

CA MICS[®] Resource Management

IMS Log Data Extractor Option Guide

Release 12.9



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Chapter 1: OVERVIEW

The CA MICS IMS Log Data Extractor (LDE) collects and preprocesses IMS log data in preparation for the daily update run of the CA MICS Analyzer Option for IMS (referred to as the IMS Analyzer).

LDE is used with IMS/VS with DASD logging, and is especially useful to data centers that run IBM's Information Management System (IMS) at one site and the CA MICS IMS Analyzer at another. LDE reads IMS log data and creates a transaction file that it passes to the IMS Analyzer. This file contains only the data required by the IMS Analyzer.

Using LDE means that tape, while still an option, is no longer the only IMS output medium available. LDE uses DASD as its output medium, which minimizes the possibility of hardware failure and improves data recovery in the event of a system hardware failure.

This section contains the following topics:

[1.1 Primary Areas of Application](#) (see page 8)

[1.2 Major Features](#) (see page 10)

[1.3 Reporting and Inquiry Facilities](#) (see page 11)

[1.4 Files Overview](#) (see page 11)

[1.5 Product Prerequisites](#) (see page 12)

[1.6 Benefits](#) (see page 12)

1.1 Primary Areas of Application

LDE's primary function is to process IMS log data, reduce the volume of data, and produce an output file suitable for use by the CA MICS Analyzer Option for IMS. This IMS Analyzer processes information about IMS users, transactions, and applications. It may obtain its data either from LDE or directly from IMS logs.

Figure 1-1 illustrates possible routes that the flow of IMS log data can take to get from IMS to the IMS Analyzer.

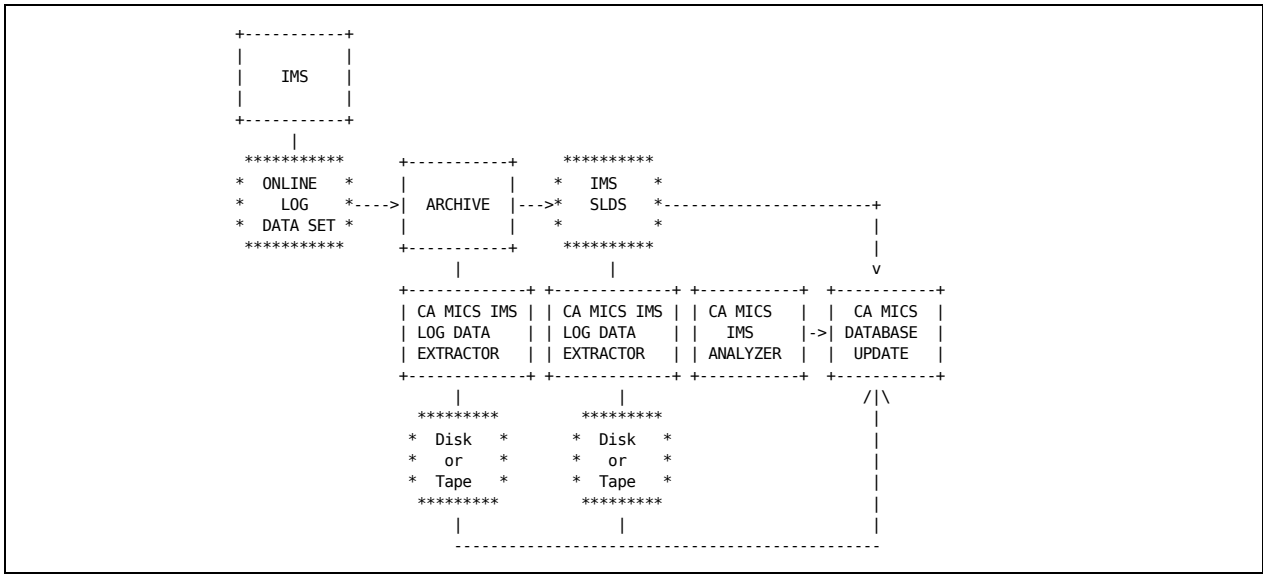


Figure 1-1. IMS Log Data Flow

LDE processes IMS Log records and reduces the amount of data passed to the IMS Analyzer by:

- o Consolidating IMS Log record data to create a CA MICS transaction record
- o Eliminating data that the IMS Analyzer does not use, which can decrease data from fifteen to eighty percent

In addition, LDE significantly reduces tape and system failures by:

- o Reading one DASD log at a time (when executed as an exit to DFSUARCO), allowing preprocessing of log records when the IMS Online Data Set is archived
- o Writing its output to DASD rather than to tape, eliminating the need to mount tapes while the IMS Analyzer is executing

1.2 Major Features

The major features of the LDE can be grouped into two categories:

- o Data source facilities
- o Report facilities

Data Source Facilities

You can execute LDE as an exit of the IMS DASD Logging archive process or as a stand-alone job reading IMS SLDS.

The CA MICS IMS Analyzer updates files using an assembler program (see the list of assembly language routines in section 3.1). These assembler programs read the IMS log, build a transaction record by combining data from several log records, and pass it to the IMS Analyzer SAS program for processing and file update. If LDE is installed, it calls these assembler programs directly.

The assembler programs perform the same tasks regardless of where they run (as part of CA MICS daily processing or as part of the LDE).

Report Facilities

LDE provides a Record Distribution Report, which is run on a daily basis as part of the IMS operation. This report summarizes the data read by LDE and assists in tracking LDE's operation and verifying that the appropriate IMS log data has been read.

1.5 Product Prerequisites

LDE supports IBM's Information Management System (IMS) Versions 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1, and 13.1.

1.6 Benefits

LDE contributes to the overall benefits that CA MICS Resource Management provides.

- o It reduces the volume of data your organization has to process. Depending on the type of IMS processing you do, this can:
 - minimize the potential impact on hardware failures
 - reduce total processing time of IMS statistics
 - reduce tape drive utilization
 - reduce demand on operator time
 - permit the input to the CA MICS IMS Analyzer to be stored on DASD instead of tape
- o Organizations that have multiple IMS sites need not have the IMS Analyzer at every site. LDE at each IMS site can process that site's data. The output produced can then be sent to a site that has the IMS Analyzer.

Chapter 2: PLANNING THE INSTALLATION

This chapter provides formulas for calculating the size of the files that LDE will use. It is recommended that you read and fully understand this chapter and the implications of installing LDE before you attempt to install and run it.

This section contains the following topics:

[2.1 Estimating the Size of the LDE Output File](#) (see page 14)

2.1 Estimating the Size of the LDE Output File

LDE generates an output file containing data necessary for the CA MICS IMS update step to complete successfully. It is recommended that this file be on DASD. This section provides a formula for calculating the DASD space that is required for the LDE output file.

You can count on receiving a significant reduction of data that is passed to CA MICS from the full IMS log. The reduction varies, depending on:

- o whether the user is running BMC MAINVIEW for IMS Online or full-function IMS logging
- o the ratio of transactions that are executed to database calls
- o the number and size of command records on the IMS log
- o the number and size of records that ultimately result in incidents being generated in the CA MICS database
- o whether the IMS site runs full function IMS transactions, Fastpath transactions, or both

A rough approximation of the size of the output data set required by LDE (in bytes) is:

$$(1024 * f) + (1024 * p) + (452 * s) + (ir * n)$$

where:

f = number of full function transactions

p = number of Fastpath transactions

s = number of program schedules (number of 07 records)

ir = average size of command and incident records from the IMS log tape

n = number of command and incident records from the IMS log tape

The Record Distribution Report, described in section 6.2, provides the number of records and their lengths for this calculation.

The same approximation for BMC MAINVIEW for IMS Online users can be obtained by the following formula:

$$(afa * nt) + (af9 * np) + (ir * n)$$

where:

afa = average size of BMC MAINVIEW for IMS Online transaction (FA) log records

nt = number of type FA log records

af9 = average size of BMC MAINVIEW for IMS Online program (F9) log records

np = number of type F9 log records

ir = average size of command and incident records from the IMS log tape

n = number of command and incident records from the IMS log tape

For example, assume a daily average of 100,000 full function IMS transactions per day, in a shop that runs no Fastpath, with 1000 commands and incidents per day. If the average size of the command and incident records is 150 bytes, the calculation would be performed as follows:

$$(1024 * 100000) + 0 + (150 * 1000) = 102,550,000 \text{ bytes}$$

Assuming the following DCB specification, (BLKSIZE=27998,LRECL=27994,RECFM=VB), at half track 3390 blocking (27,998 bytes per block), the 102,550,000 bytes would take fewer than 123 cylinders of DASD storage per day. Note: That there are 15 tracks per cylinder on a 3390 device.

The following record types are copied from the input IMS log tape intact. Storage requirements vary depending upon the number and size of these record types: 02, 06, 07, 40, 45, 10, 14, 15, 16, 20, 21, 24, 40, 41, 42, 45, 4C, 69, F9 (when using Mainview for IMS), FA (when using Mainview for IMS), CA MICS uses these record types to generate incident and exception records in addition to extracting accounting related data.

Chapter 3: OPERATION

This chapter describes how to use LDE.

This section contains the following topics:

[3.1 LDE Data Sets](#) (see page 18)

[3.2 Continuous Operation Considerations](#) (see page 28)

[3.3 Running LDE](#) (see page 29)

[3.4 LDE's Effect on the CA MICS IMS Analyzer](#) (see page 30)

3.1 LDE Data Sets

This section explains the input and output data sets that LDE uses. This section also provides methods for increasing the efficiency of LDE.

The LDE Parameters Data Set

LDE requires that you specify the version of IMS and specific information about your environment for the following reasons:

- o Data record formats differ between IMS versions.
- o CA MICS supports several different monitors and features. This including full-function IMS, Fastpath IMS, and BMC MAINVIEW for IMS Online. The IMS release identifier is not contained in the data.
- o Required storage pool sizes vary between IMS regions and can be set differently for each region.

To allocate a partitioned data set, where you code your LDE parameters, use ISPF/PDF option 3.2 or the TSO ALLOC and ATTRIB commands. A one-track partitioned data set (PDS) with one directory block has been adequate for most sites.

LDE parameter data sets must contain one member for each system whose data is processed by LDE. There must be a separate member for each system. The LDEPARM DD statement in the execution JCL must point to this library and member.

The following describes the syntax for the LDE and TABLES statements.

LDE Statement

```
+-----+
| LDE rel fn BMP fs fe WFI FASTWFI FOLDUID |
+-----+
```

The LDE statement contains information that controls the processing that is performed by the IMS Log Data Reduction (LDR) module. The bmp, fs, and fe parameters are NOT positional and can be specified in any order. If a parameter value is omitted, the default value is used.

The format of the LDE statement is as follows.

```
LDE rel fn bmp fs fe wfi
```

where the parameters are:

rel - The IMS version of the data that is to be processed by LDE. The IMS version is specified in the form xx. The IMS versions currently supported are 61, 71, 81, 91, 10, 11, 12, and 13.

The rel parameter can be specified as ??, which invokes AutoDetection processing for the IMS version/release information. When this is specified, the actual value of the IMS version/release is obtained from the IMS log data being processed for input to LDE.

DEFAULT: None. A valid value must be specified.

fn - This parameter specifies the source of the IMS Fastpath and full function log data, whether native log records or IMS data, and how Fastpath records are to be processed in the case of the former.

Valid values for this parameter are:

NN - Exclude Fastpath database transaction statistics.

MN - Include Fastpath database statistics for transactions scheduled through the standard message scheduling. Note: Mixed mode statistics are included in the IMSISU and IMSIAU files, while statistics for those transactions that are scheduled by the Expedited Message Handler are included in the IMS_IS and IMS_IA files.

FN - Include transactions performing Fastpath database calls, scheduled through the standard message scheduler or the Expedited Message Handler method.

CC - IMS Fastpath and full function data is input from BMC MAINVIEW for IMS Online data.

DEFAULT: None. A valid value must be specified.

BMP - This parameter indicates whether BMP transactions in this system are to be presummarized (collapsed) by the IMS LDR module. Code **BMP** to activate presummarization only if **CC** has not been specified in the **fn** parameter field. Code **NOBMP** to prevent presummarization.

Coding **NOBMP** causes one transaction to be processed for each message that a message-driven **BMP** has executed. Specify **BMP** to collapse, or presummarize, message-driven **BMP** transactions; this summarizes message-driven **BMP** activity by the unique combination of **LTERM** of the message terminal, transaction code, **PSB** name, and hour of day. Presummarizing such **BMP** transactions improve the performance of the IMS Analyzer's daily update.

DEFAULT: **NOBMP**

fs - This parameter indicates whether transaction records that are the result of "False Schedules" are to be output by the IMS LDR module. Specifying **FSCHEd** results in the output of False Schedule transactions to the **MAOUTPUT** file. These transactions contain a CPU Time value even though there were no messages processed by the transaction. Specifying **NOFSCHEd** prevents the output of the False Schedule transactions.

DEFAULT: **FSCHEd**

fe - This parameter indicates whether Shared Message Queue "front-end" records are to be output by the IMS LDR module. These records can be created when processing data from an IMS Shared Message Queues environment. These transaction records are identified by the presence of an **x'FE'** in byte one of the record. Specifying **SQFE** results in the output of front-end transactions to the **MAOUTPUT** file. Specifying **NOSQFE** prevents the output of the front-end transaction records.

DEFAULT: **NOSQFE**

WFI - This parameter indicates whether **WFI AutoFlush** is enabled. This parameter on the **OPTIONS** statement can also be specified as:

WFI(n)

where (n) artificially lower the horizon.

Example: Assume that no other "non-never ending" has a PROCLIM above 10,000.

By changing the AutoFlush Horizon to 10,000, transactions are identified as being "never ending" at a much earlier point in time. This would appear in LDEPARM as WFI(10000).

Note: Since these transactions are more frequently written to the the MAOUTPUT file, it may be necessary to increase the space requirements for the MAOUTPUT data set.

DEFAULT: NOWFI

FASTWFI - This parameter specifies whether the immediate flushing of completed WFI transactions are (FASTWFI) or are not (NOFASTWFI) enabled during processing. The FASTWFI feature is for the benefit of users that process large numbers of never-ending WFI transaction which can cause serious virtual storage constraints.

DEFAULT: NOFASTWFI

FOLDUID - This parameter specifies whether the RACFUSID is (FOLDUID) or is not (NOFOLDUID) be translated to upper case characters.

DEFAULT: FOLDUID

TABLES Statement

```
+-----+
| TABLES ldrn sdrn emhb rttbl trpool |
+-----+
```

This statement is used by the IMS LDR module to calculate the sizes of various storage pools that are used during processing.

If you are using BMC MAINVIEW for IMS Online and if "CC" is coded on the LDE statement (see LDE statement description above), the TABLES statement is not required, but is checked for proper syntax if present.

The IMS LDR module reduces IMS log data to produce IMS transaction records. These programs use storage pools for much of their processing. The default execution parameters define tables that should accommodate almost any standard IMS system's daily volume. You may elect to alter the table parameters to increase table sizes for larger systems, or to decrease table sizes for smaller systems to conserve virtual memory. The memory for the storage pools is obtained above the 16MB line.

Use the TABLES statement to specify table sizes. The format of the TABLES statement is as follows.

```
TABLES ldrn sdrn emhb rttbl trpool
```

where the parameters are:

ldrn - The number of long message queue records in the IMS region being processed by the IMS LDR module.

The minimum value for this parameter is 0 and the maximum value for this parameter is 999999.

Notes: Set this parameter to 0 if you are using BMC MAINVIEW for IMS Online.

The ldrn pool is managed to automatically expand to meet increased workload demand. Therefore, the default value is usually enough. It is not necessary to adjust this value, but some gain in performance can be realized by specifying a value that eliminates the need to allocate secondary pool extents.

DEFAULT: 5000

sdrn - The number of short message queue records in the IMS region being processed by the IMS LDR module.

The minimum value for this parameter is 0 and the maximum value for this parameter is 999999.

Notes: Set this parameter to 0 if you are using BMC

MAINVIEW for IMS Online.

The sdrn pool is managed to automatically expand to meet increased workload demand. Therefore, the default value is usually enough. It is not necessary to adjust this value, but some gain in performance can be realized by specifying a value that eliminates the need to allocate secondary pool extents.

DEFAULT: 5000

- emhb - The number of EMHBs in the IMS region be processed by the IMS LDR module.

The minimum value for this parameter is 0 and the maximum value for this parameter is 999999.

Note: This parameter is no longer used and is kept as a placeholder for compatibility purposes.

DEFAULT: 0

- rttbl - The largest number of active Recovery Tokens in use at any one time by the IMS region being processed by the IMS LDR module.

The minimum value for this parameter is 0 and the maximum value for this parameter is 999999.

Note: This parameter is no longer used and is kept as a placeholder for compatibility purposes.

DEFAULT: 0

- trpool - This value defines the number of TRAN cells that are obtained in the primary allocation. The TRAN cells are used for construction of the Fastpath and full function transaction records that are created by the IMS LDR module. It should typically be set to the largest number of Fastpath and full function transactions that can be active at any one time by the IMS region that is being processed by the IMS LDR module.

This value varies based on the number of concurrent

users that are active in the IMS region. Consider using the default as an initial value and adjusting it based on the Normal Termination Report's Section 5.3 Transaction Pool, High Water Mark value.

The minimum value for this parameter is 0 and the maximum value for this parameter is 999999.

Note: Set this parameter to a number greater than 0 for IMS systems operating at IMS 6.1 or higher.

The TRAN pool is managed to automatically expand to meet increased workload demand. Therefore, the default value is usually enough. It is not necessary to adjust this value, but some gain in performance can be realized by specifying a value that eliminates the need to allocate secondary pool extents.

DEFAULT: 10000

Examples

For a site that has one IMS system running IMS 10.1 Fastpath, does not use BMC MAINVIEW for IMS Online, and does not use the BMP Collapse feature, specify the following:

- o sharedprefix.MICS.PARMS(LDEPARM) would contain:

```
LDE 10 FN
TABLES 5000 5000 0 0 10000
```

Note: The NOBMP parameter has been omitted because it is the default value. In addition, the FSCHED and NOSQFE default parameter values would also be in effect.

- o LDE operational JCL in sharedprefix.MICS.CNTL(LDEIMS13) (or LDESA, depending on your operating mode) would contain:

```
//LDEPARM DD DSN=sharedprefix.MICS.PARMS(LDEPARM)
```

For a site that has two IMS systems, one running IMS 11.1 and BMC MAINVIEW for IMS Online and the other running IMS 12.1, without BMC MAINVIEW for IMS Online, and that does not want

the "False Schedule" records output, specify the following:

- o sharedprefix.MICS.PARMS(LDEPARM1) would contain:

```
LDE 11 CC
```

Note: Since BMC MAINVIEW for IMS Online data has been specified, the TABLES statement is not required for processing.

- o sharedprefix.MICS.PARMS(LDEPARM2) would contain:

```
LDE 12 NN NOFSCHE
TABLES 5000 5000 0 0 10000
```

- o LDE operational JCL in sharedprefix.MICS.CNTL(LDEIMS13) (or LDESA, depending on your operating mode) would contain:

```
//LDEPARM DD DSN=sharedprefix.MICS.PARMS(LDEPARMx)
```

where:

LDEPARMx - Specifies the LDE parameters (see above) required for the IMS region data being processed.

The Input Log File

In all environments, LDE expects input to be the IMS log file, whether from the IMS DASD logging facility or the IMS log tape. LDE checks to ensure that the input data set contains IMS log information.

Note: The BMC MAINVIEW for IMS Online IRUF file CANNOT be used as input to LDE or the IMS Analyzer.

The IMS Suspend Files

Suspend files are sequential data sets used by LDE to store incomplete CA MICS transaction records.

At the end of each LDE run, transactions that have been received from the IMS subsystem but have not been processed completely at LDE step termination are "suspended," that is, written to a "suspend" file that is read and reprocessed during later runs of LDE. Sites that use BMC MAINVIEW for

IMS Online do not need suspend files.

During LDE initialization, data from the suspend file is read and stored in tables. The data is then written to the LDE output file when the records required to complete the CA MICS transaction record are received.

Assembly Language Routines

The following assembler language routine is used to read the raw IMS logs. The list gives the name of the routine and the level of IMS it supports.

IMSLDR20 (IMS 10.1 and above)
IMSLOGV6 (IMS 6.1, 7.1, 8.1, and 9.1)

Sites running LDE with the CA MICS IMS Analyzer use the same assembler code modules for both the IMS and LDE products as described in Section 4.3 of this guide.

The LDE Print Data Sets

The MAPRINT and MASTATS data sets hold reports and error messages that are generated by LDE. These files are explained in detail in Chapter 6 of this guide.

The LDE Output File (MAOUTPUT)

LDE reduces the amount of IMS log data that is passed to CA MICS and stores it in the MAOUTPUT data set. The MAOUTPUT data set is read by the CA MICS IMS daily update job step.

Disposition of MAOUTPUT

To estimate the amount of space that is needed for your MAOUTPUT data set, see Section 2.1 of this guide.

If you allocate LDE's MAOUTPUT data set as DISP=MOD,UNIT=(SYSDA), LDE appends IMS transaction records to MAOUTPUT during LDE processing that occurs before the CA MICS IMS daily update job step. Before using this technique, ensure both of the following:

- o You have allocated adequate DASD space for the file.

- o Issues related to 24 hour operations, discussed in Section 3.2 of this guide, have been resolved.

Resetting MAOUTPUT

Once the daily CA MICS update completes, the file input to IMS (step DAY060) should be emptied in preparation for the collection of data for the next day's update. It is very important to reset the file; if it is not reset, it continues to grow and DAY060 step operation will be seriously degraded.

Use the LDERESET job, as described, to reset the input file. LDERESET is a single-step job that moves the end-of-file pointer to the beginning of the data set. LDERESET is the only mechanism that is supported by LDE for resetting the input file.

Once you have determined that CA MICS completed successfully (using Operational Status and Tracking, for example), run LDERESET. Prototype JCL is available in the following data sets:

- o CA MICS environment or host site:

```
sharedprefix.MICS.CNTL(LDERESET)
```

- o Non-CA MICS environment or remote site:

```
yourprefix.MICS.CNTL(LDERESET)
```

3.2 Continuous Operation Considerations

If IMS processing will continue during the CA MICS update, IMS may attempt to archive a DASD log while CA MICS is processing the LDE output file (the data set designated by the MAOUTPUT DD statement in the archive jobstream). To prevent interruption of your CA MICS update, use the LDERESET job.

The LDERESET job makes a copy of the LDE output file and uses the copy as input to CA MICS. It then resets the original LDE output file, which empties the file and compensates for its "MOD" disposition.

Depending upon your environment, prototype JCL can be found in either one of these:

- o sharedprefix.MICS.CNTL(LDERESET) (CA MICS environment)
- o yourprefix.MICS.CNTL(LDERESET) (non-CA MICS environment)

You must change the INPUTIMS data set name in the IMS step of the CA MICS DAILY job to reflect this new file.

LDE also provides an LDECOPY job that you can use to back up your LDE output file. The LDECOPY job is a subset of the LDERESET job.

3.3 Running LDE

This section discusses the running of LDE:

- o in a DASD logging environment
- o in a tape environment

DASD Environment

When LDE is installed properly in your IMS environment, it runs automatically as part of the DASD logging archive process. No operator intervention is necessary.

Tape Logging Environment

If you run in a tape environment, the following steps must be performed for each run of LDE:

Enter the proper tape volume serial numbers into the JCL contained in:

sharedprefix.MICS.CNTL(LDESA) (CA MICS environment)

or

yourprefix.MICS.CNTL(LDESA) (non-CA MICS environment).

Submit the LDE job.

Verify that the job ran successfully.

The time required to read and process one day's tape log of IMS may delay the CA MICS IMS Analyzer update. To allow for this time lag, run LDE several times per day rather than as one job immediately preceding the CA MICS daily update run. This will make the most efficient use of your system's resources.

3.4 LDE's Effect on the CA MICS IMS Analyzer

This section describes operational changes to the CA MICS IMS update that result from running LDE.

The Input Log Data Set

Rather than using the IMSLOG as input to CA MICS, a user running LDE uses the LDE output file as input to the update. The procedures for making this JCL change are described in section 4.4 of this guide, "Installation Checklist for CA MICS Sites."

Internal Differences

The IMS Analyzer of the daily CA MICS update step contains two distinct processing phases: an assembler language front end responsible for reducing the amount of data passed to the SAS processing code, and the processing and summarization code that is written in the SAS language.

With LDE, the assembler front end is no longer included in the CA MICS IMS update process. Instead, it is called by LDE. Then the LDE output file becomes the input to the SAS routines. This input file is now in CA MICS format.

This affects the operation of the IMS Analyzer in two major ways. First, the new file contains only one CA MICS record for each IMS transaction. Also, the use of transaction tables passes from the IMS Analyzer to LDE, thus eliminating some of the virtual storage previously required by the IMS Analyzer.

Chapter 4: INSTALLATION

This chapter presents an overview of the steps necessary to install LDE and a description of the distribution materials.

Detailed installation checklists in this chapter cover the following situations:

- o Sites installing LDE into a CA MICS complex
- o LDE installation at IMS non-CA MICS sites that run CA MICS at a local site

CAUTION! Review this material carefully BEFORE performing any of the installation steps.

This section contains the following topics:

[4.1 Installation Overview](#) (see page 31)

[4.2 Distribution Materials](#) (see page 32)

[4.3 Installation Details](#) (see page 33)

[4.4 Installation Checklist for CA MICS Sites](#) (see page 34)

[4.5 Installation Checklist for Non-CA MICS Sites](#) (see page 37)

4.1 Installation Overview

The LDE installation process consists of unloading the product distribution tape, allocating LDE datasets, and modifying the JCL used by the individual DASD logging archive processes. The installation process is detailed in the sections that follow.

4.2 Distribution Materials

If LDE is to be installed at a host site that has the CA MICS product, LDE is distributed on the complete CA MICS distribution tape and is loaded into the CA MICS libraries before you enter this checklist.

If LDE is to be installed at a remote site where CA MICS itself is not installed, LDE is distributed on a magnetic tape containing 22 files that are in IBM IEBCOPY-unload format. This tape is a standard label tape (SL format) with a volume serial and density marked on the external label.

The LDE modules, JCL, and LDE guide are contained in five of the 22 files on the tape. If you are only installing LDE, the remaining files will contain dummy entries and can be ignored.

File	Data Set	Description
2	CA.MICS.ASM	LDE Assembler language source code. For a CA MICS system or product installation, data set includes assembler source code.
4	CA.MICS.CNTL	LDE installation and operation JCL. For CA MICS system or product installations, data sets include CA MICS JCL
6	CA.MICS.DOC.TEXT	LDE guide. For CA MICS system or product installation, data set includes CA MICS text.
11	CA.MICS.LOAD	LDE load modules. For a CA MICS system or product installation, data set includes CA MICS load modules.
19	CA.MICS.SOURCE	SAS module #LDEMSTR indicates that LDE is present in this CA MICS complex.

4.3 Installation Details

LDE comes pre-assembled and link-edited for all environments.

```
+-----+
|                                     |
|                               IMPORTANT |
|                                     |
| If your enterprise runs LDE at both host and remote |
| sites, ensure that all sites run the same version of |
| the assembler front end of IMS (as listed in section |
| 3.1) with both the IMS Analyzer and the IMS Log Data |
| Extractor (LDE). |
|                                     |
| Contact your CA MICS system administrator at the host |
| CA MICS site to ensure that you are running the same |
| version. |
|                                     |
+-----+
```

Section 4.4 provides an installation checklist for sites using both IMS Analyzer and LDE.

Section 4.5 provides an installation checklist for sites who are only using LDE. The extracted data is usually forwarded to a site that runs IMS Analyzer.

Note: You must completely install LDE before you run the CA MICS daily update.

4.4 Installation Checklist for CA MICS Sites

Use this checklist ONLY if you are installing LDE at a new or existing CA MICS site.

If you are installing LDE at a non-CA MICS site, you MUST use the checklist in section 4.5.

```
*****
*
*   Before installing LDE, you must have already   *
*   installed the CA MICS Analyzer Option for IMS   *
*   in each of the CA MICS database units affected *
*   by LDE.                                         *
*
*****
```

- ___ 1. Create the LDE parameter member.

Allocate an 80-byte fixed block data set to hold your LDE parameter members. For example, sharedprefix.MICS.PARMS. Refer to Section 3.1 of this guide for information about the contents of this data set.

- ___ 2. Allocate suspend files for each IMS region that will be processed by LDE.

Prototype JCL for suspend file allocation was loaded into sharedprefix.MICS.CNTL(LDESUSP).

Notes: A unique pair of suspend files must be allocated for each IMS region that is processed by LDE. These files cannot be shared between archiving jobs or between an archiving job and a CA MICS database unit. Therefore, the job in this member must be run for each IMS region that is to be processed by LDE.

Do NOT allocate this data set as VBS (variable blocked spanned).

Edit LDESUSP, modify the job card, complete the JCL parameters on the EXEC card, and submit the job.

```
//ALLOC EXEC ALLOC,
//   YPFX='_____', <= UNIQUE FOR EACH IMS REGION
//   WKUNIT=SYSDA, <= IS WORK DASD UNIT OK?
```

```
// LIBUNIT=SYSDA, <== IS LIB DASD UNIT OK?
// LIBVOL=          <== DO YOU NEED A DASD VOL?
```

where:

YPFX - is the prefix for the suspend data sets.
It must be unique for each IMS region
that is processed by LDE.

WKUNIT - is the unit name of a direct-access work
device.

LIBUNIT - is the unit name of the direct-access
device that holds the cataloged suspend
data sets.

LIBVOL - is the volume serial of the direct-access
device that holds the cataloged suspend
data sets.

___ 3. Set up the operational JCL.

Prototype IMS operational archive JCL was loaded by
the load job into sharedprefix.MICS.CNTL under one of
the following member names to conform with the
operating modes that are supported by the product:

LDEIMS13 - if you run LDE as an exit of IMS.

LDESA - if you run LDE as a stand-alone product.

Change your IMS operational archive JCL to include
the DD statements in the applicable member of
sharedprefix.MICS.CNTL.

Note: The TABLES statement can be read in from the
LDEPARM DD statement or can be omitted
completely.

This becomes your production JCL.

___ 4. Make environment-specific changes.

If you run LDE as an exit to IMS DASD logging, add
the following to the archive jobstream JCL.

```
//SYSIN DD *
EXIT NAME(MALDEXIT)
```

```
*****
*
* Running LDE as an exit requires coordinating
* with the persons responsible for installing
* and maintaining IMS.
*
* Test CA MICS LDE first on your installation's
* test IMS region and applicable CA MICS test
* database unit.
*
*****
```

___ 5. Add LDE to IMSOPS.

Edit prefix.MICS.PARMS(IMSOPS) and add the LDE parameter to the IMS option statements. The OPTIONS statement is:

```
OPTIONS osysid imsid rel ddname int monitor fp LDE
```

For example:

```
OPTIONS SYS1 IMS1 13.1 DD1 5 IMF2 FP LDE
OPTIONS SYS2 IMS2 13.1 DD2 5 IMF2 FP LDE
```

___ 6. Submit prefix.MICS.CNTL(IMSPGEN); ensure that the job completes with a return code of 0.

___ 7. Edit prefix.MICS.PARMS(INPUTIMS) and change the DSNAME to coincide with MAOUTPUT in the IMS operational archive JCL described in step 3.

For example:

```
/* SYS1 LDE OUTPUT
//DD1 DD DISP=SHR,DSN=yourprefix.LDE.SYS1.OUTPUT
/* SYS2 LDE OUTPUT
//DD2 DD DISP=SHR,DSN=yourprefix.LDE.SYS2.OUTPUT
```

___ 8. Edit prefix.MICS.PARMS(JCLGENU) to include only the word "DAILY". Submit prefix.MICS.CNTL(JCLGENU) to regenerate the daily JCL.

___ 9. The LDE installation is now complete and the operational JCL created in step 3 is ready to run.

```
*****
*
```

```
*      Repeat Steps 1 through 9 for each database unit you *
*      are installing.                                     *
*                                                         *
*****
```

4.5 Installation Checklist for Non-CA MICS Sites

If you are the CA MICS administrator for the non-CA MICS site, you must first have the CA MICS administrator at the CA MICS site generate a remote site LDE tape for you. Once you have received the tape, follow the checklist in section 4.5.2.

If you are the CA MICS administrator at the CA MICS site and you need to generate a remote site LDE tape, follow the instructions in section 4.5.1.

This section describes how to install LDE at a non-CA MICS site. The following topics are discussed in detail:

- 1 - Generating a Remote Site LDE Tape
- 2 - Installing a Remote Site LDE Tape

4.5.1 Generating a Remote Site LDE Tape

If your site has licensed the CA MICS Analyzer Option for IMS, a job is included to generate remote site LDE tapes. The CA MICS IMS Log Data Extractor Option (LDE) is a separately licensed product, and you must pay a license fee for each site that runs it. For further information, contact your CA sales representative.

To build a remote site LDE tape, follow the checklist below:

- ___ 1. Prepare the generation job.

Edit `sharedprefix.MICS.CNTL(LDEBLD)`. Add a job card and update the data set names with your `sharedprefix`.

- ___ 2. Generate the distribution tape.

Run `sharedprefix.MICS.CNTL(LDEBLD)`. Ensure that the job completes with a condition code of zero.

- ___ 3. Print a copy of this guide.

- ___ 4. Ship the tape and the LDE guide to the remote site.

4.5.2 Installing a Remote Site LDE Tape

This checklist is ONLY for installing LDE at a remote site (a site that is not running CA MICS). If you are installing LDE in a CA MICS system, you MUST use the checklist in section 4.4 of this guide.

This section lists the steps required to install LDE at a remote site or one that is installing LDE in libraries other than the standard CA MICS libraries. To perform the installation, follow the steps in this checklist, checking off the steps as you complete them.

Note: Many of the JCL skeletons provided are used for both remote and local operation of the LDE product. In the skeletons you will see references to sharedprefix in the data set names. The term sharedprefix is analogous to yourprefix in remote operations.

___ 1. Load the distribution tape.

Create and run the following JCL to load the JCL from the distribution tape you received from your CA MICS administrator.

```
//unload JOB .....
//STEP1 EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//#CNTL DD DSN=CA.MICS.LIBLOAD.CNTL,
// DISP=OLD,UNIT=_____,
// VOL=SER=_____,
// LABEL=(1,SL)
//CNTL DD DSN=yourprefix.MICS.CNTL,DISP=SHR
//SYSUT3 DD UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSUT4 DD UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSIN DD *
        C I=#CNTL,O=CNTRL
        S M=LDELOAD
/*
```

where:

UNIT= is the unit name of the tape device on which the tape is to be mounted

VOL=SER= is the volume serial number of the tape

yourprefix.MICS.CNTL is the CNTL library of your

choice.

Note: If the data set does not exist, you must allocate it as a PDS with the following DCB attributes: RECFM=FB,LRECL=80,BLKSIZE=6160

___ 2. Load the LDE modules into your libraries.

This step loads the LDE source code and sample JCL into the appropriate libraries. Edit the LDELOAD member of yourprefix.MICS.CNTL. Modify the job card as required, complete the rest of the JCL statements as follows, submit the LDELOAD job, and verify the output.

```
//LOAD EXEC LOAD,  
//   DSP=NEW,      <-- NEW, LIBRARIES MUST BE NEW  
//   TUNIT='____', <-- REQUIRED  
//   TEXPDT=98000, <-- IS TAPE EXPDT OK?  
//   TVOL=_____,  <-- REQUIRED  
//   LIBUNIT=SYSDA, <-- IS LIB DASD UNIT OK?  
//   LIBVOL=,      <-- DO YOU NEED LIB DASD VOL?  
//   WKUNIT=SYSDA, <-- IS WORK DASD UNIT OK?  
//   BLOCK=6160,  <-- LIBRARY BLOCKSIZE  
//   VPREFIX='____' <-- REQUIRED  
//   VMICS='MICS.' <-- REQUIRED
```

where:

TUNIT, TEXPDT, TVOL = unit, expiration date, and volume serial number of the distribution tape

LIBUNIT, LIBVOL = unit and volume serial number of the DASD volume for the CA MICS libraries

WKUNIT = unit for the SYSUT3 AND SYSUT4 work data sets needed by the IEBCOPY utility

VPREFIX = yourprefix for the LDE installation.

This can also be your sharedprefix if you are running LDE at your CA MICS site. Note that this is specified without the trailing period (that is, DP1.SG rather than DP1.SG.)

VMICS = This parameter adds the MICS level to your data set names. If you do not want to include the additional level in your data set names, ensure that VMICS is null (that is, VMICS=). If you want the MICS level added to your

data set names, ensure that VMICS is set to "MICS." (that is, VMICS='MICS.').

Note: You must exit the data set yourprefix.MICS.CNTL for the LDELOAD job to complete because the LDELOAD job uses DISP=OLD.

___ 3. Create the LDEPARM member

Allocate an 80 byte fixed block data set (for example yourprefix.MICS.PARMS) to hold your LDE parameter member(s). Refer to Section 3.1 of this guide for information on the contents of this data set.

___ 4. Allocate suspend files for each IMS system that will be processed by LDE.

Prototype JCL for suspend file allocation was loaded into yourprefix.MICS.CNTL(LDESUSP).

Notes: A unique pair of suspend files must be allocated for each IMS region that will be processed by LDE. These files cannot be shared between archiving jobs or between an archiving job and a CA MICS database unit. Therefore, the job in this member must be run for each IMS region that is to be processed by LDE.

Do NOT allocate this data set as VBS (variable blocked spanned).

Edit LDESUSP, modify the job card, complete the JCL parameters on the EXEC card, and submit the job.

```
//ALLOC EXEC ALLOC,
//   YPFX='_____', <== UNIQUE FOR EACH IMS REGION
//   WKUNIT=SYSDA, <== IS WORK DASD UNIT OK?
//   LIBUNIT=SYSDA, <== IS LIB DASD UNIT OK?
//   LIBVOL=      <== DO YOU NEED A DASD VOL?
```

where:

YPFX - is the prefix for the suspend data sets.
It must be unique for each IMS region
that will be processed by LDE.

WKUNIT - is the unit name of a direct access work

device.

LIBUNIT - is the unit name of the direct access device that will hold the cataloged suspend data sets.

LIBVOL - is the volume serial of the direct access device that will hold the cataloged suspend data sets.

___ 5. Set up the operational JCL.

Prototype IMS operational archive JCL was loaded by the load job into yourprefix.MICS.CNTL under one of the following member names to conform with the operating modes supported by the product:

LDEIMS13 - if you are running LDE as an exit of IMS.

LDESA - if you are running LDE as a stand-alone product.

Change your IMS operational archive JCL to include the DD statements in the applicable member of yourprefix.MICS.CNTL.

Note: The TABLES statement can be read in from the LDEPARM DD statement or can be omitted completely.

If you do not use the CA MICS level in your data set names, be sure to remove them from the data set names in your operational JCL

This will become your production JCL.

___ 6. Make environment-specific changes.

If you are running LDE as an exit to IMS DASD logging, add the following to the archive jobstream JCL.

```
//SYSIN DD *  
EXIT NAME(MALDEXIT)
```

```
*****  
* *  
* Running LDE as an exit requires coordinating *  
* with the person responsible for installing *  
*****
```

```
* and/or maintaining IMS. *
* *
* The LDE option should first be tested on your *
* data center's test IMS region. *
* *
*****
```

- ___ 7. LDE installation is complete. The operational JCL created in step 5 is ready to run.

Chapter 5: MAINTENANCE

This chapter discusses the policies and procedures for maintaining the LDE option.

This section contains the following topics:

[5.1 Maintenance Policies](#) (see page 45)

[5.2 Applying Maintenance](#) (see page 46)

5.1 Maintenance Policies

The following maintenance policies for supporting the LDE product are consistent with CA MICS maintenance policies:

- o You are encouraged to apply the distributed maintenance within 120 days of receiving it.
- o Maintenance is distributed through the CA MICS Product Support Program to the host site. Each change provides a complete description of the problem being fixed, explains the fix in detail, and gives instructions for applying the fix.
- o Each LDE module begins with a maintenance log. Each distributed Product Change contains comments that update the maintenance log. You are encouraged not to omit updates to the maintenance log. Reviewing the maintenance log is usually the easiest way to determine whether a specific fix has been applied to LDE.
- o You are responsible for integrating maintenance and user modifications.
- o Do NOT renumber source code. Maintenance is distributed for these members according to the statement numbers maintained by CA.
- o Sites that execute LDE in remote locations must obtain maintenance from the CA MICS site (local site). You must ensure that the LOAD and ASM libraries are synchronized. Modules such as IMSLOGV6 and IMSLDR20 must be in sync between the remote and local sites.

5.2 Applying Maintenance

This section describes how to apply maintenance to the LDE product.

Applying Maintenance to the Source Code

LDE maintenance is delivered using the CA MICS Product Support Program. See the How to Use the PSP Guide for instructions on applying maintenance using PSP Online.

Assembling and Link Editing LDE Maintenance

LDE is assembled and link edited using your data center's standard assembler and linkage editor.

Chapter 6: REPORTS AND MESSAGES

This chapter describes the reports and messages generated by LDE and includes the actions to be taken if LDE terminates abnormally.

This section contains the following topics:

- [6.1 Normal Termination Report](#) (see page 47)
- [6.2 Record Distribution Report](#) (see page 47)
- [6.3 System Abend Messages and Maintenance](#) (see page 48)
- [6.4 LDE User Abend Messages](#) (see page 49)

6.1 Normal Termination Report

When LDE terminates normally, a report is produced from the contents of the MAOUTPUT data set. It includes the numbers of records read and processed, allocated table sizes, table utilization, and other environment indicators.

6.2 Record Distribution Report

CA MICS Log Data Extractor Record Distribution Report Copyright (C) 2014 CA. All Rights Reserved.		
IMS Region(XXXX) IMS Release(NN)		
Record Type	Record Count	Average Length
10	6	60
16	1,514	80
40	3	616
42	1	600
45	68	508
AD	2	96
FA	62,001	1,024

Figure 6-2. Record Distribution Report

When LDE terminates, the Record Distribution Report is produced. Statistics that are displayed on this report include, for each record type (IMS Log Record Identifier), the number of records written to the output file (MAOUTPUT) and the average length of the record.

This report allows an accurate calculation of the DASD space needed for LDE files. See Section 2.1, "Estimating the Size of the LDE Output File."

6.3 System Abend Messages and Maintenance

- o If the abend is due to a lack of space in LDE's output data set you receive an abend code such as B37, D37, or E37. Do the following:
 - Allocate a larger data set.
 - Run the LDECOPY job from the appropriate CNTL library. The LDECOPY job does a SAS REPRO from the affected data set to the larger data set.
 - Restart the archive job.

Duplicate record deletion logic in CA MICS will eliminate any duplicate transactions occurring because of the rerun of the archive.

- o If the abend is due to a failure in LDE, IMSLOGV6, or IMSLDR20:
 - Deactivate LDE by removing the EXIT NAME(MALDEXIT) statement from the archive JCL.

```
*****  
*                                                                 *  
*   In all cases, contact Technical Support at                   *  
*   http://ca.com/support for corrective measures.               *  
*                                                                 *  
*****
```

6.4 LDE User Abend Messages

While LDE does not produce messages, it does issue user abends when situations occur from which it cannot recover. In this section, we document these abends and the respective recovery procedures.

```
*****  
* U0200 *  
*****
```

When MALDEXIT issues the message, either the release or option specified in a LDEPARM member is incorrect.

```
*****  
* U0201 *  
*****
```

When MALDEXIT issues the message, either the release or option specified in a LDEPARM member is incorrect.

```
*****  
* U0202 *  
*****
```

When MALDEXIT issues the message, either the release or option specified in a LDEPARM member is incorrect.

```
*****  
* U0203 *  
*****
```

When MALDEXIT issues the message, either the release or option specified in a LDEPARM member is incorrect.

```
*****  
* U0204 *  
*****
```

When MALDEXIT issues the message, either the release or option specified in a LDEPARM member is incorrect.

```
*****
```

* U0998 *

When MALDEXIT issues the message, either the release or option specified in a LDEPARM member is incorrect.

```
+-----+  
| I M S 0 0 1 0 0 |  
+-----+
```

TEXT: -----
Record Type Summary for DDNAME: IMSE

Log Record	Records Added	Records Deleted
------------	---------------	-----------------

TYPE: Information

REASON: Printed at the end of IMS DAILY processing if the DEBUG data element is set. Shows the headers for the data that follows.

ACTION: None

REFERENCES: None