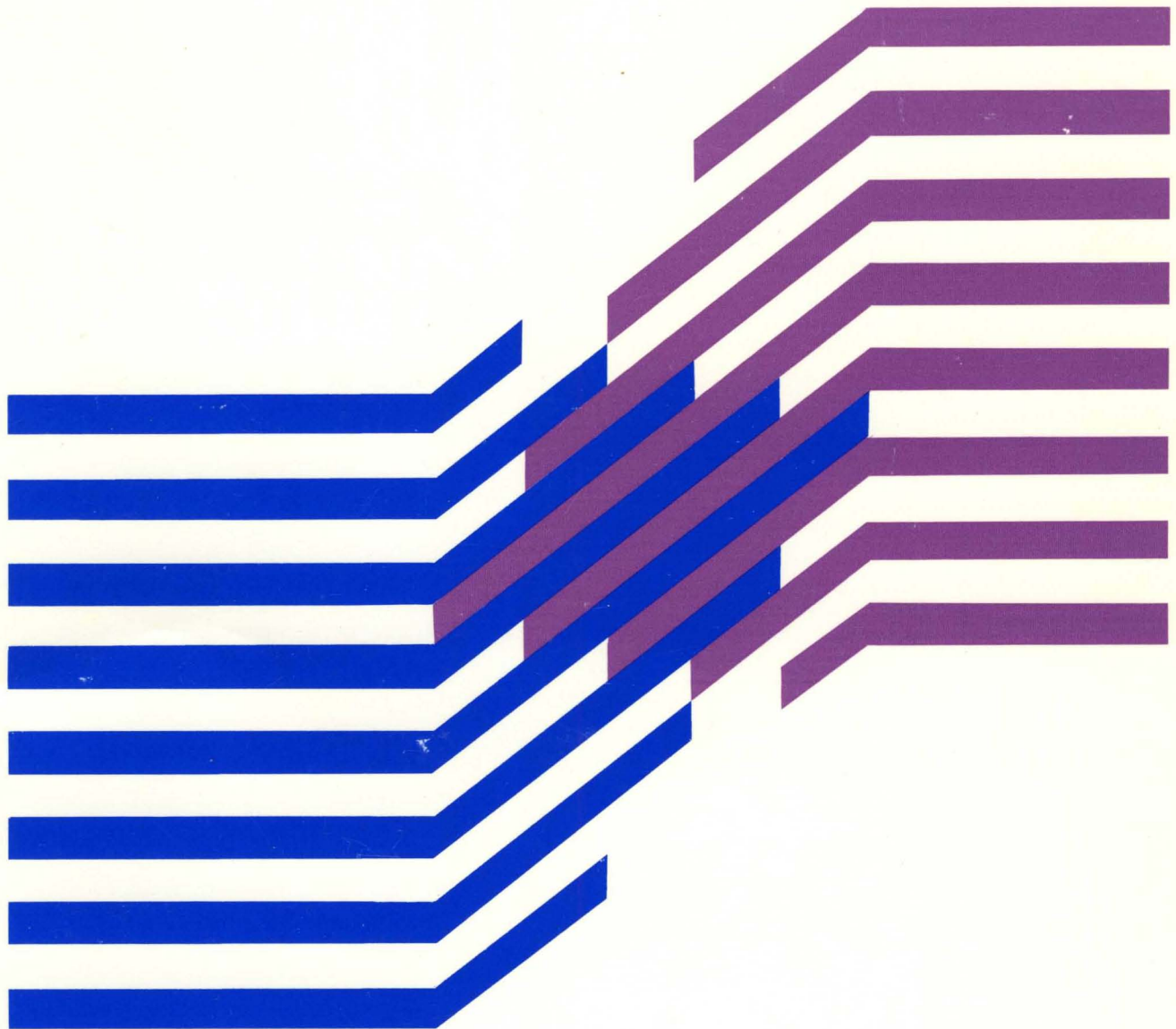




MVS/ESA
Component Diagnosis:
Availability Manager

LY28-1438-1

MVS/System Product
JES2 Version 3
JES3 Version 3





MVS/ESA
Component Diagnosis:
Availability Manager

LY28-1438-1

MVS/System Product
JES2 Version 3
JES3 Version 3

Second Edition (February, 1990)

This is a major revision of, and obsoletes, LY28-1438-0. See the Summary of Changes following the Contents for a summary of the changes to this manual. Technical changes or additions to the text and illustrations are indicated by a vertical line to the left of the change. This edition applies to Version 3 of MVS/System Product 5685-001 or 5685-002 and to all subsequent releases until otherwise indicated in new editions or Technical Newsletters. Changes are made periodically to the information herein; before using this publication in connection with the operation of IBM systems, consult the latest *IBM System/370 Bibliography*, GC20-0001, for the editions that are applicable and current.

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PROGRAMMING INTERFACES

This book does **NOT** contain any programming
interface information.

About This Book

This book will help you diagnose problems in the availability manager component. Using the book, you will be able to:

- Follow diagnostic procedures for each type of problem in the component
- Collect and analyze data needed to diagnose the problem
- Develop a search argument to be used for searching problem reporting data bases
- Know what problem data is needed before reporting the problem to IBM

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Who This Book Is For

This book is for anyone who diagnoses problems that appear to be caused by the availability manager.

The level of detail at which this book is written assumes that the reader:

- Understands the commonly used diagnostic tasks and aids, such as those presented in the *Basics of Problem Determination* book
- Codes in assembler language, and reads assembler and linkage editor output
- Understands basic system concepts and the use of system services
- Understands the externals for the availability manager

How This Book Is Organized

This book contains the following:

- **Chapter 1, “Diagnosing Problems in Availability Manager”** identifies the problem types and gives a diagnostic procedure for each type.
- **Chapter 2, “Collecting and Analyzing Problem Data for Availability Manager”** tells how to collect and analyze needed problem data.
- **Chapter 3, “Developing a Search Argument for Availability Manager”** summarizes the search argument symptoms for problems in the availability manager.
- **Chapter 4, “Reporting a Problem to IBM”** summarizes the problem data needed for reporting the problem to IBM.
- **Chapter 5, “Introduction to Availability Manager”** provides an overview of the services performed by the component and the expected inputs and outputs.
- **“Index.”**

Related Information

Where necessary, this book references information in other books, using shortened versions of the book title. The following figure shows the shortened titles, complete titles, and order numbers of the books you might need while you are using this book.

Short Title Used in This Book	Title	Order Number
Basics of Problem Determination	MVS/ESA Basics of Problem Determination	GC28-1839
EREP User's Guide	Environmental Record Editing and Printing Program User's Guide and Reference	GC28-1378
IPCS Command Reference	MVS/ESA Interactive Problem Control System (IPCS) Command Reference	GC28-1834
IPCS User's Guide	MVS/ESA Interactive Problem Control System (IPCS) User's Guide	GC28-1833
Planning: XRF	MVS/Extended Architecture Planning: Extended Recovery Facility (XRF)	GC28-1139
Service Aids	MVS/ESA Service Aids	GC28-1844
System Codes	MVS/ESA Message Library: System Codes	GC28-1815
System Messages	MVS/ESA Message Library: System Messages, Volumes 1 - 2	GC28-1812 and GC28-1813
Using Dumps and Traces	MVS/ESA Diagnosis: Using Dumps and Traces	LY28-1843

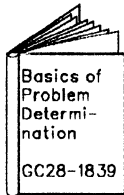
Diagnosis Library

PLANNING:

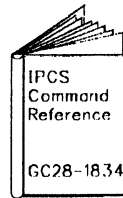
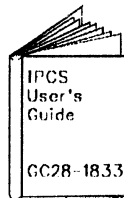
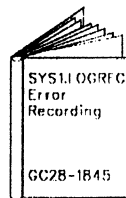
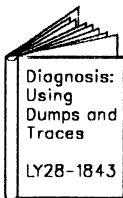


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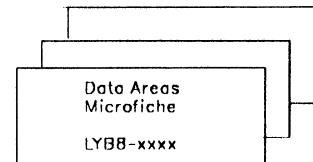
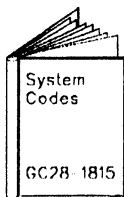
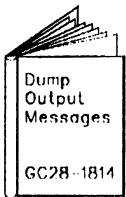
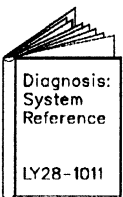
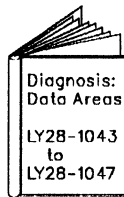
For Diagnostic Procedures



For Data Collection

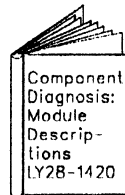
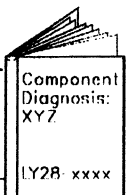


For Data Interpretation



For Component-Specific Information

(To identify the component, see Basics of Problem Determination)



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Summary of Changes

**Summary of Changes
for LY28-1438-1
MVS/System Product Version 3 Release 1.3**

Changed Information: Various technical and editorial changes were made throughout the book.

**Summary of Changes
for LY28-1438-0
MVS/System Product Version 3 Release 1.0**

This book contains information presented in *MVS/Extended Architecture System Logic Library: Availability Manager*, LY28-1625-0. This book contains no new technical information.

Part 1. Diagnostic Procedures for Availability Manager

Chapter 1. Diagnosing Problems in Availability Manager

Prerequisites

Before using this book, collect the following problem data. If you do not have this data, see the *Basics of Problem Determination* book and perform its procedures.

- The problem type, such as an abend
- The product name
- The component name: availability manager

Use this book to diagnose problems only in the availability manager. If the component name is not availability manager, return to the *Basics of Problem Determination* book to identify the component. Use the component diagnosis book for the identified component.

Identifying Problems

The following figure lists the symptoms that indicate each problem type. The figure directs you to a diagnostic procedure for that problem type or to another book.

For a problem with these symptoms:	See the following:
<p>Abend X'02E': The availability manager terminates with system completion code X'02E'. The second byte of register 15 contains one of the following reason codes:</p> <p>01 03-11 13-17 1A-27 29 2C-33 38 3A-47 49</p>	<p>“Diagnosing an Abend 02E” on page 1-2</p>
<p>Abend X'02E' for a user problem: The availability manager terminates with system completion code X'02E'. The reason code in register 15 is not listed above. This is a user problem.</p>	<p>System completion code 02E in <i>System Codes</i></p>
<p>Message AVM032I, AVM034I, AVM036I, or AVM038I</p>	<p>“Diagnosing Message AVM032I, AVM034I, AVM036I, or AVM038I” on page 1-3</p>
<p>Message AVMnnns other than a listed message</p>	<p><i>System Messages for the message explanation</i></p>

Figure 1-1. Problem Types

Diagnosing an Abend 02E

Use this procedure if the availability manager abnormally terminates with system completion code X'02E'. The second byte of register 15 contains one of the following reason codes:

01
03-11
13-17
1A-27
29
2C-33
38
3A-47
49

Diagnostic procedure	References
1. Obtain message AVM010E and other messages accompanying abend X'02E'. Look at their explanations and take any recommended actions.	<i>System Messages</i> for explanation of the messages
2. Obtain the SYS1.LOGREC error record or the dump for the abend. An SVC dump for the abend has a title beginning with COMPON=AVM.	<i>Using Dumps and Traces</i> for an explanation of the dump title
3. Format the dump or SYS1.LOGREC record to see the search argument: <ul style="list-style-type: none"> • Format an SVC dump or SYSMDUMP ABEND dump with the IPCS VERBEXIT LOGDATA subcommand. • Format a SYS1.LOGREC record with EREP to obtain a detail edit report. 	<i>IPCS Command Reference</i> for the subcommand <i>EREP User's Guide</i> for EREP formatting
4. Develop a search argument consisting of: <ul style="list-style-type: none"> • CSECT name: RIDS/AVFcccc • System abend code: AB/S002E • Abend reason code: PRSC/hh • Message identifier: MS/AVM010E 5. Use the search argument to search problem reporting data bases. If the search finds that the problem has been reported before, request the problem fix. If not, continue with the next step.	Chapter 3, “Developing a Search Argument for Availability Manager”
6. From the SVC dump, obtain information about the availability manager using the IPCS VERBEXIT AVMDATA subcommand.	Chapter 2, “Collecting and Analyzing Problem Data for Availability Manager” <i>IPCS Command Reference</i> for the subcommand
7. Report the problem to IBM, if assistance is needed. Provide the following problem data: <ul style="list-style-type: none"> • Accompanying messages • The dump and/or SYS1.LOGREC error record • The search argument • Product name • Module level 	Chapter 4, “Reporting a Problem to IBM”

Figure 1-2. Diagnostic Procedure for an Abend 02E

Diagnosing Message AVM032I, AVM034I, AVM036I, or AVM038I

Use this procedure if the availability manager issues message AVM032I, AVM034I, AVM036I, or AVM038I.

Diagnostic Procedure	References
1. Obtain any variable data from the text of the message.	<i>System Messages</i> for a description of the message text
2. Develop a search argument consisting of: <ul style="list-style-type: none">• Message identifier: MS/AVM032I MS/AVM034I MS/AVM036I MS/AVM038I• Reason code: PRCS/hh 3. Use the search argument to search problem reporting data bases. If the search finds that the problem has been reported before, request the problem fix. If not, continue with the next step.	Chapter 3, “Developing a Search Argument for Availability Manager”
4. Report the problem to IBM, if assistance is needed. Provide the following problem data: <ul style="list-style-type: none">• The search argument• Product name• Message identifier and text	Chapter 4, “Reporting a Problem to IBM”

Figure 1-3. Diagnostic Procedure for Message AVM032I, AVM034I, AVM036I, or AVM038I

Chapter 2. Collecting and Analyzing Problem Data for Availability Manager

This chapter contains information to help you collect and analyze data about a problem.

Dumping Availability Manager Data

A dump for availability manager contains diagnostic data. Format the diagnostic data using IPCS. For information about IPCS, see *IPCS User's Guide* and *IPCS Command Reference*. Obtain availability manager diagnostic data as follows:

1. Start an IPCS session.
2. Select the COMMAND option on the IPCS Primary Option Menu.
3. Enter the following subcommand on the IPCS Subcommand Entry panel:

```
VERBEXIT AVMDATA
```

The state of the availability manager and associated subsystems determines the control blocks printed for the subcommand.

On the following page is an example of an output of the subcommand.

```

***** AVM DATA FOLLOWS *****

AVVT 00B3EFE0
+0000 ID C1E5E5E3 LEN 0020 SP 00F1 LEVL 00000001 AVMN 01DE5BA8
+0010 RQ 01BC5BF0 GLUE 80FE4A20 TRM 81DE1D50 RSV 00000000

AVMN 01DE5BA8
+0000 ID C1E5D4D5 LEN 0458 SP 00E7 LEVL 00000001 STAT 00000006
+0010 ASCB 00F43100 ASID 000C GENR 0007 CAUS 00 RSV 000000
+001C TDOM 00000000 CMPF 00 CMPC 000000 RSCD 00000000 DQ 00000000
+002C AVAS 01DE5808 STKN 00000001 ETKN 00000001 ATKN 00000001 RSV 0000
+003E IDTN 0680 RSV 0000 MHSP 00F1 MHSZ 000071A8 MHPT 01DDDE58
+004C IDTS 01DE5C00 OFLW 0000 MGEN 0000 RSV 00000000

ASID TABLE
+0058 AS 000B GEN 0000 RSV 00 USE 003E80
+0050 AS 0000 GEN 0000 RSV 00 USE 000000
+0058 AS 0000 GEN 0000 RSV 00 USE 000000
+0070 AS 0000 GEN 0000 RSV 00 USE 000000
+0078 AS 0000 GEN 0000 RSV 00 USE 000000
+0080 AS 0000 GEN 0000 RSV 00 USE 000000
+0088 AS 0000 GEN 0000 RSV 00 USE 000000
+0090 AS 0000 GEN 0000 RSV 00 USE 000000
+0000 ** 0000

+0440 AS 0000 GEN 0000 RSV 00 USE 000000
+0448 AS 0000 GEN 0000 RSV 00 USE 000000
+0450 AS 0000 GEN 0000 RSV 00 USE 000000

++++ AVM REQUEST QUEUE ++++

AVTA 01BC5BF0
+0000 ID C1E5E3C1 LEN 0026 SP 00E7 LEVL 00000001 NEXT 01BC5C58
+0010 SRB 01BC6AC0 RQTY 02000000 RQOP 00000000 ASID 000B RSV 0000
+0020 ETKN 00000001 BLEN 0100

SRB 01BC6AC0
+0000 ID SRB FLNK 00000000 ASCB 00F4D880 CPAFF 0000 PASID 000B
+0010 PTCB 00000000 EPA 8100D700 RMTRA 8100C760 PARM 01BC5B80 SAVE 00000000
+0024 PKF 00 FLGS 00 HLHI 00 FLGS1 00 FRR A 00000000

AVTD 01BC5B80
+0000 ID C1E5E3C4 LEN 003E SP 00E7 LEVL 00000001 RQTY 02000000
+0010 SKEY 00000030 ECB 00006E78 STAT 00006E94 ASPR 00F4D880 ASCB 00F4D880
+0024 TCB 00000000 RB 00000000 FLAG 30000000 ASID 000B GEN 0000
+0034 INDX 00000001 RBUF 00006EA2 BLEN 0100

AVTA 01BC5C58
+0000 ID C1E5E3C1 LEN 0026 SP 00E7 LEVL 00000001 NEXT 01BC5CC0
+0010 SRB 01BC6AF0 RQTY 02000000 RQOP 00000000 ASID 000B RSV 0000
+0020 ETKN 00000001 BLEN 0100

SRB 01BC6AF0

++++ AVM UTILITY DATA REPOSITORY ++++

AVUD 01BF01E0
+0000 ID C1E5E4C4 SP 00E7 LEN 05A4 LEVL 00000001 #PSS 00000008
+0010 PSSD 01BF0204 #RSE 00000004 RSED 01BF0404 #SSE 00000008 SSED 01BF04C4

PSSD 01BF0204
+0000 ID D7E2E2C4 LEN 0040 RSV 0000 LVL 00000001 TOKN 00000001
+0010 SLNK 01BF04C4 ASID 000B FLG 0000 SIDL 04 SIDN SUBA 00000000
+0029 ASD2 000B MSGL 04 MSGN SUBA 00000000 STRM 00000000

SSED 01BF04C4
+0000 ID E2E2C5C4 LEN 0058 RSV 0000 LVL 00000001 ETKN 00000001
+0010 ATOK 00000001 STOK 00000001 IOPD 00000000 RSV 00000000 PMID 00000000
+0024 EMID 00000000 ECB 00000000 RLNK 01BF0404 PLNK 01BF0204 GTRQ 01BF0148
+0038 STAT 08000000 IOST 04000000 FLGS 00000000 MODE 80 RSV 0000
+0047 RSEL 04 RSEN RSEL

GRQH 01BF0148
+0000 ID C7D9D8C8 LEN 0018 SP 00E7 LEVL 00000001 FRST 01BF00E0
+0010 LAST 01BF00E0 RSV 00000000

GRQE 01BF00E0
+0000 ID C7D9D8C5 LEN 002D SP 00E7 LEVL 00000001 NEXT 01BF0148
+0010 PREV 01BF0148 TYPE 01 RSV 00000000 AVTA 00000000 RCRD 00110009 00000000
+0024 C1E5D4D5 D6C3D6D4 D4

RSED 01BF0404
+0000 ID D9E2C5C4 LEN 0030 RSV 0000 LVL 00000001 ACT 01BF04C4
+0010 BCK 7FFFFFFF STAT 40000000 RSV 00000000 RSEL 04 RSEN RSEL
+002C SCHK 00000001

***** END OF AVM DATA *****
    
```

Figure 2-1. AVM Data

Chapter 3. Developing a Search Argument for Availability Manager

Search procedures and arguments are described in the *Basics of Problem Determination* book.

The following figures show symptoms for search arguments for this component. The first figure summarizes the symptoms recommended in the diagnostic procedures in Chapter 1, “Diagnosing Problems in Availability Manager” on page 1-1. The second figure lists symptoms to add if the searches produce too many matches.

Description	Free Format Symptom	Structured Format Symptom	Examples
CSECT name	AVFcccc	RIDS/AVFcccc	AVFED RIDS/AVFED
System abend code	hhh	AB/S0hhh	02E AB/S002E
Abend reason code	hh	PRCS/hh	01 PRCS/01
Message identifier	msgcccnns	MS/cccnns	msgAVM032I MS/AVM032I
Reason code from the message text	RChh	PRCS/hh	rc08 PRCS/08

Figure 3-1. Search Arguments

Description	Free Format Symptom	Structured Format Symptom	Examples
Program identifier	5752SCccc	PIDS/5752SCccc	5725SCAVM PIDS/5725SCAVM
Other search arguments developed while using the <i>Basics of Problem Determination</i> book			

Figure 3-2. Additional Search Arguments

Chapter 4. Reporting a Problem to IBM

The checklist in the following figure identifies the data that IBM needs for a problem in the availability manager. Collect the data appropriate for the problem type before calling to report a problem.

Problem data	Example
Search argument from Chapter 3, “Developing a Search Argument for Availability Manager”	
Product name, version, and release	MVS/System Product 3.1
Module level	Product level: HBB3310 Program temporary fix (PTF) number: UY00934
SYS1.LOGREC error record	
SVC dump including AVMDATA output	
Messages accompanying the problem, including the message identifier and text	Identifier: AVM032I
Other problem data developed while using the <i>Basics of Problem Determination</i> book	

Figure 4-1. Checklist of Problem Data

Part 2. Reference for Availability Manager

Chapter 5. Introduction to Availability Manager

The availability manager enhances the operating system's support for subsystem availability. It defines and manages the recoverable service elements (RSEs) in an Extended Recovery Facility (XRF) complex. XRF is a related set of programs that allows an installation to achieve a high level of availability for selected end users. In particular, it responds to the Information Management System/Virtual Storage (IMS/VS) users' need for continuity of online transaction processing. The related set of IBM software products that work together to make up XRF are:

- MVS/System Product and Data Facility Product
- IMS
- Virtual telecommunications access method (VTAM)
- Network control program (NCP), including system support program (SSP)

They run on an IBM processor to provide end users with improved reliability and continuity of service. To understand the larger context in which availability manager operates, see *Planning: XRF*.

The modules in the availability manager component are named AVFcccc.

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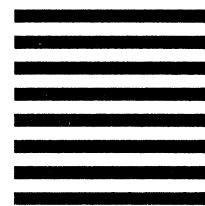
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