

CA IDMS™ Enforcer

Enforcer User Guide

Release 18.5.00



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Chapter 1: Introduction

This manual provides the information needed to use CA IDMS™ Enforcer. In addition, the many features that CA IDMS Enforcer offers are documented to assist you.

Chapter 2: General Information

This section contains the following topics:

[What Is CA IDMS Enforcer?](#) (see page 11)

[CA IDMS Enforcer Defined](#) (see page 11)

[Product Features](#) (see page 12)

[Synopsis of a Typical Enforcement Strategy](#) (see page 13)

[Environment](#) (see page 13)

[Recovery to Previous Session of CA IDMS Enforcer](#) (see page 13)

What Is CA IDMS Enforcer?

CA IDMS Enforcer provides automatic verification and enforcement of naming standards, entered into the CA IDMS integrated data dictionary. You can maximize the benefit of establishing standards through the use of CA IDMS Enforcer online definition and maintenance utilities in combination with active and/or passive enforcement components.

CA IDMS Enforcer Defined

CA IDMS Enforcer provides automatic verification and enforcement of naming standards, entered into the CA IDMS integrated data dictionary. You can maximize the benefit of establishing these standards through the use of CA IDMS Enforcer.

Product components are available to:

- Define and maintain enforcement standards
- Actively enforce these standards, both online and in batch
- Audit the data dictionary for compliance with naming standards.

With the menu-driven online system, you can define and maintain enforcement standards. Active and Passive Enforcement facilitate the enforcement of your site specific standards.

Standards Installed on CA IDMS Database

CA IDMS Enforcer uses CA IDMS as its database management system.

When CA IDMS Enforcer is fully implemented on a CA IDMS database, features inherent to CA IDMS are available as follows:

- Share-ability
- CA IDMS Recoverability
- CA IDMS Backup and Restoration.

Product Features

The following features of CA IDMS Enforcer facilitate the enforcement of naming standards:

- Online definition and maintenance of naming standards for data dictionary entities including user-defined entity names
- Active enforcement--enforcement for entities entered using system generation, schema, subschema, and CA-DDDL compilers and the data dictionary Menu Facility
- Passive enforcement--audit reporting against the data dictionary for compliance
- Flexible, user-defined levels of enforcement
- Batch utilities to support multiple machines and central versions
- Standard compiler exit protocol is used
- Runtime optimizing techniques to minimize the impact of enforcement
- Print facility (batch)
- Online documentation.

Synopsis of a Typical Enforcement Strategy

The following steps indicate one of the ways an enforcement strategy may be approached:

Step 1--Develop standards using Online Definition and Maintenance utility functions

Step 2--Execute Passive Enforcement against the data dictionary

- Use the Dictionary Audit utility in the Terse mode to determine the areas of concern
- Rerun the audit with the Expanded mode to present diagnostics to development management

Step 3--Develop an implementation schedule

- Enable Active Enforcement at the Informational level
- Generate enforcement at a preventive level with a pre-determined implementation date

Environment

Teleprocessing Environment:

- CA IDMS/DC

Terminal Type:

- 3270 or 3270-compatible terminals including models 2, 3, 4, and 5.

Recovery to Previous Session of CA IDMS Enforcer

The recovery feature allows you to recover to the screen you were accessing when an abnormal exit from CA IDMS Enforcer occurred.

In order to recover successfully, you must specify either of the following at the CA IDMS Enforcer Recovery screen:

- The user ID entered during CA IDMS/DC sign on
- The logical terminal identifier.

If the central version (CV) becomes inactive for any reason, recovery to the previous session of CA IDMS Enforcer is not possible.

Chapter 3: Using CA IDMS Enforcer

This section contains the following topics:

- [About This Chapter](#) (see page 15)
- [Getting Started](#) (see page 15)
- [Sign On To CA IDMS Enforcer](#) (see page 16)
- [CA IDMS Enforcer Options](#) (see page 18)
- [Signing Off CA IDMS Enforcer](#) (see page 20)
- [Online Definition and Maintenance](#) (see page 20)
- [Using the CA IDMS Enforcer Online System](#) (see page 20)
- [Options](#) (see page 21)
- [Browse Option](#) (see page 21)
- [Edit Option](#) (see page 26)
- [Utilities Option](#) (see page 36)
- [Tutorial Option](#) (see page 67)
- [Exit Option](#) (see page 67)
- [Active Enforcement](#) (see page 68)
- [What is Active Enforcement?](#) (see page 68)
- [Activating Enforcement Online](#) (see page 69)
- [Activating Enforcement--Batch](#) (see page 73)
- [Passive Enforcement](#) (see page 76)
- [What is Passive Enforcement?](#) (see page 77)
- [Activating Passive Enforcement--Batch](#) (see page 77)

About This Chapter

This chapter is divided into four sections: Getting Started, Online Definition and Maintenance, Active Enforcement, and Passive Enforcement.

Getting Started

This section helps you to get started with CA IDMS Enforcer. It describes how to:

- Sign on to CA IDMS Enforcer, user profile information available at sign on and possible security requirements for signing on
- Access the five options available to you from the Primary Menu screen: Browse, Edit, Utilities, Tutorial, and Exit
- Sign off of CA IDMS Enforcer.

Read this section before you begin your first session with CA IDMS Enforcer.

Sign On To CA IDMS Enforcer

Follow the steps below to sign on to CA IDMS Enforcer (unless your DBA or Security Administrator has implemented a different procedure).

1. Access your online CA IDMS/DC system.
2. At the CA IDMS/DC system prompt, type the task code assigned to CA IDMS Enforcer system and press the Enter key. Obtain the task code, which is assigned at the time of installation, from your DBA.

The Primary Menu screen is displayed.

User Profile Information

User profile information is acquired in one of these ways: through the CA IDMS user ID if you are signed on to the CA IDMS/DC or through the logical terminal identifier (LTERM-ID) if you are not signed on to CA IDMS/DC. User screen entries are retained between sessions to recall last structure, entity, template, or system-owned values specified.

CA IDMS Enforcer Security

If your company has implemented task CA IDMS Enforcer structure security, access into CA IDMS Enforcer is limited to the level of authority assigned to a user in conjunction with task and activity resources contained in your centralized security system.

For more details on CA IDMS Enforcer security, see [Utilities Option](#) (see page 36) and Chapter 5, "Operations".

CA IDMS Enforcer Primary Menu Screen

CA IDMS Enforcer Primary Menu screen provides five options, a message area, copyright information, and system identification. The fields described below are shown in Exhibit 3.1.

- **OPTION**--Select the option that you want by typing the character that precedes the option name in this field.
- **Message Area**--Messages are displayed below the list of options. You can access the online documentation, which includes the Online Message Facility, by selecting option T from the Primary Menu screen.

At any point in the online session, you can use the HELP command to access the online documentation which includes:

- Information about CA IDMS Enforcer screens
- Complete details on each of the commands, options, and keys used to edit a template
- Necessary commands used to scroll through template documentation
- Message text.

If task security has been defined for CA IDMS Enforcer, your user ID used to signon to CA IDMS/DC will require execution privileges for the task category resource assigned to access the CA IDMS Enforcer Primary Menu. See [Operations](#) (see page 119) for more information on task security.

```

          CCCCCCCC
          CCCCCCCC
          CCC
          CCC   AAAA
          CCC   AAAAA
          CCC   AAAAAA
          CCC   AAA AAA
          CCC AAA AAA
          CCAAACCCCC
          AAACCCCCC
          AAA   AAA
          AAA   AAA
          AAA   AAA
          CA IDMS/Extractor
              Rnn.n
              OnLine
          Definition and Maintenance
              mm/dd/yy hh:mm

          OPTION ==>
          1 Browse   - Display Enforcement Standards
          2 Edit     - Create or Change Naming Standards
          3 Utilities - Perform Enforcement Structure Utility
                   Functions
          T Tutorial - Display Information about CA IDMS/Extractor
          X Exit     - Exit from the CA IDMS/Extractor System

          Copyright (c) 2003 CA

```

Exhibit 3.1 CA IDMS Enforcer Primary Menu Screen

CA IDMS Enforcer Options

These options are available to you from CA IDMS Enforcer Primary Menu screen:

- Browse
- Edit
- Utilities
- Tutorial
- Exit.

Browse

The Browse Option allows you to view details about the dictionary entity name values enforced at your site. This option does **not** allow you to add, change, or delete any values.

Selection lists containing the names of dictionaries, nodes, entity-types, and templates in CA IDMS Enforcer database are available. Templates are the lowest level in this hierarchy. You can directly access a specific template by entering the name of the dictionary, node, entity-type, and template.

For details on the Browse Option, see [Online Definition and Maintenance](#) (see page 20) and the online documentation.

Edit

The Edit Option allows you to modify or delete enforcement values through CA IDMS Enforcer Edit Template Format/Fields screen, commands, and PF keys.

For details on the Edit Option, see [Online Definition and Maintenance](#) (see page 20) and the online documentation.

Utilities

Use the Utilities Option to:

- Define security, environment, and structure
- Add or copy dictionaries, entities, or templates
- Add, modify, or delete system-level value tables and value ranges.

Three definition utilities are available: Security, Environment, and Structure. The Security utility is used to define security for structures. The Environment utilities are used to define severity levels, runtime directives, and also to activate or inactivate enforcement. The Structure utilities are used to delete enforcement structures or modify generation options.

There are three add/copy function utilities available. With these utilities you can add or copy new or existing enforcement structures.

In addition, the System Level Entities utility allows you to add, modify, and delete system-level values tables and value ranges. This prevents the storage of redundant versions of value sets and value ranges at multiple field levels.

For more information about the Utilities Option, see [Online Definition and Maintenance](#) (see page 20) and the online documentation.

Tutorial

The Tutorial Option provides you with information about CA IDMS Enforcer. You can view the online documentation sequentially or, by making selections from the menus offered within this documentation, you can view information about specific topics.

For more information about using the Tutorial Option, see [Online Definition and Maintenance](#) (see page 20).

Exit

When you select the Exit Option, all of CA IDMS Enforcer operations are terminated and you are returned to the CA IDMS/DC Entry screen.

Signing Off CA IDMS Enforcer

You can exit CA IDMS Enforcer from the Primary Menu screen or from any of the lower level screens.

To exit CA IDMS Enforcer from the Primary Menu screen:

- Type an **X** (indicating the Exit Option) in the OPTION field and press the Enter key.

To exit CA IDMS Enforcer from any lower level screen:

- Type **=X** in the COMMAND field and press the Enter key.

Online Definition and Maintenance

This portion of the chapter details CA IDMS Enforcer's online definition and maintenance system. It includes information to help you display, add, modify, or delete the enforcement values found in the CA IDMS Enforcer database.

Note: CA IDMS Enforcer is not a front-end processor to CA IDMS security features and in no way establishes CA IDMS or CA IDMS/DC data resource structures or components.

Specifically:

- Adding a dictionary and node structure to the CA IDMS Enforcer database does not establish a dictionary in the central version where CA IDMS Enforcer is installed.
- Assigning security to a CA IDMS Enforcer internal dictionary and node structure does not define security counterparts required for CA IDMS centralized security feature implementation.
- Adding an entity type to the CA IDMS Enforcer database in no way establishes that entity type as a data resource component in a CA IDMS dictionary. (A "user-defined entity" must be established following Data Dictionary Definition Language (DDDL) conventions.)

Using the CA IDMS Enforcer Online System

CA IDMS Enforcer online system is used to define and maintain enforcement values. By using the menu-driven screens that make up the online system, you can add, modify, delete, or display these enforcement values.

Establishing Enforcement Values

Enforcement values can be established at your site by adding, modifying, or deleting enforcement structures, entity types, and template definitions using the Utilities and Edit options.

Options

Use the following options to display, add, modify, or delete enforcement values:

- Browse
- Edit
- Utilities.

In addition, the Tutorial option is available. For information about this online documentation, see [Tutorial Option](#) (see page 67).

Browse Option

The Browse Option allows you to display the contents of each enforcement template in the CA IDMS Enforcer database. This option does **not** allow you to add, modify, or delete any values.

Accessing an Enforcement Template

You can access an enforcement template directly or indirectly.

Direct Access

You can directly access an enforcement template from the Standards Enforcement Access screen by typing specific dictionary, node, entity type, and template names and pressing the Enter key. It is not necessary to type the dictionary and node names if you want to access the default dictionary and node. After you press the Enter key, the contents of the template is displayed on the Browse Template screen. You can browse a template definition using browse commands to scroll. For more information on these commands, see the online documentation.

Indirect Access

You can also access an enforcement template indirectly from the Standards Enforcement Access screen by using a series of selection list screens that enable you to choose dictionary, node, entity type, and template names.

Use CA IDMS Enforcer commands to scroll forward and backward through selection lists of more than one page. For information on these commands, see the online documentation.

Browse Option Screens

CA IDMS Enforcer provides a series of screens within each option. The Browse Option uses the following screens: Standards Enforcement Access, Dictionary/Node List, Entity List, Template List, and Browse Template.

Browse Security

If task or CA IDMS Enforcer structure security is defined in your centralized security system, your CA IDMS/DC user ID used to signon to your central version (CV) will require the following execution privileges for:

- The task category resource assigned to Standards Enforcement Access for the Browse option
- The Browse activity resource assigned to the dictionary/node structure defined in the CA IDMS Enforcer database.

Standards Enforcement Access Screen (Browse)

To display the Standards Enforcement Access screen from the Primary Menu screen:

1. Type the character **1** (which represents the Browse Option) in the OPTION field.
2. Press the Enter key.

This screen provides direct and indirect access to CA IDMS Enforcer's Browse structure.

```

CA IDMS Enforcer Rnn.n — Standards Enforcement Access — mm/dd/yy hh:mm
COMMAND ==> ESXABAC

Specify "DICTIONARY" and "NODE" name for Entity/Template List:
Dictionary ==> *      ( * for List of all Dictionaries within
Node              ==> *      ( * for List of all Nodes within
                             Dictionary, blank for default Node)

ENTITY-TYPE NAME:      (Blank for Entity-Type List)
Entity Type ==>

TEMPLATE NAME:         (Blank for Template List)
Template ==>

```

Exhibit 3.2: Standards Enforcement Access (Browse)

Dictionary/Node List Screen

The Dictionary/Node List screen presents a list of dictionary/node structures.

To select a dictionary/node structure name:

1. Type **S** in the selection field (to the left of the dictionary/node structure name).
2. Press the Enter key.

The Entity List screen is displayed.

```

CA IDMS Enforcer Rnn.n — Dictionary/Node List — mm/dd/yy hh:mm
COMMAND ==> ESXADL

      DICT      NODE      PENDING      CURRENT      LAST      LAST
      NAME      NAME      GENERATION  GENERATION  UPDATED  USER
      PROD      NODELD09  mm/dd/yy   mm/dd/yy   mm/dd/yy  UPLOAD
      TEST
      **END**

```

Exhibit 3.3: Dictionary/Node List Screen (Browse)

Entity List Screen

The Entity List screen presents a list of all entity-type names within the selected or specified dictionary/node structure. Entity types appear in alphabetically ascending order.

To select an entity-type name:

1. Type **S** in the selection field (to the left of the entity-type name).
2. Press the Enter key.

The Template List screen is displayed.

```

CA IDMS Enforcer Rnn  Entity List  mm/dd/yy hh:mm
COMMAND ==>                                     ESXAEL

DICTIONARY: PROD      NODE: NODELD09

ENTITY-TYPE          INCLUDE/  LAST      LAST
NAME                 EXCLUDE  UPDATED  USER
AREA                 I        mm/dd/yy  UPLOAD
ATTRIBUTE            I        mm/dd/yy  UPLOAD
CLASS                I        mm/dd/yy  UPLOAD
COBOL ELEMENT       I        mm/dd/yy  UPLOAD
DESTINATION         I        mm/dd/yy  UPLOAD
ELEMENT              I        mm/dd/yy  UPLOAD
ELEMENT SYNONYM     I        mm/dd/yy  UPLOAD
ENTRY POINT         I        mm/dd/yy  UPLOAD
FILE                 I        mm/dd/yy  UPLOAD
FILE SYNONYM        I        mm/dd/yy  UPLOAD
LINE                 I        mm/dd/yy  UPLOAD
LOAD MODULE         I        mm/dd/yy  UPLOAD
LOGICAL RECORD      I        mm/dd/yy  UPLOAD
LOGICAL - TERMINAL (LTERM) I        mm/dd/yy  UPLOAD
MAP                  I        mm/dd/yy  UPLOAD
MESSAGE             I        mm/dd/yy  UPLOAD
MODULE              I        mm/dd/yy  UPLOAD

```

Exhibit 3.4: Entity List Screen (Browse)

Template List Screen

The Template List screen presents a list of templates within a specified or selected entity type. Templates appear in Search Order sequence.

To select a template name:

1. Type **S** in the selection field (to the left of the template's Search Order).
2. Press the Enter key.

The Browse Template screen is displayed.

Additional Information

For information about the commands available at the list screens, see the online documentation.

```

CA IDMS Enforcer Rnn.n  — Template List  ————— mm/dd/yy hh:mm
COMMAND ==>                                                    ESXATL

DICTIONARY: PROD          NODE: NODELD09  ENTITY: AREA

SEARCH  TEMPLATE                INCLUDE/ SEVRTY BRACKET  LAST   LAST
ORDER  NAME                    EXCLUDE  CLASS  MODE   UPDATED USER
01  AREA-NAME                    I        001    N    mm/dd/yy  UPLOAD
02  EMPDB-AREA-NAME              I        001    N    mm/dd/yy  UPLOAD
03  PAYR-AREA-NAME               I        001    Y    mm/dd/yy  UPLOAD
04  ACCT-RECV-AREA-NAME         I        001    N    mm/dd/yy  UPLOAD
05  PARTS-DB-AREA-NAME          I        001    N    mm/dd/yy  UPLOAD
06  BLNG-DB-AREA-NAME           I        001    N    mm/dd/yy  UPLOAD
07  CONTR-DB-AREA-NAME          I        001    N    mm/dd/yy  UPLOAD
50  DELQT-DB-AREA-NAME          E        002    Y    mm/dd/yy  UPLOAD
51  DEPR-DB-AREA-NAME           E        002    Y    mm/dd/yy  UPLOAD
52  EMPLR-DB-AREA-NAME          E        002    Y    mm/dd/yy  UPLOAD
53  DISCRP-DB-AREA-NAME         E        003    N    mm/dd/yy  UPLOAD
70  FST-AREA-NAME                I        001    N    mm/dd/yy  UPLOAD
71  FLD-AREA-NAME                I        001    N    mm/dd/yy  UPLOAD
72  FIN-AREA-NAME                I        001    N    mm/dd/yy  UPLOAD
73  FIFO-AREA-NAME              I        001    N    mm/dd/yy  UPLOAD
74  FXD-AREA-NAME               I        001    N    mm/dd/yy  UPLOAD
75  FLW-AREA-NAME               I        001    N    mm/dd/yy  UPLOAD

```

Exhibit 3.5: Template List Screen (Browse)

Browse Template Screen

The Browse Template screen can be accessed through the Standards Enforcement Access screen, the Template List screen, or by using the DISPLAY command at the Active Enforcement screen. Detailed information about the specified template appears on this screen including: template identification, template format, and template field detail.

Identification--The names of the dictionary, node, entity type, and template.

Format--The format of the template is displayed in two lines: the symbolic representation and the numeric grid. The symbolic representation presents the contents of each field. The numeric grid is provided as an aid to locating field position.

Field Detail--Template field detail provides information about each field of the template. This information includes template bracket mode, the length to be enforced for the template, the severity level, field position and length, data type, field description, and a list of possible values.

Browse Commands

See the online documentation for information about the Browse commands.

```
BROWSE - TEMPLATE                                COLUMNS 001 079
COMMAND ==>                                     SCROLL ==> CSR
*** TOP OF DATA ***** CA IDMS Enforcer ***

Enforcement for:
  Dictionary  PROD
  Node        NODELD09
  Entity      AREA
  Template    AREA-NAME

  +-----+
  |s|s|s|s|s|s|t|A|R|E|A|*|*|*|
  +-----+

where:

  Template mode is bracketed.
  Enforcement template length is 16.
  Severity class is 001 and severity level is E-error.

  ssssssss Position: 01 Length: 08
  Data type is Alphanumeric.
  "s" = The 8 character descriptor of the database
```

Exhibit 3.6: Browse Template Screen

Edit Option

The Edit Option allows authorized users to modify or delete template structures that exist in the CA IDMS Enforcer database.

Accessing an Enforcement Template

You can access an enforcement template directly or indirectly.

Direct Access

You can directly access an enforcement template from the Standards Enforcement Access screen by typing specific dictionary, node, entity type, and template names and pressing the Enter key. It is not necessary to type the dictionary and node names if you want to access the default dictionary and node. After you press the Enter key, the Edit Template Format/Fields screen is displayed.

Indirect Access

You can also access an enforcement template indirectly from the Standards Enforcement Access screen by using a series of selection list screens that enable you to choose dictionary, node, entity type, and template names.

Use CA IDMS Enforcer scroll commands to scroll forward and backward through selection lists of more than one page. For information about these commands, see the online documentation.

Note: Following an Edit session, you must generate or regenerate the relocatable table used for runtime enforcement. See [Utilities Option](#) (see page 36).

Edit Security

If task or CA IDMS Enforcer structure security is defined in your centralized security system, your CA IDMS/DC user ID used to signon to CA IDMS/DC will require the following execution privileges for:

- The task category resource assigned for the CA IDMS Enforcer Edit option
- The Edit activity resource assigned to the dictionary/node structure defined in the CA IDMS Enforcer database.

Edit Option Screens

CA IDMS Enforcer provides a series of screens within each option. The Edit Option uses the following screens:

- Standards Enforcement Access (Edit)
- CA IDMS Enforcer Dictionary/Node List
- CA IDMS Enforcer Entity List
- Template List
- Edit Template Format/Fields
 - Confirm Field Modification
 - Confirm Field Deletion
 - Indirect Field Reference
 - Edit Template Field Range Value(s)
 - System Table Reference
 - Edit Template Field Value(s).

Selection List Screens

The Selection List screens, detailed previously within the Browse Option, are also used to select dictionary/node, entity type, and template names for the Edit Option.

To select an item from any of these list screens:

1. Type **S** in the selection field (to the left of the item name).
2. Press the Enter key.

CA IDMS Enforcer Dictionary/Node List Screen

The Dictionary/Node List screen (Exhibit 3.3) presents a list of dictionary/node structures.

The Entity List screen is displayed after you make your selection.

CA IDMS Enforcer Entity List Screen

The Entity List screen (Exhibit 3.4) presents a list of all entity type names within the selected or specified dictionary/node structure established in the CA IDMS Enforcer database.

The Template List screen is displayed after you make your selection.

Template List Screen

The Template List screen (Exhibit 3.5) presents a list of templates within a specified or selected entity type.

The Edit Template screen is displayed after you make your selection.

Additional Information

See the online documentation for additional information about the Edit option, commands, and PF keys for scrolling and template editing.

Standards Enforcement Access Screen (Edit)

To display the Standards Enforcement Access screen (Edit) from the Primary Menu screen:

1. Type the character **2** (which represents the Edit Option) in the OPTION field.
2. Press the Enter key.

This screen provides direct and indirect access to CA IDMS Enforcer's Edit structure.

```

CA IDMS Enforcer Rnn.n — Standards Enforcement Access — mm/dd/yy hh:mm
COMMAND ==> ESXAEAC

Specify "DICTIONARY" and "NODE" name for Entity/Template List:
Dictionary ==> PROD      ( * for List of all Dictionaries within
                          Node, blank for default Dictionary)
Node          ==> NODELD09 ( * for List of all Nodes within
                          Dictionary, blank for default Node)

ENTITY-TYPE NAME: (Blank for Entity-Type List)
Entity Type ==> AREA

TEMPLATE NAME: (Blank for Template List)
Template ==> AREA-NAME

* The following line commands will be available as indicated:

S - Select item for more detail in a Dictionary, Entity, or Template List
A - Add a new Field Value or Range Values in a Field Edit List
M - Modify a Field Value or Field Range Values in Field Edit Lists
D - Delete Field Value or Range Values in Field Edit Lists

```

Exhibit 3.7: Standards Enforcement Access Screen (Edit)

Edit Template Format and Fields Screen

The Edit Template Format/Fields screen is used to edit template field formats and enforcement value specifications.

For a description of each field presented on this screen and information about the commands available, see the online documentation. For details on template bracket mode, refer to [Operations](#) (see page 119).

```
CA IDMS/ENFORCER Rnn.n — Edit Template Format/Fields — mm/dd/yy hh:mm
COMMAND ==> ESXAETF

DICTIONARY: PROD      NODE: NODELD09 ENTITY: AREA
ENTITY LENGTH: 16      TEMPLATE: AREA-NAME
TEMPLATE FIELD NUMBER: 01      FIELD POSITION: 01      FIELD LENGTH: 08
For Field Detail, position cursor under a Field and press the "ENTER" key:
      V
Template Field(s) Format ==> ssssssstAREA***
      —+----1----+
Template Bracket Mode On? ==> Y      (Y-Yes, N-No)
Enforcement Template Length ==> 16
Action on Template Field ==> M      (A-Add, D-Delete, I-Inquire, M-Modify)
Field Identifier ==> iiii
Field Value Type ==> I      (D-Data, I-Indirect, R-Range, S-Systable, V-Value)
Field Data Type ==> A      (A-Alphanumeric, B-alphaBetic, N-Numeric)
Field Description ==> "s" = The 8 character descriptor of the database
                        system the area name definition is for. Example:
                        CUSTOMER-FIL1-AREA
                        CUSTOMER-FIL2-AREA
                        CUSTOMER-FIL3-AREA
                        Where CUSTOMER represents the "s" field designa-
                        tor portion of the template format.
Extended Field Edit? ==> Y      (Y-Yes, N-No, to specify "Field Value Type".)
```

Exhibit 3.8: Edit Template Format/Fields Screen

Confirm Field Modification Screen

The Confirm Field Modification screen appears to verify the modification of a template field on the Edit Template Format/Fields screen.

To complete the modification:

- Press the Enter key.

To terminate the modification:

- Type **END** in the COMMAND field and press the Enter key.

After completing or terminating the modification, you return to the Edit Template Format/Fields screen.

```

CA IDMS Enforcer Rnn.n — Confirm Field Modification — mm/dd/yy hh:mm
COMMAND ==> ESXAEMC

*****
** WARNING: A FIELD has been selected for length/type modification. **
** ACTION: Field Value Types associated with the indicated FIELD **
** will be erased and the TEMPLATE adjusted for length by **
** appending wildcards (*), or by compressing existing "**. **
** **
** ENTITY: AREA **
** TEMPLATE: AREA-NAME **
** V **
** FIELD: ssssssstAREA*** **
** —+----1----+ **
** DESC: "s" = The 8 character descriptor of the database **
** system the area name definition is for. Example: **
** CUSTOMER-FIL1-AREA **
** CUSTOMER-FIL2-AREA **
** CUSTOMER-FIL3-AREA **
** Where CUSTOMER represents the "s" field designa- **
** tor portion of the template format. **
** INSTRUCTIONS: Press "ENTER" key to confirm modify request. **
** Enter "END" command to cancel modify request. **
*****

```

Exhibit 3.9: Confirm Field Modification Screen

Confirm Field Deletion Screen

The Confirm Field Deletion screen appears to verify the deletion of a template field on the Edit Template Format/Fields screen.

To complete the deletion:

- Press the Enter key.

To terminate the deletion:

- Type **END** in the COMMAND field and press the Enter key.

After completing or terminating the deletion, you return to the Edit Template Format/Fields screen.

```
CA IDMS Enforcer Rnn.n --- Confirm Field Deletion ----- mm/dd/yy hh:mm
COMMAND ==> ESXAEDC

*****
** WARNING: A FIELD has been selected for deletion. **
** ACTION: The indicated FIELD will be removed, subsequent fields **
** compressed, and equivalent wildcards (*) appended to **
** the TEMPLATE. **
** **
** ENTITY: AREA **
** TEMPLATE: AREA-NAME **
** V **
** FIELD: ssssssstAREA*** **
** -----1----- **
** DESC: "s" = The 8 character descriptor of the database **
** system the area name definition is for. Example: **
** CUSTOMER-FIL1-AREA **
** CUSTOMER-FIL2-AREA **
** CUSTOMER-FIL3-AREA **
** Where CUSTOMER represents the "s" field designa- **
** tor portion of the template format. **
** INSTRUCTIONS: Press "ENTER" key to confirm delete request. **
** Enter "END" command to cancel delete request. **
*****
```

Exhibit 3.10: Confirm Field Deletion Screen

Indirect Field Reference Screen

The Indirect Field Reference screen is used to indirectly reference a pre-defined template structure for entity occurrence naming standards.

Rules for Indirect References

Indirect references have some restrictions:

- Indirect references may only be made to structures within the same dictionary and node as the structure being accessed or edited.
- The template being referenced cannot itself contain an indirect reference.
- Indirect references must be made with respect to the rules governing the template being referenced.
- The length of the indirect field must be exactly equal to the maximum length of the specified entity.

Information about the template/field from the Edit Template Format/Fields screen appear as protected literals: Dictionary, Node, Entity, Template, Field Identifier, Data Type, Field Number, and Template Bracket Mode status.

```

CA IDMS Enforcer Rnn.n — Indirect Field Reference ————— mm/dd/yy hh:mm
COMMAND ==> ESXAEFI

      DICTIONARY:  PROD          NODE:  NODELD09 ENTITY:  AREA
      TEMPLATE:   AREA-NAME
      FIELD:      ssssssss
FIELD NUMBER:  01          TEMPLATE BRACKET MODE:  Y

FIELD INDIRECT REFERENCE:

Reference Entity ==>
Reference Template ==>
Description ==>

```

Exhibit 3.11: Indirect Field Reference Screen

Edit Template Field Range Value(s) Screen

The Edit Template Field Range Values screen is used to specify a FROM and TO set of values into which the characters in a particular field must fit.

A field may have both included and excluded value ranges. For example, a 5-byte field in a template may represent an accounting code. The code may be defined to fit into the following two value ranges:

```

INCLUSIONARY RANGE: 00001-66666
EXCLUSIONARY RANGE: 55555-55557
INCLUSIONARY RANGE: 88888-99999
EXCLUSIONARY RANGE: 90137-90935
    
```

The following fields echo, as protected literals, the name of the template structure displayed on the Edit Template Format/Fields screen: Dictionary, Node, Entity, Template, Field Identifier, and Data Type, Field Number, and Template Bracket Mode status.

```

CA IDMS Enforcer Rnn.n — Edit Template Field Range Value(s) — mm/dd/yy hh:mm
COMMAND ==>
                                     ESXAEFR

    DICTIONARY: PROD      NODE: NODELD09 ENTITY: AREA
    TEMPLATE:  AREA-NAME
    FIELD:     ssssssss   DATA TYPE: ALPHANUMERIC
    FIELD NUMBER: 01     TEMPLATE BRACKET MODE: Y
-----
    INCLUDE/EXCLUDE? ==> (I/E)  DESC ==>
      FROM RANGE ==>
      TO RANGE ==>
-----
    INCLUDE/EXCLUDE? ==> (I/E)  DESC ==>
      FROM RANGE ==>
      TO RANGE ==>
-----
    INCLUDE/EXCLUDE? ==> (I/E)  DESC ==>
      FROM RANGE ==>
      TO RANGE ==>
-----
    INCLUDE/EXCLUDE? ==>
      FROM RANGE ==>
    *** END ***   TO RANGE ==>
-----
\
    
```

Exhibit 3.12: Edit Template Field Range Value(s) Screen

System Table Reference Screen

Use the System Table Reference screen to associate a field with a system-owned value set or value range.

To make this association:

- The system table must be defined to the CA IDMS Enforcer system
- If the system table represents a value range, the associated field cannot be compressible
- The length of the system table entry must be greater than or equal to the field's length.

Information about the template/field from the Edit Template Format/Fields screen appear as protected literals: Dictionary, Node, Entity, Template, Field Identifier, Data Type, Field Number, Template Bracket Mode, and the Table Type.

```

CA IDMS Enforcer  Rnn.n  — System Table Reference  _____ mm/dd/yy hh:mm
COMMAND ==>                                           ESXASTE

      DICTIONARY:  PROD      NODE:  NODELD09      ENTITY:  AREA
      TEMPLATE:   AREA-NAME
      FIELD:      SSSSSSSS
FIELD NUMBER:    01      TEMPLATE BRACKET MODE:  Y
      TABLE TYPE:                (V-VALUE SET, R-RANGE SET)

FIELD SYSTEM TABLE REFERENCE:

      System Table Name ==>
      Table Description ==>
  
```

Exhibit 3.13: System Table Reference Screen

Edit Template Field Value(s) Screen

The Edit Template Field Values screen is used to specify those values that must be included or excluded for the field position and length in a template for the entity occurrence. A field value may not exceed the maximum length of the field.

The following fields echo, as protected literals, the name of the template structure displayed on the Edit Template Format/Fields screen: Dictionary, Node, Entity, Template, Field Identifier, Data Type, Field Number, and Template Bracket Mode status.

```
CA IDMS Enforcer Rnn.n — Edit Template Field Value(s) — mm/dd/yy hh:mm
COMMAND ==> ESXAEFV
ENF0088W NO VALUES/VALUE RANGES HAVE BEEN ASSIGNED TO FIELD
DICTIONARY: PROC NODE: NODELD09 ENTITY: AREA
TEMPLATE: AREA-NAME
FIELD: ssssssss DATA TYPE: ALPHANUMERIC
FIELD NUMBER: 01 TEMPLATE BRACKET MODE: Y
Include/Exclude Field Value(s) for next generation? => I (I-include/E-exclude)
FIELD VALUE VALUE DESCRIPTION

**END**
```

Exhibit 3.14: Edit Template Field Value(s) Screen

Utilities Option

Use the Utilities Option to define security, environment, and structure; add or copy dictionaries, entities, or templates; and add, modify, or delete system-level value tables and value ranges.

Utilities Option Screens

CA IDMS Enforcer provides a series of screens within each option. The Utilities Option uses the following screens:

- Standards Enforcement Utilities**
 - Dictionary/Node Security List
 - Environment Utilities
 - Environment--Severity Levels
 - Environment--Runtime Directives
 - Environment--Runtime Generation

- Structure Utility Access
 - Dictionary/Node List (Utilities)
 - Confirm Dictionary Delete
 - Entity List (Utilities)
 - Confirm Entity Delete
 - Template List (Utilities)
 - Confirm Template Delete
- Add/Copy Enforcement Structure
 - Confirm Structure Replace
- Add/Copy Entity Type
 - Confirm Entity Replace
- Add/Copy Template
 - Confirm Template Replace
- System Table Maintenance
 - System Table List
 - Confirm System Table Delete
 - System Table Field Value(s)
 - System Table Field Range Value(s)

Standards Enforcement Utilities Security

If task security has been implemented at your site, your CA IDMS/DC user ID used at signon will be required to have access privileges to the Standards Enforcement Utilities task resources contained in your system catalog.

If CA IDMS Enforcer dictionary/nodestructure security has been defined in your centralized security system, the user or group ID you use to signon to your central version (CV) will be required to have execution privileges for the activity resources assigned for structure update and read/browse access.

For more information on securable Utilities tasks and structure security, see [Operations](#) (see page 119).

Standards Enforcement Utilities Screen

The Standards Enforcement Utilities screen provides access to CA IDMS Enforcer's structure utilities. These utilities are used to maintain all enforcement database structures above the template level.

To access the Standards Enforcement Utilities screen from the Primary Menu:

1. Type the character **3** (which represents the Utilities Option) in the OPTION field.
2. Press the Enter key.

To access one of the utilities available in the online definition and maintenance system:

1. Type the number of the chosen utility in the OPTION field.
2. Press the Enter key.

```
CA IDMS Enforcer Rnn.n — Standards Enforcement Utilities — mm/dd/yy hh:mm
OPTION ==> ESXAUTL

DEFINITION UTILITIES:
 0 Security - Define CA IDMS Security for Dictionary/Node Structures
 1 Environment - Define Severity Class Codes, Specify Runtime Directives,
                or Generate Runtime Enforcement Values
 2 Structure - Delete Enforcement Structures, or Modify Generation
                Options

ADD/COPY FUNCTIONS:
 3 Dictionary - Add a new Enforcement Structure or Copy an existing
                Structure
 4 Entity - Add a new Entity-Type name or Copy an existing
                Entity-Type and Templates
 5 Template - Add a new Template or Copy existing Templates

SYSTEM LEVEL ENTITIES:
 6 Tables - Add, Modify or Delete System Tables, Table Values
                and Table Range Value Sets
```

Exhibit 3.15: Standards Enforcement Utilities Screen

Definition Utilities

The Definition Utilities are Security, Environment and Structure.

The Security Option allows you to define security codes for CA IDMS Enforcer dictionary/node database structures.

The Environment Options enable the association of runtime error levels with class codes, modification of runtime enforcement directives, or the generation of a relocatable table for runtime enforcement.

The Structure Options enable the deletion of dictionary/node structures, entities, and templates, and the modification of generation options.

Add/Copy Functions

The Dictionary Option of the Add/Copy function allows you to add a new or initialized dictionary/node structure to the CA IDMS Enforcer database. You can also copy an existing dictionary/node structure contained on the database.

The Entity Option of the Add/Copy function allows you to add a new entity type to a specified dictionary/node entity within the CA IDMS Enforcer database. You can also use this function to copy an existing CA IDMS Enforcer entity type or entities.

The Template Option of the Add/Copy function allows you to add a new template to a specified dictionary/node structure within the CA IDMS Enforcer database. You can also use this function to copy an existing template or templates.

System Level Entities

The Tables Option allows you to specify value sets and value ranges which are owned by CA IDMS Enforcer and accessible from any structure in the system.

Dictionary/Node Security List Screen

The Dictionary/Node Security List screen is displayed when you select option **0** at the Standards Enforcement Utility screen.

The structure list presents all dictionary/node combinations contained within the CA IDMS Enforcer database. To modify the security activity numbers shown in the Browse and Update fields:

1. Type **M** in the selection field to the left of the dictionary name to position the cursor at the Browse field.
2. Modify the value displayed (use a numeric value from 0 to 255) in either or both fields.
3. Press the Enter key.

If the values you enter are valid, the dictionary and node structure is modified and subsequent operations to browse or update the secured structure are compared against your centralized security system. Any user requesting structure access must have access privilege for the browse or update activity resource assigned. For more information on security, see [Operations](#) (see page 119).

Note: This utility in no way establishes security for CA IDMS dictionaries and does not define CA IDMS resources in the centralized security system.

```
CA IDMS Enforcer Rnn.n — Dictionary/Node Security — mm/dd/yy hh:mm
COMMAND ==> ESXASL
```

DICT NAME	NODE NAME	LAST UPDATED	LAST USER	ACTIVITY NUMBERS BROWSE/UPDATE	
PROD	NOELD09	mm/dd/yy	UPLOAD	000	000
QAUNIPK		mm/dd/yy	UPLOAD	000	000
TEST		mm/dd/yy	UPLOAD	000	000
END					

Exhibit 3.16: Dictionary/Node List Security Screen

Environment Utilities Screen

The Environment Utilities screen is used to access the environment utility options. To access one of these options:

1. Type the number of the chosen option in the OPTION field.
2. Press the Enter key.

You must also indicate the name of the dictionary/node structure you want to access in the Dictionary and Node fields. You can specify a name in each field, type an asterisk (*) in either or both fields for the selection list, or leave these fields blank to use the default dictionary/node structure.

Environment Options

The following options are available:

- Associate Runtime Severity Levels with Template Class Codes. Use this option to review and modify the severity levels (I--Informational, W--Warning, or E--Error) and classes for a specified or selected dictionary/node structure. The Environment--Severity Class Code screen is displayed if you select this option.
- Specify or Modify Runtime Enforcement Directives. Use this option to review and modify the runtime enforcement options for a specified or selected dictionary/node structure. The Environment Runtime Directives screen is displayed if you select this option.
- Generate/Create Relocatable Table for Runtime Enforcement. Use this option to produce a new generation of enforcement table or disable an existing enforcement table for a specified or selected dictionary/node structure. The Environment Runtime Generation screen is displayed if you select this option.

```

CA IDMS Enforcer Rnn.n — Environment Utilities ————— mm/dd/yy hh:mm
OPTION ==>                                                    ESXAUEN

    1 - Associate Runtime Severity Levels with Template Class Codes
    2 - Specify or Modify Runtime Enforcement Directives
    3 - Generate/Create Relocatable Table for Runtime Enforcement

Specify "DICTIONARY" and "NODE" name for utility function:
Dictionary ==> PROD          ( * for List of all Dictionaries within
                             Node, blank for default Dictionary)
Node           ==> NODELD09  ( * for List of all Nodes within
                             Dictionary, blank for default Node)

```

Exhibit 3.17: Environment Utilities Screen

Environment--Severity Levels Screen

The Environment--Severity Levels screen is used to review and modify Template severity classes and their associated severity level (I--Informational, W--Warning, or E--Error).

To alter the severity level for a severity class, type **M** in the selection field to the left of the Severity Class of the Severity Level you want to alter. Modify the value displayed in the Severity Level field (use I, W, or E) and press the Enter key. A message will indicate the outcome of the operation.

```

CA IDMS Enforcer Rnn.n --- Environment - Severity Levels --- mm/dd/yy hh:mm
COMMAND ==>                                     ESXAUES

      DICTIONARY: PROD          NODE: NODELD09

LAST UPDATED: mm/dd/yy  LAST USER: UPLOAD
Specify Starting value or paging commands to select a CLASS for modification:
  Start with CLASS ==> 000
      SEVERITY CLASS          SEVERITY LEVEL (I)nformational (W)arning (E)rror
          000                  I
          001                  E
          002                  W
          003                  I
          004                  E
          005                  W
          006                  I
          007                  E
          008                  W
          009                  I
          010                  E
          011                  W
          012                  I
          013                  E
          014                  W
    
```

Exhibit 3.18: Environment--Severity Levels Screen

Environment--Runtime Directives Screen

The Environment--Runtime Directives screen is used to specify the severity levels, encountered at runtime, that display errors and prevent update of the data dictionary.

```

CA IDMS Enforcer Rnn.n — Environment - Runtime Directives — mm/dd/yy hh:mm
COMMAND ==>                                     ESXAUED

DICTIONARY: PROD          NODE: NODELD09

  DISPLAY ERRORS FOR:
  Informational ==> Y      ( Y-Yes, N-No )
  Warning       ==> Y      ( Y-Yes, N-No )
  Fatal Errors  ==> Y      ( Y-Yes, N-No )

  PREVENT DICTIONARY UPDATES FOR:
  Informational ==> N      ( Y-Yes, N-No )
  Warning       ==> N      ( Y-Yes, N-No )
  Fatal Errors  ==> Y      ( Y-Yes, N-No )

```

Exhibit 3.19: Environment--Runtime Directives Screen

Environment--Runtime Generation Screen

The Environment--Runtime Generation screen is used to order the new generation of a dictionary/node structure or to disable an existing structure generation.

```

CA IDMS Enforcer Rnn.n .— Environment - Runtime Generation — mm/dd/yy hh:mm
COMMAND ==>                                     ESXAUEG

A New Generation has been requested for:
  DICTIONARY: PROD
  NODE: NODELD09

Initiate the Generation Process after specifying "GENERATION OPTIONS" below:

  CONFIRM GENERATION:
  Initiate Generation Process? ==> N              (Y-Yes, N-No)

  GENERATION OPTIONS:
  Activate Generation On          ==> mm / dd / yy  (MM/DD/YY)
  Create Enforcement Structure Backup ==> N          (Y-Yes, N-No)
  Disable Enforcement             ==> N          (Y-Yes, N-No)

```

Exhibit 3.20: Environment--Runtime Generation Screen

Structure Utility Access Screen

The Structure Utility Access screen is used to access CA IDMS Enforcer's utility structure. The names of the last dictionary, node, entity, and template accessed are displayed on the screen.

```
CA IDMS Enforcer Rnn.n — Structure Utility Access ————— mm/dd/yy hh:mm
COMMAND ==> ESXAUAC

Specify "DICTIONARY" and "NODE" name for Entity/Template List:
Dictionary ==> * ( * for List of all Dictionaries within
                  Node, blank for default Dictionary)
Node          ==> * ( * for List of all Nodes within
                  Dictionary, blank for default Node)

ENTITY-TYPE NAME: (Blank for Entity-Type List)
Entity Type ==>

TEMPLATE NAME: (Blank for Template List)
Template ==>

* The following line commands will be available when the list is displayed:

S - Select item for more detail in a Dictionary, Entity, or Template List
M - Modify Entity or Template generation options (ie., Include/Exclude
  status, Template Search Order and Severity Class codes)
D - Delete Templates, Entities, or an entire Dictionary and Node Structure
```

Exhibit 3.21: Structure Utility Access Screen

Browse Template Access

If a name is specified in each field, the Browse Template screen is displayed. Information about the Browse Template screen is detailed within the Browse Option and in the online documentation.

Selection List Access

If a name is **not** specified in each field, you access CA IDMS Enforcer Selection List screens. Through these lists, you can:

- Modify entity or template generation options
- Delete dictionary/node, entity type, or template structures.

The line commands and functions available to you vary with each list screen (Dictionary/Node, Entity, or Template). Line commands available from each list screen are given on the next page.

For information about selection list screens, see [Browse Option](#) (see page 21) and the online documentation.

Note: Delete functions do not affect dictionaries defined in your central version (CV). Entity types or entity-name occurrences are not removed from a dictionary contained in your CV using CA IDMS Enforcer delete functions.

Selection List Line Commands

Dictionary/Node List

These line commands are available from the Dictionary/Node List screen: S--select and D--delete. To use these line commands:

1. Type one or more line commands the selection field to the left of the Dictionary/Node structure for utility function or selection.
2. Press the Enter key.
 - S--Select indicates that you have selected a dictionary structure. The Entity List screen is displayed after you press the Enter key. Multiple selects are automatically processed upon return requests to the Dictionary/Node List screen.
 - D--Delete indicates that you want to delete the entire dictionary/node structure from the CA IDMS Enforcer database. The Confirm Dictionary/Node Delete screen is displayed to verify this deletion. Multiple deletes can be specified and are automatically processed in the order the deletes are encountered.

Entity List

These line commands are available from the Entity List screen: S--select, M--modify, and D--delete. You can specify one or more line commands at this screen. Multiple entries are automatically processed, in the order in which they are encountered, when you return to the Entity List screen. To use these line commands:

1. Type the letter of the chosen function in the selection field, to the left of the Entity type.
2. Press the Enter key.
 - S--Select indicates that you have selected an entity type name. The Template List screen is displayed after you press the Enter key.
 - M--Modify indicates that you want to modify the Include/Exclude status of the chosen entity type.
 - D--Delete indicates that you want to delete the entire entity structure from the CA IDMS Enforcer database. The Confirm Entity Delete screen is displayed to verify this deletion.

Template List

These line commands are available from the Template List screen: S--Select, M--Modify, and D--Delete. To use one or more of these line commands:

1. Type the letter of the chosen line command in the selection field, to the left of the Search Order field.
2. Press the Enter key.

- **S**--Select indicates that you have selected a template structure. The Browse Template screen is displayed after you press the Enter key.
- **M**--Modify indicates that you want to modify the search order, include/exclude status, and severity class of the template structure.
- **D**--Delete indicates that you want to delete the entire template structure from the CA IDMS Enforcer database. The Confirm Template Delete screen is displayed to verify this deletion.

Multiple line commands can be specified at this screen. Line commands are automatically processed in the order they appear on the screen when you return to the Template List from the Browse Template screen using the END command.

Confirm Dictionary/Node Delete Screen

The Confirm Dictionary/Node Delete screen is used to verify the deletion of a dictionary/node structure from the CA IDMS Enforcer database. This deletion includes all source and generated load structures owned by the dictionary/node structure.

There are two options available at this screen:

- Press the Enter key to complete the deletion.
- Type **END** in the COMMAND field and press the Enter key to cancel the deletion.

After you press the Enter key, you are returned to the Dictionary/Node List screen.

Note: This function does not affect dictionaries that have been defined using CA IDMS or CA IDMS/DC utility functions.

```

CA IDMS Enforcer Rnn.n — Confirm Dictionary/Node Delete — mm/dd/yy hh:mm
COMMAND ==> ESXAUDC

*****
**
** ACTION: The indicated Dictionary and Node structure has been **
** selected for deletion. **
**
** WARNING: All Entities, Templates, Template Definitions, and **
** Structure Generations associated with the following **
** Dictionary and Node will be erased. **
**
** DICTIONARY: PROD **
** NODE: NODELD09 **
**
** INSTRUCTIONS: Press "ENTER" key to confirm delete request. **
** Enter "END" command to cancel delete request. **
**
*****

```

Exhibit 3.22: Confirm Dictionary/Node Delete Screen

Confirm Entity Delete Screen

The Confirm Entity Delete screen is used to verify the deletion of a user-defined entity type. The deletion includes all templates, template fields, and field values or value ranges associated with each template.

The Confirm Entity Delete screen offers two options:

- Press the Enter key to confirm the deletion.
- Type **END** in the COMMAND field and press the Enter key to cancel the deletion.

If the entity structure you have chosen to delete **does not** contain a template which is indirectly referenced by another template structure, the Confirm Entity Delete screen (1), shown below, is presented with a warning message indicating that the entity and all associated templates will be erased.

Note: Entity types and entity-name occurrences contained on dictionaries defined in your central version (CV) are in no way affected by CA IDMS Enforcer delete functions.

```
CA IDMS Enforcer Rnn.n — Confirm Entity Delete ————— mm/dd/yy hh:mm
COMMAND ==> ESXAUEC

*****
**                                                                 **
**                                                                 **
** WARNING: The indicated Entity Type has been selected for deletion. **
**                                                                 **
**                                                                 **
** ACTION: All template definitions associated with the following **
**           Entity Type will be erased.                            **
**                                                                 **
**                                                                 **
** ENTITY TYPE: DBNAME                                             **
**                                                                 **
**                                                                 **
** INSTRUCTIONS: Press "ENTER" key to confirm delete request.    **
**                Enter "END" command to cancel delete request.  **
**                                                                 **
**                                                                 **
**                                                                 **
**                                                                 **
*****
```

Exhibit 3.23: Confirm Entity Delete Screen (1)

If the entity structure you have chosen to delete **does** contain a template which is indirectly referenced by another template, the Confirm Entity Delete screen (2), shown below, appears with a warning message indicating the existence of indirect referencing and the type of action that will be taken if the operation is completed.

If you complete the deletion, all indirect references are resolved to wildcards (*) and bracket mode templates containing the indirect reference will be converted to non-bracketed templates.

Note: Entity types and entity-name occurrences contained on dictionaries defined in your central version (CV) are in no way affected by CA IDMS Enforcer delete functions.

```
CA IDMS Enforcer Rnn.n — Confirm Entity Delete ————— mm/dd/yy hh:mm
COMMAND ==> ESXAUEC

*****
**
** WARNING: The Entity Type selected for deletion contains one or **
** more templates which are indirectly referenced. **
**
** ACTION: The field in templates containing the indirect reference **
** will be converted to wildcards (*) and bracket mode **
** templates will be reset to non-bracketed template status. **
**
** ENTITY TYPE: AREA USER ENTITY **
**
** INSTRUCTIONS: Press "ENTER" key to confirm delete request. **
** Enter "END" command to cancel delete request. **
**
**
*****
```

Exhibit 3.24: Confirm Entity Delete Screen (2)

Confirm Template Delete Screen

The Confirm Template Delete screen appears to verify the deletion of a template structure. This deletion includes all field and value source structures associated with that template structure.

There are two options available at this screen:

- Press the Enter key to confirm the deletion.
- Type **END** in the COMMAND line and press the Enter key to cancel the deletion.

If the template structure you have chosen to delete **is not** indirectly referenced by another template structure, The Confirm Template/Indirect Delete screen (1), shown below, appears with a warning message indicating that the template structure will be erased.

```
CA IDMS Enforcer Rnn.n — Confirm Template Delete — mm/dd/yy hh:mm
COMMAND ==> ESXAUTC

*****
**                                                                 **
**                                                                 **
** WARNING: The indicated Template has been selected for deletion. **
**                                                                 **
**                                                                 **
** ACTION: All fields, and field values or value ranges associated **
**           with the following Template will be erased.           **
**                                                                 **
**                                                                 **
**           ENTITY TYPE: AREA                                     **
**           TEMPLATE NAME: AREA-NAME                             **
**                                                                 **
**                                                                 **
** INSTRUCTIONS: Press "ENTER" key to confirm delete request.    **
**                  Enter "END" command to cancel delete request. **
**                                                                 **
**                                                                 **
*****
```

Exhibit 3.25: Confirm Template Delete Screen (1)

If the template structure you have chosen to delete **is** indirectly referenced by another template structure, the Confirm Template Delete screen (2), shown below, appears with a warning message indicating the existence of indirect referencing and the type of action that will be taken if the operation is completed.

If you complete the deletion, any template that may have indirectly referenced the deleted template is changed to wildcards (*) with no value references and the template's bracket mode is set to non-bracketed mode.

```
CA IDMS Enforcer Rnn.n — Confirm Template Delete — mm/dd/yy hh:mm
COMMAND ==> ESXAUTC

*****
**
**
** WARNING: The Template selected for deletion is indirectly
**         referenced by one or more templates.
**
** ACTION: The field in templates containing the indirect reference
**         will be converted to wildcards (*) and bracket mode
**         templates will be reset to non-bracketed template status.
**
**         ENTITY TYPE: AREA USER ENTITY
**         TEMPLATE NAME: AR-US-ENT-NAME
**
** INSTRUCTIONS: Press "ENTER" key to confirm delete request.
**               Enter "END" command to cancel delete request.
**
**
*****
```

Exhibit 3.26: Confirm Template Delete Screen (2)

Add/Copy Enforcement Structure Screen

The Add/Copy Enforcement Structure screen is used to add or copy a dictionary/node structure to the CA IDMS Enforcer database.

Adding a Dictionary/Node Structure

When a structure is added to CA IDMS Enforcer, all supported entity types for active and passive enforcement are automatically included in that structure. Templates must be defined separately.

To add a structure:

1. Type **A** in the OPTION field.
2. Specify information in the Dictionary and Node fields in the ADD/COPY TO portion of the Add/Copy Enforcement Structure screen to create a unique structure name.
3. Press the Enter key.

Note: Adding a dictionary/node structure to the CA IDMS Enforcer database in no way establishes a dictionary in the central version where CA IDMS Enforcer is installed.

```

CA IDMS Enforcer Rnn.n — Add/Copy Enforcement Structure ——— mm/dd/yy hh:mm
OPTION ==>                                     ESXAUCD

A - Add a new Dictionary, Node, and Entities
C - Copy an existing Dictionary/Node to a new or existing structure

ADD/COPY TO:
Specify an existing or new "DICTIONARY" and "NODE" for utility function:
Dictionary ==>                                (Blank for Default Dictionary)
Node       ==>                                (Blank for Default Node)
Replace    ==> N                              (Y-Yes, N-No)

COPY FROM:
Specify "DICTIONARY" and "NODE" name for direct COPY:
Dictionary ==>                                ( * for List of all Dictionaries within
Node       ==>                                ( * for List of all Nodes within
                                                Dictionary, blank for default Node
    
```

Exhibit 3.27: Add/Copy Enforcement Structure Screen

Copying a Dictionary/Node Structure

The Add/Copy Enforcement screen is also used to copy an existing dictionary/node structure, including all entities and associated templates, to a new or existing dictionary/node structure. To copy a structure:

1. Type **C** in the OPTION field.
2. Specify required information in both the ADD/COPY TO and COPY FROM portions of the screen.
3. Press the Enter key.

When the Replace option has been specified with Y, the Confirm Structure Replace screen is displayed to verify this replacement.

Confirm Structure Replace Screen

The Confirm Structure Replace screen appears to verify the replacement of a dictionary/node structure. The replacement includes all entities and template definitions.

The Confirm Structure Replace screen offers two options:

- Press the Enter key to confirm the replacement (which has no effect on dictionaries defined in your central version)
- Type **END** in the Command line and press the Enter key to cancel the replacement.

```

CA IDMS Enforcer Rnn.n — Confirm Structure Replace — mm/dd/yy hh:mm
COMMAND ==> ESXAUC

*****
**                                                                 **
**                                                                 **
** WARNING: The indicated Dictionary and Node Structure has been **
** selected for replacement.                                     **
**                                                                 **
** ACTION: All entities and template definitions associated with **
** the following structure will be replaced.                   **
**                                                                 **
**                                                                 **
**     DICTIONARY: PROD                                         **
**           NODE: NODELD09                                    **
**                                                                 **
**                                                                 **
**     INSTRUCTIONS: Press "ENTER" key to confirm replace request. **
**                   Enter "END" command to cancel replace request. **
**                                                                 **
**                                                                 **
*****

```

Exhibit 3.28: Confirm Structure Replace Screen

Add/Copy Entity Type Screen

The Add function of the Add/Copy Entity Type screen is used to add a new entity-type name to an existing dictionary/node structure.

The Copy function is used to:

- Copy an existing entity to a new or existing entity type
- Copy multiple entities associated with a dictionary/node.

Note: Adding an entity type to the CA IDMS Enforcer database in no way establishes that entity type as a data resource component in a CA IDMS data dictionary. A "user-defined entity" must be established following Data Dictionary Definition Language (DDDL) conventions.

```
CA IDMS Enforcer Rnn.n --- Add/Copy Entity Type ----- mm/dd/yy hh:mm
OPTION ==>                                                    ESXAUCE

A - Add a new Entity-Type name
C - Copy an Entity-Type and templates to a new/existing Entity or
  copy MULTIPLE Entities

ADD/COPY TO:
Dictionary ==> (Blank for Default Dict)
Node ==> (Blank for Default Node)
Entity ==> (Blank for MULTIPLE copies)
Replace ==> N (Y-Yes, N-No)
If option "A" has been selected, enter the following:
  Include/Exclude in Next Generation ==> I (I-Include, E-Exclude)

COPY FROM:
Dictionary ==> ( * for List of all Dictionaries within
Node, blank for default Dictionary)
Node ==> ( * for List of all Nodes within
Dictionary, blank for default Node)
Entity ==> (Blank for Entity List)
```

Exhibit 3.29: Add/Copy Entity Type Screen

Adding an Entity Type

To add a new entity type name to a dictionary/node structure that exists in the CA IDMS Enforcer database:

1. Type **A** in the OPTION field.
2. Specify information in the fields detailed below.
3. Press the Enter key.

Note: User-defined entity types must also be established in your data dictionary by using the CLASS TYPE IS ENTITY CLAUSE of the CLASS statement before name occurrences can be enforced.

If you select the Add Option:

- No templates, value sets, value ranges, or indirect references are added
- The Replace field and the fields in the COPY FROM portion of the screen are disregarded
- The entity type is not added to a dictionary defined in your central version.

Copying Single or Multiple Entity Types

The Copy function of the Add/Copy Entity screen is used to copy one or more entity types associated with a specified dictionary and node in the CA IDMS Enforcer database.

To use the Copy function

1. Type **C** in the OPTION field.
2. Specify required information in both the ADD/COPY TO and COPY FROM portions of the screen.
3. Press the Enter key.

If the entity type you specify already exists, it will be overlaid with the entity specified or selected in the COPY FROM portion of the screen. The Replace field response must be Y to request the overlay. A confirmation screen is displayed before completing the replace function. This function has no effect on entity types contained in dictionaries defined in your central version.

All templates, and template field value sets and value ranges are copied; template indirect references are stored as wildcards (*).

Note: The maximum entity occurrence name length for user-defined entities is 40 characters. Therefore, COPY FROM entity types must have the same name occurrence length requirements as the COPY TO structure.

Confirm Entity Replace Screen

The Confirm Entity Replace screen appears to verify the replacement of an entity type. The replacement includes all templates, template fields and field values or value ranges associated with each template.

The Confirm Entity Replace screen offers two options:

- Press the Enter key to confirm the replacement.
- Type **END** in the Command line and press the Enter key to cancel the replacement.

If the entity structure you have chosen to replace **does not** contain a template which is indirectly referenced by another template structure the Confirm Entity Replace screen (1), shown below, appears with a warning message indicating that templates associated with the entity will be replaced.

Note: Entities contained in dictionaries defined in your central version are not affected by this operation.

```
CA IDMS Enforcer Rnn.n — Confirm Entity Replace ————— mm/dd/yy hh:mm
COMMAND ==>                                                    ESXAUUC

*****
**                                                                 **
**                                                                 **
** WARNING: The indicated Entity Type has been selected for      **
** replacement.                                                  **
**                                                                 **
** ACTION: All template definitions associated with the following **
** Entity Type will be replaced. (NOTE: Indirect references     **
** will be converted to wildcards "*").                          **
**                                                                 **
**                                                                 **
** ENTITY TYPE: ATTRIBUTE                                       **
**                                                                 **
**                                                                 **
** INSTRUCTIONS: Press "ENTER" key to confirm replace request.  **
** Enter "END" command to cancel replace request.              **
**                                                                 **
**                                                                 **
*****
```

Exhibit 3.30: Confirm Entity Replace Screen (1)

If the entity structure you have chosen to replace **does** contain a template which is indirectly referenced by another template, the Confirm Entity Replace screen (2), shown below, appears with a warning message indicating the existence of indirect referencing and the type of action that will be taken if the operation is completed.

If you complete the replacement, all indirect references are resolved to wildcards (*) and bracket mode templates converted to non-bracket mode.

Note: Entity types contained in dictionaries defined in your central version are not affected by the confirmation of the function.

```

CA IDMS Enforcer Rnn.n — Confirm Entity Replace ————— mm/dd/yy hh:mm
COMMAND ==> ESXAUUC

*****
**                                                                 **
**                                                                 **
** WARNING: The Entity Type selected for replacement contains one  **
**           or more templates which are indirectly referenced.    **
**                                                                 **
** ACTION:  The field in templates containing the indirect reference **
**           will be converted to wildcards (*) and bracket mode   **
**           templates will be reset to non-bracketed template     **
**           status.                                               **
**                                                                 **
**           ENTITY TYPE:  AREA USER ENTITY                        **
**                                                                 **
**           INSTRUCTIONS: Press "ENTER" key to confirm replace    **
**                         request.                               **
**                         Enter "END" command to cancel replace   **
**                         request.                               **
**                                                                 **
*****

```

Exhibit 3.31: Confirm Entity Replace Screen (2)

Add/Copy Template Screen

The Add function of the Add/Copy Template screen is used to add an initialized template to an existing dictionary/node structure.

The Copy function is used to:

- Copy an existing template to a new or existing template
- Copy multiple templates associated with a dictionary/node and entity type.

```

CA IDMS Enforcer Rnn.n — Add/Copy Template ————— mm/dd/yy hh:mm
OPTION ==>
                                     ESXAUCT

A - Add a new Template
C - Copy a Template to a new/existing Template or copy MULTIPLE Templates

ADD/COPY TO:
Dictionary ==>                               (Blank for Default Dict)
Node      ==>                               (Blank for Default Node)
Entity    ==>
Template  ==>                               (Blank for MULTIPLE copies)
Replace   ==> N                             (Y-Yes, N-No)
If option "A" has been selected, enter the following:
  Runtime Enforcement Search Order ==> 01    (0-99)
  Include/Exclude in Next Generation ==> I    (I-Include, E-Exclude)
  Enforcement Severity Class Code  ==> 001    (0-999)

COPY FROM:
Dictionary ==>                               ( * for List of all Dictionaries within
Node      ==>                               Node, blank for default Dictionary)
Entity    ==>                               ( * for List of all Nodes within
Template  ==>                               Dictionary, blank for default Node)
Entity    ==>                               (Blank for Entity List)
Template  ==>                               (Blank for Template List)
    
```

Exhibit 3.32: Add/Copy Template Screen

Adding an Initialized Template

To add an initialized template to a dictionary/node structure that already exists in the CA IDMS Enforcer database:

1. Type **A** in the OPTION field.
2. Specify information in the fields detailed below.
3. Press the Enter key.

If you specify the Add Option:

- No value sets, value ranges, or indirect references are added
- The Replace field and all fields in the COPY FROM portion of the screen are disregarded.

Copying Single or Multiple Templates

The Copy function of the Add/Copy Template screen is used to copy one or all of the templates associated with a specified dictionary, node, and entity type.

To use the Copy function:

1. Type **C** in the OPTION field.
2. Specify information in the fields detailed below or use a series of selection list screens to select structure information.
3. Press the Enter key.

To replace an existing template, the Replace field response must be **Y**. A confirmation screen appears prior to completing the overlay.

Confirm Template Replace Screen

The Confirm Template Replace screen appears to verify the replacement of an entity type. The replacement includes the replacement of all templates, template fields and field values or value ranges associated with each template.

The Confirm Template Replace screen offers two options:

- Press the Enter key to confirm the replacement.
- Type **END** in the Command line and press the Enter key to cancel the replacement.

If the template structure you have chosen to replace is **not** indirectly referenced by another template structure the Confirm Template Replace screen (Exhibit 3.33) appears with a warning message indicating that the template structure will be erased.

```
CA IDMS Enforcer Rnn.n — Confirm Template Replace ————— mm/dd/yy hh:mm
COMMAND ==> ESXAURC

*****
**                                                                 **
**                                                                 **
** WARNING: The indicated Template has been selected for          **
** replacement.                                                  **
**                                                                 **
** ACTION: All fields and field values or value ranges associated  **
** with the following Template will be replaced. (NOTE:          **
** Indirect references will be converted to wildcards "*").      **
**                                                                 **
** ENTITY TYPE: ATTRIBUTE                                         **
** TEMPLATE NAME: ATTRIBUTE-NAME                                  **
**                                                                 **
** INSTRUCTIONS: Press "ENTER" key to confirm replace request.   **
** Enter "END" command to cancel replace request.                **
**                                                                 **
*****
```

Exhibit 3.33: Confirm Template Replace Screen (1)

If the template structure you have chosen to replace is indirectly referenced by another template structure, the Confirm Template Replace screen (2), shown below, appears with a warning message indicating the existence of indirect referencing and the type of action that will be taken if the replacement is completed.

If you complete the replacement, any template that may have indirectly referenced the replaced template is changed to wildcards (*), with no value references. In addition, if the template containing the indirect reference is a bracketed template, that template is changed to a non-bracketed template.

```

CA IDMS Enforcer Rnn.n — Confirm Template Replace ————— mm/dd/yy hh:mm
COMMAND ==> ESXAURC

*****
**
**
** WARNING: The Template selected for replacement is indirectly
**           referenced by one or more templates.
**
** ACTION: The field in templates containing the indirect reference
**           will be converted to wildcards (*) and bracket mode
**           templates will be reset to non-bracketed template status.
**
**           ENTITY TYPE: AREA USER ENTITY
**           TEMPLATE NAME: AR-US-ENT-NAME
**
** INSTRUCTIONS: Press "ENTER" key to confirm delete request.
**               Enter "END" command to cancel delete request.
**
**
*****

```

Exhibit 3.34: Confirm Template Replace Screen (2)

System Table Maintenance Screen

Use the System Table Maintenance screen to:

- Add a system table to the CA IDMS Enforcer system
- Modify existing system tables
- Delete existing system tables.

You can specify the name of the system table you want to modify or delete or you can select the system table name from the System Table List screen (Exhibit 3.36).

To access the System Table List screen from the System Table Maintenance screen, either leave the OPTION field blank and press the Enter key or leave the Table Name field blank and press the Enter key.

Additional Information

For more information about using the System Table Maintenance screen, see the online documentation.

```

CA IDMS Enforcer Rnn.n  — System Table Maintenance  ————— mm/dd/yy hh:mm
OPTION ==>                                                    ESXASTB

A   - Add a new System Table
M   - Modify an existing System Table
D   - Delete a System Table
BLANK - Display/Maintenance Tables in a System Table List

Specify "TABLE" name for add, modify or delete:
Table Name ==>

If option "A" or "M" has been selected, enter the following:
Include/Exclude in Next Generation ==> E      (I-Include, E-Exclude)
Set of Values or Set of Ranges      ==> V      (V-Values, R-Ranges)
Length of Table Entries              ==> 40     (1-40)

* The following line commands may be specified in Table Maintenance Lists:
S - Select a Table to review or change Table Values or Range Values
A - Add a new Value or Range Directive and Values to a Table
M - Modify an existing System Table, Table Value or Range Values
D - Delete a System Table, a Table Value or a Range Value Set

```

Exhibit 3.35: System Table Maintenance Screen

System Table List Screen

The System Table List screen lists the names of all existing system tables in alphabetically ascending order.

Use the selection field (to the left of the system table name) to indicate the action you want to take:

- **S** indicates that you want to select the System Table to change the content of the table's value set or range values.
- **M** indicates that you want to modify the generation option (Include or Exclude for next generation) or the length of the value set or range associated with the system table.
- **D** indicates that you want to remove a system table and its value set or ranges from the CA IDMS Enforcer structure. If you indicate **D**, a confirmation screen appears.

Additional Information

See the online documentation for more information about the System Table List screen.

```
CA IDMS Enforcer Rnn.n — System Table List ————— mm/dd/yy hh:mm
COMMAND ==> ESXASTL
```

TABLE NAME	INCL/ EXCL	VAL/ RNG	ENTRY LENGTH	LAST UPDATED	LAST USER
ELEMENT DESIGNATORS	I	V	40	mm/dd/yy	UPLOAD
EMPLOYEE	E	R	05	mm/dd/yy	UPLOAD
EMPLOYEE NUMBER	E	R	05	mm/dd/yy	UPLOAD
STATE	E	V	02	mm/dd/yy	UPLOAD
ZIP	I	V	10	mm/dd/yy	UPLOAD
END					

Exhibit 3.36: System Table List Screen

Confirm System Table Delete Screen

The Confirm System Table Delete screen is used to confirm the deletion of a system table including the adjustment of all associated templates and template fields. Template fields referencing the indicated system table will be converted to wildcards (*) with a field value type of "D" representing a data-only type field, and bracket mode templates will be reset to non-bracketed template status.

The Confirm System Table Delete screen offers two options:

- Press the Enter key to confirm the deletion.
- Type **END** in the Command line and press the Enter key to cancel the deletion.

```
CA IDMS Enforcer Rnn.n --- Confirm System Table Delete -&&CONT.-save mm/dd/yy
hh:mm
COMMAND ==>                                     ESXASTC
*****
**
** WARNING: Deletion of the indicated System Table has been requested. **
** ACTION: If confirmed, all fields contained in CA IDMS Enforcer      **
**          referencing this table will be converted to wildcards (*)   **
**          and bracket mode templates will be reset to non-bracketed  **
**          template status.                                           **
**
**          System Table: ELEMENT_DESIGNATORS                          **
**
**
** INSTRUCTIONS: Press "ENTER" key to confirm delete request.         **
**          Enter "END" command to cancel delete request.             **
**
**
*****
```

Exhibit 3.37: Confirm System Table Delete Screen

System Table Field Value(s) Screen

The System Table Field Value(s) screen is used to specify one or more values into a system table. Values and value descriptions can be added, modified, or deleted through line command specifications. The entire value set can be included or excluded from the enforcement structure generation.

Use the selection field (to the left of the field value) to indicate the action you want to take:

- **A** indicates a new value is being added to the system table
- **M** indicates that you want to modify the value description
- **D** indicates that you want to remove that value from the table.

For Adds, key over blank or existing entries and specify the REFRESH command to review the altered field value list.

The following fields echo, as protected literals, the name of the System Table, field length indicator, and the Data Type.

Additional Information

See the online documentation for more information about the System Table Field Value(s) screen.

```

CA IDMS Enforcer Rnn.n System Table Field Value(s) -&$CONT. — mm/dd/yy hh:mm
COMMAND ==>> ESXAEFV

    DICTIONARY: N/A      NODE: N/A      ENTITY: SYSTEM TABLE
    TABLE: ZIP
    FIELD: ——+----1          DATA TYPE: ALPHANUMERIC

Include/Exclude Field Value(s) for next generation? ==> I (I-include/E-exclude)
FIELD VALUE          VALUE DESCRIPTION
11530-4787          GARDEN CITY NY
23860-3860          HOPEWELL VA
29710-8763          LAKE WYLIE SC
33618-5510          TAMPA FL
52556-3757          FAIRFIELD IA
60532-8532          LISLE IL
60631-8631          CHICAGO IL
64801-4801          JOPLIN MO
76011-8601          ARLINGTON TX
76086-8086          WEATHERFORD TX
77705-7705          BEAUMONT TX
77845-2517          COLLEGE STATION TX
78217-8217          SAN ANTONIO TX
78570-8570          MERCEDES TX
79545-9545          ROSCOE TX

```

Exhibit 3.38: System Table Field Value(s) Screen

System Table Field Range Value(s) Screen

The System Table Field Range Value(s) screen is used to specify one or more range values into a system table. Range values and descriptions can be added, modified, or deleted through line command specifications. The entire value set can be included or excluded from the enforcement structure generation.

Use the selection field (to the left of the Include/Exclude field) to indicate the action you want to take:

- **A** indicates a new range value is being added to the system table
- **M** indicates that you want to modify the range value description
- **D** indicates that you want to remove that range value from the table.

The following fields echo, as protected literals, the name of the System Table, field length indicator, and the Data Type.

Additional Information

See the online documentation for more information about the System Table Field Range Value(s) screen.

```

CA IDMS Enforcer Rnn.n — System Table Field Range Value(s) — mm/dd/yy hh:mm
COMMAND ==>
                                     ESXAEFR

    DICTIONARY: N/A      NODE: N/A      ENTITY: SYSTEM TABLE
    TABLE: EMPLOYEE NUMBER
    FIELD: ——+
                                     DATA TYPE: ALPHANUMERIC

-----
    INCLUDE/EXCLUDE? ==> I (I/E)  DESC ==> Information Systems
    FROM RANGE ==> 00001
    TO RANGE ==> 69999

-----
    INCLUDE/EXCLUDE? ==> I (I/E)  DESC ==> Insurance
    FROM RANGE ==> 40001
    TO RANGE ==> 49999

-----
    INCLUDE/EXCLUDE? ==> I (I/E)  DESC ==> Personnel
    FROM RANGE ==> 50001
    TO RANGE ==> 59999

-----
    INCLUDE/EXCLUDE? ==> I (I/E)  DESC ==> Accounting
    FROM RANGE ==> 70001
    TO RANGE ==> 79999

-----
\
    
```

Exhibit 3.39: System Table Field Range Value(s)

Tutorial Option

The Tutorial Option provides you with information about CA IDMS Enforcer. You can view the online documentation sequentially or, by making selections from the menus offered within this documentation, you can view information about specific topics.

Accessing the Online Documentation

To access the online documentation:

1. Type **T** (for Tutorial) in the OPTION field of the Primary Menu screen.
2. Press the Enter key.

You can exit the tutorial at any time by pressing PF3.

You can also access the online documentation from any screen within CA IDMS Enforcer by using the HELP command. To do this:

1. Type **HELP** in the COMMAND field.
2. Press the Enter key.

Information about the current screen is displayed.

Exit Option

Select the Exit Option to sign off of CA IDMS Enforcer. When the Exit Option is selected, all of CA IDMS Enforcer operations are terminated and you are returned to the CA IDMS/DC Entry screen.

Signing Off of CA IDMS Enforcer

To exit CA IDMS Enforcer from the Primary Menu screen:

1. Type **X** (for exit) in the OPTION field.
2. Press the Enter key.

To exit CA IDMS Enforcer from any lower level screen:

1. Type **=X** in the COMMAND field.
2. Press the Enter key.

Active Enforcement

This portion of the chapter details active enforcement available both online and batch. Best-fit templates are described and examples of diagnostic documentation are given.

What is Active Enforcement?

What is Active Enforcement?

Active enforcement prevents the update of the data dictionary with entity names that do not comply with the standards established at your site. The level of enforcement is user-specified and may vary for each dictionary/node structure.

Active Enforcement can be established for the:

- System Generation compiler
- Schema compiler
- Subschema compiler
- Data Dictionary Definition Language compiler
- Data Dictionary Menu Facility.

For details on entity types actively enforced, see [Operations](#) (see page 119).

In addition, CA IDMS Enforcer delivers diagnostics, both online and in batch, so that you can more easily comply with the established standards.

Authorized users can override active enforcement online by using the OVERRIDE command. See the online documentation for information about CA IDMS Enforcer commands. Different types of override capabilities are described in [Operations](#) (see page 119).

Levels of Enforcement

Levels of enforcement are user-specified. Through the online definition and maintenance system's environment utilities, you can:

- Assign runtime severity levels
- Specify runtime enforcement directives
- Generate the runtime enforcement table

For more information about the levels of enforcement, see [Environment Utilities Screen](#) (see page 41).

Activating Enforcement Online

Activating enforcement for one or all of the online CA IDMS compilers is described in [Active Enforcement](#) (see page 121). This section also provides instructions for installing your CA IDMS compiler user exit. [Security Options](#) (see page 129) describes how to install CA IDMS Enforcer enforcement exits as subordinate exits to CA-ACF2 security exits.

Active Enforcement--Online

Based upon the runtime specifications made during online definition and maintenance, update of the data dictionary may or may not be allowed.

- If an attempted entity name occurrence matches the naming standard template that is first in the search order for that entity, no errors result and the name is allowed.
- If the attempted entity name occurrence does **not** match the first naming standard template, CA IDMS Enforcer searches through all remaining templates. If the attempted name complies with a template that is not first in the search order, the name is allowed and an informational message is registered.
- If no templates match, CA IDMS Enforcer determines the best-fit template.

Best-fit Template

The best-fit template is the template that most closely matches the attempted entity name. CA IDMS Enforcer selects the template that:

- Registers the least severe error level (I--Informational, W--Warning, or E--Error)
- Has the least number of fields in error.

If the DISPLAY ERRORS feature has been enabled, the Active Enforcement screen, (Exhibit 3.40) is displayed.

Active Enforcement Screen

The Active Enforcement screen, displayed when naming compliance fails, offers information about the best-fit template. Each of the fields presented on this screen are detailed below. Refer to the Active Enforcement screen shown below and the online documentation for more information.

The names of the dictionary/node structure and the entity type against which update was attempted are displayed as protected literals in the DICTONARY, NODE, and ENTITY fields. These literals represent the data dictionary and entity type in the central version for current activity and the dictionary/node structure and entity type of the CA IDMS Enforcer database structure against which naming compliance is being determined.

```
CA IDMS Enforcer Rnn.n — Active Enforcement ————— mm/dd/yy hh:mm  
COMMAND ==> IDDUXIT  
  
    DICTONARY:  PROD  
           NODE:  NODELD09  
           ENTITY: ELEMENT  
           TEMPLATE: ELEMENT-NAME  
           SEVERITY: E - ERROR  
TOTAL # ERRORS: 05  
  
The following NAME OCCURRENCE is invalid.  
The NAME failed all templates for the indicated ENTITY above.  
The following represents the "best-fit" FORMAT which failed update criteria.  
  
    TEMPLATE FORMAT:  COST-ssssst+-qqq+++++++x  
    NAME OCCURRENCE:  NICK  
                    —+----1----+----2-----3--  
  
Specify the "DISPLAY" command to expand the requirements of this TEMPLATE.  
Specify the "HELP" command for more information on your options.  
Specify the "END" command to continue the Dictionary session.  
Specify the "OVERRIDE" command to bypass naming compliance.
```

Exhibit 3.40: Active Enforcement Screen

The TEMPLATE field contains the name of the best-fit template--the template that most closely matches the attempted entity name.

The SEVERITY field displays the severity level (I--Informational, W--Warning, or E--Error) of the best-fit template.

The number of errors found in the best-fit template is displayed in the TOTAL # ERRORS field.

The TEMPLATE FORMAT field provides a symbolic representation of the best-fit template.

The actual entity-name occurrence that failed compliance appears in the NAME OCCURRENCE field.

For additional information to enable or disable presentation of the Active Enforcement screen and alternative processing, see [Modify CA IDMS Enforcer Tuning Parameters](#) (see page 127).

Active Enforcement Screen Commands

After you review the information presented on the Active Enforcement screen, you must enter one of these commands: DISPLAY, HELP, END, or OVERRIDE. To do so:

1. Type the command in the COMMAND field.
2. Press the Enter key.

If you specify the DISPLAY command, the Browse Template screen is displayed. This screen offers more detailed information about the best-fit template. For more information about the Browse Template screen, see [Browse Option](#) (see page 21) and the online documentation.

If you enter the HELP command, online documentation about the current screen is displayed.

With the END command, you acknowledge the error information presented and return to the active compiler for utility exit processing.

Authorized users can bypass naming compliance with the OVERRRIDE command. The entity-name occurrence displayed on the Active Enforcement screen is accepted. For additional information on overriding active enforcement and the different types of override processing, see [Operations](#) (see page 119).

For more information about these commands, see the online documentation.

Active Enforcement Exit Processing--Online

If you enter the END command at the Active Enforcement screen, you are returned to the active compiler for further utility processing.

Data dictionary updates are allowed or not allowed based on the template's severity level and the PREVENT DICTIONARY UPDATE error level specifications (I--Informational, W--Warning, or E--Error). For more information about these specifications, see [Environment Utilities Screen](#) (see page 41).

If the best-fit template's severity level has PREVENT DICTIONARY UPDATE enabled, dictionary update is aborted. If PREVENT DICTIONARY UPDATE is not enabled, dictionary update is allowed.

CA IDMS Enforcer directs further CA IDMS utility processing by returning one of these codes:

- **8** —. PREVENT DICTIONARY UPDATE enabled and the attempted entity name occurrence does not match templates for that entity. *+ E CA IDMS utility message-type is generated for this error level.
- **4** —. PREVENT DICTIONARY UPDATE disabled and the attempted entity name occurrence does not match templates for that entity. *+ W CA IDMS utility message-type is generated for this error level.
- **1** —. PREVENT DICTIONARY UPDATE enabled or disabled and enforcement passed due to a subordinate template (other than first). *+ I CA IDMS utility message-type is generated for this error level.
- **0** —. PREVENT DICTIONARY UPDATE enabled or disabled and the attempted entity name occurrence matched the first template encountered. No messages are generated for this error level and CA IDMS utility processing continues.

Active Enforcement Messages

Regardless of error display levels specified, active enforcement for a data dictionary results in naming compliance messages presented in CA IDMS utility message format. These messages, which are displayed in the CA IDMS Utility Scratch Pad, offer information about compliance or non-compliance.

An example of CA IDMS Enforcer messages presented during attempted dictionary update is shown below. These messages are distinguished by the utility identifier Extractor, and preceded by *+ I, *+ W, or *+ E. See the Online Message Facility for an explanation of each message.

```
IDD 15.0 ONLINE 3 ERRORS 1/17
ADD PROGRAM NAME IS ARBUDT02.
*+ I Extractor ENF0067I ENFORCEMENT PASSED DUE TO SUBORDINATE
*+ - Extractor TEMPLATE (OTHER THAN FIRST)
ADD PROGRAM NAME IS ESAUPD99
*+ E Extractor ENF0076W UPDATE ABORTED- ENFORCEMENT FAILED FOR
*+ - Extractor PROGRAM
*+ W DC60107 FORWARD SPACING TO NEXT PERIOD WORD 6
ADD ELEMENT NAME IS ADDR-EMPLOYEE-CLAIM-PROCESSED.
ADD ELEMENT NAME IS ADDR-CLIENT-CLAIM-PROCESSED.
*+ E Extractor ENF0076W UPDATE ABORTED- ENFORCEMENT FAILED FOR
*+ - Extractor ELEMENT
*+ W DC601017 FORWARD SPACING TO NEXT PERIOD WORD 6
ADD CLASS NAME IS CA-UDNS CLASS TYPE IS ENTITY.
ADD CA-UDNS NAME IS CA-UDNS-NAME.
*+ E Extractor ENF0076E UPDATE ABORTED- ENFORCEMENT FAILED FOR
*+ - Extractor CA-UDNS
*+ W DC601017 FORWARD SPACING TO NEXT PERIOD WORD 6
```

Exhibit 3.41: Enforcement Message Format for Active Enforcement--Online

Activating Enforcement--Batch

Activating enforcement for one or all of the batch counterparts to online CA IDMS compilers is described in [Active Enforcement](#) (see page 121). That section also provides instructions for installing your CA IDMS compiler user exit. [Security Options](#) (see page 129) describes how to install CA IDMS Enforcer enforcement exits as subordinate exits to CA-ACF2 security exits.

Active Enforcement--Batch

Active Enforcement for batch jobs is also based upon the runtime specifications made through the online definition and maintenance system. You can specify the level of enforcement and also tailor the display of diagnostic information. For more information, see [Online Definition and Maintenance](#) (see page 20).

- If an attempted entity name occurrence matches the naming standard template that is first in the search order for that entity, no errors result and the name is allowed.
- If an attempted entity name occurrence does **not** match the naming standard template that is first in the search order, CA IDMS Enforcer searches through all naming standard templates for that entity. An informational message is registered and the name is allowed if the attempted name complies with a template that is not first in the search order.
- If no templates match, CA IDMS Enforcer determines the best-fit template.

Best-fit Template

The best-fit template is the template that most closely matches the attempted entity name. CA IDMS Enforcer selects the template that:

- Registers the least severe error level
- Has the least number of fields in error.

If the DISPLAY ERRORS feature is enabled, diagnostic documentation is generated.

Diagnostic Documentation

If the DISPLAY ERRORS feature is enabled by the enforcement administrator, the best-fit template compliance information is written to the SYSLST output of the CA IDMS Batch Utility. Requirements for executing this utility, including input parameters, is detailed in [Batch Utilities](#) (see page 85). An example of the diagnostic documentation generated is shown in Exhibit 3.42.

```

IDMSDDL rr.r          CA      DATE      TIME      PAGE
                    INTEGRATED DATA DICTIONARY ACTIVITY LIST  mm/dd/yy  hhmmss  nnnn

0001      SIG DIC '' USE 'CULL DBA' PAS ? .
0002      SET OPT SESS INP 1 THRU 72.
0003      ADD EL AMT-PAYROLL-PROCESSED VERSION IS 1
0004      ELEMENT DESCRIPTION IS
0005      'TEST ELEMENT DESCRIPTION ADD'
0006      PICTURE IS X(2) USAGE IS DISPLAY.
0007      ADD EL AMT-RECEIVABLE-PROCESSED.
0008      ADD EL AMT-RECEIVABLE-CREDIT.
0009      ADD RECORD NAME IS CUSTOMER-MAST VERSION IS 1
0010      RECORD DESCRIPTION IS 'TEST RECORD DESCRIPTION ADD'
*+ENF0083I NAMING ENFORCEMENT FAILURE ANALYSIS FOLLOWS:
*+TEMPLATE: RECORD-SYNONYM-NAME          E - ERROR
*+   KEY: aaaaaa*****
*+       V
*+   NAME: CUSTOMER-MASTER
*+       +-----1-----2-----3--
*+Position 01. Length 07. Literal.      The following value(s) may be used:
*+                                       PAYR001
*+                                       PAYR002
*+ENF0084I END OF ENFORCEMENT FAILURE ANALYSIS
    
```

Exhibit 3.42: Diagnostic Format for Active Enforcement--Batch

Active Enforcement Exit Processing--Batch

Dictionary updates for batch jobs (central version or local mode runs) is based on PREVENT DICTIONARY UPDATE specifications made through the online definition and maintenance system.

Dictionary updates are allowed or not allowed based on the template's severity level and the PREVENT DICTIONARY UPDATE error level specifications (I--Informational, W--Warning, or E--Error). For more information about these specifications, [Environment Utilities Screen](#) (see page 41).

If the best-fit template's severity level has PREVENT DICTIONARY UPDATE enabled, dictionary update is not allowed. If PREVENT DICTIONARY UPDATE is not enabled, dictionary update is allowed.

CA IDMS Enforcer directs further CA IDMS Batch Utility processing by returning one of these codes:

- **8** —. PREVENT DICTIONARY UPDATE enabled and the attempted entity name occurrence does not match templates for that entity. *+ E CA IDMS Batch Utility message-type is generated for this error level.
- **4** —. PREVENT DICTIONARY UPDATE disabled and the attempted entity name occurrence does not match templates for that entity. *+ W CA IDMS Batch Utility message-type is generated for this error level.
- **1** —. PREVENT DICTIONARY UPDATE enabled or disabled and enforcement passed due to a subordinate template (other than first). *+ I CA IDMS Batch Utility message-type is generated for this error level.
- **0** —. PREVENT DICTIONARY UPDATE enabled or disabled and the attempted entity name occurrence matched the first template encountered. No messages are generated and CA IDMS Batch Utility processing continues for this error level.

Message Displays--Batch

Regardless of DISPLAY ERROR specification, active enforcement for a data dictionary results in naming compliance messages presented in CA IDMS Batch Utility message format. These messages offer information about entity compliance or non-compliance.

An example of CA IDMS Enforcer messages written to the utility SYSLST is shown below. These messages are distinguished by the utility identifier Extractor, and preceded by *+ I, *+ W, or *+ E. See the Online Message Facility for an explanation of each message.

```
0003          ADD PROGRAM NAME IS ARBJDT02.
0003*+ I Extractor ENF0067I ENFORCEMENT PASSED DUE TO SUBORDINATE TEMPLATE (OTHER THAN FIRST)
0004          ADD PROGRAM NAME IS ESAUPD99.
0004*+ E Extractor ENF0070W UPDATE ABORTED- ENFORCEMENT FAILED FOR PROGRAM
0004*+ W DC601017 FORWARD SPACING TO NEXT PERIOD
0005          ADD ELEMENT NAME IS ADDR-EMPLOYEE-CLAIM-PROCESSED.
0006          ADD ELEMENT NAME IS ADDR-CLIENT-CLAIM-PROCESSED.
0006*+ E Extractor ENF0070W UPDATE ABORTED- ENFORCEMENT FAILED FOR ELEMENT
0006*+ W DC601017 FORWARD SPACING TO NEXT PERIOD
0007          ADD CLASS NAME IS CA-UNDS CLASS TYPE IS ENTITY.
0008          ADD CA-UNDS NAME IS CA-UNDS NAME.
0008*+ E Extractor ENF0076E UPDATE ABORTED- ENFORCEMENT FAILED FOR CA-UNDS
0008*+ W DC601017 FORWARD SPACING TO NEXT PERIOD
```

Exhibit 3.43: CA IDMS Batch Utility SYSLST Output Messages

Passive Enforcement

This portion of the chapter describes the passive enforcement component of CA IDMS Enforcer. The Dictionary Audit Utility used for this purpose is explained and examples of the two report modes are given.

What is Passive Enforcement?

Passive enforcement audits established naming standards against simulated data dictionary updates using CA IDMS Enforcer enforcement values as the basis for naming compliance determinations. This is accomplished through the Dictionary Audit Utility (ESXAUDIT). Entity name occurrences already contained in the dictionary are audited against the naming standards established at your site through CA IDMS Enforcer's online definition and maintenance system.

Batch reports in both Terse and Expanded modes are available to help you determine the level of naming compliance at your site. You can tailor output for a dictionary/node structure by:

- Selecting or excluding specific entity types.
- Limiting selection to entities added within a start and/or end date.

In addition, CA IDMS Enforcer delivers summary information with both modes of reporting.

Activating Passive Enforcement--Batch

The CA IDMS Enforcer enforcement table generated in the Environment Utilities of the online definition and maintenance system is the only requirement for activating enforcement for the Dictionary Audit Utility. CA IDMS compilers do not apply to this procedure. For more details on activating enforcement, see [Operations](#) (see page 119).

Dictionary Audit Utility (ESXAUDIT)

This utility audits the specified data dictionary for naming compliance by simulating Active Enforcement. Each entity name occurrence for a specified entity type is logically re-applied against the dictionary as an ADD function which passes through Active Enforcement. Theoretical update of the dictionary may or may not be allowed, resulting in diagnostic information about the level of compliance.

You can limit the number of entities audited and also limit the amount of information yielded for each entity. Details on the parameters used to make these specifications are given on the following pages.

Parameter Keyword Example

A parameter keyword example is shown below:

```
PROCESS,  
  DICTIONARY=dictionary-name,  
  NODE=node-name,  
  TERSE  
SELECT=select-value(s)  
EXCLUDE=exclude-value(s)  
STARTDATE=mmdyy  
ENDDATE=mmdyy
```

Structure Specification Parameters

PROCESS is the required keyword which signals the beginning of the parameter set.

Use the keywords **DICTIONARY** and **NODE** to specify the name of the data dictionary in the central version to be audited.

Report Specification Parameters

The expanded version of the Dictionary Audit Report offers diagnostic information about the naming compliance for a specified data dictionary. Details about this report are given on the following pages.

TERSE is an optional keyword used to request a limited version of the Dictionary Audit Report. If you do **not** use this keyword, the expanded version of the Dictionary Audit Report is given. Details about this report, shown in Exhibit 3.46, are given on the following pages.

The required keyword **SELECT** allows you to specify which entities are included in the dictionary audit. The table of values for this keyword is shown in Exhibit 3.44.

The optional keyword **EXCLUDE** allows you to specify which entities are excluded from the dictionary audit. The table of values for this keyword is shown in Exhibit 3.44.

You can further qualify the output generated by specifying the **STARTDATE** and **ENDDATE** keyword parameters.

If **STARTDATE** is specified, it is compared against the date that each entity name occurrence was added to the dictionary. If the name occurrence was added *prior* to the **STARTDATE**, it is not included in the audit.

If **ENDDATE** is specified, it is compared against the date that each entity name was added to the dictionary. If the name occurrence was added *after* the **ENDDATE**, it is not included in the audit.

Refer to [Batch Utilities](#) (see page 85) for additional information about the Dictionary Audit Utility and keyword parameter specifications.

Value	Value	Value
AREA	LOGICAL-TERMINAL	REPORT-SYNONYM
ATTRIBUTE	MAP	SCHEMA
CLASS	MESSAGE	SCHEMA-RECORD
COBOL-ELEMENT	MODULE	SET
DESTINATION	PANEL	SUBSYSTEM
ELEMENT	PHYSICAL-TERMINAL	SYSTEM
ELEMENT-SYNONYM	PROCESS	TABLE
ENTRY-POINT	PROGRAM	TASK
FILE	QFILE	TRANSACTION
FILE-SYNONYM	QUEUE	TRANSACTION- SYNONYM
LINE	RECORD	USER
LOAD-MODULE	RECORD-SYNONYM	user-defined- entity-type
LOGICAL-RECORD	REPORT	VIEW-ID

Exhibit 3.44: SELECT/EXCLUDE Table Values

Report Output--Expanded Mode

The Naming Compliance Audit Detail Report, shown in Exhibit 3.45, provides a single line entry for each selected occurrence name which passed enforcement or failed with a severity level of I--Informational, W--Warning, or E--Error. These are presented in TERSE report format.

For compliance status other than passed, detailed diagnostic information shows the selected occurrence name in comparison to the naming standard template. The total number of compliance failures is indicated by one or more pointers directly above the error.

All versions of an entity name occurrence for a specified entity are validated. Each name occurrence is compared against every template defined for an entity type. Once all names have been processed against a template, the entire procedure is restarted for the next template.

Literal information describing the report appears at the top of each page. The name of the entity-type against which the audit was run is displayed above the column headings. Each entity-type is treated as a single report with unique sets of page numbers.

The following fields are found on the report:

ENTITY NAME--all entity name occurrences audited for the specified entity type appear in this column.

VERSION--the entity name occurrence version number appears adjacent to the name in this column.

TEMPLATE ERROR ANALYSIS--CA IDMS Enforcer entity type's template name used to compare against the occurrence name appears after the literal

TEMPLATE: Detailed diagnostic information is also presented under this column heading.

USER:--identifying name of the user that last prepared or revised the entity name occurrence.

LEVEL--the severity level of the template (I--Informational, W--Warning, E--Error).

Diagnostic Detail--the template used for a name occurrence comparison is shown above the attempted dictionary update name. One or more pointers positioned directly above an entity name display the location of the error as well as the total number of errors.

KEY:--the template format key which is used to validate an entity name occurrence is shown after this literal.

Pointer--the pointer to error locations in the name occurrence is depicted by the literal **V** placed directly above the entity name occurrence. One or more of these pointers indicate the location and total number of errors.

Column-indicator--a column indicator is provided below the entity name occurrence. This is used as a guide for additional information about the field position and length of the template format key.

Position nn--the integer position of the first and subsequent fields contained in a template **KEY** is shown for each field.

Length nn--the length of a field is shown for each field contained in the template **KEY**.

Values--field valuesets, value ranges, or indirect references to another template's field values or ranges appears following the position and length requirements. Whether the value or range is a valid or invalid entry is also indicated.

CA-TOOLS	RELEASE	CA IDMS Enforcer	DATE	TIME	PAGE	
	Rnn.nn	NAMING COMPLIANCE AUDIT DETAIL		mm/dd/yy	hh:mm:ss	nnnn
***** AREA *****						
ENTITY NAME	VERSION	TEMPLATE ERROR ANALYSIS				
INS-DEMO-REGION	0000	TEMPLATE: AREA-NAME KEY: aaa***** V NAME: INS-DEMO-REGION -----1----- Position 01. Length 03. Literal.		E - ERROR	USER: DBA	
				The following value(s) may be used:		
				ATA		
				ESS		
				GSD		
				GSI		
				GSM		
				GSS		
				SSK		
				TPS		
				USA		
				USD		
				USE		
				USF		
				USG		
				USL		
				USM		
				USN		
				USR		
				USS		
				USX		
				XDM		
SSK-DATA-AREA	0000	TEMPLATE: AREA-NAME		PASSED	USER: DBA	
ESS-TXT-AREA	0000	TEMPLATE: AREA-NAME		PASSED	USER: DBA	
ACCT-RECV-1-AREA	0000	TEMPLATE: AREA-NAME KEY: aaa***** V NAME: ACCT-RECV-1-AREA -----1----- Position 01. Length 03. Literal.		E - ERROR	USER: DBA	
				The following value(s) may be used:		
				ATA		
				ESS		
				GSD		
				GSI		
				GSM		
				GSS		
				SSK		
				TPS		
				USA		
				USD		
				USE		
				USF		
				USG		
				USL		
				USM		
				USN		
				USR		
				USS		
				USX		
				XDM		

Exhibit 3.45: Naming Compliance Audit Detail Report--Expanded

Report Output--Terse Mode

The Naming Compliance Audit Detail Report--Terse, shown in Exhibit 3.46, provides only the template name and compliance status for each selected occurrence name for every template of its entity type.

The compliance status is either the severity level of the template (I--Informational, W--Warning, or E--Error) or PASSED.

All versions of an entity name occurrence for a specified entity are validated. Each name occurrence is compared against every template defined for an entity type. Once all names are processed against a template, the entire procedure is restarted for the next template.

Literal information describing the report appears at the top of each page. The name of the entity-type against which the audit was run is displayed above the column headings. Each entity-type is treated as a single report with a unique set of page numbers.

ENTITY NAME--all entity name occurrences audited for the specified entity type appear in this column.

VERSION--the entity name occurrence version number appears adjacent to the name in this column.

TEMPLATE NAME--CA IDMS Enforcer entity type's template name used to compare against the occurrence name appears under this heading.

LEVEL--the severity level of the template (I--Informational, W--Warning, E--Error).

USER RESPONSIBILITY--the identifying name of the user that last prepared or revised the entity name occurrence.

CA-TOOLS	RELEASE	CA IDMS/Extractor		DATE	TIME	PAGE		
	Rnn.nn	NAMING	COMPLIANCE	AUDIT	DETAIL	mm/dd/yy	hh:mm:ss	nnnn
*****		ELEMENT		*****		*****		
ENTITY NAME	VERSION	TEMPLATE NAME	LEVEL	USER RESPONSIBILITY				
INDIRECT-TEMPLATE	0001	ELEMENT-NAME	E	DBA				
VALUE-RANGE	0001	ELEMENT-NAME	E	DBA				
VALUE-SET	0001	ELEMENT-NAME	E	DBA				
DATA-ONLY	0001	ELEMENT-NAME	E	DBA				
FLD-VALUE-TYPE	0001	ELEMENT-NAME	E	DBA				
TMP-USER-LAST-UPDATED	0001	ELEMENT-NAME	E	DBA				
TMP-DATE-LAST-UPDATED	0001	ELEMENT-NAME	E	DBA				
TMP-TEMPLATE-NAME	0001	ELEMENT-NAME	E	DBA				
TMP-SEARCH-ORDER	0001	ELEMENT-NAME	E	DBA				
FLD-DESCRIPTION	0001	ELEMENT-NAME	E	DBA				
FLD-DESCRIPTION-LENGTH	0001	ELEMENT-NAME	E	DBA				
FLD-FILLER-20	0001	ELEMENT-NAME	E	DBA				
FLD-LITERAL	0001	ELEMENT-NAME	E	DBA				
FLD-FILLER	0001	ELEMENT-NAME	E	DBA				
ENT-USER-LAST-UPDATED	0001	ELEMENT-NAME	E	DBA				
ENT-DATE-LAST-UPDATED	0001	ELEMENT-NAME	E	DBA				
ENT-MAX-TEMPLATE-LENGTH	0001	ELEMENT-NAME	E	DBA				
ENT-ENTITY-NAME	0001	ELEMENT-NAME	E	DBA				
WARNING	0001	ELEMENT-NAME	E	DBA				
SEV-CLASS	0001	ELEMENT-NAME	E	DBA				
SEV-TABLE	0001	ELEMENT-NAME	E	DBA				
INFORMATIONAL	0001	ELEMENT-NAME	E	DBA				
ERROR	0001	ELEMENT-NAME	E	DBA				
SEV-LEVEL	0001	ELEMENT-NAME	E	DBA				
SEV-USER-LAST-UPDATED	0001	ELEMENT-NAME	E	DBA				
SEV-DATE-LAST-UPDATED	0001	ELEMENT-NAME	E	DBA				
SEV-CODES-PER-RECORD	0001	ELEMENT-NAME	E	DBA				
HDR-FILLER-8	0001	ELEMENT-NAME	E	DBA				

Exhibit 3.46: Naming Compliance Audit Detail Report--Terse

Naming Compliance Audit Summary

The Naming Compliance Audit Summary Report provides the total number of successful logical dictionary update attempts. Error, warning, and informational messages generated by the dictionary are also included in the totals. The CA IDMS Enforcer audit utility totals the error level response for each ADD entity name performed during the dictionary update simulation.

Each entity name occurrence is counted once based upon the lowest CA IDMS Enforcer return code, from comparison against all templates for that entity type, as if the name occurrence had been added through Active Enforcement.

Literal information describing the report appears at the top of each page. Entity types are listed to the left of the totals column.

Following is a description of the columns containing totals. Totals are shown for the entity types selected for utility function.

Note: User-defined entity types are not included in the summary. However, the expanded and terse report detail shows diagnostic information for these entities.

SUCCESSSES--this column contains the totals for the entity name occurrences which passed the first template in the search order.

ERRORS--the totals in this column indicate the total number of entity name occurrences that failed all templates, where none of the templates allowed dictionary update (that is, prevent dictionary update for all template severity levels was enabled).

WARNINGS--the totals in this column indicate name occurrences which failed all templates, where one or more of the templates would have allowed dictionary update (that is, prevent dictionary update for one or more template severity levels was disabled).

INFORMATIONALS--the totals in this column indicate name occurrences which passed at least one template other than the first in search order.

(%)--the percentage in these columns indicate the equivalent percentile of successes, errors, warnings, and informationals totals.

TOTAL FOR ENTITY--the sum total of successes, errors, warnings, and informationals.

CA-TOOLS	RELEASE	CA IDMS/Extractor	DATE	TIME	PAGE
	Rnn.nn	Naming Compliance Audit Summary Report	mm/dd/yy	hh:mm:ss	nnnn
ENTITIES SUMMARIZED BY SEVERITY LEVEL:					
ENTITY TYPE	SUCCESSSES-----(%)	ERRORS-----(%)	WARNINGS-----(%)	INFORMATIONALS-(%)	TOTAL FOR ENTITY
AREA	000000008-(014%)	000000048-(085%)	000000000-(000%)	000000000-(000%)	000000056
ATTRIBUTE	_____	_____	_____	_____	_____
CLASS	_____	_____	_____	_____	_____
COBOL ELEMENT	_____	_____	_____	_____	_____
DESTINATION	_____	_____	_____	_____	_____
ELEMENT	_____	_____	_____	_____	_____
ELEMENT SYNONYM	_____	_____	_____	_____	_____
ENTRY POINT	_____	_____	_____	_____	_____
FILE	_____	_____	_____	_____	_____
FILE SYNONYM	_____	_____	_____	_____	_____
LINE	_____	_____	_____	_____	_____
LOAD MODULE	_____	_____	_____	_____	_____
LOGICAL RECORD	_____	_____	_____	_____	_____
LOGICAL-TERMINAL	_____	_____	_____	_____	_____
MAP	_____	_____	_____	_____	_____
MESSAGE	_____	_____	_____	_____	_____
MODULE	_____	_____	_____	_____	_____

Exhibit 3.47: Naming Compliance Audit Summary Report

Chapter 4: Batch Utilities

This section contains the following topics:

[About This Chapter](#) (see page 85)

[CA IDMS Enforcer Batch Utilities](#) (see page 85)

About This Chapter

This chapter contains explanations of each batch utility for CA IDMS Enforcer and descriptions of input parameters for job execution and sample z/OS and Z/OS and Z/VSE JCL are also provided for each batch utility.

Note: This release of CA IDMS supports Z/OS V2R10 as well as z/OS 1.1 and above. However, we will always refer to z/OS and Z/OS in this document.

CA IDMS Enforcer Batch Utilities

There are five batch utilities that you can run in CA IDMS Enforcer:

- Download Enforcement Structure (ESXDLOD)
- Upload Enforcement Structure (ESXULOD)
- Enforcement Structure Print (ESXPRINT)
- Dictionary Audit (ESXAUDIT)
- Batch Compiler Utilities--Enforcer Example (ESXSAMPL)

These utilities may generate messages when they are run. Refer to the Online Message Facility for an explanation of each message.

CA IDMS Enforcer Parameter Statement

CA IDMS Enforcer has one parameter statement--PROCESS--with subparameters available to it. All keywords appear in UPPERCASE. The minimum required portion of each keyword is *underscored*. You can omit the portion of a keyword that is not underscored without altering the meaning of the statement, for example:

PROCESS,DICTIONARY=dictionary-name

Variables appear in LOWERCASE underscored. You **must** substitute an appropriate value for each variable (i.e., *dictionary-name*).

Audit Reporting

After executing a batch utility, review the Audit Report for messages. Successful execution produces informative and/or warning messages. Informative messages do not require remedial action. Warning messages may require corrective action, depending upon individual analysis of the warning message.

If the utility does not execute successfully, error messages appear on the Audit Report. Correct any errors and resubmit the batch job.

Download Enforcement Structure (ESXDLOD)

This utility downloads CA IDMS Enforcer's installed enforcement database structure to a transportable file. When you execute this utility, database structures for the indicated dictionary/node are encoded into a sequential file or partitioned data set (z/OS and Z/OS).

The model JCL and keys to variables are contained in Target or Distribution source library member ESXDLOD (z/OS and Z/OS), TOOLJCL library member ESXDLOD.S (Z/VSE), or the ESXDLOD EXEC (Z/VM). These members are shown below.

Keyword Parameter Example

```
PROCESS,  
  
DICTIONARY=dictionary-name,  
  
NODE=node-name,  
  
TABLES
```

Optional Parameters

dictionary-name

This one- to eight-character subparameter is used to specify the CA IDMS Enforcer database dictionary name for enforcement structure download.

node-name

This one- to eight-character subparameter is used to specify the node name for enforcement structure download.

TABLES

The TABLES optional keyword directs download processing to extract all system table definitions contained in the installed database. If TABLES is specified, DICTIONARY and NODE are ignored.

Download Enforcement Report Output

After executing ESXDLOD, review the Audit Report. If ESXDLOD does not execute successfully, warning and/or error messages appear on the report. Correct any errors and resubmit the job.

```
//ESXDLOD JOB (job card parameters),CLASS=A,MSGCLASS=A
//ESXDLOD EXEC PGM=ESXBDDL,REGION=1000K
//STEPLIB DD DISP=SHR,DSN=your.ca.loadlib
//          DD DISP=SHR,DSN=your.idms.loadlib
//SYSCTL  DD DISP=SHR,DSN=your.idms.sysctl
//SYSIDMS DD *
DMCL=your.dmcl.name
//AUDIT   DD SYSOUT=a
//LODFILE DD DSN=your.enforcer.structure,
//          DISP=(NEW,CATLG),
//          UNIT=SYSDA,
//          SPACE=(CYL,(6,2))
//SYSIPT  DD *
PROCESS,
  DICTIONARY=dictionary-name,
  NODE=node-name,
  TABLES
/*
//
```

Exhibit 4.1: Model z/OS and Z/OS JCL (ESXDLOD)

Key to Variables

- **job card parameter** — The job card parameters required at your company.
- **your.ca.loadlib** — The name of the load library into which CA IDMS Enforcer load modules were link edited.
- **your.idms.loadlib** — The name of the load library into which the CA IDMS load modules were link edited.
- **your.idms.sysctl** — The dataset name of the SYSCTL file for the Central Version (CV) used during CA IDMS Enforcer batch processing.
- **your.dmcl.name** — The name of your runtime system DMCL.
- **a** — An appropriate SYSOUT class for your company.
- **your.enforcer.structure** — The disk file into which the CA IDMS Enforcer structure will be downloaded.
- **dictionary-name** — Is optional. If specified, must be a 1- to 8-character name of the dictionary specified for utility function.
- **node-name** — Is optional. If specified, must be a 1- to 8-character name of the node specified for utility function.

```
* $$ JOB JNM=ESXDLOD
// JOB ESXDLOD
// OPTION NODUMP
// UPSI a
// ASSGN SYS009,IGN

* *** CORE IMAGE LIBRARY FOR PRODUCT
// DLBL ca,'your.corelib'
// EXTENT ,volserc
// LIBDEF PHASE,SEARCH=(ca.sublibrary,idms.sublibrary),TEMP
*
* *** INPUT - SYNTAX
// ASSGN SYSIPT,SYSDR
*
* *** OUTPUT - AUDIT REPORT FILE
// ASSGN SYS011,SYSLST
*
* *** OUTPUT - STRUCTURE DOWNLOAD FILE
// DLBL LODFILE,'your.enforcer.structure',0,SD
// EXTENT SYS014,volserw,,,strtrks,trks
// ASSGN SYS014,DISK,VOL=volserw,SHR
*
* *** DOWNLOAD Enforcer STRUCTURE
// DLBL SYSIDMS,'#SYSIPT',0,SD
// EXEC ESXBOLD,SIZE=(ESXBOLD,400K)
PROCESS,
DICTIONARY=dictionary-name,
NODE=node-name
/*
*
* Rnn.n OPTIONAL SYSIDMS PARAMETERS
*
/*
* $$ E0J
```

Exhibit 4.2: Model Z/VSE JCL (ESXDLOD.S)

Key to Variables

- **a** — The UPSI switch to be replaced with specifications from the IDMSOPTI module.
- **ca** or **ca.sublibrary** — The file name of the core image library into which the executable phases of CA IDMS Enforcer were installed.
- **your.corelib** — The name of the core image library into which the executable phases of CA IDMS Enforcer were installed.
- **volser** — The volume serial number or generic assignment of the disk volume on which the library, as specified in the previous statement, resides. The following letters identify the type of library or installation media: c=core image library, w=work file, r=relocatable library, and s=source statement library.

- **idms** or **idms.sublibrary** – The file name of the core image library into which the executable phases of CA IDMS were installed.
- **your.enforcer.structure** – The name of the file to which the CA IDMS Enforcer structure is downloaded.
- **strtrks** – The starting track of the disk file specified in the previous statement.
- **trks** – The number of tracks of the disk file specified in the previous statement.
- **dictionary-name** – The name of the alternate dictionary specified for download.
- **node-name** – The name of the node specified for download.

```

/* */
TRACE OFF; SIGNAL ON ERROR
/* */
/* ESXDLOD */
/* */
CA_LOADLIB_FN      = 'yourlib'
IDMS_LOADLIB_FN    = 'idmslib'
IDMS_TXTLIB_FN     = 'txtlib'
/* */
/* Link and access the Minidisks containing the required librarie(s) */
/* */
'GLOBAL TXTLIB  IDMS_TXTLIB_FN'
'GLOBAL LOADLIB CA_LOADLIB_FN IDMS_LOADLIB_FN'
'CP SPOOL PRINTER NOCONT CLOSE'
'CP SPOOL PRINTER TO * NOHOLD CONT FORM OFF DIST OFF'
/* */
/* Create the input parameter file. */
/* */
CALL CREATE_INPUT_PARM_FILE
/* */
/* Product specific files. */
/* */
'FILEDEF  AUDIT  PRINTER'
'FILEDEF  LODFILE  DISK LODFILE SYSIPT A'
'FILEDEF  SYSIPT  DISK ESXDLOD SYSIPT A'
/* */
/* You must create a file 'SYSIDMS INPUT A' containing the SYSIDMS */
/* parameters you use to specify your runtime environment. */
/* */
'FILEDEF  SYSIDMS  DISK SYSIDMS INPUT A'
/* */
SIGNAL OFF ERROR
SAY 'STARTING RUN OF CA IDMS/Enforcer DOWNLOAD'
'EXECOS OSRUN ESXBOLD'
ESXBOLD_RC = RC
'CP SPOOL PRINTER NOCONT'
'CP CLOSE PRINTER NAME ESXDLOD LISTING'
'CP SPOOL PRINTER OFF'
SAY 'Enforcer DOWNLOAD FINISHED WITH A RETURN CODE OF ' ESXBOLD_RC
'GLOBAL LOADLIB'
'GLOBAL TXTLIB'
'FILEDEF * CLEAR'
EXIT ESXBOLD_RC
/* */
/*+++++*/
CREATE_INPUT_PARM_FILE:
/*+++++*/
SIGNAL OFF ERROR
'ERASE ESXDLOD  SYSIPT A'

```

```

/*                                                                 */
PUSH 'FFILE'
PUSH
PUSH 'TABLES'
PUSH 'NODE=node-name,'
PUSH 'DICTIONARY=dictionary-name,'
PUSH 'PROCESS,'
PUSH 'INPUT'
PUSH 'SET LRECL 80'
PUSH 'SET RECFM F'
'XEDIT ESXDLOD SYSIPT A' ,
' (NOPROFILE NOSCREEN NOMSG'
RETURN
/*                                                                 */
/*+++++*/
ERROR:
/*+++++*/
ERROR_RC = RC
TRACE OFF; SIGNAL OFF ERROR
/*                                                                 */
SAY 'NON-ZERO RETURN CODE ENCOUNTERED IN EXEC AT LINE' SIGL
/*                                                                 */
'CP SPOOL PRINTER NOCONT'
'CP CLOSE PRINTER NAME ESXDLOD LISTING'
'CP SPOOL PRINTER OFF'
'GLOBAL LOADLIB'
'FILEDEF * CLEAR'
EXIT ERROR_RC
/*                                                                 */

```

Exhibit 4.3: Model Z/VM EXEC—ESXDLOD

Key to Variables

- **yourlib** — The file name of the load library into which you downloaded CA IDMS Enforcer.
- **idmslib** — The file name of the load library containing your CA IDMS SUBSCHEMA and DMCL modules.
- **txtlib**— The name of the text library containing your CA IDMS text files.
- **LODFILE SYSIPT A** — The name of the disk file into which the CA IDMS Enforcer structure will be downloaded. If necessary, rename the file to suit your site's naming standards.
- **dictionary-name** — The name of the alternate dictionary specified for download.
- **node-name** — The name of the node specified for download.

Upload Enforcement Structure (ESXULOD)

This utility uploads a downloaded enforcement structure into the installed database. When you execute this utility, a file that has been downloaded is reconstituted into an enforcement structure.

Keyword parameters direct upload processes to a specific structure contained in the database or to CA IDMS Enforcer system-owned structures. As an option, you can replace the entire contents of an existing dictionary and node structure with the contents of the downloaded structure file (LODFILE) by specifying the REPLACE option in the PROCESS input file (see keyword parameters below). System TABLES can be uploaded exclusively or WORDSETS can replace existing system tables.

The model JCL and key to variables are contained in Target or Distribution source library member ESXULOD (z/OS and Z/OS), TOOLJCL library member ESXULOD.S (Z/VSE), or the ESXULOD EXEC (Z/VM). These members are shown below.

Keyword Parameter Example

```
PROCESS,  
  
    DICTIONARY=dictionary-name,  
    NODE=node-name,  
    REPLACE,  
    WORDSET=wordset-name,  
    TABLE
```

Optional Parameters

- *dictionary-name* — This one- to eight-character subparameter is used to specify the CA IDMS Enforcer database dictionary name for enforcement structure upload. Dictionary name is ignored for WORDSET or TABLES upload.
- *node-name* — This one- to eight-character subparameter is used to specify the node name for enforcement structure upload. Node name is ignored for WORDSET or TABLES upload.
- **REPLACE** — REPLACE is optional. If specified, the existing CA IDMS/Enforcer dictionary/node structure contained on the database will be replaced using the downloaded enforcement structure file, LODFILE, as input. If REPLACE is not specified and a target enforcement structure exists, an error is printed and processing terminates. REPLACE is ignored for TABLES upload.
- *wordset-name* — This 1- to 32-character subparameter is the system table name into which the contents of the comma delimited file, CDFILE, will be uploaded. If specified, DICTIONARY and NODE are ignored. LODFILE is ignored when this parameter has been specified.
- **TABLES** — TABLES is required if the downloaded structure file (LODFILE) contains system tables from the downloaded utility (ESXDLOD). If specified, DICTIONARY, NODE, and REPLACE are ignored.

Upload Enforcement Report Output

After executing ESXULOD, review the Audit Report. If ESXULOD does not execute successfully, error messages appear on the Audit Report. Correct any errors and resubmit the job.

```
//ESXULOD JOB (job card parameters),CLASS=A,MSGCLASS=A
//ESXULOD EXEC PGM=ESXBULD,REGION=1000K
//STEPLIB DD DISP=SHR,DSN=your.ca.loadlib
//          DD DISP=SHR,DSN=your.idms.loadlib
//SYSCTL DD DISP=SHR,DSN=your.idms.sysctl
//SYSIDMS DD *
DMCL=your.dmc1.name
//AUDIT DD SYSOUT=a
//LODFILE DD DISP=SHR,DSN=your.enforcer.structure
//CDFILE DD DISP=SHR,DSN=your.enforcer.cdfile
//WORKFIL DD DSN=your.enforcer.workfile,
//          DISP=(NEW,DELETE,DELETE),
//          UNIT=SYSDA,
//          SPACE=(CYL,(2,1))
//SYSIPT DD *
PROCESS,
  DICTIONARY=dictionary-name,
  NODE=node-name,
  REPLACE,
  WORDSET=wordset-name,
  TABLES
/*
//
```

Exhibit 4.4: Model z/OS and Z/OS JCL (ESXULOD)

Key to Variables

- **job card parameters** — The job card parameters required at your company.
- **your.ca.loadlib** — The name of the load library into which CA IDMS Enforcer load modules were link edited.
- **your.idms.loadlib** — The name of the load library into which CA IDMS load modules were link edited.
- **your.idms.sysctl** — The dataset name of the SYSCTL file for the Central Version (CV) used during CA IDMS Enforcer batch processing.
- **a** — An appropriate SYSOUT class for your company.
- **your.enforcer.structure** — The disk file that contains the CA IDMS Enforcer downloaded enforcement structure or system tables.
- **your.enforcer.cdfile** — The disk file that contains 80 byte records of comma delimited word-sets for system table upload.

- **your.enforcer.workfile** — The work file used by this utility.
- **dictionary-name** — Is optional. If specified, must be a 1- to 8-character name of the dictionary specified for utility function.
- **node-name** — Is optional. If specified, must be a 1- to 8-character name of the node specified for utility function.
- **wordset-name** — Is optional. If specified, the upload represents the upload of a comma delimited file of element-designators to be read into the system table specified by the 1- to 32-character system-table name (wordset-name).

```

* $$ JOB JNM=ESXULOD
// JOB ESXULOD
*
// OPTION NODUMP
// UPSI a
// ASSGN SYS009,IGN
*
* *** CORE IMAGE LIBRARY FOR PRODUCT
// DLBL ca,'your.corelib'
// EXTENT ,volserc
// LIBDEF PHASE,SEARCH=(ca.sublibrary,idms.sublibrary),TEMP
*
* *** INPUT - SYNTAX
// ASSGN SYSIPT,SYSDR
*
* *** OUTPUT - AUDIT REPORT FILE
// ASSGN SYS011,SYSLST
*
* *** INPUT - STRUCTURE UPLOAD FILE
// DLBL LODFILE,'your.enforcer.structure',0,SD
// EXTENT SYS014,volserw,,,strtrks,trks
// ASSGN SYS014,DISK,VOL=volserw,SHR
*
* *** WORK - TRANSIENT WORK FILE
// DLBL WORKFIL,'your.enforcer.workfile',0,SD
// EXTENT SYS015,volserw,,,strtrks,trks
// ASSGN SYS015,DISK,VOL=volserw,SHR
*
* *** UPLOAD Enforcer STRUCTURE
// DLBL SYSIDMS,#SYSIPT',0,SD
// EXEC ESXBULD,SIZE=(ESXBULD,400K)
PROCESS,
DICTIONARY=dictionary-name,
NODE=node-name,
replace
/*
* Rnn.n OPTIONAL SYSIDMS PARAMETERS
/*
/*
* $$ E0J

```

Exhibit 4.5: Model Z/VSE JCL (ESXULOD.S)

Key to Variables

- **a** — The UPSI switch to be replaced with specifications from the IDMSOPTI module.
- **ca** or **ca.sublibrary** — The file name of the core image library into which the executable phases of CA IDMS Enforcer were installed.

- **your.corelib** — The name of the core image library into which the executable phases of CA IDMS Enforcer were installed.
- **volser** — The volume serial number or generic assignment of the disk volume on which the library, as specified in the previous statement, resides. The following letters identify the type of library or installation media: c=core image library, w=work file, r=relocatable library and s=source statement library.
- **idms** or **idms.sublibrary** — The file name of the core image library into which the executable phases of CA IDMS were installed.
- **your.enforcer.structure** — The name of the file from which the CA IDMS Enforcer structure will be uploaded.
- **strtrks** — The starting track of the disk file specified in the previous statement.
- **trks** — The number of tracks of the disk file specified in the previous statement.
- **your.enforcer.workfile** — The work file used by this utility.
- **dictionary-name** — The name of the alternate dictionary specified for upload.
- **node-name** — The name of the node specified for upload.


```

/* */
TRACE OFF; SIGNAL ON ERROR
/* */
CA_LOADLIB_FN      = 'yourlib'
IDMS_LOADLIB_FN    = 'idmslib'
IDMS_TXTLIB_FN     = 'txtlib'
/* */
/* Link and access the Minidisks containing the required librarie(s) */
'GLOBAL TXTLIB  IDMS_TXTLIB_FN'
'GLOBAL LOADLIB CA_LOADLIB_FN IDMS_LOADLIB_FN'
'CP SPOOL PRINTER NOCONT CLOSE'
'CP SPOOL PRINTER TO * NOHOLD CONT FORM OFF DIST OFF'
/* Create the input parameter file. */
CALL CREATE_INPUT_PARM_FILE
/* */
/* Product specific files. */
'FILEDEF AUDIT  PRINTER'
'FILEDEF WORKFIL DISK FILE WORKFIL a'
'FILEDEF LODFILE DISK LODFILE SYSIPT A'
'FILEDEF SYSIPT DISK ESXULOD SYSIPT A'
/* You must create a file 'SYSIDMS INPUT A' containing the SYSIDMS */
/* parameters you use to specify your runtime environment. */
'FILEDEF SYSIDMS DISK SYSIDMS INPUT A'
/* */
SIGNAL OFF ERROR
SAY 'STARTING RUN OF CA IDMS Enforcer UPLOAD'
'EXECOS OSRUN ESXBULD'
ESXBULD_RC = RC
'CP SPOOL PRINTER NOCONT'
'CP CLOSE PRINTER NAME ESXULOD LISTING'
'CP SPOOL PRINTER OFF'
SAY 'Enforcer UPLOAD FINISHED WITH A RETURN CODE OF ' ESXBULD_RC
'GLOBAL LOADLIB'
'GLOBAL TXTLIB'
'FILEDEF * CLEAR'
EXIT ESXBULD_RC
/*+++++*/
CREATE_INPUT_PARM_FILE:
/*+++++*/
SIGNAL OFF ERROR
'ERASE ESXULOD SYSIPT A'
PUSH 'FFILE'
PUSH
PUSH 'REPLACE'
PUSH 'NODE=node-name,'
PUSH 'DICTIONARY=dictionary-name,'
PUSH 'PROCESS,'
PUSH 'INPUT'
PUSH 'SET LRECL 80'

```

```
PUSH 'SET RECFM F'
'XEDIT ESXDLOD SYSIPT A' ,
'(NOPROFILE NOSCREEN NOMSG'
RETURN
/*+++++ */
ERROR:
/*+++++ */
ERROR_RC = RC
TRACE OFF; SIGNAL OFF ERROR
/* */
SAY 'NON-ZERO RETURN CODE ENCOUNTERED IN EXEC AT LINE' SIGL
/* */
'CP SPOOL PRINTER NOCONT'
'CP CLOSE PRINTER NAME ESXULOD LISTING'
'CP SPOOL PRINTER OFF'
'GLOBAL LOADLIB'
'FILEDEF * CLEAR'
EXIT ERROR_RC
```

Exhibit 4.6: Model Z/VM EXEC—ESXULOD

Key to Variables

- **yourlib** — The file name of the load library into which you downloaded CA IDMS Enforcer.
- **idmslib** — The file name of the load library containing your CA IDMS SUBSCHEMA and DMCL modules.
- **txtlib** — The name of the text library containing your CA IDMS text files.
- **LODFILE SYSIPT A** — The name of the disk file into which the CA IDMS Enforcer structure will be downloaded. If necessary, rename the file to suit your site's naming standards.
- **CDFILE SYSIPT A** — The name of the disk file that contains the 80-byte records of comma-delimited word-sets for system table upload. If necessary, rename the file to suit your site's naming standards. An example of comma-delimited words follows: EMPLOYEE, PAYROLL, ACCOUNTS, INVENTORY, etc. Words must begin in column 1 of the 80-byte record; may not be continued from one 80-byte record to the next; may be terminated within an 80-byte record with a comma or trailing spaces; and may not contain embedded dashes, underscores, or spaces.
- **FILE WORKFIL A** — The name of the work file used by this utility. If necessary, rename the file to suit your site's naming standards.
- **dictionary-name** — The name of the alternate dictionary specified for download.

- **node-name** — The name of the node specified for download.
- **wordset-name** — The mutually exclusive WORDSET option is specified when the input file is CDFILE, containing 80-byte records with comma-delimited word-sets. Words are stored as values in the system table represented by the wordset-name (system table name).

Enforcement Structure Print (ESXPRINT)

This utility prints the contents of a CA IDMS Enforcer structure including: all or selected entities, all templates within those entities, all fields defined for each template, and all values, value ranges, system-owned table values and range values, and indirect references for each field. In addition, if you use the optional SNAPSHOT parameter, you can print the structure that was last backed up. If you do not use this parameter, the primary structure is printed. The Structure Hard-Copy Report generated by this utility is shown in Exhibit 4.11.

The model JCL and key to variables are contained in Target or Distribution source library member ESXPRINT (z/OS and Z/OS), TOOLJCL member ESXPRINT.S (Z/VSE), or the ESXPRINT EXEC (Z/VM). These members are shown below.

Keyword Parameter Example

```
PROCESS,  
  
    DICTIONARY=dictionary-name,  
    NODE=node-name,  
    SNAPSHOT  
SELECT=select-value(s)
```

Required Parameters

- *select-value(s)* — The required keyword, **SELECT**, provides the entity types that you want to print. Possible values are presented in Exhibit 4.7. You must select one or more entity types or specify the ALL parameter on the SELECT statement. If you choose to select more than one entity, the entity names must be encased in parenthesis and separated with commas.

Optional Parameters

- *dictionary-name* — This one- to eight-character subparameter is used to specify the CA IDMS Enforcer database dictionary name for enforcement structure print.
- *node-name* — This one- to eight-character subparameter is used to specify the node name for enforcement structure print.
- **SNAPSHOT** — This optional subparameter, with a minimum length of two characters, is used to direct print procedures to the backed up version of an enforcement structure. If this parameter is **not** specified, structures are printed from the primary enforcement structure. See Enforcement Structure Backup Procedures for more details.

Enforcement Structure Print Report Output

After executing ESXPRINT, review the Audit Report. If ESXPRINT does not execute successfully, error messages appear on the Audit Report, correct any errors and resubmit the job.

Print SELECT Values

Each of the entity-type names must be fully specified as listed below.

You must select one or more entity types or specify the ALL parameter on the SELECT statement. If you select more than one entity, the entity name must be encased in parenthesis and separated with commas.

Value	Value	Value
AREA	LOGICAL-TERMINAL	REPORT-SYNONYM
ATTRIBUTE	MAP	SCHEMA
CLASS	MESSAGE	SCHEMA-RECORD
COBOL-ELEMENT	MODULE	SET
DESTINATION	PANEL	SUBSYSTEM
ELEMENT	PHYSICAL-TERMINAL	SYSTEM
ELEMENT-SYNONYM	PROCESS	TABLE
ENTRY-POINT	PROGRAM	TASK
FILE	QFILE	TRANSACTION
FILE-SYNONYM	QUEUE	TRANSACTION- SYNONYM
LINE	RECORD	USER

Value	Value	Value
LOAD-MODULE	RECORD-SYNONYM	user-defined- entity-type
LOGICAL-RECORD	REPORT	VIEW-ID

Exhibit 4.7: Print SELECT Values

```
//ESXPRINT JOB (job card parameters),CLASS=A,MSGCLASS=A
//ESXPRINT EXEC PGM=ESXBPRT,REGION=1000K
//STEPLIB DD DISP=SHR,DSN=your.ca.loadlib
//          DD DISP=SHR,DSN=your.idms.loadlib
//SYSCTL DD DISP=SHR,DSN=your.idms.sysctl
//SYSIDMS DD *
DMCL=your.dmcl.name
//WORKFIL DD DSN=your.print.work.file,
//          DISP=(NEW,DELETE,DELETE),
//          UNIT=SYSDA,
//          SPACE=(CYL,(1,1))
//SYSLST DD SYSOUT=a
//SYSIPT DD *
PROCESS,
  DICTIONARY=dictionary-name,
  NODE=node-name,
  SNAPSHOT
SELECT=select-value(s)
/*
//
```

Exhibit 4.8: Model z/OS and Z/OS JCL (ESXPRINT)

Key to Variables

- **job card parameters** — The job card parameters required at your company.
- **your.ca.loadlib** — The name of the load library into which CA IDMS Enforcer load modules were link edited.
- **your.idms.loadlib** — The name of the load library into which CA IDMS load modules were link edited.
- **your.idms.sysctl** — The dataset name of the SYSCTL file for the Central Version (CV) used during CA IDMS Enforcer batch processing.
- **your.dmcl.name** — The name of your runtime system DMCL.
- **a** — An appropriate SYSOUT class for your company.
- **your.print.work.file** — The work file used by the print utility.
- **dictionary-name** — Is optional. If specified, must be a 1- to 8-character name of the dictionary specified for utility function.

- **node-name** — Is optional. If specified, must be a 1- to 8-character name of the node specified for utility function.
- **select-value(s)** — The entity-type name(s) selected for print. The required keyword, SELECT, provides the entity types that are selected for print. Select one or more entity types or specify the ALL parameter on the SELECT statement. Multiple entity names must be enclosed in parenthesis and separated by commas. See [Print SELECT Values](#) (see page 100) for SELECT values.

```
* $$ JOB JNM=ESXPRINT
// JOB ESXPRINT
*
// OPTION NODUMP
// UPSI a
// ASSGN SYS009,IGN
*
* *** CORE IMAGE LIBRARY FOR PRODUCT
// DLBL ca,'your.corelib'
// EXTENT ,volserc
// LIBDEF PHASE,SEARCH=(ca.sublibrary,idms.sublibrary),TEMP
*
* *** INPUT - SYNTAX
// ASSGN SYSIPT,SYSDR
*
* *** OUTPUT - PRINT REPORT FILE
// ASSGN SYS011,SYSLST
*
* *** WORK - Enforcer PRINT WORK FILE
// DLBL WORKFIL,'your.print.work.file,,0,SD
// EXTENT SYS015,volserw,,,strtrks,trks
// ASSGN SYS015,DISK,VOL=volserw,SHR
*
* *** PERFORM Enforcer ENTITY-TYPE PRINT
// DLBL SYSIDMS,'#SYSIPT',0,SD
// EXEC ESXBPT,SIZE=(ESXBPT,400K)
PROCESS,
    DICTIONARY=dictionary-name,
    NODE=node-name,
    SNAPSHOT
SELECT=(select-values)
/*
* Rnn.n OPTIONAL SYSIDMS PARAMETERS
/*
/*
* $$ EOJ
```

Exhibit 4.9: Model Z/VSE JCL (ESXPRINT.S)

Key to Variables

- **a** — The UPSI switch to be replaced with specifications from the IDMSOPTI module.
- **ca** or **ca.sublibrary** — The file name of the core image library into which the executable phases of CA IDMS Enforcer were installed.
- **your.corelib** — The name of the core image library into which the executable phases of CA IDMS Enforcer were installed.
- **volser** — The volume serial number or generic assignment of the disk volume on which the library, as specified in the previous statement, resides. The following letters identify the type of library or installation media: c=core image library, w=work file, r=relocatable library and s=source statement library.
- **idms** or **idms.sublibrary** — The file name of the core image library into which the executable phases of CA IDMS were installed.
- **your.print.work.file** — The work file used for internal processing during the print process.
- **strtrks** — The starting track of the disk file specified in the previous statement.
- **trks** — The number of tracks of the disk file specified in the previous statement.
- **dictionary-name** — The name of the alternate dictionary specified for upload.
- **node-name** — The name of the node specified for upload.
- **select-value(s)** — The entity-type name(s) selected for print. The required keyword, SELECT, provides the entity types that are selected for print. You must select one or more entity types or specify the ALL parameter on the SELECT statement. Multiple entity names must be enclosed in parenthesis and separated by commas. See [Print SELECT Values](#) (see page 100) for SELECT values.

```
/* */
TRACE OFF; SIGNAL ON ERROR
CA_LOADLIB_FN      = 'yourlib'
IDMS_LOADLIB_FN    = 'idmslib'
IDMS_TXTLIB_FN     = 'txtlib'
/* Link and access the Minidisks containing the required librarie(s) */
'GLOBAL TXTLIB  IDMS_TXTLIB_FN'
'GLOBAL LOADLIB CA_LOADLIB_FN IDMS_LOADLIB_FN'
'CP SPOOL PRINTER NOCONT CLOSE'
'CP SPOOL PRINTER TO * NOHOLD CONT FORM OFF DIST OFF'
/*
/* Create the input parameter file.
CALL CREATE_INPUT_PARM_FILE
/* Product specific files.
'FILEDEF SYSLST  PRINTER'
'FILEDEF SYSIPT  DISK ESXPRINT SYSIPT A'
'FILEDEF WORKFIL DISK FILE WORKFIL A'
/*
/* You must create a file 'SYSIDMS INPUT A' containing the SYSIDMS
/* parameters you use to specify your runtime environment.
'FILEDEF SYSIDMS DISK SYSIDMS INPUT A'
SIGNAL OFF ERROR
SAY 'STARTING RUN OF CA IDMS/Dictionary PRINT UTILITY'
'EXECOS OSRUN ESXBPT'
ESXBPT_RC = RC
'CP SPOOL PRINTER NOCONT'
'CP CLOSE PRINTER NAME ESXPRINT LISTING'
'CP SPOOL PRINTER OFF'
SAY 'Dictionary PRINT FINISHED WITH A RETURN CODE OF ' ESXBPT_RC
'GLOBAL LOADLIB'
'GLOBAL TXTLIB'
'FILEDEF * CLEAR'
EXIT ESXBPT_RC
```



```

/*+++++ */
CREATE_INPUT_PARM_FILE:
/*+++++ */
SIGNAL OFF ERROR
'ERASE ESXPRINT SYSIPT A'
/*
PUSH 'FFILE'
PUSH
PUSH 'SELECT=select-values'
PUSH 'SNAPSHOT'
PUSH 'NODE=node-name,'
PUSH 'DICTIONARY=dictionary-name,'
PUSH 'PROCESS,'
PUSH 'INPUT'
PUSH 'SET LRECL 80'
PUSH 'SET RECFM F'
'XEDIT ESXPRINT SYSIPT A' ,
' (NOPROFILE NOSCREEN NOMSG'
RETURN
/*+++++ */
ERROR:
/*+++++ */
ERROR_RC = RC
TRACE OFF; SIGNAL OFF ERROR
/*
SAY 'NON-ZERO RETURN CODE ENCOUNTERED IN EXEC AT LINE' SIGL
/*
'CP SPOOL PRINTER NOCONT'
'CP CLOSE PRINTER NAME ESXPRINT LISTING'
'CP SPOOL PRINTER OFF'
'GLOBAL LOADLIB'
'FILEDEF * CLEAR'
EXIT ERROR_RC

```

Exhibit 4.10: Model Z/VM EXEC--ESXPRINT

Key to Variables

- **yourlib** — The file name of the load library into which you downloaded CA IDMS Enforcer.
- **idmslib** — The file name of the load library containing your CA IDMS SUBSCHEMA and DMCL modules.
- **txtlib** — The name of the text library containing your CA IDMS text files.
- **FILE WORKFIL A** — The name of the work file used by this utility. If necessary, rename the file to suit your site's naming standards.
- **dictionary-name** — The name of the alternate dictionary specified for download.

- **node-name** — The name of the node specified for download.
- **select-value(s)** — The entity-type name(s) selected for print. The required keyword, SELECT, provides the entity types that are selected for print. You must select one or more entity types or specify the ALL parameter on the SELECT statement. Multiple entity names must be enclosed in parenthesis and separated by commas. See [Print SELECT Values](#) (see page 100) for SELECT values.

```

CA-T00LS          RELEASE          CA IDMS Enforcer          DATE          TIME          PAGE
                  Rnn.nn          Structure Hard-Copy      mm/dd/yy      hh:mm:ss      nnnn

***** AREA *****

Enforcement for:
Dictionary ,
Node ,
Entity AREA
Template DC01

-----1-----
aaa*****

where:

Template mode is non-bracketed.
Enforcement template length is 18.
Severity class is 001 and severity level is E-error.

aaa Position: 01 Length: 03
Type is System Table.
The following value(s) MAY be used:
ATA
ESS
GSD
GSI
GSM
GSS
SSK
TPS
USA
USD
USE
USF
USG
USL
USM
USN
USR
USS
USX
XDM

s Position: 04 Length: 01
Type is System Table.
The following value(s) MAY be used:
DEST , test
DICT , test
LINE , test
LT01 , test
NODE , test
PT01 , test
TEST , test
TYPE , test
    
```

Exhibit 4.11: Structure Hard-Copy Report

Dictionary Audit (ESXAUDIT)

This utility audits the specified central version data dictionary structure for naming compliance using CA IDMS Enforcer enforcement values as the basis for compliance determinations. The expanded version of the Dictionary Audit Report, shown in Exhibit 4.45 in Report Output--Expanded Mode, offers detailed diagnostic information. By using the `TERSE` parameter, you can limit the amount of information on the Dictionary Audit Report. An example of the terse version of the report is shown in Exhibit 4.46 in Report Output--Terse Mode. Both the expanded and terse version of the Dictionary Audit Report offer summary information (see Exhibit 4.47 in Naming Compliance Audit Summary).

You can limit the data dictionary entities to be audited by selecting or excluding specific entities. To minimize the size of the output file, expanded mode runs should be made as selective as possible.

Refer to Active Enforcement for passive enforcement requirements to audit data dictionaries defined in your central version.

The model JCL and key to variables are contained in Target or Distribution source library member `ESXAUDIT` (z/OS and Z/OS), TOOLJCL library member `ESXAUDIT.S` (Z/VSE), or the `ESXAUDIT EXEC` (Z/VM). These members are shown below.

Keyword Parameter Example

```
PROCESS,  
  
    DICTIONARY=dictionary-name,  
    NODE=node-name,  
    TERSE  
SELECT=select-value(s)  
EXCLUDE=exclude-value(s)  
STARTDATE=mmddy  
ENDDATE=mmddy
```

Required Parameters

- *select-value(s)* — The required keyword, `SELECT`, provides the entity-types that are selected for audit. You must select one or more entity types or specify the `ALL` parameter on the `SELECT` statement. If you select more than one entity, the entity names must be encased in parentheses and separated by commas. See Exhibit 4.12 for `SELECT` values.

Optional Parameters

- **TERSE** — This optional keyword limits the amount of audit information on the report. If you use this parameter, only the template name and compliance status for each selected occurrence name for every template of its entity type is presented. If you do **not** use this keyword, you will receive the expanded version of the Dictionary Audit Report.
- *dictionary-name* — This one- to eight-character subparameter is used to specify an alternate dictionary name for dictionary audit.
- *node-name* — This one- to eight-character subparameter is used to specify an alternate node name for dictionary audit.
- *exclude-value(s)* — Use the optional keyword, EXCLUDE, to further limit the entity selections made with the SELECT parameter. The entities that you exclude are not audited. If you specify more than one entity type for exclusion, the entity names must be encased in parenthesis and separated by commas. See Exhibit 4.12 for a list of possible values.
- **STARTDATE** and **ENDDATE** — These optional keywords indicate the dates against which entity name occurrences are compared for the purpose of audit selection. Any entity that was added to the dictionary prior to the STARTDATE specified is not included in the audit. Any entity that was added to the dictionary after the ENDDATE is not included in the audit.

Dictionary Audit Report Descriptions

After executing ESXAUDIT, review the Audit Report. If ESXAUDIT does not execute successfully, error messages appear on the Audit Report, correct any errors and resubmit the job.

Refer to Passive Enforcement for a complete description of the expanded and terse versions of the Dictionary Audit Report and detailed information about Summary reporting.

SELECT\EXCLUDE Table

Each of the entity-type names must be fully specified as listed below.

Entities	Entities	Entities
AREA	LOGICAL-TERMINAL	REPORT-SYNONYM
ATTRIBUTE	MAP	SCHEMA
CLASS	MESSAGE	SCHEMA-RECORD
COBOL-ELEMENT	MODULE	SET
DESTINATION	PANEL	SUBSYSTEM

Entities	Entities	Entities
ELEMENT	PHYSICAL-TERMINAL	SYSTEM
ELEMENT-SYNONYM	PROCESS	TABLE
ENTRY-POINT	PROGRAM	TASK
FILE	QFILE	TRANSACTION
FILE-SYNONYM	QUEUE	TRANSACTION- SYNONYM
LINE	RECORD	USER
LOAD-MODULE	RECORD-SYNONYM	user-defined- entity-type
LOGICAL-RECORD	REPORT	VIEW-ID

Exhibit 4.12: SELECT/EXCLUDE Dictionary Entities

```
//ESXAUDIT JOB (job card parameters),CLASS=A,MSGCLASS=A
//ESXAUDIT EXEC PGM=ESXBDDIC,REGION=1000K
//STEPLIB DD DISP=SHR,DSN=your.ca.loadlib
//          DD DISP=SHR,DSN=your.idms.loadlib
//SYSCTL DD DISP=SHR,DSN=your.idms.sysctl
//SYSIDMS DD *
DMCL=your.dmc1.name
//SYSLST DD SYSOUT=a
//SYSIPT DD *
PROCESS,
  DICTIONARY=dictionary-name,
  NODE=node-name,
  TERSE,
  SELECT=select-value(s),
  EXCLUDE=exclude-value(s),
  STARTDATE=mmddy,
  ENDDATE=mmddy
/*
//
```

Exhibit 4.13: Model z/OS and Z/OS JCL (ESXAUDIT)

Key to Variables

- **job card parameters** — The job card parameters at your company.
- **your.ca.loadlib** — The name of the load library into which the CA IDMS Enforcer load modules were link edited.
- **your.idms.loadlib** — The name of the load library into which the CA IDMS load modules were link edited.
- **your.idms.sysctl** — The dataset name of the SYSCTL file for the Central Version (CV) used during CA IDMS Enforcer batch processing.

- **your.dmcl.name** — The name of your runtime system DMCL.
- **a** — An appropriate SYSOUT class for your company.
- **dictionary-name** — Is optional. If specified, must be a 1- to 8-character name of the dictionary specified for utility function.
- **node-name** — Is optional. If specified, must be a 1- to 8-character name of the node specified for utility function.
- **select-value(s)** — The entity-type name(s) selected for audit. The required keyword, SELECT, provides the entity-types that are selected for audit. You must select one or more entity types or specify the ALL parameter on the SELECT statement. Multiple entity names must be encased in parenthesis and separated by commas. See [SELECT\EXCLUDE Table](#) (see page 108) for SELECT values.
- **exclude-value(s)** — Optional keyword EXCLUDE enables you to limit the entity selections made with the SELECT parameter. Multiple entity types specified must be encased in parenthesis and separated by commas. See [SELECT\EXCLUDE Table](#) (see page 108) for EXCLUDE values.
- **mmddy** — The STARTDATE and ENDDATE parameters may be optionally specified. These optional keywords indicate the dates against which entity name occurrences are compared for the purpose of audit selection. Any entity that was added to the dictionary prior to the STARTDATE specified is not included in the audit. Any entity that was added to the dictionary after the ENDDATE is not included in the audit.

```

* $$ JOB JNM=ESXAUDIT
// JOB ESXAUDIT
*
// OPTION NODUMP
// UPSI a
// ASSGN SYS009,IGN
*
* *** CORE IMAGE LIBRARY FOR PRODUCT
// DLBL dbms,'your.corelib'
// EXTENT ,volserc
// LIBDEF PHASE,SEARCH=(dbms.sublibrary,idms.sublibrary),TEMP
*
* *** INPUT - SYNTAX
// ASSGN SYSIPT,SYSRDR
*
* *** OUTPUT - AUDIT REPORT FILE
// ASSGN SYS011,SYSLST
*
* *** PERFORM PASSIVE ENFORCEMENT
// DLBL SYSIDMS,'#SYSIPT',0,SD
// EXEC ESXBDIC,SIZE=(ESXBDIC,400K)
*
* Rnn.n OPTIONAL SYSIDMS PARAMETERS
/*
PROCESS,
  DICTIONARY=dictionary-name,
  NODE=node-name,
  TERSE
SELECT=(select-values)
EXCLUDE=(exclude-values)
STARTDATE=mmddy
ENDDATE=mmddy
/*
/*
* $$ E0J

```

Exhibit 4.14: Model Z/VSE JCL (ESXAUDIT.S)

Key to Variables

- **a** — The UPSI switch to be replaced with specifications from the IDMSOPTI module.
- **ca** or **ca.sublibrary** — The file name of the core image library into which the executable phases of CA IDMS Enforcer were installed.
- **your.corelib** — The name of the core image library into which the executable phases of CA IDMS Enforcer were installed.

- **volser** — The volume serial number or generic assignment of the disk volume on which the library, as specified in the previous statement, resides. The following letters identify the type of library or installation media: c=core image library, w=work file, r=relocatable library and s=source statement library.
- **idms** or **idms.sublibrary** — The filename of the core image library into which the executable phases of CA IDMS were installed.
- **dictionary-name** — The name of the alternate dictionary specified for this utility function.
- **node-name** — The name of the node specified for this utility function.
- **select-value(s)** — The entity-type name(s) selected for audit. The required keyword, **SELECT**, provides the entity-types that are selected for audit. Select one or more entity types or specify the **ALL** parameter on the **SELECT** statement. Multiple entity names must be encased in parenthesis and separated by commas. See [SELECT\EXCLUDE Table](#) (see page 108) for **SELECT** values.
- **exclude-value(s)** — Optional keyword **EXCLUDE** enables you to limit the entity selections made with the **SELECT** parameter. Multiple entity types specified must be encased in parenthesis and separated by commas. See [SELECT\EXCLUDE Table](#) (see page 108) for **EXCLUDE** values.
- **mmddy** — The **STARTDATE** and **ENDDATE** parameters may be optionally specified. These optional keywords indicate the dates against which entity name occurrences are compared for the purpose of audit selection. Any entity that was added to the dictionary prior to the **STARTDATE** specified is not included in the audit. Any entity that was added to the dictionary after the **ENDDATE** is not included in the audit.


```
/* */
TRACE OFF; SIGNAL ON ERROR
CA_LOADLIB_FN      = 'yourlib'
IDMS_LOADLIB_FN    = 'idmslib'
IDMS_TXTLIB_FN     = 'txtlib'
/* */
/* Link and access the Minidisks containing the required librarie(s) */
'GLOBAL TXTLIB  IDMS_TXTLIB_FN'
'GLOBAL LOADLIB CA_LOADLIB_FN IDMS_LOADLIB_FN'
'CP SPOOL PRINTER NOCONT CLOSE'
'CP SPOOL PRINTER TO * NOHOLD CONT FORM OFF DIST OFF'
/* */
/* Create the input parameter file. */
CALL CREATE_INPUT_PARM_FILE
/* */
/* Product specific files. */
'FILEDEF SYSLST  PRINTER'
'FILEDEF SYSIPT  DISK ESXAUDIT SYSIPT A'
/* You must create a file 'SYSIDMS INPUT A' containing the SYSIDMS */
/* parameters you use to specify your runtime environment. */
'FILEDEF SYSIDMS DISK SYSIDMS INPUT A'
SIGNAL OFF ERROR
SAY 'STARTING RUN OF CA IDMS/Dictionary AUDIT UTILITY'
'EXECOS OSRUN ESXBDIC'
ESXBDIC_RC = RC
'CP SPOOL PRINTER NOCONT'
'CP CLOSE PRINTER NAME ESXAUDIT LISTING'
'CP SPOOL PRINTER OFF'
SAY 'Dictionary AUDIT FINISHED WITH A RETURN CODE OF ' ESXBDIC_RC
'GLOBAL LOADLIB'
'GLOBAL TXTLIB'
'FILEDEF * CLEAR'
EXIT ESXBDIC_RC
```

```

/*+++++ */
CREATE_INPUT_PARM_FILE:
/*+++++ */
SIGNAL OFF ERROR
'ERASE ESXAUDIT SYSIPT A'
/*
*/
PUSH 'FFILE'
PUSH
PUSH 'EXCLUDE=(exclude-values)'
PUSH 'ENDDATE=mmddy'
PUSH 'STARTDATE=mmddy'
PUSH 'SELECT=(select-values)'
PUSH 'TERSE'
PUSH 'NODE=node-name,'
PUSH 'DICTIONARY=dictionary-name,'
PUSH 'PROCESS,'
PUSH 'INPUT'
PUSH 'SET LRECL 80'
PUSH 'SET RECFM F'
'XEDIT ESXAUDIT SYSIPT A' ,
' (NOPROFILE NOSCREEN NOMSG'
RETURN
/*+++++ */
ERROR:
/*+++++ */
ERROR_RC = RC
TRACE OFF; SIGNAL OFF ERROR
SAY 'NON-ZERO RETURN CODE ENCOUNTERED IN EXEC AT LINE' SIGL
'CP SPOOL PRINTER NOCONT'
'CP CLOSE PRINTER NAME ESXAUDIT LISTING'
'CP SPOOL PRINTER OFF'
'GLOBAL LOADLIB'
'FILEDEF * CLEAR'
EXIT ERROR_RC

```

Exhibit 4.15: Model Z/VM EXEC--ESXAUDIT

Key to Variables

- **yourlib** — The file name of the load library into which you downloaded CA IDMS Enforcer.
- **idmslib** — The file name of the load library containing your CA IDMS SUBSCHEMA and DMCL modules.
- **txtlib** — The name of the text library containing your CA IDMS text files.
- **dictionary-name** — The name of the alternate dictionary specified for download.
- **node-name** — The name of the node specified for download.
- **exclude-values** — Any of the CA IDMS Enforcer entity types.

- **select-values** — Any of the CA IDMS Enforcer entity types.
- **mmddy** — Used to limit validation to entities added on or after this date.

Batch Compiler Utilities--Enforcer Example (ESXSAMPL)

ESXSAMPL presents example use of the CA IDMS Batch Utilities with CA IDMS Enforcer.

The Integrated Data Dictionary Activity List report (Exhibit 3.41 of Active Enforcement Messages) is generated when you execute a CA IDMS compiler. Active enforcement against input syntax to the compiler and naming compliance reporting occurs after you have activated enforcement and re-assigned output to the appropriate output file.

The example JCL/EXEC (z/OS and Z/OS and Z/VM only), key to variables, and a description of utility processing with CA IDMS Enforcer are contained in Target or Distribution source library member ESXSAMPL (z/OS and Z/OS) or in the ESXSAMPL EXEC (Z/VM).

Activating Enforcement

Activating CA IDMS Enforcer depends on the load library concatenation specified in your batch utility JCL. You **MUST** include the load library containing CA IDMS Enforcer's load module RHDCSGEN, IDMSCHEM, IDMSUBSC, or IDMSDDDL, established at product installation. This loadlib **MUST** appear first in the STEPLIB. For more information on Activating Enforcement, see Operations.

SYSLST Limitations

SYSLST must be assigned to SYSOUT unless all error levels are defined as "Display=N (NO)" through option 3.1.2 of the online definition and maintenance system.

For more information, see Active Enforcement and "Batch Mode--SYSLST Limitations".

Report Output

If CA IDMS Enforcer's error level display is enabled using option 3.1.2--Environment Runtime Directives Utility, you will receive the expanded mode version of report output similar to the Report Output--Expanded Mode. See "Batch Mode--SYSLST Limitations" for more information about enabling error displays.

Regardless of the error display specified, active enforcement for a data dictionary results in naming compliance messages presented in CA IDMS utility message format. Message displays presented during dictionary update are described in Active Enforcement.

```
//ESXSAMPL JOB (job card parameters),CLASS=A,MSGCLASS=A
//ESXSAMPL EXEC PGM=batchjob,REGION=1000K
//STEPLIB DD DISP=SHR,DSN=your.ca.loadlib
// DD DISP=SHR,DSN=your.idms.loadlib
//SYSCTL DD DISP=SHR,DSN=your.idms.sysctl
//SYSIDMS DD *
DMCL=your.dmcl.name
//SYSLST DD SYSOUT=a
//SYSPCH DD DUMMY
//SYSIPT DD *
.
.
.
syntax-input
.
.
/*
//
```

Exhibit 4.16: Model z/OS and Z/OS JCL (ESXSAMPL)

Key to Variables

- **job card parameters** — The job card parameters at your company.
- **batchjob** — The name of the batch compiler for execution: RHDCSGEN, IDMSCHEM, IDMSUBSC or IDMSDDDL.
- **your.ca.loadlib** — The name of the load library into which CA IDMS Enforcer load modules were link edited.
- **your.idms.loadlib** — The name of the load library into which the CA IDMS load modules were link edited.
- **your.idms.sysctl** — The dataset name of the SYSCTL file for the Central Version (CV) used during CA IDMS Enforcer batch processing.
- **your.dmcl.name** — The name of your runtime system DMCL.

- **a** — An appropriate SYSOUT class for your company.
- **syntax-input** — Your syntax for input to the batch utility.

```

/* */
TRACE OFF; SIGNAL ON ERROR
CA_LOADLIB_FN      = 'yourlib'
IDMS_LOADLIB_FN    = 'idmslib'
IDMS_TXTLIB_FN     = 'txtlib'
/*
/* Link and access the Minidisks containing the required librarie(s) */
'GLOBAL TXTLIB  IDMS_TXTLIB_FN'
'GLOBAL LOADLIB CA_LOADLIB_FN IDMS_LOADLIB_FN'
'CP SPOOL PRINTER NOCONT CLOSE'
'CP SPOOL PRINTER TO * NOHOLD CONT FORM OFF DIST OFF'
/*
/* Create the input parameter file.
CALL CREATE_INPUT_PARM_FILE
/*
/* Product specific files.
'FILEDEF SYSST  PRINTER'
'FILEDEF SYSIPT DISK ESXSAMPL SYSIPT A'
/*
/* You must create a file 'SYSIDMS INPUT A' containing the SYSIDMS
/* parameters you use to specify your runtime environment.
'FILEDEF SYSIDMS DISK SYSIDMS INPUT A'
SIGNAL OFF ERROR
SAY 'STARTING RUN OF CA IDMS BATCH COMPILER WITH Enforcer'
'EXECOS OSRUN batchjob'
ESXSAMPL_RC = RC
'CP SPOOL PRINTER NOCONT'
'CP CLOSE PRINTER NAME ESXSAMPL LISTING'
'CP SPOOL PRINTER OFF'
SAY 'BATCH COMPILER FINISHED WITH A RETURN CODE OF ' ESXSAMPL_RC
'GLOBAL LOADLIB'
'GLOBAL TXTLIB'
'FILEDEF * CLEAR'
EXIT ESXSAMPL_RC

```

```

/*+++++ */
CREATE_INPUT_PARM_FILE:
/*+++++ */
SIGNAL OFF ERROR
'ERASE ESXSAMPL SYSIPT A'
PUSH 'FFILE'
PUSH
PUSH batch-compiler-syntax
PUSH batch-compiler-syntax
PUSH batch-compiler-syntax
PUSH 'INPUT'
PUSH 'SET LRECL 80'
PUSH 'SET RECFM F'
'XEDIT ESXSAMPL SYSIPT A' ,
' (NOPROFILE NOSCREEN NOMSG'
RETURN
/*+++++ */
ERROR:
/*+++++ */
ERROR_RC = RC
TRACE OFF; SIGNAL OFF ERROR
/* */
SAY 'NON-ZERO RETURN CODE ENCOUNTERED IN EXEC AT LINE' SIGL
/* */
'CP SPOOL PRINTER NOCONT'
'CP CLOSE PRINTER NAME ESXSAMPL LISTING'
'CP SPOOL PRINTER OFF'
'GLOBAL LOADLIB'
'FILEDEF * CLEAR'
EXIT ERROR_RC
/* */

```

Exhibit 4.17: Model Z/VM EXEC--ESXSAMPL

Key to Variables

- **yourlib** — The file name of the load library into which you downloaded CA IDMS Enforcer.
- **idmslib** — The file name of the load library containing your CA IDMS SUBSCHEMA and DMCL modules.
- **txtlib** — The name of the text library containing your CA IDMS text files.
- **batchjob** — The name of the batch compiler for execution: RHDCSGEN, IDMSCHEM, IDMSUBSC, or IDMSDDDL.
- **batch-compiler-syntax** — Syntax statements for the specific batch compiler.

Chapter 5: Operations

This section contains the following topics:

[About This Chapter](#) (see page 119)

[CA IDMS Enforcer System Requirements](#) (see page 119)

[Enforcement Structure](#) (see page 120)

[Active Enforcement](#) (see page 121)

[Passive Enforcement](#) (see page 126)

[Modify CA IDMS Enforcer Tuning Parameters](#) (see page 127)

[Security Options](#) (see page 129)

[Activating Enforcement](#) (see page 131)

[Interface to CA IDMS SASO](#) (see page 132)

[Migrating the CA IDMS Enforcer Database](#) (see page 133)

[Online Documentation Facilities](#) (see page 133)

About This Chapter

This chapter details CA IDMS Enforcer operations. It describes system requirements, the enforcement structure, active and passive enforcement considerations, modifying runtime tuning parameters, security options, activating enforcement, interface to CA IDMS SASO (Standards Administration System Online), migration procedures for the CA IDMS Enforcer database, and the Online Documentation Facilities.

CA IDMS Enforcer System Requirements

CA IDMS Enforcer supports CA IDMS and CA IDMS/DC.

Terminal Type

CA IDMS Enforcer can be used from these terminals

- IBM 3270 terminal (except model 1), including the 3279 color display
- Any other 3270-compatible terminal.

Enforcement Structure

The online definition and maintenance system and batch utilities are used to define and maintain enforcement values. Batch operations provide easy specification of word or acronym sets and word delimitation values. By using the online system, you can establish enforcement structures.

Structures are organized by dictionary and node, entity types, and entity type templates for enforcement. A template consists of a collection of fields where each field can be associated with a fixed literal, multiple values, a system-owned table of values, or a field can indirectly reference another template already defined. The template example below demonstrates the use of a field designator with compressible characters (p+++++++), a literal value (AREA-), a fixed field designator (aaaaaaaa), and wildcards (*****).

```
p+++++++AREA-aaaaaaaa*****  
——+----1----+----2----+----3----+----4
```

Field designators are a unique set of lower-case characters or a single character. Compressible characters are represented by a plus sign (+) and indicate that portion of a field which is variable. Literals represent the actual data required during active enforcement and wildcards allow for entry of any values at runtime. Field delimitations can be dashes (-), underscores (_), spaces (), or all three. Delimitations established at product installation can be altered at any time. Refer to [Modify CA IDMS Enforcer Tuning Parameters](#) (see page 127).

Entity types, templates, and field values can be selectively included or excluded from active enforcement. Once a structure is established using online definition and maintenance utilities, a table containing enforcement values can be generated. Enforcement can be activated for current or future dates and can be active online and in batch or it can be used to audit your dictionary for existing entity-name occurrences. For more details, see Active Enforcement and "Passive Enforcement".

Bracket Mode Templating

Bracket mode is a tutorial driven processor which steps you through template field definitions required for a bracketed template. A bracket mode template is comprised of a PREFIX portion, followed by 1 to n interactions of words in a single WORDSET (system table) and terminated by a SUFFIX.

The PREFIX and SUFFIX portion of the template may be any type of enforcer field designation except for wildcards or compressible types. The WORDSET portion must be a single, unique, lower-case character and assigned to a system table.

Enforcement Structure Backup Procedures

CA IDMS Enforcer provides the capability to backup an enforcement structure. This backup is accomplished through generation options specified at the Environment Runtime Generation screen.

A snapshot of the dictionary/node structure being generated for active enforcement is created if you enter **Y** for Yes in the Create Enforcement Structure Backup field. This snapshot roughly doubles the size of your database.

For more information about Runtime Generation, see [Online Definition and Maintenance](#).

Enforcement Structure Backup Access

Dictionary/node structures which have been backed up can be reviewed using the Browse option of the online definition and maintenance system. Enforcement structures can be further defined and edited while the backup version, created at the Environment Runtime Generation screen, remains a snapshot of that dictionary and node as it existed when it was generated for active enforcement.

In addition to using the Browse option to view structures which have been backed up, you can print those structures. With the keyword parameter specifications of the print utility, ESXPRINT (contained in your installation source library), you can print the hard copy image of the snapshot version of the structure.

Dictionary/node structures in the process of definition, or those with no backup, are considered to be the primary structure for that dictionary/node. These structures can also be printed.

For more information about the Print Utility see [Batch Utilities](#) (see page 85).

Active Enforcement

The following operational considerations are discussed below:

- Entity types actively enforced
- Stalled generation
- Batch mode--SYSLST limitations
- CA IDMS utility processing
- Overriding active enforcement.

For more information on enabling enforcement for the CA IDMS utilities, see [Activating Enforcement](#) (see page 131).

Entity Types Actively Enforced

CA IDMS Enforcer supports the following standard dictionary entity types and entity-type synonyms supported by the System Generation, Schema, Subschema, and Data Dictionary Definition Language Compilers for ADD functions:

- System Generation Compiler Entity Types Actively Enforced

- DESTINATION
- LINE
- LOGICAL-TERMINAL
- PHYSICAL-TERMINAL
- PROGRAM
- QUEUE
- TASK

- Schema Compiler Entity Types Actively Enforced

- AREA
- SCHEMA
- SCHEMA-RECORD
- SET

- Subschema Compiler Entity Types Actively Enforced

- SUBSCHEMA

- Data Dictionary Entity Types Actively Enforced

- ATTRIBUTE
- CLASS
- COBOL-ELEMENT
- DESTINATION
- ELEMENT
- ELEMENT-SYNONYM
- ENTRY-POINT
- FILE
- FILE SYNONYM
- LINE
- LOAD MODULE
- LOGICAL-TERMINAL
- MAP

- MESSAGE
- MODULE
- PANEL
- PHYSICAL-TERMINAL
- PROCESS
- PROGRAM
- QFILE
- QUEUE
- RECORD
- RECORD-SYNONYM
- REPORT
- SCREEN
- SUBSYSTEM
- SYSTEM
- TABLE
- TASK
- TRANSACTION
- USER
- *user-defined-entity-type*
- VIEW ID

Stalled Generation

Enforcement processing may be compromised under certain circumstances. Messages ENF0040E and ENF0042E detail these situations. For information about these messages, access the online message facility through the online documentation.

If these messages are accompanied by a terminal ID, it is probable that a user is holding the enforcement table through an active IDDUXIT session. Relinquishing this session should enable generation to proceed.

In those cases where the indicated terminal **does not** hold an IDDUXIT session, the in-use count of an enforcement table has been incremented, the session has aborted (perhaps due to a deadlock situation), and generation cannot proceed because the in-use count can never reach zero. In order to reset the in-use count, one of the following procedures must be followed:

1. Cycle the central version. This will reset the tables.
2. If your site does not use 24-hour central version procedures, implement generation on a future date as long as the central version cycles prior to that date.
3. Insure that all tasks are quiesced and enter the ENFRESET task code from the DC prompt. This resets all enforcement tables and allows generation to proceed.

Batch Mode--SYSLST Limitations

The SYSLST DD assignment must be to a SYSOUT unless all severity levels for the specific enforcement structure are defined with a DISPLAY Mode assignment of N (No) at the Environment Runtime Directives screen.

If the DISPLAY mode is enabled and SYSLST is assigned to DASD or TAPE, the results are unpredictable.

For more information about executing CA IDMS compilers in batch mode, refer to [Batch Utilities](#) (see page 85).

CA IDMS Utility Processing

The System Generation Compiler, Schema Compiler, Subschema Compiler, and the Data Dictionary Definition Compiler can be actively enforced in both batch and online. Active enforcement both batch and online is based on the type of processing code returned to the CA IDMS Utility from CA IDMS Enforcer. Dictionary update options for varying error levels (I--Informational, W--Warning, or E--Error) determine further utility processing. Displaying errors and preventing data dictionary updates for varying error levels is specified at the Environment Runtime Directives online definition and maintenance utility, option 3.1.2. CA IDMS Enforcer processing codes (0-No Error, 1-Informational, 4-Warning, or 8-Error) are returned to the executing utility based on enforcement compliance and dictionary update options as shown in the examples below:

1. The entity name occurrence matches the naming standard template that is first in the search order for that entity:
 - 0--PREVENT DICTIONARY UPDATE enabled.
 - 0--PREVENT DICTIONARY UPDATE disabled.
2. The entity name occurrence does **not** match the first naming standard template, but complies with a template that is not first in the search order:
 - 1--PREVENT DICTIONARY UPDATE enabled.
 - 1--PREVENT DICTIONARY UPDATE disabled.
3. The entity name occurrence does not match any templates defined for that entity type:
 - 4--PREVENT DICTIONARY UPDATE disabled.
 - 8--PREVENT DICTIONARY UPDATE enabled.

The CA IDMS utility formats one of the following messages based on CA IDMS Enforcer return codes:

- 0 — no message type is generated for this error level.
- 1 — ***+ I** — CA IDMS utility message type is generated for this error level.
- 4 — ***+ W** — CA IDMS utility message type is generated for this error level.
- 8 — ***+ E** — CA IDMS utility message type is generated for this error level.

For more information about active enforcement, see Active Enforcement.

Overriding Active Enforcement

Two types of override processing are available during of an active enforcement session, the `OVERRIDE` command and internal processing to override the prefix specification requirements for bracketed template compliance. Both features are implemented through a combination of CA IDMS security and task definition established at product installation. The `OVERRIDE` command is associated with the `ESXAOVE` task and the internal prefix override is associated with the `ESXPFIX` task.

To implement these features, task category resources for `ESXAOVE` and `ESXPFIX` must be defined to your system catalog and access privileges granted to users allowed to override enforcement compliance. If resources are not defined in your catalog, anyone issuing the `OVERRIDE` command can bypass compliance to enforcement standards. For bracketed templates, entry of the prefix will be required to pass enforcement.

For additional information on bracketed templates and security, see [Enforcement Structure](#) (see page 120) and "Security Options". The `OVERRIDE` command is discussed in Active Enforcement.

Passive Enforcement

CA IDMS Enforcer supports the following standard data dictionary entity types, entity-type synonyms, and CA IDMS components supported by the System Generation, Schema, Subschema, and Data Dictionary Definition Language Compilers:

Entity	Entity	Entity
AREA	MAP	SCHEMA-RECORD
ATTRIBUTE	MESSAGE	SCREEN
CLASS	MODULE	SET
COBOL-ELEMENT	PANEL	SUBSYSTEM
DESTINATION	PHYSICAL-TERMINAL	SYSTEM
ELEMENT	PROCESS	TABLE
ELEMENT-SYNONYM	PROGRAM	TASK
ENTRY POINT	QFILE	TRANSACTION
FILE	QUEUE	TRANSACTION-SYNONYM
FILE SYNONYM	RECORD	USER
LINE	RECORD-SYNONYM	user-defined- entity-type
LOAD-MODULE	REPORT	VIEW ID

Entity	Entity	Entity
LOGICAL-RECORD	REPORT-SYNONYM	
LOGICAL-TERMINAL	SCHEMA	

Exhibit 5.1: Entity Types Passively Enforced

Modify CA IDMS Enforcer Tuning Parameters

CA IDMS Enforcer tuning parameters are initially established at product installation. Values that may be altered include:

- The CA IDMS Enforcer task used to invoke the Online Definition and Maintenance system
- The Dictionary and Node used to contain the tutorials or help text for the Online Definition and Maintenance system
- The Version number of tutorials or help modules accessed at runtime from the specified dictionary and node
- The Lock Mode Directive to direct active enforcement online
- The Delimiters valid for word delimitations during active enforcement of entity name occurrences.

CA IDMS Enforcer Task

The default task code at installation is ENFORCER. If you alter this, you must also modify the task name in the ESXSYSGN member from initial installation to correspond.

Dictionary and Node--Tutorials

The Online Help or Tutorial feature of CA IDMS Enforcer uses a CA IDMS data dictionary to hold the tutorial text. You may load the tutorial text to the primary dictionary associated with the CA IDMS/DC under which this product runs. You may decide, however, to load the tutorial text in a secondary dictionary associated with the CA IDMS/DC under which this product runs.

The default dictionary and node at installation is the primary dictionary associated with the CA IDMS/DC under which this product runs. If you alter this, you must upload the help text or tutorial modules into the specified dictionary using the ESXTUTOR member from initial installation.

Version Number--Tutorials

The version number default is 1. VERSION 1 is contained in the ESXTUTOR member supplied at product installation. If the version number is changed, you must also change the version number in the ESXTUTOR member to correspond.

Locking Mode Directives--Active Enforcement

The default lock mode is D. Locking modes direct active enforcement during updates to the data dictionary using the System Generation Compiler, Schema Compiler, Subschema Compiler, or the Data Dictionary Definition Language Compiler. Specific lock modes and their functions are described below.

- **D** — DEADLOCK. This directive enables full enforcement diagnostics which includes presentation of the Active Enforcement screen. This mode causes deadlocks when concurrent updates of the same entity type are requested in the same dictionary. Multiple transaction processing causes a currency failure when the enforcer attempts to commit the first transaction and process the next.
- **B** — BATCH MODE. This directive disables presentation of the Active Enforcement screen. Only CA IDMS Enforcer messages are displayed. This mode minimizes the possibility of deadlocks.
- **I** — IDDM ONLY. This directive enables full enforcement diagnostics when the Menu Facility is in use. Single transaction processing eliminates currency problems.

CA IDMS Enforcer message detailing naming compliance failures is presented in online compiler diagnostics and in printed batch output regardless of lock mode. For more information, see Active Enforcement.

Delimitations

Delimiters used to separate words or acronyms can be limited to one or enabled for all. Delimitations established at installation allow all delimiters as the default. Words can be delimited by:

- () SPACE
- (-) DASH
- () UNDERLINE.

Modifying the ESXTPARM Macro

To alter values in the ESXTPARM macro, change the arguments in the assembler instruction(s) immediately before the END statement and assemble the program. To assemble ESXTPARM, you must have ESXCPARM in the assembly maclib. Following successful assembly, link edit ESXTPARM using appropriate parameters supplied at product installation.

Security Options

The CA IDMS Enforcer integrated security feature gives you the ability to provide security for the various online definition and maintenance browse, edit and utility functions, and for CA IDMS Enforcer dictionary and node structure access contained on the installed database.

Securing CA IDMS Enforcer Tasks

You can secure online definition and maintenance functions, shown in Exhibit 5.3, by defining CA IDMS task category resources for a function's task. Once task category resource entities are defined, user can be granted execution privileges to access all or specific browse, edit, or utility functions.

Security checking is performed at CA IDMS Enforcer runtime. Task-level security is verified first. Tasks that are not defined to CA IDMS security will not be accessible by all users.

Securing CA IDMS Enforcer Dictionary/Node Structures

You can secure specific CA IDMS Enforcer dictionary and node structures by:

- Defining dictionary and node browse and update activity resources to CA IDMS centralized security system
- Using the online definition and maintenance Dictionary/Node Security Utility, option 3.0, to assign the resource activity number to the CA IDMS Enforcer dictionary/node for browse, update, or both
- Granting execution privileges to a user or group for access to the CA IDMS Enforcer dictionary and node structure for browse, update, or both.

TRANSFER LEVEL	TASK NAME	FUNCTION
0	ESXAMEN	CA IDMS Enforcer Online Definition and Maintenance Primary Menu.

TRANSFER LEVEL	TASK NAME	FUNCTION
1	ESXABAC	Standards Enforcement Access--Browse
2	ESXAEAC	Standards Enforcement Access--Edit
3	ESXAUTL	Standards Enforcement Access--Utilities
3.0	ESXASL	Dictionary/Node Security
3.1	ESXAUEN	Environment Utility
3.1.1	ESXAUES	Environment--Severity Levels
3.1.2	ESXAUED	Environment--Runtime Directives
3.1.3	ESXAUEG	Environment--Runtime Generation
3.2	ESXAUAC	Structure Utility Access
3.3	ESXAUCD	Add/Copy Enforcement Structure
3.4	ESXAUCE	Add/Copy Entity Type
3.5	ESXAUCT	Add/Copy Template
3.6	ESXASTB	System Table Maintenance

Exhibit 5.2: A-IDMS/Enforcer Securable Tasks

CA-ACF2 Security Exit Installation

Use these steps to install CAIDMS Enforcer as a subordinate exit to the CA-ACF2 security exit:

- Step 1--Modify the Prototype CA-ACF2 Exit** — A standard IBM linkage call must be added to the prototype CA-ACF2 exit. This call should load a V-type address constant of SUBEXIT for every possible exit command type. If the command is a SIGNON command, SUBEXIT should only be called if the return code is less than eight.

After modification, the CA-ACF2 exit should be reassembled. It is assumed that the CA-ACF2 exit **does not** use the User Work Area full word in the User Exit Control Block, and that parameters are passed intact from the CA IDMS Utility.

- Step 2--Relink the CA IDMS Utility** — Alter the appropriate linkage edit statements from the initial product installation to change the name of the CA IDMS Enforcer exit. To alter the name, use the CHANGE command in the following sequences for the target online or batch compiler:

Online

```
INCLUDE SYSLIB (IDUXIT)      CA-ACF2 Prototype
CHANGE IDUXIT (SUBEXIT)
INCLUDE LOADLIB (IDUXITA)
```

Batch

```
INCLUDE SYSLIB (IDUXIT)      CA-ACF2 Prototype
CHANGE IDUXIT (SUBEXIT)
INCLUDE LOADLIB (IDUXITB)
```

See Exhibit 5.3 for a list of compilers containing user-exit support. Activating enforcement using CA IDMS compiler user exits is also described in this chapter.

Activating Enforcement

Activating Enforcement is accomplished by generating the CA IDMS Enforcement Table and testing for the presence or not of Enforcer modules in your CDMSLIB or STEPLIB library concatenation.

CA IDMS Enforcer Enforcement Table

The CA IDMS Enforcer enforcement table contains enforcement values defined in the online definition and maintenance system. For each data dictionary defined in your central version that must be actively and/or passively enforced, a table of enforcement values must be generated for the corresponding dictionary/node structure contained in the CA IDMS Enforcer database.

For more information on generating the required enforcement table, see Environment Utilities Screen.

Online Environment

Activating Enforcement for the online environment is achieved based on the presence of the ENFRXITO with an alias of ENFROXIT in your CDSMLIB library concatenation at runtime.

Batch Environment

Activating Enforcement for the batch environment is achieved based on the presence of the ENFRXITB with an alias of ENFRBXIT in your job STEPLIB library concatenation.

Passive Enforcement

Refer to Passive Enforcement for detailed information about passive enforcement. "Dictionary Audit Utility (ESXAUDIT)", does not require user exit processing to determine the levels of entity-name compliance. The only requirement for auditing a data dictionary is that the enforcement values are defined in the online definition and maintenance system and are generated into the required table format.

Interface to CA IDMS SASO

CA IDMS Enforcer standards can be displayed in full detail in a CA IDMS SASO online browse session or in printed output. For more information, see the "Operations" chapter of the *CA IDMS SASO User Guide*.

Migrating the CA IDMS Enforcer Database

To migrate the template definitions of a CA IDMS Enforcer database structure from one CA IDMS/DC environment to another (database), download the contents of the database and populate the database of the new environment with the downloaded text. Download the database using the Download Enforcement Structure batch utility (ESXDLOD). This procedure writes the entire contents of the structure to a disk file or tape. To populate another database with the tape or disk output file, use the Upload Enforcement Structure batch utility (ESXULOD) specifying appropriate keyword parameters to either replace an existing structure or add a new one. For more information, see [Batch Utilities](#) (see page 85).

Online Documentation Facilities

Online Documentation Print Utility

The CA Online Documentation Print Utility provided with CA IDMS Enforcer allows error messages and other product information to be printed upon request.

The Target or Distribution source library member GSIPRINT (z/OS and Z/OS), TOOLJCL library member GSIPRINT.S (Z/VSE), or the GSIPRINT EXEC (Z/VM), downloaded from the CA IDMS Enforcer installation media, contains the JCL to execute the Online Documentation Print Utility. The online documentation modules for CA IDMS Enforcer processing are listed in Exhibit 5.4.

The printed version of the online documentation is presented one screen per page and includes page reference indices for screen options. Characters highlighted in the online documentation appear bolded in the printed version.

Online Message Facility

CA IDMS Enforcer allows you to view message text in an online environment.

To access the Message Index screen:

1. Type **M** in the OPTION field of any HELP screen.
2. Press the Enter key.

The Message Index screen is displayed.

To view message text:

1. Type the message number in the INDEX line of the Message Index screen.
2. Press the Enter key.

The text for that message is displayed.

Module Name	Description
GSCMSG	General Service Messages
GSHELP	General Service documentation
USXMSG	EDITOR Messages
ESXABAC	Standards Enforcement Access (browse)
ESXADL	Dictionary/Node List
ESXAEAC	Standards Enforcement Access (edit)
ESXAEDC	Confirm Field Deletion
ESXAEFI	Indirect Field Reference
ESXAEFR	Field Range Values
ESXAEFV	Field Value(s)
ESXAEL	Entity List
ESXAEMC	Confirm Field Modification
ESXAETF	Edit Template Format/Fields
ESXAKEY	Display PF Key Values
ESXAMEN	Primary Menu--documentation for all options
ESXAREC	CA IDMS Enforcer Recovery
ESXASL	Dictionary/Node Security List
ESXASTB	System Table Maintenance

Module Name	Description
ESXASTC	Confirm System Table Deletion
ESXASTE	System Table Reference
ESXASTL	System Table List
ESXATL	Template List
ESXAUAC	Structure Utility Access
ESXAUC	Confirm Structure Replace
ESXAUCD	Add/Copy Enforcement Structure
ESXAUC	Add/Copy Entity Type
ESXAUCT	Add/Copy Template
ESXAUC	Confirm Structure Deletion
ESXAUEC	Confirm Entity Deletion
ESXAUED	Environment - Runtime Directives
ESXAUEG	Environment - Runtime Generation
ESXAUEN	Environment Utilities
ESXAUES	Environment - Severity Levels
ESXAURC	Confirm Template/Indirect Replace
ESXAUTC	Confirm Template/Indirect Deletion
ESXAUTL	Standards Enforcement Utilities
ESXAUUC	Confirm Entity Replace
ESXBROW	EDITOR Browse Commands
ESXSHOW	Browse Template
ESXMSG	CA IDMS Enforcer Online Message Facility
ESXSYNTAX	General Syntax Notation Information
IDDEXIT	Active Enforcement documentation Facility

Exhibit 5.4: Online Documentation Modules for CA IDMS Enforcer

Chapter 6: Messages

This section contains the following topics:

[About This Chapter](#) (see page 137)

[Messages](#) (see page 137)

About This Chapter

This chapter lists all messages generated by CA IDMS Enforcer. Included are the codes for messages, reasons for their occurrences, and suggestions for appropriate remedial action.

Messages are preceded by an alphanumeric code that ends with a letter indicating the severity. The code is one of the following:

Informative--A code ending with the letter **I** indicates an informative message. Informative messages need no remedial action.

Warning--A code ending with the letter **W** indicates a warning message. Warning messages report conflicting parameter data or processing conditions that may cause unexpected results.

Error--A code ending with letter **E** indicates an error. Error messages report erroneous and conflicting parameter data that has caused processing to terminate.

Messages

ADIC001E NOTHING WAS SELECTED FOR VALIDATION

Reason:

The combination of SELECTS, EXCLUDES, and DATE SPECIFICATIONS failed to yield any entities for validation.

Action:

Respecify parameters so that something may be selected, and rerun the job.

ADIC002E THE x CARD WAS OUT OF SEQUENCE OR MISSING

Reason:

The keyword parameter major command represented by "x" was out of sequence.

Action:

Correct the major command sequence and rerun the job.

ADIC003E AN UNEXPECTED EXCLUDE VALUE OF x WAS ENCOUNTERED

Reason:

An EXCLUDE value represented by 'x' is not one of the fixed ENTITY types valid for audit.

Action:

Refer to Chapter 4, [Batch Utilities](#) (see page 85) or "Passive Enforcement" for valid ENTITY types, correct the invalid EXCLUDE value and rerun the job.

ADIC004E INVALID DATE CONFIGURATION IN x

Reason:

The keyword parameter indicated by 'x', STARTDATE OR ENDDATE, contains an invalid date configuration.

Action:

Refer to [Batch Utilities](#) (see page 85), correct the date specification on the STARTDATE or ENDDATE parameter and rerun the job.

ADIC005E INVALID DICTIONARY/NODE COMBINATION OF x/y

Reason:

The dictionary and node names, "x/y", specified or defaulted for audit cannot be located as a valid network database name.

Action:

Correct the DICTIONARY and NODE parameters and rerun the job. Insure that the SYSCTL is pointing to the correct central version.

ADIC006E MAXIMUM USER-DEFINED ENTITIES PER RUN IS n**Reason:**

USER-DEFINED entities selected for audit cannot exceed the number represented by "n".

Action:

If the number of USER-DEFINED entities to be audited exceeds the maximum number indicated in the message, divide them across more than one audit run.

ADIC007W UNABLE TO LOCATE USER-DEFINED ENTITY x**Reason:**

A value "x" was encountered as one of the SELECT specifications. The value was neither one of the fixed entity types, nor the name of a USER-DEFINED ENTITY in the dictionary to audit.

Action:

Correct the indicated value and rerun the job.

APRT001E THE x CARD WAS OUT OF SEQUENCE OR MISSING**Reason:**

The keyword parameter major command represented by "x" was out of sequence.

Action:

Correct the major command sequence and rerun the job.

APRT002E AN UNEXPECTED EXCLUDE VALUE OF x WAS ENCOUNTERED**Reason:**

An EXCLUDE value was specified which does not represent one of the fixed ENTITY types.

Action:

Refer to Chapter 4, [Batch Utilities](#) (see page 85) or "Passive Enforcement" for valid ENTITY types, correct the invalid EXCLUDE value and rerun the job.

APRT003E NO TEMPLATES WERE PRINTED FOR THIS REQUEST

Reason:

The SELECT criteria for print yielded no printable templates, or the indicated ENTITY owned no templates.

Action:

Correct CA IDMS Enforcer structure or select another ENTITY and rerun the job.

APRT004E DICTIONARY/NODE x/y PRIMARY/SNAPSHOT NOT FOUND

Reason:

The indicated structure and version were not found.

Action:

Correct the DICTIONARY, NODE, and/or SNAPSHOT parameters and rerun the job.

APRT005E INVALID RETURN OF n FROM DOCUMENTOR

Reason:

The documentation subroutine encountered an unrecoverable error. The integer represented by "n" may be one of the following values:

- 4 - STRUCTURE COMMUNICATION FAILURE (Structure not found)
- 8 - Dynamic CALL failure from batch documentor
- 12 - FILE HANDLER failure from batch documentor

Action:

Contact CA Technical Support with the indicated error message and integer code. For errors 8 and 12, review the job log for additional system presented diagnostics.

APRT006E MAXIMUM USER-DEFINED ENTITIES PER RUN IS n

Reason:

USER-DEFINED entities selected for audit cannot exceed the number represented by "n".

Action:

If the number of USER-DEFINED entities to be printed exceeds the maximum number indicated in the message, divide them across more than one print run.

APRT007W UNABLE TO LOCATE USER-DEFINED ENTITY x**Reason:**

A value "x" was encountered as one of the SELECT specifications. The value was neither one of the fixed entity types, nor the name of a USER-DEFINED ENTITY in the CA IDMS Enforcer structure.

Action:

Correct the indicated value, and rerun the job.

DLOD001I DOWNLOAD COMPLETED FOR x/y**Reason:**

The indicated DICTIONARY/NODE was successfully downloaded to a logical offload output file.

Action:

None.

DLOD002E UNABLE TO LOCATE x/y FOR DOWNLOAD**Reason:**

The indicated DICTIONARY/NODE could not be located in the data structure.

Action:

Correct the DICTIONARY/NODE specification, and rerun the job.

DLOD003I DOWNLOAD COMPLETED FOR SYSTEM TABLES**Reason:**

A SYSTEM TABLE download has successfully completed (ESXDLOD).

Action:

None.

DLOD004E UNABLE TO LOCATE SYSTEM TABLES**Reason:**

A SYSTEM TABLE download has been requested for a CA IDMS Enforcer structure which owns no SYSTEM TABLES.

Action:

Select a CA IDMS Enforcer structure which contains SYSTEM TABLES and rerun the job.

ENF0001E COMMAND x IS NOT ACTIVE FOR THIS FUNCTION

Reason:

The command is not active for the current screen. The invalid command was either entered on the command line or substituted from a PFKEY.

Action:

Refer to the user guide or use the online HELP facility to determine valid commands.

ENF0002E SYSTEM TABLE table-name ALREADY EXISTS

Reason:

An attempt has been made to add a system table which already exists.

Action:

Select another name for ADD, modify the indicated table, or request a system table list.

ENF0003E SYSTEM TABLE table-name DOES NOT EXIST

Reason:

An attempt has been made to modify or delete a system table which does not exist.

Action:

Select another table name for modify or delete, or request a system table list.

ENF0004E AN ERROR OCCURRED DURING RECOVERY PROCEDURES

Reason:

The CA IDMS Enforcer communication area stack has been compromised by a system failure, and recovery cannot continue.

Action:

Exit CA IDMS Enforcer, logoff the terminal, or have all terminal resources freed using the DCMT V LT terminal-id RESOURCES DELETE command. If the condition reoccurs consistently, contact CA Inc. Product Support.

ENF0005E ENTITY-TYPE NAME IS MISSING**Reason:**

An ENTITY name has been entered incorrectly.

Action:

Either respecify the ENTITY name correctly, or enter blanks in the ENTITY NAME field to display and select from the ENTITY LIST.

ENF0006E HIGHLIGHTED FIELD VALUES ARE IN CONFLICT - PLEASE RESOLVE AND REENTER**Reason:**

A process has been attempted, but field values conflict with allowable procedures.

Action:

Determine the cause of the field conflict. If the screen directives do not reveal the cause, refer to the user guide or the online HELP facility to resolve the field conflict.

ENF0007E NO DICTIONARY/NODE STRUCTURES EXIST**Reason:**

A DICTIONARY/NODE list has been requested, but no structures exist in the CA IDMS Enforcer database.

Action:

Either use the ADD STRUCTURE utility to create a skeletal structure, or upload a downloaded structure using batch utilities described in the user guide.

ENF0008E UNABLE TO TRANSFER TO x**Reason:**

An equal command (=n.n) has been attempted, but the transfer point does not exist, or is invalid from this function.

Action:

Specify a valid transfer. A table of transfer points is contained in the user guide and in the online documentation.

ENF0009E SUBROUTINE ERROR - x

Reason:

Upon exit from CA IDMS Enforcer, a severe error has occurred during an attempt to return the terminal to UPPER case mode.

Action:

Review the message text supplied in the message. If the error is not correctable, contact CA Technical Support with the full message text.

ENF0010E THE HIGHLIGHTED FIELD(S) CONTAINS AN INVALID VALUE

Reason:

During screen processing, an invalid value was detected in one or more fields.

Action:

If the screen directives do not supply enough information to determine the cause of the error, review the contents of the user guide or the online HELP facility to correct the field contents.

ENF0011E PLEASE MAKE A SELECTION FROM THE INDICATED OPTIONS

Reason:

The indicated screen requires a user-supplied option value from the list of options, but none was entered.

Action:

Enter one of the indicated options.

ENF0012E UTILITY FUNCTION DISALLOWED (DUPLICATE STRUCTURES CANNOT BE COPIED)

Reason:

An attempt has been made to copy a structure or a structural component onto itself.

Action:

Specify a different target or source for the function.

ENF0013E ADD/COPY FAILED - x/y ALREADY EXISTS**Reason:**

The indicated DICTIONARY/NODE structure, x/y, cannot be the target of an ADD or COPY because it already exists.

Action:

If the DICTIONARY/NODE is to be overlaid, specify the REPLACE option as YES.

ENF0014E SYSTEM TABLE CONTAINS VALUES — TYPE MODIFICATION DISALLOWED**Reason:**

An attempt has been made to modify a system table from a set of RANGES to a set of VALUES, or vice versa.

Action:

Delete and re-add the system table.

ENF0015I DELETE OF SYSTEM TABLE table-name CANCELLED BY USER**Reason:**

The user has requested a delete of a system table, and subsequently entered the END command to terminate the deletion.

Action:

None.

ENF0016I FUNCTION SUCCESSFULLY COMPLETED**Reason:**

The current function was successfully completed.

Action:

None.

ENF0017E NODE x WAS NOT FOUND

Reason:

A NODE value was specified on the entry specification screen, but no DICTIONARY/NODE combination with the specified NODE exist.

Action:

Specify a different NODE value, or enter an asterisk (*) in the NODE value for all possible NODES.

ENF0018E NO ENFORCEMENT STRUCTURES EXIST FOR x/y

Reason:

A DICTIONARY and NODE value were specified on the entry specification screen, but the combination does not exist.

Action:

Specify different DICTIONARY/NODE values or asterisks (*) to display all DICTIONARY/NODES.

ENF0019E x ERROR - INVALID PARM LIST

Reason:

The program name represented by "x" has passed an invalid parameter configuration to a subroutine.

Action:

Contact CA with the full message text.

ENF0020E ESAMnnnn - INVALID PARAMETER LIST

Reason:

A system internal failure has occurred during EDITOR interface processing.

Action:

Contact CA with the message text including the return code represented by "nnnn".

ENF0021E ESAMnnnn - ILLEGAL CALL (PUT BEFORE OPEN)**Reason:**

A system internal failure has occurred during EDITOR interface processing.

Action:

Contact CA Technical Support with the message text and the return code represented by "nnnn".

ENF0022E ESAMnnnn - I/O ERROR nnnn OCCURRED**Reason:**

A system internal failure has occurred during EDITOR interface processing.

Action:

Contact CA Technical Support with the message text and return codes represented by "nnnn".

ENF0023E ESAMnnnn - UNEXPECTED RETURN CODE WHILE CREATING THE SOURCE TEXT AREA**Reason:**

A system internal failure has occurred during EDITOR interface processing.

Action:

Contact CA Technical Support with the message text and the return code represented by "nnnn".

ENF0024E ESAMnnnn - END OF FILE REACHED (BEYOND BOTTOM)**Reason:**

A system internal failure has occurred during EDITOR interface processing.

Action:

Contact CA Technical Support with the message text and the return code represented by "nnnn".

ENF0025E DICTIONARY x WAS NOT FOUND

Reason:

A DICTIONARY value was specified on the entry specification screen, but no DICTIONARY/NODE combination with the specified DICTIONARY exist.

Action:

Specify a different DICTIONARY value, or enter an asterisk (*) in the DICTIONARY value for all possible DICTIONARIES.

ENF0026I RECOVERY WAS SUCCESSFUL

Reason:

A system failure occurred, but the CA IDMS Enforcer session was successfully recovered.

Action:

None.

ENF0027E BAD RETURN OF n FROM KEY HANDLER

Reason:

The CA IDMS Enforcer communication storage has been compromised.

Action:

Contact CA Product Support with the integer return code and the name of the CA IDMS Enforcer program in which the error has occurred.

ENF0028E ONLY ONE (1) LINE COMMAND x IS VALID FOR THIS FUNCTION

Reason:

While several of CA IDMS Enforcer list functions allow multiple line commands per each screen iteration, the current function only allows the specification of a single line command.

Action:

Determine the single line entry to process, remove the other line commands, and retry the transaction.

ENF0029I DELETE OF DICTIONARY x, NODE y CANCELLED BY USER**Reason:**

The user has responded with the END command at the structure delete confirmation screen.

Action:

None.

ENF0030E REPLACE OPERATION FAILED - x/y WAS NOT FOUND**Reason:**

A structure copy indicated that the DICTIONARY/NODE was to be replaced, but the structure does not exist.

Action:

Alter the REPLACE option to NO and retry the transaction.

ENF0031E HIGHLIGHTED FIELD(S) IS NOT NUMERIC**Reason:**

The indicated field requires a numeric value, but a value other than 0 through 9 has been encountered.

Action:

Correct the indicated fields.

ENF0032E NO ENTITY TYPES EXIST FOR x/y**Reason:**

The DICTIONARY/NODE structure represented by "x/y" contains no ENTITIES.

Action:

This is a system internal error. Contact CA Technical Support.

ENF0033E AN INTERNAL ERROR HAS OCCURRED IN PROGRAM x - CONTACT PRODUCT SUPPORT**Reason:**

An unexpected program condition has been encountered in program "x".

Action:

Contact CA Technical Support with the message text.

ENF0034E LINE COMMAND x NOT VALID FOR THIS FUNCTION

Reason:

A line command has been entered on a list screen, but the command is not valid for the current list processing.

Action:

Enter a valid line command. If the screen directive does not provide enough information, access the user guide or the online HELP system for correct line command entries.

ENF0035E NO SEVERITY CLASSES EXIST FOR x/y

Reason:

The dictionary and node, "x/y", contains no SEVERITY CLASSES.

Action:

This is a system internal error. Contact CA Technical Support.

ENF0036I PREVIOUS LINE COMMAND REQUEST(S) M SUCCESSFULLY COMPLETED

Reason:

One or more (M)odifies of Severity Level assignments were successful.

Action:

None.

ENF0037E HIGHLIGHTED DATE COMPONENT(S) ARE INVALID

Reason:

The indicated fields require a valid date, but the entries are invalid.

Action:

Correct the fields to a valid date in Month/Day/Year format.

ENF0038E NO SYSTEM TABLES EXIST

Reason:

A system table list was requested, but no system tables exist in this CV.

Action:

Populate the system tables using batch utilities ESXDLOD and ESXULOD, or by using the ADD option of the System Table Maintenance function online.

ENF0039I GENERATION SUCCESSFUL - TABLE IS n BYTES LONG**Reason:**

An enforcement table has been successfully generated. The length of the table in bytes is presented in the indicated integer "n".

Action:

None.

ENF0040E GENERATION FAILED - RETURN CODE IS n**Reason:**

A system failure occurred during generation, or enforcement implementation. Possible returns are:

Code	Action
0004	Generation failed due to missing structure parameters. Contact CA Technical Support.
0008	Generation failed due to severe logic error. Contact CA Technical Support.
0104	Structure implant failed due to missing structure parameters. Contact CA Technical Support.
0112	Storage failure. Increase storage pool.
0116	Single-thread lock failure. Cycle central version. If symptom reoccurs, contact CA Technical Support.

Code	Action
terminal-id	Structure lock failure, return code is 0120. A CA IDMS online utility request to update the dictionary has invoked the Active Enforcement screen presenting full enforcement diagnostics, and 60 seconds have elapsed. The message indicates the owning terminal. Have the owning terminal free their active enforcement session, and retry the generation. If the terminal has already freed the session, a deadlock error has probably left usage count above zero for the structure. For stalled generations, use the ENFRESET function as described in Operations (see page 119). To prevent future deadlock errors, see Chapter 5, "Operations" for information on different CA IDMS Enforcer Tuning Parameter modes.
0124	Area cannot be readied due to another run unit against the CA IDMS Enforcer database. Check area status and retry when area is freed.
0200-1499	CA IDMS/DB status error during structure implant. Return is CA IDMS/DB status return. If error is not correctable, contact CA Technical Support.

ENF0041E STRUCTURE COPY/REPLACE PARAMETERS INVALID

Reason:

An illegal copy has been attempted.

Action:

This is a probable internal error. Primary structures may be copied to snapshots of the same structure.

ENF0042E UNABLE TO ACQUIRE LOCK DUE TO USE BY TERMINAL x

Reason:

This message is identical to return code 120 related to message ENF0040E preceding.

Action:

Refer to message ENF0040E above.

ENF0043E UNABLE TO LOCATE ENTITY x

Reason:

The indicated ENTITY does not exist in the current structure.

Action:

Correctly specify the ENTITY name, or enter blanks to allow selection from the ENTITY list.

ENF0044E UNABLE TO LOCATE TEMPLATE x

Reason:

The indicated TEMPLATE does not exist in the current ENTITY.

Action:

Correctly specify the TEMPLATE name, or enter blanks to allow selection from the TEMPLATE list.

ENF0045E UNABLE TO LOCATE FIELD(S) FOR TEMPLATE x

Reason:

A template without fields has been encountered, or an invalid field number has been derived by program logic.

Action:

Contact CA Technical Support.

ENF0046E FIELD CURRENCY MUST REMAIN UNCHANGED FOR DELETES AND MODIFIES

Reason:

An attempt has been made to modify or delete a field in template editing, before establishing field currency.

Action:

Establish currency at the field to modify or delete.

ENF0047I FIELD CURRENCY LOCATED TO FIELD BOUNDARY FOR INQUIRY

Reason:

Field currency was modified by cursor positioning, but the cursor was not on an exact field boundary. Currency is located to the beginning of the field in which the cursor is located.

Action:

None.

ENF0048E FIELD IDENTIFIER CANNOT BE SPACES

Reason:

Spaces were entered in the Field Identifier.

Action:

Correct the Field Identifier and retry the transaction. For valid entries, consult the user guide or the online HELP system.

ENF0049E FIELD IDENTIFIER EXCEEDS MAXIMUM ENTITY/TEMPLATE LENGTH

Reason:

The length of the field to be added or modified will cause the overall length of the template to exceed the maximum length of the indicated ENTITY.

Action:

Correct the length and retry the transaction.

ENF0050E x AND y MAY NOT APPEAR IN THE SAME FIELD

Reason:

Two or more conflicting values have been entered in the Field Identifier. The conflicting values are represented by "x" and "y". Non-unique field designators are not allowed.

Action:

Correct the Field Identifier and retry the transaction.

ENF0051E COMPRESSION CHARS (+) MAY NOT PRECEDE ANY ACTUAL FIELD IDENTIFIER(S)

Reason:

A compression character (+) was entered as a leading character. Compressible fields must be designated with at least one alphabetic lower case character.

Action:

Correct the contents of the Field Identifier. Refer to the user guide or the online HELP system for valid Field Identifier construction.

ENF0052E FIELDS MAY ONLY BE ADDED AT AN EXISTING FIELD BOUNDARY**Reason:**

A field ADD was attempted, but the cursor was not positioned on a field boundary.

Action:

Position to a field boundary using the RIGHT, LEFT, FIRST, or LAST command before attempting the ADD.

ENF0053W ALREADY AT FIRST/LAST FIELD**Reason:**

The RIGHT or LAST command was entered and the currency was at the last field, or the LEFT or FIRST command was entered and the currency was at the first field.

Action:

None.

ENF0054E EXTENDED EDIT NOT ALLOWED FOR THIS FIELD**Reason:**

A request for extended field editing was made for a field type which does not support extended editing.

Action:

Either modify the characteristics of the field so that extended editing is possible, or move field currency to another field.

ENF0055I TABLE DELETION WAS SUCCESSFUL--NO TEMPLATE/FIELDS WERE ALTERED**Reason:**

The request to delete a system table completed successfully. The table was not associated with any template fields in CA IDMS Enforcer which resulted in no template or field change requirements.

Action:

None.

ENF0056E TEMPLATE NAME IS MISSING

Reason:

An ADD or COPY of a TEMPLATE has been requested, but the TEMPLATE NAME field is spaces.

Action:

Specify a TEMPLATE NAME as the target of the ADD or COPY.

ENF0057E INSUFFICIENT TRAILING WILDCARDS (*) TO ADD/MODIFY THIS FIELD

Reason:

An attempt has been made to add (insert) a new field, or increase the length of an existing field, but the altered length will overflow the maximum template length.

Action:

Create enough trailing wildcards by shortening existing fields or deleting fields. Then, re-add or modify the original field.

ENF0058E THE INDICATED SYSTEM TABLE IS A VALUE RANGE-COMPRESSION IS NOT ALLOWED

Reason:

An attempt to associate a compressible field with a system table type other than a set of non-numeric VALUES has been made.

Action:

You can indicate another system table defined as a set of VALUES, or return to the template edit function and re-specify the field value type or the field identifier to a field other than a compressible field.

ENF0059E TEMPLATE-NAME, SEARCH-ORDER, OR BOTH ALREADY EXISTS

Reason:

An attempt has been made to ADD or COPY-TO a template, but the template name or search order already exists.

Action:

Determine whether the name or search order is duplicated, alter the redundant value, and retry the transaction.

ENF0060I x OF TEMPLATE FIELD CANCELLED BY USER

Reason:

The requested action on a template field, "x", indicates that field MODIFICATION, DELETION, or ADDITION has been cancelled from the confirmation screen using the END command.

Action:

None.

ENF0061E REPLACE OPERATION FAILED-UNABLE TO LOCATE TEMPLATE x

Reason:

The target of a template copy has been specified as "REPLACE", but the template does not exist.

Action:

Either respecify the transaction without the REPLACE option, or correct the template name to that of an existing template.

ENF0062E DICTIONARY x AND NODE y WERE NOT FOUND

Reason:

The indicated DICTIONARY/NODE combination does not exist on the CA IDMS Enforcer database.

Action:

Respecify DICTIONARY/NODE, or add the indicated DICTIONARY/NODE structure.

ENF0064E USER NOT AUTHORIZED FOR BROWSE/UPDATE IN STRUCTURE x/y

Reason:

An attempt to access the dictionary and node structure represented by "x/y" failed. Either the task category resource for the current CA IDMS Enforcer function could not be located in the system dictionary or the user ID is not defined in the user catalog.

Action:

Either select another CA IDMS Enforcer function or contact the security administrator at your company with this message. For additional information on security, see [Operations](#) (see page 119).

ENF0065E IMPLANT OF ENFORCEMENT STRUCTURE FAILED WITH RETURN n

Reason:

A system failure occurred during active enforcement while attempting to load an enforcement structure into core. For a listing of possible return codes and actions, see ENF0040E in this guide.

ENF0066E ENFORCEMENT FAILURE - UNABLE TO ACQUIRE SINGLE-THREAD LOCK

Reason:

Active enforcement failed because 60 seconds elapsed without the freeing of the single-thread lock used to insure enforcement table integrity.

Action:

If the condition occurs a second time, a severe system error has left the single-thread lock allocated. Recycle the central version to clear the lock.

ENF0067I ENFORCEMENT PASSED DUE TO SUBORDINATE TEMPLATE (OTHER THAN FIRST)

Reason:

The entity name associated with this message passed naming compliance but the template against which the name passed was not the first in the search order.

Action:

None.

ENF0068I DELETION CANCELLED BY USER FOR TEMPLATE x

Reason:

The user has terminated a template delete by entering the END command from the confirmation screen.

Action:

None.

ENF0069E NO TEMPLATES EXIST FOR ENTITY x

Reason:

A template list has been requested for the indicated entity, but no templates have been defined.

Action:

Add or copy templates to the indicated entity, and retry the transaction.

ENF0070E NUMERIC FIELDS MAY NOT BE GREATER THAN 9 CHARACTERS IN LENGTH**Reason:**

A field add or modification was attempted for a DATA TYPE of numeric, but the field length is greater than 9.

Action:

If the numeric portion of the template must be more than 9 characters in length, divide the field into two separate numeric fields.

ENF0071E FIELD VALUE ALREADY EXISTS-X**Reason:**

An attempt has been made to add a field value which already exists in the value set for the current field.

Action:

Alter the indicated field value to a non-existing value, or unspecify the request.

ENF0072E COMPRESSION (+) IS ONLY ALLOWED FOR NON-NUMERIC VALUE SETS**Reason:**

An attempt to associate a compressible field with a numeric data type or a field value type other than S-Systable or V-Value has been made.

Action:

Alter the field value type to S-Systable or V-Value, specify A-Alphanumeric or A-Alphabetic data type, or specify a non-compressible field.

ENF0073E VALUE SPECIFIED IS GT THAN MAXIMUM ALLOWABLE**Reason:**

The length of an entry in the valueset or value range field exceeds the defined length of the field.

Action:

Correct the length of the value entry, or alter the length of the field.

ENF0074E VALUE SPECIFICATIONS MUST ADHERE TO DATA TYPE x

Reason:

A value has been provided in the value set or value range list which does not match the data type of the current field, ALPHABETIC, ALPHANUMERIC, or NUMERIC.

Action:

Correct the value entry to match the data type indicated in the messages by "x".

ENF0075E FIELD VALUE COULD NOT BE FOUND: x

Reason:

A modification or delete of a field value or field value range has been attempted, but the value entry does not exist.

Action:

Correct the transaction type or value entry, and retry the transaction.

ENF0076E/I/W UPDATE ALLOWED/ABORTED - ENFORCEMENT FAILED FOR x

Reason:

The following message appears in CA IDMS utility output when enforcement is enabled. The suffix to the ENF0076 portion of the message indicates the severity level of the template against which compliance was established. If the severity level is associated with the prevention of updates, the message will state "UPDATE ABORTED" and will be associated with a CA IDMS utility message prefix of "*+ E", and the entity will not be added to the dictionary. If the severity level is not associated with the prevention of updates, the message will state "UPDATE ALLOWED" and will be associated with a CA IDMS utility message prefix of "*+ W", and the entity will be added to the dictionary.

Action:

None.

ENF0077E FIELD x ALREADY REFERENCED IN y

Reason:

A field has been defined as an indirect reference, but the ENTITY/TEMPLATE to which the field is indirected contains a field which is indirected. Only one level of indirection is allowed.

Action:

Either remove the indirection from the target ENTITY/TEMPLATE, or specify another ENTITY/TEMPLATE.

ENF0078E INDIRECT TEMPLATE LENGTH ff CONFLICTS WITH REQUIRED LENGTH ff**Reason:**

The length of the indirected field must exactly match the maximum entity length of the ENTITY to which indirection is to be established.

Action:

Alter the length of the current field, or select an ENTITY which is the length of the current field.

ENF0079E THE SEARCH ORDER SPECIFIED ALREADY EXISTS**Reason:**

A template is attempting to be added with a search order which already exists.

Action:

Alter the search order and retry the transaction.

ENF0080E *NO-REPLACE - TEMPLATE NAME, SEARCH ORDER, OR BOTH ALREADY EXISTS**Reason:**

At attempt has been made to replace a template, but the search order from the source template is in conflict with the configuration of search orders in the target entity.

Action:

Either alter search orders in the target entity to be non-conflicting, or select another source template for the copy.

ENF0081E D-DATA ONLY A-ALPHANUMERIC FIELD TYPES MUST BE WILDCARDS (*)**Reason:**

A field has been defined as D-Data value type, A-Alphanumeric data type, but the field identifier does not contain wildcards (*).

Action:

Alter the field identifier to contain wildcards (*), or change the data type and/or value type of the field.

ENF0082E NON-UNIQUE USE OF FIELD DESIGNATOR

Reason:

A field is being added or modified to contain the same lower case character as the preceding or following field. Two contiguous fields may not use the same field designator (lower case character).

Action:

Select another lower case character as the field designator.

ENF0083I NAMING ENFORCEMENT FAILURE ANALYSIS FOLLOWS:

Reason:

Display mode has been enabled for a CA IDMS batch compiler (System Generation, Schema, Subschema, or Data Dictionary Definition Language compiler), and a naming compliance failure has occurred. This message designates the beginning of the batch diagnostics associated with the compliance failure.

Action:

None.

ENF0084I END OF ENFORCEMENT FAILURE ANALYSIS

Reason:

Display mode has been enabled for a CA IDMS batch compiler (System Generation, Schema, Subschema, or Data Dictionary Definition Language compiler), and a naming compliance failure has occurred. This message designates the end of the batch diagnostics associated with the compliance failure.

Action:

None.

ENF0085E THE LAST FIELD MAY NOT BE DELETED

Reason:

A single field exists in the current template, and a delete has been attempted against it. Templates must contain at least one field.

Action:

Either modify the single field, or add new fields to rearrange the template.

ENF0086E UNABLE TO COMPLETE DOCUMENTATION REQUEST**Reason:**

A request to BROWSE a template could not be completed due to an internal system error.

Action:

Contact CA Technical Support.

ENF0087I REPLACEMENT CANCELLED BY USER FOR TEMPLATE x**Reason:**

Template replacement has been cancelled by the user through the END command from the confirmation screen.

Action:

None.

ENF0088W NO VALUES/VALUE RANGES HAVE BEEN ASSIGNED TO FIELD/TABLE**Reason:**

This message is displayed upon first entry to the value list or range set process after a system table or a template field has been initially defined.

Action:

Add a value or range set in the skeletal occurrences provided using line command "A" (ADD) to the left of the FIELD VALUE or the INCLUDE/EXCLUDE? screen fields.

ENF0089E FROM RANGE CANNOT BE GREATER THAN (GT) TO RANGE**Reason:**

Range specifications require that the "to" range is greater than or equal to the "from" range.

Action:

Correct the range values and retry the transaction.

ENF0090E UNABLE TO LOCATE TCE AND CSA IN IDDUXIT

Reason:

A severe logic error has been encountered during active enforcement.

Action:

Contact CA Technical Support.

ENF0091I ACTIVE ENFORCEMENT DISABLED

Reason:

Enforcement has been disabled, and the active enforcement tables removed from core.

Action:

None.

ENF0092E NAME OVERRIDE NOT APPROVED

Reason:

The OVERRIDE command was entered from the on-line active enforcement display, but the user is not authorized for name override.

Action:

Refer to [Operations](#) (see page 119) to determine further action, if any.

ENF0093E COPY-TO ENTITY-TYPE LENGTH n CONFLICTS WITH COPY-FROM LENGTH n

Reason:

The from and to entities in a copy request are of different lengths.

Action:

Correct the source or target entity so that the lengths are identical.

ENF0094E SIGNON REQUIRED DUE TO ACTION OF ANOTHER COMPILER

Reason:

Multiple CA IDMS utility sessions (System Generation, Schema, Subschema, Data Dictionary Definition Language Compilers or the Data Dictionary Menu Facility) have compromised enforcement control tables.

Action:

Re-issue signon to the current compiler.

ENF0095E ENTITY-TYPE NAME ALREADY EXISTS

Reason:

An attempt has been made to add an ENTITY which already exists in the target DICTIONARY/NODE.

Action:

Correct ENTITY-TYPE to a new value.

ENF0096E REPLACE OPERATION FAILED-UNABLE TO LOCATE ENTITY x

Reason:

An attempt has been made to replace an ENTITY which does not exist.

Action:

Correct ENTITY-TYPE to an existing value, or unspecify the REPLACE option.

ENF0097I REPLACEMENT CANCELLED BY USER FOR ENTITY x

Reason:

The user cancelled an ENTITY REPLACEMENT by entering END from the confirmation screen.

Action:

None.

ENF0098E *NO-REPLACE - ENTITY-TYPE NAME ALREADY EXISTS

Reason:

An attempt has been made to copy over an ENTITY which currently exists, but the REPLACE option was not specified.

Action:

Select another ENTITY as the target of the COPY operation or specify the REPLACE option.

ENF0099I DELETION CANCELLED BY USER FOR ENTITY x

Reason:

The user cancelled an ENTITY DELETION by entering END from the confirmation screen.

Action:

None.

ENF0100E TEMPLATE LENGTH CANNOT EXCEED THE MAXIMUM ALLOWABLE ENTITY LENGTH

Reason:

The template length specified for enforcement is greater than the entity length.

Action:

Re-specify Enforcement Template Length to either match the entity length displayed or indicate a value less than the maximum allowable.

ENF0101E USER DEFINED ENTITY TYPES MUST BE A 1- THROUGH 20- CHARACTER NAME

Reason:

User defined entity types are added by specifying the CLASS TYPE IS ENTITY parameter of the ADD CLASS NAME IS statement. Class name must be a 1- through 20-character name.

Action:

Specify a 20 character entity type name.

ENF0102E program-name: USER NOT AUTHORIZED FOR task-name TASK CATEGORY RESOURCE

Reason:

The user or group has not been granted execution privileges to access the CA IDMS Enforcer "task-name" to which control was being transferred. This is a CA IDMS security failure.

Action:

Either select another function, or have the security administrator grant execution privileges to this user/group.

ENF0103I REPLACEMENT CANCELLED BY USER FOR DICTIONARY x AND NODE y

Reason:

Dictionary and node replacement has been cancelled by the user through the END command from the confirmation screen.

Action:

None.

ENF0104E FIELD IDENTIFIER EXCEEDS ENFORCEMENT TEMPLATE LENGTH SPECIFICATION

Reason:

A template field has been specified which is greater in length than the template length indicated for enforcement.

Action:

Re-specify the template field with a value that is equal to or less than enforcement template length.

ENF0105E token-identifier MAY NOT APPEAR IN FIELD NUMBER field-number FOR BRACKET MODE

Reason:

Bracket mode edits have detected an invalid field value in the field identifier.

Action:

Specify another value in the field identifier and retry the transaction, or bypass bracket mode by specifying N in the template bracket mode screen field.

ENF0106E FIELD 02 MUST BE A ONE CHARACTER DESIGNATOR FOR BRACKET MODE

Reason:

More than one lower-case character has been specified to designate the WORDSET (system table) portion of the bracket mode template.

Action:

Alter the field identifier to contain a single lower-case character, or bypass bracket mode by specifying N in the template bracket mode screen field.

ENF0107E FIELD 02 MUST BE ASSOCIATED WITH A SYSTEM TABLE FOR BRACKET MODE

Reason:

A Field Value Type other than S-Systable was found for the WORDSET portion of the bracket mode template.

Action:

Specify "S" in the Field Value Type screen field and press enter, or bypass bracket mode by specifying N in the template bracket mode screen field.

ENF0108E COMPRESSION CHARS (+) ARE NOT VALID FOR BRACKET MODE

Reason:

A compressible character has been detected in the current template field.

Action:

Specify a field designator other than a compressible type, or bypass bracket mode by specifying N in the template bracket mode screen field.

ENF0109E FIELD 02 CANNOT BE DESIGNATED AS A LITERAL FOR BRACKET MODE

Reason:

The field identifier contains a literal value which is invalid for the WORDSET portion of a bracket mode template.

Action:

Specify a single lower-case character in field 02, or bypass bracket mode by specifying N in the template bracket mode screen field.

ENF0110E WILDCARDS MUST HAVE FIELD TYPES OF D-DATA AND A-ALPHANUMERIC

Reason:

A field identifier specified as a wildcard (*) is not associated with the required field value type D for data only, and/or the required field data type A which indicates alphanumeric.

Action:

Correct the contents of field value type, and/or field data type.

ENF0111E FIELD DESIGNATORS BEYOND FIELD 03 MUST BE WILDCARDS FOR BRACKET MODE

Reason:

More than three fields exist and the field beyond field number 03 contains a field designator other than wildcards (*).

Action:

Delete all fields beyond field number 03. Deleted fields are automatically converted to wildcards. Otherwise, change the bracket mode to N and continue.

ENF0112E SYSTEM TABLE REQUIRED FOR BRACKET MODE NOT FOUND FOR FIELD 02**Reason:**

The WORDSET portion (PREFIX.WORDSET.SUFFIX) of the bracketed template requires assignment of a system table.

Action:

Specify Y at the Extended Field Edit prompt to associate a system table with field 02.

ENF0113E BRACKET MODE ERROR--NO SYSTEM TABLES COULD BE LOCATED**Reason:**

No CA IDMS Enforcer system tables could be found.

Action:

Alter the Template Bracket Mode screen field to N and exit the Edit Template function. To define a system table, access the System Table Maintenance utility option. When your table is defined, you can continue with previous activities.

ENF0114E BRACKET MODE ERROR--SYSTEM TABLE table-name NOT FOUND**Reason:**

A system table specified in 'table-name' could not be located in the CA IDMS Enforcer database.

Action:

Alter the Template Bracket Mode screen field to N and exit the Edit Template function. To define the system table, access the System Table Maintenance utility option. When your table is defined, you can continue with previous activities.

ENF0115E BRACKET MODE ERROR--SYSTEM TABLE DB OBTAIN ERROR**Reason:**

A database error occurred while attempting to locate a system table.

Action:

Contact CA Technical Support with this error message. To exit the Edit Template function, specify N at the Template Bracket Mode field and enter the END command.

ENF0116E BRACKET MODE ERROR--RANGE TYPE SYSTEM TABLE IS INVALID

Reason:

A range type system table, which is invalid for a bracketed template, is associated with a field.

Action:

Specify Y in the Extended Edit screen prompt and assign a value type system table to the Field Identifier.

ENF0117E BRACKET MODE ERROR--SYSTEM TABLE table-name CONTAINS NO VALUES

Reason:

A system table, which contains no values, has been associated with a bracketed template field.

Action:

To specify values in the system table, specify N at the Template Bracket Mode prompt, enter the END command, and access the System Table Maintenance function. When the table contains values, continue with previous activity.

ENF0118E AT LEAST 3 FIELD SPECIFICATIONS IS REQUIRED FOR BRACKET MODE

Reason:

Three fields (PREFIX.WORDSET.SUFFIX) are required to establish a bracketed template.

Action:

Define three fields following instructions outlined in the online tutorial or in [Operations](#) (see page 119).

ENF0119I BRACKET MODE COMPLETED SUCCESSFULLY FOR template-name TEMPLATE

Reason:

The template definition passed all bracket mode edits.

Action:

None.

ENF0120I FUNCTION SUCCESSFULLY COMPLETED, PRESS ENTER TO CONTINUE BRACKET EDITS**Reason:**

Bracket mode is a tutorial driven processor which steps you through template field definitions required to establish a bracketed template. Current activity toward defining a bracketed template has completed successfully.

Action:

Press the Enter key to continue editing and defining the bracket template.

ENF0121I PRESS "ENTER" TO CONTINUE BRACKET MODE EDITS**Reason:**

Bracket mode is a tutorial driven processor which steps you through template field definitions required to establish a bracketed template. Additional edits are required to complete the template definition.

Action:

Press the Enter key to continue editing and defining the bracket template.

ENF0122E VALUE RANGE TABLE IS NOT VALID FOR FIELD 02 IN A BRACKETED TEMPLATE**Reason:**

A table has been specified at the System Table Reference screen which is defined as a range type table and bracket mode edits are operant.

Action:

Specify another system owned table which is defined as a value type table to satisfy bracket mode requirements.

ENF0123E TABLE CONTAINS NO VALUES-INVALID FOR FIELD 02 IN A BRACKETED TEMPLATE**Reason:**

A table has been specified at the System Table Reference screen which contains no values and bracket mode edits are operant.

Action:

Either specify another system table or exit the Edit Template function and specify values using the System Table Maintenance function.

ENF0124E REQUESTED DELETE WOULD CAUSE A NON-UNIQUE USE OF FIELD DESIGNATORS

Reason:

The Field Identifier for delete separates two fields containing the same field designator (identical lower-case characters) and field designators are required to be unique.

Action:

Alter one or both fields on either side of the Field Identifier for delete to contain unique lower-case characters.

ENF0125E program-name: task-name TASK RESOURCE OR USER/GROUP NOT FOUND

Reason:

Either a user/group global resource type could not be located in the user catalog or a task category resource type could not be located in the system dictionary.

Action:

Either select another function or contact the security administrator at your company with this message.

ENF0126E program-name: #SECHECK INTERFACE PARAMETER LIST ERROR

Reason:

An error has been detected in the parameter list supplied/returned during a security check.

Action:

Contact CA Technical Support with this message.

ENF0127E program-name: UNKNOWN RETURN CODE FROM #SECHECK INTERFACE

Reason:

A return code other than 0 through 12 has been returned from a security check.

Action:

Contact CA Technical Support with this message.

ENF0128E program-name: entity-type activity-type ACTIVITY RESOURCE OR USER/GROUP NOT FOUND

Reason:

Either a user/group global resource type could not be located in the user catalog or an update/browse activity resource for a document or chapter could not be located in the system dictionary.

Action:

Contact the security administrator at your company with this message.

FILE905E GSSFILE RETURNED AN ERROR DURING v, FILE=v, CODES nnnn

Reason:

The indicated file function could not be performed with the specified file.

Action:

See the "Messages" chapter (Exhibit 5.1) of the user guide to determine the reason the error occurred and the appropriate action to take.

Two types of errors can be reported by the return codes of n1, n2, n3, and n4--non-VSAM file errors and VSAM file errors. The error is described by n2 and n4. For VSAM file errors, n4 is always equal to 28. The error is described by n1, n2, and n3. A general return code is given by n4 for both non-VSAM and VSAM errors. All return codes are decimal values.

n4	Reason	Action
4	End-of-file	Call Product Support.
8	Open error or file is not open	Look for JCL errors or for the use of improper files.
12	An I/O error has occurred	Find cause for I/O error.
16	Request not recognized	Call Product Support.
20	File was already opened	Call Product Support.
24	Parameter list error	Call Product Support.

n4	Reason	Action
28	VSAM error n1=R15 return code from VSAM n2=low order byte from R0 GENCB/MODCB type of error n3=VSAM feedback byte error in I/O request	Use n1, n2, and n3 to check for possible user errors. If there are no user errors, call Product Support.
32	Insufficient storage	Increase storage for job step.
36	SYNAD error occurred	Call Product Support.
40	BPAM FIND error n1=R15 n2=R0	Use n1 and n2 (as described in Data Management Macro Instructions) to check for errors.
44	BPAM STOW error n1=R15 n2=0	Use n1 and n2 (as described in Data Management Macro Instructions) to check for errors.
n2	Reason	Action
0	n4=8, use of unopened file n4=24, parameter list error	Call Product Support. Call Product Support.
1	JCL/label override parm list	Remove DCB information from JCL and ensure that the correct files are referenced.
2	Parm list override JCL/label	Remove DCB information from JCL and ensure that the correct files are referenced.
3	Unrecognized request	Call Product Support.
4	Z/OS x13 ABEND trapped at open	Fix cause for x13 ABEND.
5	Tried to update seq. file	Call Product Support.
6	VSAM write at other than load	Call Product Support.
7	SOS table could not expand	Call Product Support.
8	Z/OS DCB open failed	Call Product Support.
9	SOS table buffer pointer lost	Call Product Support.
10	SOS table file CB not built	Call Product Support.
11	Z/OS DD statement Missing	Supply missing DD statement.
12	VSAM ACB open failed	Call Product Support.

n4	Reason	Action
13	Record format invalid	Call Product Support.
14	Macro format invalid	Call Product Support.
15	Record length not numeric	Call Product Support.
16	Record length too large	Call Product Support.
17	Block size not numeric	Call Product Support.
18	Block size too large	Call Product Support.
19	Invalid Z/VSE sysname table	Assemble a valid sysname table.
20	Z/VSE sysname table entry missing	Assemble a sysname table with an entry for the missing one.
21	Z/VSE LU number too large	Use an LU number within range.
22	Z/VSE sysname is not numeric or is misspelled	Correct to a valid sysname.
23	Z/VSE sysname blank	Do not use blank sysname.
24	Z/VSE LU not assigned	Call Product Support.
25	Z/VSE DTF prototype missing	Call Product Support.
26	Z/VSE logic module missing	Generate missing logic module.
27	Z/VSE CCW mismatch	Call Product Support.
28	File is not a PDS	Allocate file to a PDS.

Exhibit 5.1: Return Codes

IDMS001E PROGRAM a ABORTED WITH A STATUS OF b AT SEQUENCE c

Reason:

An unexpected CA IDMS/DB status error occurred during CA IDMS Enforcer processing in program "a." The invalid CA IDMS/DB status is presented in "b," and the CA IDMS/DB call sequence is presented in "c."

Action:

Refer to the error status values in the CA IDMS/DB error messages manual. If the reason for the error is not apparent, contact CA, Product Support.

ULOD001I UPLOAD COMPLETED INTO x/y

Reason:

An upload structure file has been successfully installed into the indicated DICTIONARY/NODE.

Action:

To implement the structure, use the online generation utility.

ULOD002E REPLACE NOT SPECIFIED BUT x/y EXISTS

Reason:

An upload was attempted against the indicated DICTIONARY/NODE, but it already exists in the CA IDMS Enforcer database.

Action:

Either specify another DICTIONARY/NODE as the target of upload, or specify the REPLACE parameter.

ULOD003E DOWNLOAD FILE IS EMPTY OR INVALID

Reason:

The structure file is empty.

Action:

Check the DD statement of LODFILE for accuracy. Re-execute the download (ESXDLOD) to create a valid load file.

ULOD004E INVALID RECORD TYPE OF x ENCOUNTERED IN LODFILE

Reason:

A system internal error has occurred because of an invalid record in the load file.

Action:

Review the output file from the download run (ESXDLOD).

ULOD005I SYSTEM TABLE UPLOAD AND/OR REPLACEMENT COMPLETED

Reason:

A SYSTEM TABLE download file has been successfully uploaded into the CA IDMS Enforcer database.

Action:

None.

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