

FOCUS for S/390

CA-IDMS Data Adapter Installation Guide
Version 7.0

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Preface

This guide describes how to use the FOCUS Integrated Database Management System (IDMS) Data Adapter. It is applicable to FOCUS Version 7.0 and subsequent releases. You should use this guide in conjunction with the 7.0 FOCUS User's Manual.

To use this guide effectively, you must be familiar with FOCUS syntax and have some knowledge of CA-IDMS databases.

This guide supersedes the *FOCUS IDMS/R Interface Installation Guide* (DN1000104.0888).

How This Guide is Organized

The remainder of this document describes the CA-IDMS Data Adapter and how to install it. The guide consists of four chapters:

- Chapter 1, *Before You Begin*, contains important information about installation prerequisites and maintenance procedures.
- Chapter 2, *Installing the IDMS Data Adapter (MVS Only)*, describes how to install the Data Adapter in the MVS environment. These instructions apply to FOCUS Version 7.0 and higher.
- Chapter 3, *Installing the IDMS Data Adapter (CMS Only)*, describes how to install the Data Adapter in the CMS environment. These instructions apply to FOCUS Version 7.0 and higher.
- Chapter 4, *User Written Exits*, describes how to execute user written programs in both the MVS and CMS environments. These instructions apply to FOCUS Version 7.0 and higher.

Note: If you need additional information on the actual use of FOCUS, consult the 7.0 FOCUS User's Manual.

Documentation Conventions

The following syntax conventions and terminology are used in this guide:

UPPERCASE	Commands and required keywords are presented in uppercase and must be typed as shown. (In some cases, a shorter unique truncation is acceptable.)
<i>Lowercase</i>	User-supplied parameters are presented in lowercase italic.
Punctuation	Required as shown.
—	Underscore indicates a default value.
{ }	Braces enclose groups of required parameters, select one.

[]	Brackets enclose optional parameters; none is required.
...	Horizontal ellipses indicate a continuation of syntax.
.	Vertical ellipses indicate intervening commands for syntax.
Master File	An updated term used throughout this manual instead of “Master File Description (MFD).”
Access File	An updated term used throughout this manual instead of “Access File Description (AFD).”

Note:

- At the command level, FOCUS accepts syntax in mixed case, uppercase, or lowercase but transmits it in uppercase.
- In sample sessions, FOCUS, CA-IDMS Data Adapter, or system responses are represented in uppercase; user responses are presented in lowercase.

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Information You Should Have

To help our consultants answer your questions most effectively, be ready to provide the following information when you call:

- Your six digit site code number (xxxx.xx).
- The FOCEXEC procedure (preferably with line numbers).
- Master File with picture (provided by CHECK FILE).
- Run sheet (beginning at login, including call to FOCUS), containing the following information:
 - ? RELEASE
 - ? FDT
 - ? LET
 - ? LOAD
 - ? COMBINE
 - ? JOIN
 - ? DEFINE
 - ? STAT

Preface

- ? SET/? SET GRAPH
- ? USE
- ? TSO DDNAME OR CMS FILEDEF
- The exact nature of the problem:
 - Are the results or the format incorrect; are the text or calculations missing or misplaced?
 - The error message and code, if applicable.
 - Is this related to any other problem?
- Has the procedure or query ever worked in its present form? Has it been changed recently? How often does the problem occur?
- What release of the operating system are you using? Has it, FOCUS, your security system, or an interface system changed?
- Is this problem reproducible? If so, how?
- Have you tried to reproduce your problem in the simplest form possible? For example, if you are having problems joining two databases, have you tried executing a query containing just the code to access the database?
- Do you have a trace file?
- How is the problem affecting your business? Is it halting development or production? Do you just have questions about functionality or documentation?

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Thank you, in advance, for your comments.

1 Before You Begin

This chapter describes the pre-installation and maintenance requirements for the CA-IDMS Data Adapter.

Note: In the remainder of this guide, the CA-IDMS Data Adapter will be referred to as the IDMS Data Adapter.

The instructions in this guide assume that the person performing the installation and maintenance procedures has a working knowledge of MVS or CMS. If you are installing the IDMS Data Adapter with the FOCUS Multi-Session Option (MSO), MSO knowledge is required.

Your IDMS database administrator (DBA) should provide you with site-specific information.

Read this guide thoroughly before installing the IDMS Data Adapter to ensure correct installation.

Pre-installation and Maintenance Requirements

Before you install the IDMS Data Adapter, you should be aware of installation prerequisites and consider maintenance procedures that affect the installation process. This chapter describes pre-installation and maintenance requirements. They apply to both MVS and CMS, except where noted.

Software Requirements

The following is a list of software requirements:

- IDMS must be installed and fully operational. If it is not, contact your IDMS database administrator.
- FOCUS must be installed and fully operational. If it is not, contact your FOCUS database administrator or consult the appropriate FOCUS installation guide for installation instructions.

You also need to know the FOCUS Version and Release. There are two ways to identify your version and release:

- Check the label of the FOCUS distribution tape used to install FOCUS; the numbers are printed on it.
- Or, invoke FOCUS if it is already installed. The release is displayed each time you begin a FOCUS session. You can also issue the FOCUS ? RELEASE query command.

Every copy of FOCUS has a version and release number.

- All program temporary fixes (PTFs) issued to you for FOCUS or the Data Adapter must have been applied to the appropriate FOCUS or Data Adapter libraries.

Memory Requirements

Enough main memory must be available to execute FOCUS, IDMS, and the IDMS Data Adapter. The recommended memory requirements for FOCUS are adequate to run the IDMS Data Adapter.

Refer to the appropriate IDMS documentation for IDMS requirements.

The Data Adapter is fully reentrant and can run in the 31-bit operating environment.

Maintenance

There are no maintenance procedures that you must perform regularly to ensure proper functioning of the IDMS Data Adapter. However, three situations that require Data Adapter maintenance may occur:

- If you install a new release of FOCUS (including maintenance releases), you must reinstall the Data Adapter from the same release.
- If you receive a program temporary fix (PTF) that affects the IDMS Data Adapter, it will be accompanied by a cover letter containing installation instructions. If you still have installation questions after reading the cover letter, contact Information Builders Customer Support Services in New York at (800) 736-6130 or your local Information Builders representative.
- If you install a new version of IDMS, you must reinstall the Data Adapter.

2 Installing the IDMS Data Adapter (MVS Only)

Topics:

- Distribution Tape Contents
- Installation Process
- Getting Started Under MVS
- Accessing IDMS in Central Version

The IDMS Read-Only Data Adapter is available for the OS/390 (MVS) batch, TSO interactive, and MSO environments. The Data Adapter can be run under the IDMS Central Version or in Local Mode. It supports release 10.2, release 12, and release 14 of IDMS. A separate Data Adapter is available to support the SQL option of IDMS.

Note: The Data Adapter now runs above the line. This is appropriate for customers running IDMS 12.0 and above. If you are running IDMS 10.2, refer to *Linking the IDMS Data Adapter to Run Below the Line (IDMS Release 10.2 Only)* on page 2-4 for additional information.

Distribution Tape Contents

The IDMS Read-Only Data Adapter is distributed on the same tape/cartridge as the base FOCUS product.

The table below shows the file number and data set attributes for the files needed to use the IDMS Data Adapter:

FILE #	DATASET NAME	TYPE	LRECL	BLKSIZE	RECFM	SIZE*
9	IDMS.LOAD	PDS	0	13030	U	TRK(10,5,45)
10	IDMS.DATA	PDS	80	1600	FB	TRK(15,5,45)

* Sizes are from the default JCL and should be allocated to conform with your company's requirements.

These files are partitioned data sets (PDS) in IEBCOPY dump format.

Installation Process

Install the IDMS Data Adapter by following the steps listed below:

1. Customize the IEBCOPY JCL
2. Prepare the run-time libraries
3. Customize the FOCUS CLIST
4. Install the AUTOIDMS facility
5. Verify IDMS and AUTOIDMS installation

Note: The installation instructions assume that all of your FOCUS production data sets are catalogued under the same high-level qualifier. For the remainder of this chapter this high-level qualifier is referred to as *prefix*.

Customizing the IEBCOPY JCL

There are two data sets on the distribution tape which were created using the IEBCOPY utility. Create an IEBCOPY procedure like the one listed below and submit it for execution.

```
//COPYPDS EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//INDD1 DD DSN=IDMS.LOAD,DISP=OLD,
// UNIT=unit,VOL=SER=volser,LABEL=(9,SL),
//INDD2 DD DSN=IDMS.DATA,DISP=OLD,
// UNIT=unit,VOL=SER=volser,LABEL=(10,SL)
//OUTDD1 DD DSN=prefix.IDMS.LOAD,DISP=(,CATLG,DELETE),
// UNIT=SYSDA,SPACE=(TRK,(10,5,45),RLSE)
//OUTDD2 DD DSN=prefix.IDMS.DATA,DISP=(,CATLG,DELETE),
// UNIT=SYSDA,SPACE=(TRK,(15,5,45),RLSE)
//SYSIN DD *
COPY INDD=INDD1,OUTDD=OUTDD1
COPY INDD=INDD2,OUTDD=OUTDD2
/*
```

where:

unit

Is the tape/cartridge.

volser

Is the tape/cartridge serial number.

prefix.IDMS.LOAD

Is the Data Adapter load library.

prefix.IDMS.DATA

Is the Data Adapter source library.

Upon successful completion there are two new PDS data sets cataloged on your system. The data set names will depend on what you specified on your IEBCOPY OUTDD1 and OUTDD2 ddcards.

Preparing the Run-time Libraries

1. Using your site criteria, allocate a partitioned data set (PDS) for your Access Files as ddname FOCIDMS. This library (or libraries) can be a mirror image of ddname MASTER and should have the same DCB parameters. Refer to your FOCUS MVS/TSO installation guide for assistance in selecting DCB parameters. Two suggested names for this data set are:
 - *prefix.ACCESS.DATA* or
 - *prefix.FOCIDMS.DATA*

Note: *prefix.ACCESS.DATA* and *prefix.FOCIDMS.DATA* are used interchangeably throughout this document.
2. The FOCUS description of an IDMS database is called a Master File. It is stored as a member of a PDS which is allocated to ddname MASTER in the FOCUS CLIST/JCL. Refer to your FOCUS MVS/TSO installation guide for assistance allocating this PDS.
3. A stored FOCUS procedure is called a FOCEXEC. A FOCEXEC is stored as a member of a PDS which is allocated to ddname FOCEXEC in the FOCUS CLIST/JCL. Refer to your FOCUS MVS/TSO installation guide for assistance allocating this PDS.

Customizing the FOCUS CLIST

The FOCUS CLIST used to execute the IDMS Data Adapter must be modified to include the Access File PDS and the PDS containing the IDMS Data Adapter load modules. The '*prefix.IDMS.LOAD*' data set, defined in *Customizing the IEBCOPY JCL* on page 2-2, includes the IDMS load modules that must be concatenated to the USERLIB, FOCLIB or STEPLIB ddnames. It is important to note that if multiple copies of the IDMS Data Adapter exist, the load module will be searched for in USERLIB first, followed by FOCLIB then STEPLIB. For batch jobs, however, allocate all load libraries to the ddname STEPLIB.

The '*prefix.IDMS.DATA*' dataset, defined in *Customizing the IEBCOPY JCL* on page 2-2, contains a member named FOCIDMS which contains the IDMS Data Adapter error messages. This data set must be concatenated to the ERRORS ddname in the FOCUS CLIST. Failure to concatenate this data set to the ERRORS ddname results in the following message when using the Data Adapter:

```
(FOC000) ERROR MESSAGE TEXT MISSING
```

Installing the IDMS Data Adapter (MVS Only)

The CLIST or JCL must contain these allocations:

1. The PDS containing Access Files.
2. The PDS containing Master Files.
3. The PDS containing FOCUS procedures (FOCEXECs).
4. The PDS containing FOCUS error messages.
5. The PDS containing the Data Adapter load modules and FOCUS load modules.
6. The IDMS run-time load modules (refer to *Accessing IDMS in Central Version* on page 2-10 for additional information).

The following chart identifies the allocations needed to execute a FOCUS procedure (FOCEXEC) against an IDMS database:

PDS CONTAINING MEMBERS:	CONCATENATE TO DDNAME:
Access Files	FOCIDMS
Master Files	MASTER
FOCUS Procedures	FOCEXEC
Error Messages	ERRORS
Data Adapter Load Module FOCUS Load Modules	* USERLIB, FOCLIB or STEPLIB
IDMS Run-Time Load Modules	Depends on local or CV access

* For batch jobs, allocate all load modules to the ddname STEPLIB.

Linking the IDMS Data Adapter to Run Below the Line (IDMS Release 10.2 Only)

If you are running IDMS release 10.2, you must re-link the IDMSR module to run below the line. Following is a sample of the JCL needed to re-link:

```
//LKED EXEC PGM=IEWL,PARM='LET,LIST,NCAL,XREF'  
//OLDMOD DD DSN=prefix.IDMS.LOAD,DISP=SHR  
//SYSLMOD DD DSN=prefix.IDMS.LOAD,DISP=SHR  
//SYSPRINT DD SYSOUT=*  
//SYSUT1 DD UNIT=SYSDA,SPACE=(CYL,(1,1))  
//SYSLIN DD *  
MODE AMODE(24),RMODE(24)  
ENTRY IDMSR  
INCLUDE OLDMOD(IDMSR)  
NAME IDMSR(R)  
/*
```

where:

prefix.IDMS.LOAD

Is the IDMS Data Adapter load library supplied by Information Builders.

Installing the AUTOIDMS Facility

The '*prefix.IDMS.DATA*' data set contains four members that must be renamed and copied into the appropriate libraries according to the chart below:

MEMBER NAME:	RENAME TO:	COPY TO:
IDMSIDDM or IDMSI10M *	IDMSIDD	<i>prefix.MASTER.DATA</i>
AUTOIDMM	AUTOIDMS	<i>prefix.MASTER.DATA</i>
IDMSIDDA	IDMSIDD	<i>prefix.ACCESS.DATA</i>
AUTOIDMS	AUTOIDMS	<i>prefix.FOCEXEC.DATA</i>

* Member IDMSI10M is the Master File that describes the IDMS/DB 10.2 dictionary. When it is renamed to IDMSIDD, AUTOIDMS correctly describes your release 10.2 subschemas.

The following JCL is located in member GENFAUTO in the '*prefix.IDMS.DATA*' data set. This JCL unloads and renames the members needed for the AUTOIDMS facility.

Note: If you are upgrading the AUTOIDMS facility, manually delete old IDMS IDD Master and Access Files to ensure all new dictionary files are installed.

```
//COPYPDS EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//INDD1 DD DSN=prefix.IDMS.DATA,DISP=SHR
//OUTDD1 DD DSN=prefix.MASTER.DATA,DISP=SHR
//OUTDD2 DD DSN=prefix.ACCESS.DATA,DISP=SHR
//OUTDD3 DD DSN=prefix.FOCEXEC.DATA,DISP=SHR
//SYSIN DD *
COPY INDD=INDD1,OUTDD=OUTDD1
SELECT MEMBER=(( IDMSIDDM, IDMSIDD ))
COPY INDD=( INDD1,R ),OUTDD=OUTDD1
SELECT MEMBER=(( AUTOIDMM, AUTOIDMS ))
COPY INDD=INDD1,OUTDD=OUTDD2
SELECT MEMBER=(( IDMSIDDA, IDMSIDD ))
COPY INDD=INDD1,OUTDD=OUTDD3
SELECT MEMBER=(( AUTOIDMS, ,R ))
```

where:

prefix.IDMS.DATA

Is the unloaded PDS from the install tape.

Installing the IDMS Data Adapter (MVS Only)

`prefix.MASTER.DATA`

Is the PDS containing FOCUS Master Files.

`prefix.ACCESS.DATA`

Is the PDS containing Access Files.

`prefix.FOCEXEC.DATA`

Is the PDS containing FOCUS procedures.

AUTOIDMS and Secondary Dictionaries

AUTOIDMS is a utility that generates FOCUS Master Files for IDMS subschemas. By default, AUTOIDMS searches for subschema descriptions in the primary dictionary. However, subschemas frequently reside in dictionaries other than the primary dictionary. These are called secondary dictionaries. When a subschema being described by AUTOIDMS is located in a secondary dictionary, `DBNAME=` and `DICTNAME=` parameters are needed in the AUTOIDMS Access File, the IDMSIDD member of ddname FOCIDMS. See *Determining Which IDD Dictionaries Will Be Accessed* on page 2-6 for more information on how to set up a secondary dictionary environment.

Determining Which IDD Dictionaries Will Be Accessed

If there is only one primary dictionary used to generate descriptions, skip to *Changing the Default Data Set Names* on page 2-7. This section sets up AUTOIDMS to access several IDD secondary dictionaries (these are the dictionaries where subschemas reside).

1. Determine which IDD dictionaries are accessed by AUTOIDMS. For each dictionary, select a one character identifier. This value is used to uniquely identify the dictionary for reporting purposes and is displayed on the Main Menu of AUTOIDMS. The identifier may be the letter A through Z, the number 0 through 9, or blank. For example, if you have a primary IDD dictionary and secondary dictionaries for production and test, you might select blank (primary dictionary), P (secondary production dictionary), and T (secondary test dictionary) as the identifiers.
2. Copy and rename the following files, once for each suffix selected in the previous step (where *n* represents the identifier):

From:

`prefix.MASTER.DATA(IDMSIDD)`

`prefix.ACCESS.DATA(IDMSIDD)`

To:

`prefix.MASTER.DATA(IDMSIDDn)`

`prefix.ACCESS.DATA(IDMSIDDn)`

3. Edit `prefix.ACCESS.DATA(IDMSIDDn)` to include the appropriate `DBNAME` and `DICTNAME` on the first line. For example

```
SSHEMA=IDMSNWKA,RELEASE=14,DBNAME=SYSDIRL,DICTNAME=SYSDIRL,$
```

4. Edit *prefix.FOCEXEC.DATA(AUTOIDMS)*. Locate the line that reads:

```
-DEFAULT &DICT_FILES=' '
```

Change the value to include each of the identifiers selected in Step 1 of this section, and only those values. The first character is used as the default dictionary on the AUTOIDMS Main Menu. For example, if you chose P, T, and blank as your identifiers and you wish to have the production dictionary as the default, the line would read:

```
-DEFAULT &DICT_FILES=' PT '
```

This indicates the following dictionaries:

P	Is the IDMSIDDP dictionary.
T	Is the IDMSIDDT dictionary.
blank	Is the IDMSIDD dictionary.

Note: Characters must be entered in upper case.

5. Repeat Steps 2 and 3 above for each of the identifiers that were selected in Step 1.

Changing the Default Data Set Names

AUTOIDMS displays default output data set names for the Master File, Access File, and FOCDEF file. These defaults follow standard Information Builders naming conventions. The defaults are changed on a per-user basis by replacing the values on the screen and then logging them to disk for subsequent use. Alternatively, the AUTOIDMS FOCEXEC can be modified to include site-specific naming conventions for all users.

To customize the initial data set defaults for all users, edit the following lines in the AUTOIDMS member of '*userid.FOCEXEC.DATA*'. Change the expression on the right-hand side of the equal sign as appropriate. The resulting expression must retain a length of 44 characters (&USERID accounts for eight characters). You only need to customize the following lines:

```
-SET &DSNP0=&USERID || '.FOCIDMS.DATA' ;
-SET &DSNM0=&USERID || '.MASTER.DATA' ;
-SET &DSNF0=&USERID || '.FOCIDMS.DATA' ;
```

where:

&DSNP0
Is the menu parameter log data set.

&DSNM0
Is the Master File output data set.

&DSNF0
Is the Access File output data set.

Verifying IDMS and AUTOIDMS Installation

To verify the installation process, begin a FOCUS session and enter:

```
TABLE FILE IDMSIDDn  
PRINT SS_NAM_026  
IF RECORDLIMIT EQ 10  
END
```

where:

n

Represents the secondary dictionary identifier.

These commands, due to the record limit, will create a report that includes up to 10 subschemas from the selected dictionary. Repeat this report for each dictionary.

If the record limit was not included, the report would contain all subschemas for that dictionary defined in the DICTNAME. We recommend including the record limit. If you are looking for a particular subschema, execute

```
TABLE FILE IDMSIDDn  
PRINT SS_NAM_026  
WHERE SS_NAM_026 EQ 'subschema_name'  
END
```

where:

subschema_name

Is the value you are interested in.

Getting Started Under MVS

The following sections explain interactive access from TSO and MSO and batch access.

Interactive Access From TSO

Use the following CLIST as a model for accessing FOCUS interactively in TSO:

```

ALLOC F(FOCEXEC) DA('prefix.FOCEXEC.DATA') SHR REUSE
ALLOC F(MASTER) DA('prefix.MASTER.DATA') SHR REUSE
ALLOC F(FOCIDMS) DA('prefix.ACCESS.DATA') SHR REUSE
ALLOC F(USERLIB) DA('prefix.IDMS.LOAD' -
                    'prefix.FUSELIB.LOAD') SHR REUSE
ALLOC F(FOCLIB) DA('prefix.FOCLIB.LOAD') SHR REUSE
ALLOC F(ERRORS) DA('prefix.IDMS.DATA' -
                    'prefix.ERRORS.DATA') SHR REUSE
ALLOC F(SYSCTL) DA('highlvl.SYSCTL') SHR REUSE
ALLOC F(SYSIDMS) DA('highlvl.SYSIDMS') SHR REUSE
CALL 'prefix.FOCLIB.LOAD(FOCUS)'
```

where:

highlvl

Is the high-level qualifier for Computer Associates supplied data sets.

prefix

Is the high-level qualifier for FOCUS production data sets.

Note: In most cases there are two CA-IDMS load libraries that need to be allocated to STEPLIB.

Interactive Access From MSO

For interactive access in MSO, modify the MSO startup JCL to include the following allocations. See the *Multi-Session Option Installation and Technical Reference Guide* for further information.

```

//STEPLIB DD DSN=prefix.IDMS.LOAD,DISP=SHR
// DD DSN=highlvl.DBA.LOADLIB,DISP=SHR
// DD DSN=highlvl.LOADLIB,DISP=SHR
//ERRORS DD DSN=prefix.IDMS.DATA,DISP=SHR
// DD DSN=prefix.ERRORS.DATA,DISP=SHR
//MASTER DD DSN=prefix.MASTER.DATA,DISP=SHR
//FOCIDMS DD DSN=prefix.ACCESS.DATA,DISP=SHR
//FOCEXEC DD DSN=prefix.FOCEXEC.DATA,DISP=SHR
//SYSCTL DD DSN=highlvl.SYSCTL,DISP=SHR
//SYSIDMS DD DSN=highlvl.SYSIDMS,DISP=SHR
```

where:

highlvl

Is the high-level qualifier for Computer Associates supplied data sets.

prefix

Is the high-level qualifier for FOCUS production data sets.

Installing the IDMS Data Adapter (MVS Only)

Note: In most cases there are two CA-IDMS load libraries that need to be allocated to STEPLIB.

Batch Access

For batch access, use the following JCL as a model:

```
//IDMSCV   EXEC  PGM=FOCUS
//STEPLIB DD   DSN=highlvl.DBA.LOADLIB,DISP=SHR
//         DD   DSN=highlvl.LOADLIB,DISP=SHR
//         DD   DSN=prefix.IDMS.LOAD,DISP=SHR
//         DD   DSN=prefix.FOCLIB.LOAD,DISP=SHR
//         DD   DSN=prefix.FUSELIB.LOAD,DISP=SHR
//ERRORS  DD   DSN=prefix.IDMS.DATA,DISP=SHR
//         DD   DSN=prefix.ERRORS.DATA,DISP=SHR
//MASTER  DD   DSN=prefix.MASTER.DATA,DISP=SHR
//FOCIDMS  DD   DSN=prefix.ACCESS.DATA,DISP=SHR
//FOCEXEC  DD   DSN=prefix.FOCEXEC.DATA,DISP=SHR
//SYSCTL   DD   DSN=highlvl.SYSCTL,DISP=SHR
//SYSIDMS  DD   DSN=highlvl.SYSIDMS,DISP=SHR
//SYSIN    DD   *
? REL
TABLE FILE EMPFILE
PRINT EMP_NAME_0415
END
FIN
```

where:

highlvl

Is the high-level qualifier for Computer Associates supplied data set.

prefix

Is the high-level qualifier for FOCUS production data set.

Note: In most cases there are two CA-IDMS load libraries that need to be allocated to STEPLIB.

Accessing IDMS in Central Version and Local Mode

Instructions for accessing IDMS databases differ for Local Mode access and Central Version (CV) access.

Central Version Access

The ddname SYSCTL must be allocated to the SYSCTL data set corresponding to the Central Version desired. No allocation of IDMS data sources or subschema/DMCL load modules is needed when running CV.

The IDMS functions will take place in the IDMS CV address space. The subschema load modules are located and retrieved in the following order:

1. CV primary load area (DDLDCLOD area)
2. CDMSLIB ddname from the IDMS Central Version job
3. STEPLIB ddname from the IDMS Central Version job

The CV's global DMCL is used but may be overridden by the DMCL assigned in the SYSIDMS ddname (IDMS release 12.0 and above).

Note: When accessing data from secondary dictionaries the primary load area is not searched to retrieve the subschema/DMCL modules.

Local Mode Access

The user must allocate all IDMS database files. These files must be allocated to the ddnames that are assigned in the IDMS/DB Schema.

All journal file allocations must be made available along with the default local mode journal, SYSJRNL, assigned to DD DUMMY.

When running the Data Adapter in a batch job or from an MSO server, the load modules must be allocated to the ddname STEPLIB.

In some cases, the libraries containing the subschema, DMCL, and IDMSINTB load modules may not be authorized. If STEPLIB cannot be used for unauthorized IDMS libraries, in a local mode job you can allocate these unauthorized modules to ddname CDMSLIB. With CDMSLIB allocated, IDMS will search the CDMSLIB, before STEPLIB, to obtain all IDMS/DB specific load modules.

When you execute AUTOIDMS in local mode and do not use the primary dictionary, you identify a secondary dictionary to search by specifying the DBNAME=, DICTNAME= in the IDMSIDD Access File. The IDMS/DB database name table (IDMSDBTB) Load Module member is used. The IDMS/DB load library containing this member must be allocated to the ddname STEPLIB or ISPLLIB in the CLIST, or to STEPLIB in a batch or MSO environment. The secondary dictionary data set must also be allocated to the appropriate ddname assigned in the IDMS/DB schema.

For Both Central Version and Local Mode

The IDMS load modules, IDMS and IDMSINTB, must be made available at run-time allocated to the ddname STEPLIB.

When running a CLIST, the STEPLIB ddname is not valid. These members must be allocated to either the link list or in the TSO logon procedure. Contact your Systems Programmer to add these members.

Installing the IDMS Data Adapter (MVS Only)

The member names of the FOCUS Master File and Access Files to read the subschema must be identically named and made available at run time.

If you are running IDMS release 12.0 or above, SYSIDMS can be allocated to identify the DMCL for both CV and LOCAL modes.

3 Installing the IDMS Data Adapter (CMS Only)

Topics:

- Getting Started Under CMS
- Preparing the IDMS Environments (Local and Central Version)
- Run-Time
- Accessing the Data Adapter
- Installing the AUTOIDMS Facility

This chapter describes how to install and prepare the IDMS Read-Only Data Adapter in the VM/CMS environment.

Getting Started Under CMS

In the VM/CMS environment, the Data Adapter can be installed either as a Standard (ST) or CP/Assisted (CP/A) Version of VM/CMS FOCUS. Refer to the *FOCUS CMS Installation Guide*, for information about options, considerations, and installation steps for Standard and CP/A Versions.

The Data Adapter is provided on your FOCUS distribution tape. The files necessary to make the Data Adapter operative will automatically be placed on the FOCUS production disk by following the standard FOCUS installation instructions.

Preparing the IDMS Environments (Local and Central Version)

By default, IDMS runs in Local mode. We recommend that an IDMSOPTI module be generated on the FOCUS production disk. An IDMSOPTI module ensures that you have no problems running IDMS in Local mode as well as Central Version.

Specifically, an IDMSOPTI module is required for Universal Communications Facility (UCF) access to MVS and DOS/VSE databases. It is also required for CMS Central Version. The module is optional for VM IDMS databases. For shared DASD access and the Cross Machine Interface (XMI), the module is not used. When an IDMSOPTI module is not made available to IDMS, the message UNRESOLVED REFERENCE: IDMSOPTI appears. Therefore, we recommend that you make an IDMSOPTI module available at all times.

Creating the IDMSOPTI Module

Edit a new file named IDMSOPTI ASSEMBLE. Enter the following lines appropriate for your environment:

- For Local mode and Shared DASD environments, place the following line in the file:

```
IDMSOPTI CENTRAL=NO
```

- For the Cross Machine Interface, the following lines are required:

```
IDMSOPTI CSECT  
          BR 14  
          END
```

- For CMS Central Version, this line is required:

```
IDMSOPTI CENTRAL=ONLY, CVMACH=userid, CVNUM=n
```

where:

userid

Is the userid of the CV virtual machine.

n

Is the number of the CV (usually 0).

- For the UCF, enter this line:

```
IDMSOPTI CENTRAL=ONLY, CVMACH=userid, CVNUM=n, SVC=mmm
```

where:

userid

Is the userid of the CV virtual machine.

n

Is the number of the CV (usually 0).

mmm

Is the number of the SVC for VMCF.

Assembling the IDMSOPTI Module

Assemble the resulting file as follows:

- For XMI/IDMS only, issue this command:

```
ASSEMBLE IDMSOPTI
```

File IDMSOPTI TEXT will be created on your A disk. Place this file on the FOCUS production disk.

- For Central Version, Local mode, UCF, and Shared DASD (the Computer Associates disks must be accessed), issue these commands:

```
GLOBAL MACLIB IDMSLIB
FILEDEF TEXT DISK IDMSOPTI TEXT A
ASSEMBLE IDMSOPTI
FILEDEF IN DISK IDMSLIB TXTLIB A (MEMBER IDMS
MOVEFILE IN OUT
COPY IDMSOPTI TEXT A tempname TEXT A (APP
FILEDEF SYSLIB DISK IDMSLIB TXTLIB A
LKED tempname (LIBE libname NAME IDMS
```

where:

tempname

Is the temporary TEXT member to be used.

libname

Is the name of the load library into which the load member IDMS is to be loaded.

The assembled IDMSOPTI module is placed in a load library. This load library is specified with GLOBAL commands later at run-time.

Make a separate load library for each version of the Data Adapter and each Central Version machine that you will use.

Run-Time

For Local mode, Shared DASD, and UCF access, you must issue a FILEDEF command for each IDMS database file. You place these FILEDEF commands in the FOCUS EXEC. To access Central Version databases, no special FILEDEF commands are required.

In addition, users will need to link to the Computer Associates production disk and issue the following GLOBAL commands:

```
GLOBAL TXTLIB IDMSLIB
GLOBAL LOADLIB libname
```

where:

libname

Is the name of the load library into which IDMS was link edited as specified in *Assembling the IDMSOPTI Module on 3-2*.

To access IDMS databases through the Cross Machine Interface, the GATEWAY id and the target job must be started.

Accessing the Data Adapter

The IDMSR module contains a new production version of the Data Adapter with all the functionality of the existing version plus global JOIN capability.

In the FOCUS Master File, specify SUFFIX=IDMSR for the new production version.

File Descriptions

The Data Adapter requires a Master and Access File for each IDMS file referenced by FOCUS. The Master File is a layout of the records, similar in concept to a COBOL FD. The Access File contains specific IDMS database information such as CALC keys and indexes.

Installing the AUTOIDMS Facility

AUTOIDMS is automatically installed on the production FOCUS disk to support the latest release of IDMS. Five files are used for this feature:

- IDMSIDD MASTER
- IDMSI10M MASTER
- IDMSIDD FOCIDMS
- AUTOIDMS MASTER
- AUTOIDMS FOCEXEC

AUTOIDMS and Secondary Dictionaries

By default, AUTOIDMS searches for subschema descriptions in the primary dictionary. However, subschemas frequently reside in dictionaries other than the primary dictionary. These are called secondary dictionaries. When a subschema being described by AUTOIDMS is located in a secondary dictionary, DBNAME= and DICTNAME= parameters are needed in the AUTOIDMS Access File, IDMSIDD FOCIDMS. See *Determining which IDD Dictionaries will be Accessed* on page 3-4 for more information on how to set up a secondary dictionary environment.

Determining which IDD Dictionaries will be Accessed

If there is only one primary dictionary used to generate descriptions, skip to *Verifying IDMS and AUTOIDMS Installation* on page 3-5. This section sets up AUTOIDMS to access several IDD secondary dictionaries (these are the dictionaries in which subschemas reside).

1. Determine which IDD dictionaries are accessed by AUTOIDMS. For each dictionary, select a one character identifier. This value is used to uniquely identify the dictionary for reporting purposes and is displayed on the Main Menu of AUTOIDMS. The identifier may be the letter A through Z, the number 0 through 9, or blank. For example, if you have a primary IDD dictionary and secondary dictionaries for production and test, you might select blank (primary dictionary), P (secondary production dictionary), and T (secondary test dictionary) as the identifiers.
2. Copy and rename the following files, once for each suffix selected in the previous step (where *n* represents the identifier):

From:	To:
IDMSIDD MASTER	IDMSIDD n MASTER
IDMSIDD FOCIDMS	IDMSIDD n FOCIDMS

3. Edit IDMSIDD n FOCIDMS to include the appropriate DBNAME and DICTNAME on the first line. For example

```
SSHEMA=IDMSNWKA,RELEASE=14,DBNAME=SYSDIRL,DICTNAME=SYSDIRL,$
```

4. Edit AUTOIDMS FOCEXEC. Locate the line that reads:

```
-DEFAULT &DICT_FILES=' '
```

Change the value to include each of the identifiers selected in Step 1 of this section, and only those values. The first character is used as the default dictionary on the AUTOIDMS Main Menu. For example, if you chose P, T, and blank as your identifiers and you wish to have the production dictionary as the default, the line would read:

```
-DEFAULT &DICT_FILES='PT '
```

This indicates the following dictionaries:

P	Is the IDMSIDDP dictionary.
T	Is the IDMSIDDT dictionary.
blank	Is the IDMSIDD dictionary.

Note: Characters must be entered in upper case.

5. Repeat Steps 2 and 3 above for each of the identifiers that were selected in Step 1.

Verifying IDMS and AUTOIDMS Installation

To verify the installation process, begin a FOCUS session and enter:

```
TABLE FILE IDMSIDD $n$ 
PRINT SS_NAM_026
IF RECORDLIMIT EQ 10
END
```

where:

Installing the IDMS Data Adapter (CMS Only)

n

Represents the secondary dictionary identifier.

These commands, due to the record limit, will create a report that includes up to 10 subschemas from the selected dictionary. Repeat this report for each dictionary.

If the record limit was not included, the report would contain all subschemas for that dictionary defined in the DICTNAME. We recommend including the record limit. If you are looking for a particular subschema, execute

```
TABLE FILE IDMSIDDn
PRINT SS_NAM_026
WHERE SS_NAM_026 EQ 'subschema_name'
END
```

where:

subschema_name

Is the value you are interested in.

4 User Written Exits

Topics:

- IDMS ZBIND Exit (MVS Only)
- IDMS ZREADY Exit (MVS Only)
- IDMS ZBIND Exit (CMS Only)
- IDMS ZREADY Exit (CMS Only)

The IDMS Data Adapter has the ability to execute user written programs via the ZBIND and ZREADY exit facilities.

These programs can be written in any IDMS supported language and must be link edited to the IDMS load module IDMSR.

For release 12 and above, ZBIND and ZREADY exits must be link edited as AMODE(31), RMODE(ANY). The user written programs initiated by the ZBIND and ZREADY exits must be link edited as AMODE(24), RMODE(24) for release 10.2 of IDMS.

The ZBIND and ZREADY exits can call any user-specified program. The IDMS Data Adapter passes back to FOCUS a 4-byte status code. A non-zero status code indicates an error condition.

IDMS ZBIND Exit (MVS Only)

You can write a program named ZBIND that uses standard IBM calling conventions and link-edit it with the Data Adapter IDMSR module (member IDMSR in the '*prefix*.IDMS.LOAD' data set). When a user executes a FOCUS TABLE request against an IDMS database, the IDMS Data Adapter calls the ZBIND exit before issuing the IDMS BIND RUN UNIT command.

A sample COBOL program, located in member ZBINDPGM in the '*prefix*.IDMS.DATA' PDS can be used to check if a user has authorization to access the subschema that is associated with the FOCUS request. There are six parameters passed to the program from the IDMS Data Adapter:

```
USER          PIC X(08)
SUBSCHEMA    PIC X(08)
DBNAME       PIC X(08)
NODE         PIC X(08)
DICTNAME     PIC X(08)
DICTNODE     PIC X(08)
STATUS       PIC X(04)
```

User Written Exits

On return of a non-zero status code, the user receives the following error message:

```
(FOC4405) BIND RUN-UNIT DENIED BY USER EXIT ZBIND FOR SUBSCHEMA: subschema
```

The following is a listing of the ZBINDPGM program provided on the tape:

```
*RETRIEVAL
*NO-ACTIVITY-LOG
  IDENTIFICATION DIVISION.
  PROGRAM-ID. ZBIND.
*****
* PROGRAM: ZBIND
* PURPOSE: CHECK TO SEE IF A USER ISSUING A FOCUS REQUEST
* HAS ACCESS TO THE SUBSCHEMA REQUESTED.
* THIS PROGRAM MAY BE USED FREELY BY THOSE
* WHO NEED AN EXAMPLE TO CODE THEIR OWN EXIT.
*****
DATE-WRITTEN. AUG 1992.
DATE-COMPILED. DATE COMPILED
ENVIRONMENT DIVISION.
CONFIGURATION SECTION.
SOURCE-COMPUTER. IBM-370.
SPECIAL-NAMES.
INPUT-OUTPUT SECTION.
FILE-CONTROL.
IDMS-CONTROL SECTION.
PROTOCOL. MODE IS BATCH DEBUG IDMS-RECORDS MANUAL.
SCHEMA SECTION.
DB IDMSNWK WITHIN IDMSNTWK.
DATA DIVISION.
EJECT
FILE SECTION.
EJECT
WORKING-STORAGE SECTION.
01 WS-START.
    02 FILLER PIC X(33) VALUE
        'ZBIND WORKING STG STARTS HERE==>' .
01 COPY IDMS SUBSCHEMA-CONTROL.
01 COPY IDMS RECORD USER-047.
01 COPY IDMS RECORD ACCESS-045.
01 COPY IDMS RECORD SS-026.
LINKAGE SECTION.
01 PUSER PIC X(8).
01 PSS PIC X(8).
01 PDBNAME PIC X(8).
01 PNODE PIC X(8).
01 PDICT PIC X(8).
01 PDICTNODE PIC X(8).
01 PSTAT PIC X(4).
```

```

*****
*
* RETURN CODE - 0000 - USER HAS ACCESS TO SUBSCHEMA
*              - 0016 - USER NOT IN DICTIONARY
*              - 0032 - USER DOES NOT HAVE ACCESS TO SUBSCHEMA
*              - 9999 - PASSED PARMS USER AND/OR SS INVALID
*              - NNNN - ERROR DURING IDMS-STATS PROCESSING.
*                   WHERE NNNN = ERROR-STATUS
*
*****
PROCEDURE DIVISION USING PUSER,
                    PSS,
                    PDBNAME,
                    PNODE,
                    PDICT,
                    PDICTNODE,
                    PSTAT.

0000-MAINLINE.
*** DISPLAY ' ' PUSER ' '
***          ' ' PSS ' '.
*** RESET ERROR-STATUS TO ENSURE REENTRANCY
    MOVE '1400' TO ERROR-STATUS.
    MOVE 'ZBIND' TO PROGRAM-NAME.
*** CHECK FOR INVALID PASSED PARMS
    IF PUSER = SPACE OR
       PSS = SPACE
       MOVE '9999' TO PSTAT
       GOBACK.
*** CHECK FOR PRESENCE OF DBNAME PARM - DETERMINE WHICH BIND
    NOTE: THIS PROGRAM ASSUMES THE DBNAME PASSED IS THE DBNAME
          WHICH MAPS THE IDMSNWKA SUBSCHEMA TO THE REQUESTED
          DICTIONARY.
          IT DOES ==> NOT <== LOOK AT THE DICTNAME PARAMETER
          PASSED
          TO THE EXIT.
    IF PDBNAME = SPACE
       BIND RUN-UNIT
    ELSE
       BIND RUN-UNIT DBNAME PDBNAME.
    IF ANY-ERROR-STATUS
       MOVE ERROR-STATUS TO PSTAT
       GOBACK.
*** BIND AND READY
    BIND USER-047.
    IF ANY-ERROR-STATUS
       MOVE ERROR-STATUS TO PSTAT
       GO TO 9999-WRAP-UP.
    BIND ACCESS-045.
    IF ANY-ERROR-STATUS
       MOVE ERROR-STATUS TO PSTAT
       GO TO 9999-WRAP-UP.
    BIND SS-026.
    IF ANY-ERROR-STATUS

```

User Written Exits

```
        MOVE ERROR-STATUS TO PSTAT
        GO TO 9999-WRAP-UP.
    READY  USAGE-MODE IS RETRIEVAL.
    IF ANY-ERROR-STATUS
        MOVE ERROR-STATUS TO PSTAT
        GO TO 9999-WRAP-UP.
    *** SEE IF USER IS IN THE DICTIONARY
        MOVE PUSER TO USER-NAME-047.
        FIND CALC USER-047.
        IF DB-REC-NOT-FOUND
            MOVE '0016' TO PSTAT
            GO TO 9999-WRAP-UP.
        IF ANY-ERROR-STATUS
            MOVE ERROR-STATUS TO PSTAT
            GO TO 9999-WRAP-UP.
    *** LOOP THRU USER-ACCESS-SS RECS TO SEE IF RELATIONSHIP EXISTS
    1200-NEXT-ACCESS.
        FIND NEXT ACCESS-045 WITHIN USER-ACCESS.
        IF DB-END-OF-SET
            MOVE '0032' TO PSTAT
            GO TO 9999-WRAP-UP.
        IF ANY-ERROR-STATUS
            MOVE ERROR-STATUS TO PSTAT
            GO TO 9999-WRAP-UP.
        IF NOT SS-ACCESS MEMBER
            GO TO 1200-NEXT-ACCESS.
        OBTAIN OWNER WITHIN SS-ACCESS.
        IF ANY-ERROR-STATUS
            MOVE ERROR-STATUS TO PSTAT
            GO TO 9999-WRAP-UP.
        IF SS-NAM-026 = PSS
            MOVE '0000' TO PSTAT
            GO TO 9999-WRAP-UP.
        GO TO 1200-NEXT-ACCESS.
    9999-WRAP-UP.
    FINISH.
    GOBACK.
    EJECT
    *COPY IDMS IDMS-STATUS.
    *IDMS-ABORT SECTION.
    *I-A-EXIT.  EXIT.
```

The following JCL, member ZBIND in the 'prefix.IDMS.DATA' PDS can be used to link edit the ZBIND user written program.

```
//LINK      EXEC PGM=IEWL,
//          PARM='LET,NCAL,SIZE=(1024K),LIST'
//OBJLIB    DD DSN=prefix.ZBIND.OBJLIB,DISP=SHR
//MAINTAIN  DD DSN=prefix.IDMS.DATA,DISP=SHR
//LOAD      DD DSN=prefix.IDMS.LOAD,DISP=SHR
//SYSLMOD   DD DSN=prefix.OUTPUT.LOADLIB,DISP=SHR
//SYSUT1    DD UNIT=SYSDA,SPACE=(CYL,(10,1))
//SYSPRINT  DD SYSOUT=*
//SYSLIN    DD *
INCLUDE OBJLIB(ZBIND)
INCLUDE MAINTAIN(IDMSR)
INCLUDE LOAD(IDMSR)
ENTRY IDMSR
NAME IDMSR(R)
/*
//
```

where:

prefix.ZBIND.OBJLIB

Is the PDS containing ZBIND object code.

prefix.IDMS.DATA

Is the PDS containing the Data Adapter source library.

prefix.IDMS.LOAD

Is the PDS containing the IDMSR load module.

prefix.OUTPUT.LOADLIB

Is the PDS to contain the new IDMSR load module.

IDMS ZREADY Exit (MVS Only)

You can create a program named ZREADY using standard IBM calling conventions and link-edit it to the Data Adapter IDMSR module (member IDMSR in the 'prefix.IDMS.LOAD' data set).

When a user executes a FOCUS TABLE request against an IDMS database, the IDMS Data Adapter calls the ZREADY exit before issuing an IDMS READY command.

An example of a useful user written program is one that resolves conflicts between FOCUS users who have access to IDMS databases through the IDMS Data Adapter and maintenance jobs which require exclusive control of their IDMS areas. Often such jobs cannot be initiated because they are waiting for FOCUS users to finish processing. Even though a single FOCUS request may only take a short time, new requests might be started so often that required areas may not become free for a long time. This ZREADY exit provides a way to inhibit new FOCUS requests, and also to force cancellation of active requests if they do not finish within a prescribed time.

User Written Exits

The IDMS Data Adapter calls the ZREADY exit for each FOCUS TABLE request against an IDMS database, once for each area containing fields referenced in the FOCUS request. This gives the user exit an opportunity to determine whether or not the IDMS Data Adapter should READY the area in question, and if so, to retain this fact for possible subsequent action. If ZREADY indicates that the READY cannot be issued because you are not authorized to access that data, the Data Adapter informs the FOCUS user and terminates that particular request without retrieving any data, even if the areas were already readied. After this, it ends its contact with IDMS by issuing a FINISH command. The FOCUS session itself is not ended; the user is free to try to access other IDMS areas.

Call ZREADY with the following parameters:

```
SUBSCHEMA    PIC X(08)
AREANAME     PIC X(32)
DBNAME       PIC X(08)
NODE         PIC X(08)
DICTNAME     PIC X(08)
DICTNODE     PIC X(08)
STATUS       PIC X(04)
```

On return of a non-zero STATUS code, the user receives the following error message:

```
(FOC4382) READY INHIBITED BY USER EXIT ZREADY FOR AREA: areaname
```

The following JCL, member ZREADY in the 'prefix.IDMS.DATA' PDS, can be used to link edit the ZREADY user written program.

```
//LINK      EXEC PGM=IEWL,
//          PARM='LET,NCAL,SIZE=(1024K),LIST'
//OBJLIB    DD DSN=prefix.ZREADY.OBJLIB,DISP=SHR
//LOAD      DD DSN=prefix.IDMS.LOAD,DISP=SHR
//SYSLMOD   DD DSN=prefix.OUTPUT.LOADLIB,DISP=SHR
//SYSUT1    DD UNIT=SYSDA,SPACE=(CYL,(10,1))
//SYSPRINT  DD SYSOUT=*
//SYSLIN    DD *
INCLUDE OBJLIB(ZREADY)
INCLUDE MAINTAIN(IDMSR)
INCLUDE LOAD(IDMSR)
NAME IDMSR(R)
/*
//
```

where:

prefix.ZREADY.OBJLIB

Is the PDS containing ZREADY object code.

prefix.IDMS.DATA

Is the PDS containing the Data Adapter source library.

prefix.IDMS.LOAD

Is the PDS containing the IDMSR load module.

prefix.OUTPUT.LOADLIB

Is the PDS to contain the new IDMSR load module.

IDMS ZBIND Exit (CMS Only)

You can write a program named ZBIND that uses standard IBM calling conventions and link-edit it with the Data Adapter IDMSR module (located in the FOCINT LOADLIB on the FOCUS production disk). When a user executes a FOCUS TABLE request against an IDMS database, the IDMS Data Adapter calls the ZBIND exit before issuing the IDMS BIND RUN UNIT command.

A sample COBOL program, located on the tape as filename ZBINDPGM, can be used to check if a user has authorization to access the subschema that is associated with the FOCUS request. There are six parameters passed to the program from the IDMS Data Adapter (see *IDMS ZBIND Exit (MVS Only)* on 4-1 for further information).

The following EXEC, GENIDMEX can be used to link edit the ZBIND user written program with the IDMSR interface module.

```
Address 'COMMAND'
Trace 'O'
'ERASE LINKCTL DATA A'
mode = ' MODE AMODE(31),RMODE(ANY) '
incl1 = ' INCLUDE EXIT'
incl2 = ' INCLUDE OLDMOD(IDMSR) '
entry = ' ENTRY IDMSR'
name = ' NAME IDMSR(R) '

diskio = 'EXECIO 1 DISKW LINKCTL DATA A 0 F 80 ( STRING'
'FILEDEF * CLEAR'
diskio mode
diskio incl1
diskio incl2
diskio entry
diskio name
'FINIS LINKCTL DATA A'

'FILEDEF exit DISK ZBIND TEXT A'
'FILEDEF oldmod DISK FOCINT LOADLIB A (RECFM U '
'FILEDEF syslmod DISK FOCINT LOADLIB A (CHANGE '
'LKED LINKCTL (LIBE FOCINT DISK MAP LET LIST NCAL SIZE 900K 64K'
Exit 0
```

where:

exit

Is the file containing ZBIND object code.

oldmod

Is the LOADLIB containing the IDMSR module.

syslmod

Is the LOADLIB to contain the new IDMSR load module.

IDMS ZREADY Exit (CMS Only)

You can create a program named ZREADY using standard IBM calling conventions and link-edit it to the Data Adapter IDMSR module (located in the FOCINT LOADLIB on the FOCUS production disk). When a user executes a FOCUS TABLE request against an IDMS database, the IDMS Data Adapter calls the ZREADY exit before issuing an IDMS READY command.

An example of a useful user written program is one that resolves conflicts between FOCUS users who have access to IDMS databases through the IDMS Data Adapter and maintenance jobs which require exclusive control of their IDMS areas. Often such jobs cannot be initiated because they are waiting for FOCUS users to finish processing. Even though a single FOCUS request may only take a short time, new requests might be started so often that required areas may not become free for a long time. This ZREADY exit provides a way to inhibit new FOCUS requests, and also to force cancellation of active requests if they do not finish within a prescribed time.

The IDMS Data Adapter calls the ZREADY exit for each FOCUS TABLE request against an IDMS database, once for each area containing fields referenced in the FOCUS request. This gives the user exit an opportunity to determine whether or not the IDMS Data Adapter should READY the area in question, and if so, to retain this fact for possible subsequent action. If ZREADY indicates that the READY cannot be issued because you are not authorized to access that data, the Data Adapter informs the FOCUS user and terminates that particular request without retrieving any data, even if the areas were already readied. After this, it ends its contact with IDMS by issuing a FINISH command. The FOCUS session itself is not ended; the user is free to try to access other IDMS areas.

Call ZREADY with the following parameters:

```
SUBSCHEMA  PIC X(08)
AREANAME   PIC X(32)
DBNAME     PIC X(08)
NODE       PIC X(08)
DICTNAME   PIC X(08)
DICTNODE   PIC X(08)
STATUS     PIC X(04)
```

On return of a non-zero STATUS code, the user receives the following error message:

```
(FOC4382) READY INHIBITED BY USER EXIT ZREADY FOR AREA: areaname
```

User Written Exits

The following EXEC, GENIDMEX can be used to link edit the ZREADY user written program with the IDMSR module.

```
/*GENIDMEX*/
Address 'COMMAND'
Trace 'O'
'ERASE LINKCTL DATA A'
mode = ' MODE AMODE(31),RMODE(ANY)'
incl1 = ' INCLUDE EXIT'
incl2 = ' INCLUDE OLDMOD(IDMSR)'
entry = ' ENTRY IDMSR'
name = ' NAME IDMSR(R)'

diskio = 'EXECIO 1 DISKW LINKCTL DATA A 0 F 80 ( STRING'
'FILEDEF * CLEAR'
diskio mode
diskio incl1
diskio incl2
diskio entry
diskio name

'FINIS LINKCTL DATA A'
'FILEDEF exit DISK ZREADY TEXT A'
'FILEDEF oldmod DISK FOCINT LOADLIB A (RECFM U '
'FILEDEF syslmod DISK FOCINT LOADLIB A (CHANGE '
'LKED LINKCTL (LIBE FOCINT DISK MAP LET LIST NCAL SIZE 900K 64K'
Exit 0
```

where:

exit

Is the file containing ZREADY object code.

oldmod

Is the LOADLIB containing the IDMSR load module.

syslmod

Is the LOADLIB to contain the new IDMSR load module.

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