and open them:

```
CEMT SET FILE(ALL) DSNAME(PAYROLL.PATH1) OPEN
```

Backout is now completed.

Chapter 11. Understanding CICSVR reports

CICSVR forward recovery and backout each produce three statistical reports in the DWWPRINT file:

- Log data set statistics (Figure 111)
- Statistics on data sets that have been backed out or recovered (Figure 112 on page 114)
- Exit action statistics (Figure 113 on page 115)

Forward recovery can also produce a recovery progress report. Examples of reports from forward recovery and backout are provided here (Figure 114 on page 116), with descriptions of the data.

The archive utility can produce up to three different reports in the DWWPRINT file. For examples of the archive reports, refer to *CICSVR V3R1 Implementation Guide*.

RECOVER—DWWPRINT output

Report of log data set statistics

MVS LOG STREAM STATISTICS:

KEY TO FIELD IDENTIFIERS

UPD-AFTER UPDATE AFTER IMAGE
ADD-AFTER ADD AFTER IMAGE
DEL-AFTER DELETE AFTER IMAGE
DSNAME DDNAME TO SPHERE AND PATH NAME

NAME OF MVS LOG STREAM	NO OF RECORDS PROCESSED	NO OF DSNAME	NO OF UPD-AFTER	NO OF ADD-AFTER	NO OF DEL-AFTER
-----	-----	-----	-----	-----	-----
RETAIL.ACCOUNTS.MVSLG1.CUST	11	3	2	5	1
RETAIL.ACCOUNTS.MVSLG2.CUST	44	12	5	21	6
-----	-----	-----	-----	-----	-----
TOTAL	55	15	7	26	7
-----	-----	-----	-----	-----	-----

Figure 111. RECOVER—Log statistics

For a detailed description of the log statistics, see “MVS log stream statistics, log statistics, and journal data set statistics” on page 119.

Report of recovered data sets statistics

STATISTICS OF RECOVERED DATA SETS

BASE NAME OF RECOVERED DATA SET: RETAIL.ACCOUNTS.MAIN

BASE NAME OF ORIGINAL DATA SET: RETAIL.ACCOUNTS.MAIN

THE FOLLOWING ASSOCIATED PATHS ARE DEFINED IN THE VSAM CATALOG:
RETAIL.ACCOUNTS.CUSTNO

FIRST AND LAST RECORDS APPLIED:

RECORDS	DATE YY/DDD	TIME HH:MM:SS	TIME TYPE
FIRST LOG RECORD APPLIED	01/157	13:19:59	LOCAL
LAST LOG RECORD APPLIED	01/158	15:44:59	LOCAL

NAME OF RECOVERED DATA SET: RETAIL.ACCOUNTS.MAIN

DATASET TYPE	FCT ENTRY NAME	:----- RECORDS FOUND ON THE LOG(S) -----:				:----- CHANGE RECORDS APPLIED -----:			:-- CHANGES IGNORED BY EXIT
		DSNAME	UPD-AFTER	ADD-AFTER	DEL-AFTER	ADDS	UPDATES	DELETES	
BASE	MAIN	4	2	14	3	2	2	1	0
TOTAL		4	2	14	3	2	2	1	0
OVERALL TOTAL		4	2	14	3	2	2	1	0
GRAND TOTAL		4	2	14	3	2	2	1	0

Figure 112. RECOVER—statistics of recovered data sets

For a detailed description of the recovered data set statistics, see “Statistics of recovered or backed-out data sets” on page 120.

Report of exit action statistics

EXIT ACTION STATISTICS

```

:-----NUMBER OF ACTIONS TAKEN-----:
EXIT NAME      RECORD CHANGE      CONTINUE      IGNORE
-----
PREAPPLY              0              2              0
ESDS DELETE      EXIT NOT TAKEN
-----

```

```

:--NUMBER OF ACTIONS TAKEN--:
EXIT NAME      CONTINUE      IGNORE
-----
ERROR          EXIT NOT TAKEN
-----

```

```

:--NUMBER OF ACTIONS TAKEN--:
EXIT NAME      CODE CHANGED      CONTINUE
-----
TERMINATION    EXIT NOT TAKEN
-----

```

Figure 113. RECOVER—exit action statistics

For a detailed description of the exit action statistics, see “Exit action statistics” on page 122.

Report of recovery progress

VSAM SPHERE NAME: VBFR.SMERRY.TEST

THE PREVIOUS FORWARD RECOVERY REGISTERED FOR THIS VSAM SPHERE WHICH WAS RUN AT 01.159 20:57:16 COMPLETED SUCCESSFULLY.

THIS FORWARD RECOVERY WAS RUN AT: 01.159 21:01:39
TYPE OF RECOVERY : FORWARD RECOVERY IN ONE STEP ONLY.

THE VSAM RECOVERY REQUESTED BIT WAS SUCCESSFULLY SET.

THE VSAM RLS LOCKS WERE SUCCESSFULLY UNBOUND.

DFSMSHSM RECOVER WAS SUCCESSFUL.

THESE AIXS WERE REMOVED:

VBFR.SMERRY.TEST.AIX1

FORWARD RECOVERY RAN SUCCESSFULLY.

AIXS AFTER AIX REBUILD:

VBFR.SMERRY.TEST.AIX1 : SUCCESSFULLY REBUILT.

THE VSAM RLS LOCKS WERE SUCCESSFULLY BOUND.

A SUCCESSFUL FORWARD RECOVERY WAS RELATED TO VSAM.

Figure 114. RECOVER—progress report

BACKOUT—DWWPRINT output

Report of log statistics

JOURNAL DATA SET STATISTICS:

KEY TO FIELD IDENTIFIERS

UPD-BEFORE DELETE OR UPDATE BEFORE IMAGE
ADD-BEFORE ADD BEFORE IMAGE
BOFLGREC BACKOUT FAILURE RECORD

NAME OF JOURNAL DATA SET	NO OF RECORDS PROCESSED	NO OF BOFLGREC	NO OF UPD-BEFORE	NO OF ADD-BEFORE
RETAIL.ACCOUNTS.J02A31.CUST	4	2	2	0
TOTAL	4	2	2	0

Figure 115. BACKOUT—journal data set statistics

For a detailed description of the log statistics, see “MVS log stream statistics, log statistics, and journal data set statistics” on page 119.

Report of backed-out data set statistics

STATISTICS OF BACKED OUT DATA SETS

BASE NAME OF BACKED OUT DATA SET: RETAIL.ACCOUNTS.MAIN

BASE NAME OF ORIGINAL DATA SET: RETAIL.ACCOUNTS.MAIN

THE FOLLOWING ASSOCIATED PATHS ARE DEFINED IN THE VSAM CATALOG:
NO PATHS DEFINED

FIRST AND LAST RECORDS APPLIED:

RECORDS	DATE YY/DDD	TIME HH:MM:SS
FIRST LOG RECORD APPLIED	01/158	11:02:36
LAST LOG RECORD APPLIED	01/158	10:59:59

NAME OF BACKED OUT DATA SET: RETAIL.ACCOUNTS.MAIN

DATASET TYPE	FCT ENTRY NAME	:----- NUMBER OF RECORDS -----:			:---- NUMBER OF CHANGED RECORDS ----:			:-- CHANGES IGNORED BY EXIT
		BOFLGREC	UPD-BEFORE	ADD-BEFORE	ADDS	UPDATES	DELETES	
BASE	CUSTNO	1	2	0	1	1	0	0
TOTAL		1	2	0	1	1	0	0
OVERALL TOTAL		1	2	0	1	1	0	0
GRAND TOTAL		1	2	0	1	1	0	0

Figure 116. BACKOUT—statistics of data sets that have been backed out

For a detailed description of the backed-out data set statistics, see “Exit action statistics” on page 122.

Report of exit action statistics

EXIT ACTION STATISTICS

```
-----:-----NUMBER OF ACTIONS TAKEN-----:
EXIT NAME      RECORD CHANGE      CONTINUE      IGNORE
-----
PREAPPLY              0              2              0
ESDS DELETE      EXIT NOT TAKEN
-----
```

```
-----:--NUMBER OF ACTIONS TAKEN--:
EXIT NAME      CONTINUE      IGNORE
-----
ERROR          EXIT NOT TAKEN
-----
```

```
-----:--NUMBER OF ACTIONS TAKEN--:
EXIT NAME      CODE CHANGED      CONTINUE
-----
TERMINATION    EXIT NOT TAKEN
-----
```

Figure 117. BACKOUT—Exit Action Statistics

For a detailed description of the exit action statistics, see page .

Report descriptions

This section describes the information that is provided in the three types of statistical reports produced by the CICSVR RECOVER and BACKOUT functions.

MVS log stream statistics, log statistics, and journal data set statistics

This report header depends on which type of log you are using in the recovery. The following information is provided in this statistical report:

Key to field identifiers

Provides a key to the record types listed in the remainder of the report.

No of records processed

Shows the total number of records (of the types shown in the columns to the right of this column) that were processed for each log, MVS log stream, or journal. Records for other VSAM spheres besides those being recovered or backed out are included.

If the CICSVR run ends with an error message, these statistics will not match the number of records shown in the **Statistics of recovered or backed-out data sets** report.

No of xxxxxx

The number of records of type xxxxxx that were processed, where xxxxxx can be one of the following types. Refer to the KEY TO FIELD IDENTIFIERS section of this report for a description of the type.

UPD-BEFORE
ADD-BEFORE
BOFLGREC
UPD-AFTER
ADD-AFTER
DEL-AFTER
DSNAME

Statistics of recovered or backed-out data sets

The following information is provided in this statistical report:

Base name of recovered (or backed out) data set

The VSAM base cluster that CICSVR allocates and updates.

Base name of original data set

The data set name that CICS used when it accessed the VSAM base cluster.

Paths defined in the VSAM catalog

Path names found in the VSAM catalog entry for the recovered (or backed out) data set. You can check these path names to confirm that the entire sphere existed during the CICSVR run. If you are using CICS V4 logs, this information is not referenced by CICSVR.

First and last records applied

The time-stamp of the first and last after-image (or before-image) that was applied to the VSAM data set. The date is taken from a label record, and the time is taken from the after-image or before-image. Time type identifies the time format (GMT or LOCAL) of the applied records.

Name of recovered (or backed out) data set

The VSAM component name of the recovered or backed-out data set. This can be a base cluster or path. If you used the NEWSPHERE keyword in the CICSVR run, the name of this field will be *Original name of recovered (or backed out) data set*. This will show the original VSAM component name that was found on the log.

Dataset type

Base or path.

FCT entry name

The CICS file control table (FCT) entry names for this VSAM sphere that were used during the period covered by the logs.

Number of records (or Records found on the log)

For each file, the total number of records found on the logs that relate to the file.

CICS issues a *backout failing* log record (BOFLGREC) the first time a backout failure occurs. The BOFLGREC shows that this is the first combination of file and task to detect a backout failure. CICS issues following BOFLGRECs if the same task suffers a backout failure via a different path, or if a different task suffers a backout failure. So there is a BOFLGREC for each combination of file and task that has failed backout.

A *backout failed* BOFLGREC is also issued when all files relating to the failure have been closed. CICSVR reads all BOFLGRECs (backout failed and backout failing) when reading the journal and they are counted in the

BACKOUT journal data set statistics report. During backout, only the *backout failing* BOFLGRECs are counted in the statistics of backed out data set report.

If the CICSVR run ends with an error message, these statistics will not match the number of records shown in the MVS log stream, log data set, or journal data set statistics report.

Number of changed records (or Change records applied)

The number of times CICSVR added, updated, or deleted a record in the VSAM data set within the specified, or default, START/STOP times.

Changes ignored by exit

The number of after-images or before-images that were ignored in the preapply exit.

**** Failures ****

The number of failures because of duplicate or not found conditions. This field might appear in the report of a forward recovery run using CICS/MVS logs. It can also appear in the report of a forward recovery run using data sets that were backed up using BWO.

Corresponding messages in the ranges DWW0601—DWW0605 and DWW0621—DWW0627 might also be produced in the DWWMSG file. If the data set being recovered was backed up with the backup-while-open facility, message DWW0635 will appear. For information on acceptable VSAM errors, refer to the error exit description in *CICSVR V3R1 Implementation Guide*. The following figure (Figure 118) is an excerpt from a recovered data set statistics report and shows the format of the Failures section.

A failure can occur for the following reasons:

DATASET TYPE	FCT ENTRY NAME	DSNAME	UPD-AFTER	ADD-AFTER	DEL-AFTER	ADDS	UPDATES	DELETES	IGNORED BY EXIT
BASE	MAIN	1	1	3	1	0	0	0	0
TOTAL		1	1	3	1	0	0	0	0

** FAILURES ** DUE TO DUPLICATE OR NOT FOUND CONDITIONS: ADDS = 3 UPDATES = 1 DELETES = 1

Figure 118. Recovered data set statistics report – Failures section

Adds

- When the access key from a CICS/MVS log record does not match the key in the log record (see message DWW0627)
- When acceptable errors are met, as detailed in the description of the error exit in *CICSVR V3R1 Implementation Guide*.

Updates

- When the access key from a CICS/MVS log record does not match the key in the log record (see message DWW0627)
- If a path update from a CICS/MVS log attempts to change the base key (see message DWW0626)
- If a non-unique key is encountered for a CICS/MVS log during a path update or delete (see message DWW0625)
- When acceptable errors are met, as detailed in the description of the error exit in *CICSVR V3R1 Implementation Guide*.

Deletes

- If a non-unique key is encountered for a CICS/MVS log during a path update or delete (see message DWW0625)
- When acceptable errors are met, as detailed in the description of the error exit in *CICSVR V3R1 Implementation Guide*.

Note: The **** Failures **** field is not illustrated in the examples (“Report of recovered data sets statistics” on page 114 and “Report of backed-out data set statistics” on page 118), because it appears only in the circumstances mentioned earlier.

Exit action statistics

The following information is provided in this statistical report:

Exit name

All four exits are listed by name.

Number of actions taken

The number of times the exit has set a given action code. Each time an exit is called, the exit routine must set an action code.

Record change

The number of VSAM records updated by the CICSVR preapply or ESDS delete exits.

Code changed

The final termination code can be changed only once by the CICSVR termination exit.

Continue

Functionally equivalent to CICSVR not taking the exit.

Ignore

The number of records ignored by the CICSVR recovery or backout process. Processing continues to the next record.

Recovery progress report

This progress report provides information related to:

- The number of steps in the recovery job
- VSAM RLS processing
- DFSMSHsm processing
- AIX removal and rebuilding

During CICSVR recovery and backout, error or informational messages might be written to the DWWMSG file.

For details of CICSVR messages and abend codes, refer to *CICSVR V3R1 Messages and Problem Determination*.

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Glossary

The terms in this glossary are defined as they pertain to the CICS VSAM Recovery documentation. If you do not find the term you are looking for, view the *IBM Dictionary of Computing* located at:

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- The *IBM Dictionary of Computing*, New York: McGraw-Hill, 1994.

The following cross-reference is used in this glossary:

See: This refers the reader to (a) a related term, (b) a term that is the expanded form of an abbreviation or acronym, or (c) a synonym or more preferred term.

A

access method services (AMS). A utility program for the definition and management of VSAM data sets.

after-image. Records that CICS writes to a forward recovery log to show what the VSAM record will look like after it has been updated by the application. (Throughout the CICSVR library, the forward recovery log is referred to as the log.)

AIX. Alternate index.

alternate index (AIX). A collection of index entries related to a given base cluster and organized by an alternate key; that is, a key other than the prime key of the associated base cluster data records. The AIX gives an alternative directory for finding records in the data component of a base cluster.

AMS. Access method services.

APAR. Authorized program analysis report.

application identifier (APPLID). The name that identifies a CICS system to VTAM. It can be a maximum of 8 characters.

APPLID. Application identifier.

archive utility. The CICSVR utility that registers details of a log on the RCDS and optionally copies it to a backup.

authorized program analysis report (APAR). A report of a problem that is suspected to be caused by a defect in a current, unaltered release of a program.

automatic journal archiving. A function provided by CICS V4. When a disk log, defined to use this function is ready for archiving, CICS automatically creates and submits an archive job. The log data set is not reused until archiving is complete, and CICS ensures that the archive jobs are submitted promptly.

B

back up. The process of copying a data set to a backup volume.

backout. The CICSVR function that you can use if CICS fails in the attempt to back out uncommitted changes on a VSAM sphere. Using information from the RCDS, CICSVR constructs a job to back out uncommitted changes on a VSAM KSDS, ESDS, or RRDS, as indicated on the log.

backout failing log record (BOFLGREC). The record that CICS stores on the system log (throughout the CICSVR library, the system log is referred to as the log). This allows CICSVR to start and stop its scan of the log in the correct places and to locate the relevant before-images. CICS issues a BOFLGREC the first time a backout failure is detected. CICS issues following BOFLGRECs if the same task suffers a backout failure through a different file, or if a different task suffers a backout failure. So, there is a BOFLGREC for each combination of file and task that fails backout.

backup. The copy of the VSAM sphere, either on disk or tape, that you make at regular intervals as a minimum precaution to protect a VSAM sphere.

backup-while-open facility (BWO). The facility supported by DFSMS/MVS, CICS V4, and CICSVR, that lets CICS VSAM data sets be backed up while CICS is concurrently updating them. The data sets can then be recovered if data is lost. For the software levels required to use this facility, refer to *CICSVR MVS/ESA V2R3 Implementation Guide*.

base cluster. A key-sequenced or entry-sequenced data set that one or more alternate indexes can be built over, or a relative-record data set.

basic catalog structure (BCS). The name of the catalog structure in the integrated catalog facility environment. See also *ICF catalog*.

batch backout. See *backout*.

BCS. Basic catalog structure.

before-image. The copy of a VSAM record that CICS saves in the system log before CICS updates the record (throughout the CICSVR library, the system log is referred to as the log). Before-images are used to back out incomplete or incorrect changes if a failure occurs.

BOFLGREC. Backout failing log record

buffer. An area of processing storage that is used to hold a block of data while it is waiting to be processed or written to an I/O device.

BWO. Backup-while-open facility.

C

CA. See *change accumulation*.

CA. Control area.

CBIPO. Custom-Built Installation Process Offering.

CBPDO. Custom-Built Product Delivery Offering.

CEDA. The main CICS-supplied transaction used to define resources online. When you use CEDA, you can update the CICS system definition (CSD) data set, and the running CICS system. Refer to *CICS V4 CICS-Supplied Transactions* and *CICS V4 Resource Definition (Online)* or *CICS/MVS CICS-Supplied Transactions* and *CICS/MVS Resource Definition (Online)*

CEMT. A CICS-supplied transaction used to invoke all the master terminal functions. These functions include inquiring and changing the value of parameters used by CICS, altering the status of system resources, terminating tasks, and shutting down CICS. Refer to *CICS Supplied Transactions* or *CICS/MVS CICS-Supplied Transactions*

CF. Coupling Facility.

change accumulation. A CICSVR utility that reduces the time it takes to perform a forward recovery. CICSVR change accumulation consolidates forward recovery log records into a CA data set. CICSVR uses the CA data set in conjunction with the forward recovery log to reduce the number of log records that CICSVR needs to apply to get the sphere back to the exact state before the data was lost.

CI. Control interval.

CICS. Customer Information Control System.

CICS session. The time period during which a user has access to a CICS system.

CICS system definition (CSD) data set. A VSAM KSDS cluster with alternate paths. The CSD data set contains a resource definition record for every record defined to CICS using resource definition online (RDO).

CICSplex. (1) A CICS complex. A CICSplex consists of two or more regions that are linked using CICS intercommunications facilities. The links can be either intersystem communication (ISC) or interregion communication (IRC) links, but within a CICSplex are more usually IRC. Typically, a CICSplex has at least one terminal-owning region (TOR), more than one application-owning region (AOR), and might have one or more regions that own the resources that are accessed by the AORs. (2) In CICSplex SM, a management domain. The largest set of CICS regions or systems to be manipulated as a single CICSplex SM entity. CICS regions in a CICSplex SM CICSplex do not need to be connected to each other.

CICSplex SM. IBM CICSplex System Manager for MVS/ESA. An IBM CICS system management product that provides a single system image and a single point of control for one or more CICSplexes, including CICSplexes on heterogeneous operating systems.

CICSVR. CICS VSAM Recovery.

cluster. In VSAM, a named structure consisting of a group of related components. For example, when the data is key sequenced, the cluster contains the data and index components; for data that is entry sequenced, the cluster contains only a data component. See also *base cluster* and *alternate index*.

cold start. The standard CICS initialization sequence performed without regard for prior system activity.

Common User Access (CUA). Guidelines for the interface between a user and a workstation or terminal.

complete recovery. The CICSVR function that consists of forward recovery followed by backout, if needed. In CICSVR complete recovery, CICSVR restores a DFSMSshm backup for you.

concurrent copy. The facility supported by DFSMS/MVS, CICS V4, and CICSVR that increases the availability of data by letting you make a consistent backup or copy of data, concurrent with normal application program processing.

control area (CA). A group of VSAM control intervals used as a unit for formatting a data set before adding records to it.

control area split. The movement of the contents of some VSAM control intervals in a control area to a newly created control area, to aid the insertion, or lengthening of a record when no free control intervals remain in the original control area.

control interval (CI). A fixed-length area of auxiliary-storage space where VSAM stores records and distributes free space. It is the unit of information that is transmitted to or from auxiliary storage, by VSAM.

control interval split. The movement of some stored records in a VSAM control interval to a free control interval, to aid the insertion, or lengthening of a record that will not fit in the original control interval.

Coupling Facility (CF). The hardware that provides high-speed caching, list processing, and locking functions in a sysplex.

CSD. CICS system definition data set.

CUA. Common User Access.

D

Data Facility Product. See *DFP*.

Data Facility Storage Management Subsystem data facility product (DFSMSdfp). A DFSMS/MVS functional component that provides functions for storage management, data management, program management, device management, and distributed data access.

Data Facility Storage Management Subsystem data set services (DFSMSdss). A DFSMS/MVS functional component used to copy, move, dump, and restore data sets and volumes.

Data Facility Storage Management Subsystem hierarchical storage manager (DFSMShsm). A DFSMS/MVS functional component used for backing up and recovering data, and managing space on volumes in the storage hierarchy.

Data Facility Storage Management Subsystem removable media manager (DFSMSrmm). A DFSMS/MVS functional component that manages removable media.

Data Facility Storage Management Subsystem/MVS (DFSMS/MVS). An IBM licensed program that together with MVS/ESA SP compose the base MVS/ESA operating environment. DFSMS/MVS consists of DFSMSdfp, DFSMSdss, DFSMShsm, and DFSMSrmm.

data integrity. The quality of data that exists as long as accidental destruction, change, or loss

ddname. Data definition name.

deregister. The CICSVR function that removes a VSAM sphere name from the RCDS, or removes all references to a log from the RCDS.

DFDSS. Referred to in this book by its new product name. See *DFSMSdss*.

DFHCSDUP. CICS system definition (CSD) data set utility program. It provides offline services for the CSD. You can invoke DFHCSDUP as a batch program, or from a user-written program running in batch mode, or under TSO.

DFHJCRDS. The CICS journal-control record-mapping macro.

DFHSM. Referred to in this book by its new product name. See *DFSMShsm*.

DFP. Referred to in this book by its new product name. See *DFSMSdfp*.

DFSMSdfp. Data Facility Storage Management Subsystem data facility product.

DFSMSdss. Data Facility Storage Management Subsystem data set services.

DFSMShsm. Data Facility Storage Management Subsystem hierarchical storage manager.

DFSMSrmm. Data Facility Storage Management Subsystem removable media manager.

DFSMS/MVS. Data Facility Storage Management Subsystem/MVS.

dsname record. A record on a log that equates an FCT file name to a data set.

DTB. Dynamic transaction backout.

dynamic transaction backout (DTB). The process of canceling changes that a transaction makes to a VSAM data set after the transaction fails, for whatever reason.

E

emergency restart. Initialization of the CICS system following an abnormal end, where the information recorded on the system log is used to recover the data files of all interrupted transactions, to the condition they

were in when the transactions started. (Throughout the CICSVR library, the system log is referred to as the log.)

entry-sequenced data set (ESDS). A VSAM data set whose records are physically in the same order in which they were added to the data set. An ESDS is processed by addressed direct access, or addressed sequential access and has no index. Records are added at the end of the data set.

ESA. Enterprise Systems Architecture.

ESDS. Entry-sequenced data set.

Extended Recovery Facility (XRF). A related set of programs that lets an installation reach a higher level of CICS availability to end users. Availability is improved by having a pair of CICS systems: an active system and a partially initialized alternate system. The alternate system stands by to continue processing if failures occur on the active system.

F

FCT. File control table.

file. A CICS entity that relates to a data set. File names are 1–8 characters.

file control table (FCT). CICS table containing the characteristics of the files accessed by CICS file control.

FMID. Function modification identifier.

forward recovery. The CICSVR function that reapplies all changes to the VSAM sphere since the last backup. The sphere can be a KSDS, ESDS, RRDS, or VRRDS. CICSVR gets the information it needs to construct the recovery job from the RCDS. The contents of the logs are applied to the VSAM sphere to return it to its exact state before the data was lost. With CICSVR forward recovery, CICSVR restores a DFSMSHsm backup for you.

forward recovery log. A log that is being used for implementing forward recovery. (Throughout the CICSVR library, the forward recovery log is referred to as the log.)

function modification identifier. A seven-character ID used to identify the release of a product.

G

GDG. Generation data group.

generation data group (GDG). A collection of data sets kept in chronological order; each data set is a generation data set.

global user exit. A point in a CICS module at which CICS can pass control to a program that you have written (an *exit* program) and then resume control when your program has finished. When an exit program is enabled for a particular exit point, the program is called every time the exit point is reached.

I

ICF catalog. Integrated catalog facility catalog.

in-flight transaction. A transaction that has uncommitted updates at the time of an abnormal CICS end.

instance. An instance of CICSVR starts when transaction VSAM is initialized as part of SMSVSAM address space initialization or enabled by operator command. It ends when transactional VSAM enters a quiesced or disabled state, or when the SMSVSAM address space is terminated.

integrated catalog facility (ICF) catalog. A catalog that consists of a basic catalog structure (BCS) and its related volume table of contents (VTOCs), and VSAM volume data sets (VVDSs). The ICF catalog is the only catalog that is supported by DFSMS/MVS. See also *basic catalog structure (BCS)*, *volume table of contents (VTOC)*, and *VSAM volume data set (VVDS)*.

Interactive System Productivity Facility (ISPF). The MVS interactive facility that serves as a full-screen editor and dialog manager. ISPF can be used for writing application programs. It is used by CICSVR to provide an interactive dialog between the CICSVR user and the CICSVR functions.

I/O. Input/output.

ISPF. Interactive System Product Facility.

J

JACD. Journal archive control data set.

JCT. Journal control table.

journal. See *log*.

journal archive control data set (JACD). CICS V4 system data set for use by the CICS automatic journal archive facility to store information about the logs.

journal control table (JCT). The way by which the characteristics of the logs are described to CICS for access through journal control. The JCT contains journal information and operating system control blocks describing each log.

journaling. The recording of information onto a journal (including the system log) for processing by CICSVR. Also known as *logging*.

journal-label-record. A special record type that is the first record written out by CICS in a block of log records.

journal partitioned data set (JPDS). A CICS V4 system data set used with the automatic journal archive facility. Each member of this data set contains skeleton JCL for use by the CICS automatic archive job submission program.

JPDS. Journal partitioned data set.

K

keypoint. The periodic recording of system information and control blocks on the system log (throughout the CICSVR library, the system log is referred to as the log).

key-sequenced &dat (KSDS). A VSAM data set whose records are loaded in key sequence and controlled by an index.

KSDS. Key-sequenced data set.

L

linear data set. A VSAM data set that contains data but no control information. A linear data set can be accessed as a byte-addressable string in virtual storage. See *recovery control data set*.

link pack area (LPA). In MVS, an area of virtual storage that contains re-entrant routines that are loaded at IPL time and that can be used concurrently by all tasks in the system.

local shared resources (LSR). Files that share a common pool of buffers and a common pool of strings; that is, control blocks supporting I/O operations.

log. A set of one or more sequential data sets to which records are written during a CICS session in these circumstances:

- By CICS, to implement user-defined resource protection (logging to the system log)
- By CICS, to implement user-defined automatic journaling (to a journal, including the system log)
- Explicitly, by the JOURNAL command (or macro), from an application program (to a journal, including the system log)

(Throughout the CICSVR library, all journals are referred to as logs.)

log manager. A CICS V4 domain introduced in CICS Transaction Server, which replaces the CICS journal control management function of earlier CICS versions. The CICS V4 log manager uses MVS system logger services to write CICS systems logs, forward recovery logs, and user journals to log streams managed by the MVS system logger. (Throughout the CICSVR library,

system logs, forward recovery logs, and MVS log streams are referred to as logs.)

log of logs. A log created by CICS Transaction Server that contains records that are written each time a file is opened or closed. CICSVR scans the log of logs and saves information needed for recovery in the RCDS.

log tail. In CICSVR, the oldest log record of interest. Log tail deletion is the process of deleting unneeded records that are older than the oldest record of interest to CICSVR.

local shared resources (LSR). Files that share a common pool of buffers and a common pool of strings; that is, control blocks supporting I/O operations.

logical unit of work (LUW). A sequence of processing actions (for example, changes to a base cluster) that must be completed before the individual actions can be regarded as committed. Every CICS task that affects a recoverable resource consists of one or more LUWs. When changes are committed (by successful completion of the LUW and recording of the sync point on the system log), they need not be backed out after a later failure of the transaction or system. The end of an LUW is marked in a transaction by a sync point, issued either by the user program or by CICS when the transaction ends. In the absence of user sync points, the entire task is an LUW.

LPA. Link pack area.

LSR. Local shared resource.

LUW. Logical unit of work.

M

master terminal operator (MTO). A CICS operator who is authorized to use the master-terminal-functions transaction.

menu bar. The area at the top of a window that contains choices that let the CICSVR user access the actions available in that window.

migration utility. The utility provided by CICSVR that helps you upgrade your RCDS.

MTO. Master terminal operator.

MVS/ESA. An MVS operating system environment that supports ESA/370.

MVS/ESA SP. An IBM licensed system product. MVS/ESA SP together with DFSMS/MVS compose the base MVS/ESA operating environment.

O

object action. A process sequence in which the user selects an object and then selects an action to apply to that object.

online. Pertaining to a user's access to a computer through a terminal. The term *online* is also used in this book to describe a resource (for example, a data set) being used by a user through a terminal.

P

path. A data set name for the relationship between an alternate index and its base cluster, or an alias for a VSAM data set.

PDF. Program Development Facility.

PMR. Problem management record.

problem management record (PMR). A record on the RETAIN database where all activity about your CICSVR problem is recorded.

program temporary fix (PTF). A temporary solution, or by-pass of a problem, diagnosed by IBM as resulting from a defect in a current, unaltered release of a program.

program update tape (PUT). A tape or cartridge on which IBM places PTFs so that you can install them on your system.

PTF. Program temporary fix.

pull-down. A list of choices associated with a choice on the menu bar. The CICSVR user selects a choice from the menu bar, and a pull-down appears in the secondary window, under the choice.

PUT. Program update tape.

R

RBA. Relative byte address.

RCDS. Recovery control data set.

RDO. Resource definition online.

record level sharing. See *VSAM record level sharing*.

recovery. (1) The general process of recovering VSAM data by CICS or CICSVR. (2) In DFSMSHsm, the process of copying a backup version of a data set from a backup volume to a specified volume, possibly to the volume from which the backup version was made.

recovery control. In CICSVR, the collective name for the functions that keep track of all the information needed to forward recover and back out protected VSAM spheres.

recovery control data set (RCDS). One of three identical linear VSAM data sets that contain information about the contents of archived logs and the ISPF dialog interface default values. CICSVR uses this stored information to construct recovery jobs. CICSVR uses three identical RCDSs to reduce the possibility of data loss.

recovery point time. The point in time that forward recovery starts from for VSAM data sets that were restored from a backup made using the backup-while-open facility. With the backup-while-open facility, recovery point time is a maximum of 30 minutes before the *actual* backup time.

register. See *archive function*.

relative byte address (RBA). The displacement of a stored record or control interval from the beginning of the storage space allocated to the VSAM data set to which it belongs.

relative-record data set (RRDS). A VSAM data set whose records are loaded into fixed-length slots. The records are accessed by a relative record number (RRN).

Remote Technical Assistance Information Network. See *RETAIN*.

request parameter list (RPL). In ACF/VTAM, a control block that contains the parameters needed for processing a request for data transfer.

resource definition macro. A method of defining resources to CICS using macros. You code and assemble special macro instructions, and then provide CICS with these assembled tables at initialization time.

resource definition online (RDO). The recommended method of defining resources to CICS by creating resource definitions interactively, or using the utility DFHCSDUP, and then storing them in the CICS system definition (CSD) data set. These definitions are then installed as CICS system tables, by specifying a list of definitions at CICS initialization time. Using the CEDA transaction, resource definitions can be installed while CICS is active, so they can be used immediately.

restore. (1) The process of copying a backup version of a VSAM data set from backup media, to the same media from which the backup version was created, or to another media. This restored copy can then be used in CICSVR forward recovery or backout. (2) In DFSMSHsm, the process of invoking DFSMSdss to perform the recover function before running CICSVR complete recovery.

RETAIN. A software system used by IBM Support Centers and other IBM offices to solve problems with IBM products. RETAIN is used to document each problem and the correction developed for it.

RPL. Request parameter list.

RLS. VSAM record level sharing.

RRDS. Relative-record data set.

S

SAA. Systems Application Architecture.

secondary window. The window you get when you select an option from a pull-down. A secondary window does not have a menu bar.

SIT. System initialization table.

SNA. System Network Architecture.

SMF. System Management Facility.

SMS. Storage Management Subsystem.

sphere. See *VSAM sphere*.

storage management subsystem (SMS). A DFSMS/MVS facility used to automate and centralize the management of storage. Using SMS, a storage administrator describes data allocation characteristics, performance and availability goals, backup and retention requirements, and storage requirements to the system through data class, storage class, management class, and ACS routine definitions.

sync point. See *synchronization point*.

synchronization point (sync point). A point in the processing of a task at which changes to recoverable resources are regarded as committed.

sysplex. A set of MVS systems communicating and cooperating with each other through certain multi-system hardware components and software services to process customer workloads.

system initialization table (SIT). A CICS control table required for the system to be operational. The SIT controls the capability of the system through a set of system initialization parameters.

system log. A CICS log (ID=01) that is used by CICS to log changes to resources for backout. (Throughout the CICSVR library, the system log is referred to as the log.)

system logger. A central logging facility provided by MVS/ESA. The MVS system logger provides an integrated MVS logging facility that can be used by

system and subsystem components. For example, it is used by the CICS Transaction Server log manager.

System Management Facility (SMF). An MVS component that collects and records system and job-related information.

Systems Application Architecture (SAA). A formal set of rules that enables applications to be run without modification, in different computer environments.

T

task. In CICS, a single instance of the execution of a transaction. Contrast with *transaction*.

tie-up record (TUR). The association between the file and data set, as recorded on the log.

transaction. Can be regarded as a unit of processing (consisting of one or more application programs) initiated by a single request, often from a terminal. A transaction might require the initiation of one or more tasks for its execution. Contrast with *task*.

transaction backout. The cancelation, because of a transaction failure, of all updates performed by a task.

TUR. Tie-up record.

U

uncommitted updates. The updates from an incomplete LUW that are left on the &sphere when a task or CICS abends.

upgrade set. All the alternate indexes that VSAM has been instructed to update whenever there is a change to the data part of the base cluster.

V

variable relative-record data set (VRRDS). A VSAM data set whose records are loaded into variable-length slots. The records are accessed by a relative record number (RRN).

volume table of contents (VTOC). A table on a direct access volume that describes each data set on the volume.

VRRDS. Variable relative-record data set

VSAM. Virtual Storage Access Method.

VSAM record level sharing (VSAM RLS). An extension to VSAM which provides direct record level sharing of VSAM data sets from multiple address spaces across multiple systems. Record level sharing utilizes the System/390 Coupling Facility to provide cross system locking, local buffer invalidation, and cross

system data caching. With VSAM RLS, CICS regions that share VSAM data sets can reside in one or more MVS images within a parallel sysplex.

VSAM sphere. A base cluster, together with any alternate indexes defined with it.

VSAM volume data set (VVDS). A data set that describes the characteristics of VSAM data sets and system-managed data sets residing on a given disk; part of an ICF catalog.

VTOC. Volume table of contents.

VVDS. VSAM volume data set.

X

XA. Extended Architecture.

XRF. Extended Recovery Facility.

Index

A

- administrate pull-down 2, 53, 62, 84
- administrative procedures
 - deciding when to run CICSVR 6
 - deciding which function to run 102
 - gathering information 97
 - naming conventions 97
- after-image 100
- ALLOCATE command
 - examples 100, 102
- allocating logs 99
- AMS commands
 - LISTCAT 96
- APPLID (application identifier) 96
- archived log list panel 61
- archiving
 - CICS V4 automatic 106, 110
 - logs 106, 109
 - naming conventions 98
- automatic log stream deregister secondary window 74

B

- backout
 - allocating logs 101, 102
 - CICS, failure 7, 103, 109
 - defining exits 49
 - defining VSAM buffer pools 49
 - entering parameters 47
 - example reports 117, 119
 - failure in CICS Transaction Server 7, 41, 103
 - failure messages 7, 103
 - listing recovery job errors 46
 - providing VSAM sphere parameters 45
 - report descriptions 119, 122
 - running 41, 51
 - running without the ISPF interface 109, 112
 - saving the JCL 51
 - selecting from the VSAM sphere list 44
 - sequence checking 48
 - submitting the job 50
 - summary of tasks 41
 - updating the default values 50
 - using the main menu 42
 - using the VSAM sphere list Utilities pull-down 45
- BACKOUT command
 - examples 101, 102
- backup
 - list 16, 32, 57
- backup copy
 - DFSMSHsm 16, 32
 - naming conventions 98
 - recording details 96
 - volume dumps 17, 33, 56
- backup-while-open facility
 - AIX considerations 96
 - report considerations 121

- before-image 102
- BOFLGREG (backout failing log record) 120
- BookManager xiv
- buffer
 - pool parameters 21, 37, 49

C

- CEDA
 - VIEW FILE 105
- CEMT commands
 - INQUIRE DSNAME 6, 96, 103
 - INQUIRE FILE 96, 110
 - SET FILE 108, 112
 - SET JOURNALNUM 106, 110
- CICS
 - APPLID 96
 - online backout failure 104, 109
 - online backout failure in CICS Transaction Server 7, 41, 103
- CICS V4
 - automatic journal archiving 106, 110
 - automatic log archiving 106, 110
 - backout failure in CICS Transaction Server 7, 41, 103
 - backout parameters 47
 - complete recovery parameters 19
 - forward recovery parameters 35
- command area 2
- commands
 - ALLOCATE
 - examples 100, 102
 - BACKOUT
 - example reports 117
 - examples 101, 102
 - RECOVER
 - example reports 113
 - examples 99, 100
- complete recovery
 - defining exits 21, 37
 - defining VSAM buffer pools 20
 - entering parameters for CICS V4 19
 - listing DFSMSHsm backups 16, 32
 - listing recovery job errors 18
 - providing VSAM sphere parameters 15
 - running 9, 24
 - saving the JCL 24
 - selecting from the VSAM sphere list 12
 - sequence checking 19
 - specifying criteria for the VSAM sphere list 11, 27, 43
 - submitting the job 23
 - summary of tasks 9
 - updating the default values 23
 - using DFSMSHsm backups 16, 32
 - using DFSMSHsm full volume dumps 17, 33
 - using the main menu 10
 - using the VSAM sphere list Utilities pull-down 13

components of panels and secondary windows 1
copied log stream list panel 71
CUA (common user access) 1

D

data loss
 logical 6, 103
 physical 6, 103
data set
 closing before recovery 104
 copying prior to backout 109
 naming conventions 97
 restore during complete recovery 16
 restore during forward recovery 32
ddnames
 DWWIN 98
 DWWLOAD 98
 DWWLOG 99, 101
 DWWMSG 98
 DWWPRINT 98
 STEPLIB 98, 110
deregistering
 log 63
 log of logs 85
 SAM copy of a log stream 73
 sphere 54
DFSMSHsm (Data Facility Storage Management
 Subsystem hierarchical storage manager)
 backup prompt list secondary window 16, 32, 57
 backups 16, 32
 forward recovery 32
 in complete recovery 16, 57
 volume dumps 17, 33, 56
diagrams
 data set problems 6, 102
DTB (dynamic transaction backout) 109
DWWCO 98
DWWIN ddname 98
DWWLOAD ddname 98
DWWLOG ddname 99, 101
DWWMSG ddname 98
DWWPRINT ddname 98
DWWPRINT STEPLIB 98, 110
dynamic
 allocation of logs 100, 102

E

emergency restart backout 109
error description secondary window 18, 34, 47
error list 18, 34, 47
example
 backout data set statistics 118
 backout exit action statistics 119
 backout log statistics 117
 failure indication 121
 panels
 archived log list 61
 components i
 copied log stream list 71

example (continued)
 panels (continued)
 log of logs list 83
 main menu 10, 26, 42
 VSAM sphere list 12, 28, 44
 VSAM sphere list include window 11, 27, 43
 pull-downs
 administrate 53, 62, 84
 help 60
 list 56
 tools 55
 utilities 13, 29
 view 58, 80
 recover data set statistics 114
 recover exit action statistics 115
 recover log statistics 113
 recovery progress 116
 report descriptions
 backed-out data set statistics 120
 exit action statistics 122
 log statistics 119
 recovered data set statistics 120
 reports
 backed-out data set statistics 118
 exit action statistics 115, 119
 log statistics 113, 117
 recover progress 116
 recovered data set statistics 114
 secondary windows
 automatic log deregister 63
 backout parameters 47
 backup prompt list 16, 32, 57
 CICSVR log stream type 18, 34
 CICSVR save JCL 24, 40, 51
 CICSVR VSAM sphere RLS details list 57
 complete recovery parameters for CICS V4 19
 copied log stream list include 81
 copied log stream list sort 81
 default update verification 23, 39, 50
 exits 22, 23, 38, 39, 50
 forward recovery parameters for CICS V4 35
 job submission 24, 40, 51
 log deregister verification 63
 log details list 66
 log list include 68
 log list sort 68
 log of logs deregister 85
 log of logs details list 88
 log of logs list include 90
 log of logs list sort 90
 log of logs register 85
 log stream details list 76
 log stream SAM copy deregister verification 73
 recovery job error list 18, 34, 47
 SAM copy details 77, 79
 SAM copy list 78
 sequence checking 20, 36, 48
 VSAM buffer pools 21, 37, 49
 VSAM sphere deregister verification 54
 VSAM sphere list include 59
 VSAM sphere list sort 59

example (*continued*)
secondary windows (*continued*)
VSAM sphere parameters 15, 31, 46
wait 17, 33, 46

exits
defining 22, 23, 38, 39, 50
example exit action report 115, 119
exit action report description 122

F

forward recovery
defining VSAM buffer pools 36
entering parameters for CICS V4 35
example reports 113
listing recovery job errors 34
log stream type 17, 33
providing VSAM sphere parameters 31
report descriptions 119, 122
running 25, 40
running without the ISPF interface 104, 109
saving the JCL 40
selecting from the VSAM sphere list 28
sequence checking 35
specifying logs 99, 102
submitting the job 39
summary of tasks 25
updating the default values 39
using the main menu 26
using the VSAM sphere list Utilities pull-down 29
with uncommitted updates 109
full volume dumps 17, 33
function
key area 2
keys 3

H

help pull-down 60, 69, 82

I

introducing CICSVR 1
ISPF dialog interface
backout 41, 51
complete recovery 9, 24
description 1
editor 93
forward recovery 25, 40
function keys 3
online help 5
other VSAM sphere list pull-downs 53, 60
panel and secondary window examples 9, 93
panel components 1
pull-downs 2
secondary window 3
shortcut commands 2, 5

J

JCL (job control language)
DWWIN 98
DWWLOAD 98
DWWLOG 99, 101
DWWMSG 98
DWWPRINT 98
for backout 110
for forward recovery 106
running forward recovery and backout 98
skeleton 26, 93
specifying logs 99, 102
STEPLIB 98, 110
job submission 24, 40, 51

L

list pull-down 56, 65, 75
log of logs
scan 29
log of logs list panel 83
log stream deregister secondary window 73
log stream list administrative pull-down 72
logging
automatic archiving 106, 110
ID number 105
information needed for recovery 96
logical copies 17, 33
logical dumps 17, 33
logs
archive naming conventions 98
archiving 106, 109
deregistering 63
details list 66
ID number 105
naming conventions 98
selecting for recovery 105
specifying 99, 102

M

main menu 10, 26, 42
manually running CICSVR
backout
checking the results 111
copying the data sets 109
getting the logs 109
initiation 111
messages 111
preparing the job 110
rerunning 111, 112
returning the data sets to CICS 112
sample JCL 110
data set naming conventions 97
deciding which function to run 102
forward recovery
checking the results 107, 108
closing the files 104
getting the logs 105
initiation 107

- manually running CICSVR *(continued)*
 - forward recovery *(continued)*
 - messages 107
 - preparing the job 106
 - rerunning 107, 108
 - restoring the backup 104
 - returning the data sets to CICS 108
 - sample JCL 106
 - gathering the information 97
 - information required 95
 - JCL required 98
 - keeping records 95
 - specifying logs 99, 102
 - work sheet 97
- menu bar 1

N

- naming conventions 97

O

- online backout failure in CICS Transaction Server 7, 41, 103
- online CICSVR books xiv
- online help 5

P

- panels
 - command area 2
 - components 1
 - examples
 - archived log list 61
 - components i
 - copied log stream list 71
 - log of logs list 83
 - main menu 10, 26, 42
 - VSAM sphere list 12, 28, 44
 - VSAM sphere list include window 11, 27, 43
 - function key area 2
 - menu bar 1
 - pull-down 1
 - scrollable area 1
 - secondary window 1, 4
- pull-downs
 - administrate 2
 - description 2
 - examples
 - administrate 53, 62, 84
 - help 60, 69, 91
 - list 56, 65, 87
 - tools 55
 - utilities 13, 29, 45
 - view 58, 67, 89
 - help 3
 - list 3
 - panel component 1
 - tools 3
 - using 2
 - utilities 2

- pull-downs *(continued)*
 - view 3

R

- RCDS (recovery control data set)
 - automatic deregistering 63
 - deregistering a log 62
 - deregistering a log of logs 84
 - deregistering a sphere 54
 - getting default values 18, 21, 36
 - registering a log of logs 84
- RECOVER command
 - examples 99, 100
- recovery
 - rerunning 108, 112
 - sample JCL 106
 - using DFSMSHsm backups 16, 32
 - using DFSMSHsm full volume dumps 17, 33
- recovery job error description 18, 34, 47
- recovery job error list 18, 34, 47
- report descriptions
 - backed-out data set statistics 120
 - exit action statistics 122
 - failure indication 121
 - log statistics 119
 - recovered data set statistics 120
 - recovery progress 122
- reports
 - backout data set statistics 118
 - backout exit action statistics 119
 - backout log statistics 117
 - failure indication 121
 - recover data set statistics 114
 - recover exit action statistics 115
 - recover log statistics 113
 - recovery progress 116
- restore
 - data set characteristics 105
 - prior to recovery 104
- running CICSVR
 - backout 41, 51
 - complete recovery 9, 24
 - forward recovery 25, 40
 - manually 98, 112
 - other VSAM sphere list pull-downs 53, 60

S

- SAA (Systems Application Architecture) 1
- sample JCL
 - backout job 110
 - forward recovery job 106
 - running forward recovery and backout 98
 - to specify logs 99, 102
- scrollable area 1
- secondary windows
 - components 1
 - description 3
 - examples
 - automatic log deregister 63

- secondary windows *(continued)*
 - examples *(continued)*
 - backout parameters 47
 - backup prompt list 16, 32, 57
 - CICSVR log stream type 18, 34
 - CICSVR save JCL 24, 40, 51
 - CICSVR VSAM sphere RLS details list 57
 - complete recovery parameters for CICS V4 19
 - copied log stream list include 81
 - copied log stream list sort 81
 - default update verification 23, 39, 50
 - exits 22, 23, 38, 39, 50
 - forward recovery parameters for CICS V4 35
 - job submission 24, 40, 51
 - log deregister verification 63
 - log details list 66
 - log list include 68
 - log list sort 68
 - log of logs deregister 85
 - log of logs details list 88
 - log of logs list include 90
 - log of logs list sort 90
 - log of logs register 85
 - log stream details list 76
 - log stream SAM copy deregister verification 73
 - recovery job error list 18, 34, 47
 - SAM copy details 77, 79
 - SAM copy list 78
 - sequence checking 20, 36, 48
 - VSAM buffer pools 21, 37, 49
 - VSAM sphere deregister verification 54
 - VSAM sphere list include 59
 - VSAM sphere list sort 59
 - VSAM sphere parameters 15, 31, 46
 - wait 17, 33, 46
- sequence checking 20, 36, 48
- shortcut commands 2, 5
- specifying logs 99, 102
- statistics reports
 - descriptions 119, 122
 - examples 113, 119
- synchronization point 109
- system log
 - active 109

T

- tools pull-down 55

U

- uncommitted updates
 - due to CICS backout failure 103
- understanding CICSVR reports 113, 122
- using CICSVR
 - backout 41, 51
 - complete recovery 9, 24
 - deciding when to run CICSVR 6
 - deciding which function to run 102
 - forward recovery 25, 40
 - gathering information 97

- using CICSVR *(continued)*
 - other VSAM sphere list pull-downs 53, 60
 - running backout manually 109
 - running forward recovery manually 104
 - specifying logs 99, 102
 - utilities pull-down 13, 29, 45

V

- view pull-down 58, 67, 89
- volume dumps 17, 33, 56
- VSAM
 - logical data loss 6, 103
 - lost or damaged data 6, 103
 - physical data loss 6, 103
 - sphere
 - closing before recovery 104
 - copying prior to backout 109
 - deregistering 54
 - keeping information 95
 - list include secondary window 59
 - list sort secondary window 59
 - parameters secondary window 15

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