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# About This Guide

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## **About This Guide**

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**CA-PAN/SQL™**

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**SQL Interface Installation Guide**

**Release 2.3**

**MVS, CMS, VSE**



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# **CA-PAN/SQL™**

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## **SQL Interface Installation Guide**

**Release 2.3**

**MVS, CMS, VSE**



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P A N S O P H I C<sup>®</sup>

SQL INTERFACE  
INSTALLATION

**PAN/SQL<sup>™</sup>**

SQL Interface Installation Guide

SQLII-9007-T



P A N S O P H I C<sup>®</sup>

*PAN/SQL*<sup>™</sup>

SQL Interface Installation Guide



## About This Guide

This document describes how to install the Computer Associate SQL Interface (CA-PAN/SQL), an optional component to several Computer Associates products.

This guide assumes that you are familiar with the IBM SQL/DS or DB2 database management system, the ORACLE relational database management system, or CA-DATACOM/DB for SQL. Throughout this guide, *you* refers to the person who installs CA-PAN/SQL. *User* refers to a person using any of the products that use CA-PAN/SQL. *Host product* refers to a product using the SQL Interface (CA-PAN/SQL).

## Organization

| Chapter | Description   |
|---------|---|
| 1       | "Introduction." This chapter identifies the environments in which CA-PAN/SQL can be installed.  |
| 2       | "CMS Installation." This chapter describes how to install CA-PAN/SQL for the SQL/DS and ORACLE Relational Database Management System in VM/CMS. This chapter describes installation in both OS and DOS simulation.                |
| 3       | "MVS Installation." This chapter describes how to install CA-PAN/SQL for DB2, the ORACLE Relational Database Management System, and CA-DATACOM/DB for SQL in MVS. This chapter describes installation in both CICS and TSO/Batch. |
| 4       | "VSE Installation." This chapter describes how to install CA-PAN/SQL for the SQL/DS Relational Database Management System and CA-DATACOM/DB for SQL in VSE. This chapter describes installation in both CICS and Batch.           |
| Indexes | "Exhibit Index and Main Index." Indexes provide listings to facilitate references to screens and tables, terms and procedures.  |

*Exhibit 0.1: Guide Organization*

If you do not find the information you need in this guide, please refer to the system documentation of the Computer Associates product that uses CA-PAN/SQL.



## **Revision Summary**

### **Product Changes**

- Additional installation modules required for the CA-GENER/OL host product.
- Application of any existing PTFs.

### **Documentation Changes**

- Installation modifications specific to the Version and Release level of the underlying SQL/DS DBMS.
- Installation of CA-PAN/SQL for CA-DATACOM/DB.

## Related Publications

The following publications are supplied from Computer Associates:

| Name                 | Release | Operating System   |
|----------------------|---------|--------------------|
| CA-GENER/OL          | 7.0     | CICS               |
| CA-EASYTRIEVE/ESP    | 1.X     |                    |
| CA-EASYTRIEVE PLUS   | 6.1     | Batch              |
| CA-EASYTRIEVE/IQ     | 3.X     | CICS,<br>TSO/Batch |
| CA-EASYTRIEVE/Online | 1.X     | CICS,<br>TSO/Batch |

*Exhibit 0.2: Other CA Documentation*

The following publications are not produced by Computer Associates but are referenced in this publication or are recommended reading:

| Name   |
|--|
| <i>IBM SQL/Data System Planning and Administration for VM</i>  |
| <i>VM/SP Operators Guide (SC19-6202)</i>                       |
| <i>IBM SQL/Data System Planning and Administration for VSE</i> |

*Exhibit 0.3: Other Helpful Documentation*

## Command Notation

This guide uses the following command notation:

| Notation                | Meaning   |
|-------------------------|---|
| <b>bold</b>             | Panel titles and panel fields appear in <b>bold</b> text.   |
| <b><i>bold ital</i></b> | Text that you must type appears in <b><i>bold italic</i></b> .  |
| "enter"                 | The verb "enter" refers only to the Enter (Return) key.   |
| [ ]                     | Optional fields or parameters are enclosed in brackets: [ ] . For example, in COMMAND PARM1 [,PARM2], the second parameter is optional. |
| symbols                 | All other punctuation, such as comma (,), period (.), and equal (=) must be specified as shown.   |
| function keys           | <b>F10</b> refers to Function Key 10.   |



# Chapter 1

## Introduction

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# Chapter 1

## Introduction

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# 1. Introduction

## Overview

This *Installation Guide* describes how to install the Computer Associates SQL Interface (CA-PAN/SQL), an optional component to several Computer Associates products. If the current release of CA-PAN/SQL is already installed at your site, do not reinstall it; however, be sure that you have the latest release of the CA-PAN/SQL for the CA product that you are also installing.

CA-PAN/SQL is installed once for a given environment and then shared among the various products that use it.

This guide assumes that you are familiar with the IBM SQL/DS or the DB2 database management system, the ORACLE relational database management system, or CA-DATACOM/DB.

This guide contains separate chapters for each environment. These chapters are described in "About This Guide." After reading "About This Guide" and Chapter 1, you should read only the chapter that is appropriate to your environment.

# Installation Considerations

## Operating Environment

CA-PAN/SQL operates on all systems that support IBM SQL/DS or DB2, the ORACLE relational database management system, or CA-DATACOM/DB.

## Installation Tape

The CA-PAN/SQL system is distributed on a separate tape for each environment for each database management system. Their label formats are shown below.

| Environment | Tape Format    |
|-------------|----------------|
| VM/CMS      | Non-labeled    |
| MVS         | Standard label |
| VSE         | Non-labeled    |

*Exhibit 1.1: Tape Label Formats*

See the chapter appropriate to your environment for a list of the files that are transferred to your system during installation.

## SQL System Dependencies

Several database management system modules are link edited with the Computer Associates SQL Interface modules during the installation process. If maintenance is ever applied to these database modules, CA-PAN/SQL must be relinked to incorporate these fixes.

The following database management system modules are linked with CA-PAN/SQL:

| DBMS   | Environment | DBMS Module     | Installation Job/Exec |
|--------|-------------|-----------------|-----------------------|
| DB2    | MVS (Batch) | DSNTIAR         | SQLINST2              |
| DB2    | MVS (CICS)  | DSNCLI, DSNTIAR | SQLINST3              |
| SQL/DS | VSE (Batch) | ARIPRDID        | SQLINST2              |
| SQL/DS | VSE (CICS)  | ARIRRTED        | SQLINST3              |
| SQL/DS | VM (CMS)    | ARIRVST         | DQINSOS or DQINSDOS   |
| ORACLE | MVS (Batch) | HLISTUB         | SQLINST1              |

*Exhibit 1.2: IBM Modules Linked with CA-PAN/SQL*



## Chapter 2

# **CMS Installation**

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# Chapter 2

## CMS Installation

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## 2. CMS Installation

### Introduction for SQL/DS

This chapter describes how to install the Computer Associates SQL Interface Option (CA-PAN/SQL) in CMS for both OS simulation and DOS simulation. The installation procedures are basically the same for OS and DOS simulation. Where a difference exists between the two, the specific environment is clearly noted.

The installation procedure transfers CA-PAN/SQL from the installation tape to disk files at your site. File01 of the installation tape contains all of the files necessary to install CA-PAN/SQL for both OS and DOS simulation.

Installation of CA-PAN/SQL for CMS using OS simulation results in the generation of a TXTLIB. Installation of CA-PAN/SQL for DOS simulation results in the generation of a DOSLIB. You should install CA-PAN/SQL in a separate TXTLIB or DOSLIB from the Computer Associates product or products that use CA-PAN/SQL. You must install the CA-PAN/SQL SQL/DS Interface in a separate TXTLIB from any other CA-PAN/SQL database Interface since the interface modules are named the same across the various databases. The name of this TXTLIB or DOSLIB must then be supplied in the EXECs required to execute the host product or products.

To simplify modifications to the host product EXEC, you should install CA-PAN/SQL on the same minidisk as the Computer Associates product using the SQL Interface. For EXEC modifications, refer to the *Installation Guide* for each host product.

All CA-PAN/SQL Interface modules exist in the TXTLIB or DOSLIB with a prefix of DQSPS. All modules are re-entrant.

The complete installation procedure installs the following components:

- The CA-PAN/SQL Message Extract Program
- The CA-PAN/SQL Views
- The CA-PAN/SQL Interface Command Processor.

These components are described below.

## CA-PAN/SQL Message Extract Module

The IBM SQL/DS System Help Tables contain the error messages associated with SQL error codes. CA-PAN/SQL installation requires pre-processing of **DQSMMTB**, the module that extracts the error messages from the IBM SQL/DS tables and creates a text member in the Interface **TXTLIB**.

## CA-PAN/SQL Views

CA-PAN/SQL uses views to obtain data from the SQL/DS system catalogs. Authorization can then be granted on the views rather than on the system catalog tables.

## CA-PAN/SQL Interface Command Processor

CA-PAN/SQL module **DQSMCMD** is referred to as the **Interface Command Processor**. CA-PAN/SQL installation requires that this module be preprocessed and assembled at your site. The source code for **DQSMCMD** is distributed with CA-PAN/SQL.

## **Installing CA-PAN/SQL for SQL/DS**

The steps to install CA-PAN/SQL for SQL/DS in CMS are:

1. Determine DASD requirements for CA-PAN/SQL files.
2. Transfer installation EXEC and CA-PAN/SQL files.
3. Verify installation of IBM SQL/DS Help Tables.
4. Modify CA-PAN/SQL Message Extract Program for SQL/DS userid and password (source member DQSMMTB).
5. Modify CA-PAN/SQL View statements regarding public authorization (optional).
6. Modify and run the Install EXEC
  - DQINSOS - installation EXEC for CMS OS simulation
  - DQINSDOS - installation EXEC for CMS DOS simulation.
7. For CMS DOS installation, verify the output generated from the DOS link edit of the CA-PAN/SQL Interface modules.
8. Modify EXEC of Computer Associates host product to incorporate the CA-PAN/SQL Interface.
9. CMS TXTLIB Maintenance for SQL/DS.

## 1. Determine DASD Requirements for CA-PAN/SQL Files

The CA-PAN/SQL installation procedure transfers SOURCE and TEXT to your installation disk. Use the table below as a guideline to ensure that adequate DASD space is available for the installation.

| Library    | 4K Blocks |
|------------|-----------|
| SOURCE     | 60        |
| OS TXLIB   | 60        |
| DOS TXLIB  | 60        |
| DOSLIB     | 160       |
| Work Space | 500       |

*Exhibit 2.1: DASD Requirements (SQL/DS CMS)*

## 2. Transfer Installation EXEC and CA-PAN/SQL Files

The CA-PAN/SQL installation tape has an external label identifying the operating system as CMS. To transfer CA-PAN/SQL files from the tape to your disks, have the VM operator:

1. ATTACH a tape drive to your USERID as 181.
2. MOUNT the CA-PAN/SQL installation tape.
3. READY the tape drive.

When the tape is ready, issue the following CMS commands to transfer the file:

```
TAPE REW
TAPE LOAD * * fm
```

where *fm* is the filemode of the read/write CA-PAN/SQL disk.

The following files are transferred:

| File     | File type | Description   |
|----------|-----------|---|
| DQCTGVWS | DATA      | Source statements to create the Interface Catalog Views                               |
| DQSMMTB  | ASMB      | Source code for the PAN/SQL Message Extract Program for SQL/DS Version 2.1 or lower   |
| DQSMMTB3 | ASMB      | Source code for the PAN/SQL Message Extract Program for SQL/DS Version 2.2 or greater |
| DQSMCMD  | ASMB      | Source code for the PAN/SQL Interface Command Processor for SQL/DS Version 1 or 2     |
| DQSMCMD3 | ASMB      | Source code for the PAN/SQL Interface Command Processor for SQL/DS Version 3          |
| DQINSOS  | EXEC      | Installation EXEC for CMS OS simulation   |
| DQINSDOS | EXEC      | Installation EXEC for CMS DOS simulation  |
| DQSQLCTL | CONTROL   | Link Control cards for generating the PAN/SQL Interface DOSLIB for CMS DOS simulation |
| DQSQLOS  | TXTLIB    | PAN/SQL TXTLIB for CMS OS simulation  |
| DQSQLDOS | TXTLIB    | PAN/SQL TXTLIB for CMS DOS simulation   |
| DQSMVRSN |           | Data control card identifying the version, release and gen-level of CA-PAN/SQL.       |

*Exhibit 2.2: Tape Files (SQL/DS CMS)*

### 3. Verify Installation of IBM SQL/DS Help Tables

CA-PAN/SQL reports the SQL errors that a user may encounter during edit/compile or execution phase processing. CA-PAN/SQL obtains the error message text from the IBM SQL/DS Help Tables. Before you can install CA-PAN/SQL, you must verify that these Help Tables are installed. The Tables are:

- SQLDBA.SYSTEXT1
- SQLDBA.SYSTEXT2

To verify the installation of these Help Tables, type *help* followed by an SQL error code in an ISQL session. For example, type:

*help -101*

for verification similar to the following:

```
TOPIC NAME:  -101
-101      SQL COMMAND EXCEEDS 8192 POSITIONS OR AN INTERNAL LIMITATION
          OF THE SYSTEM.  SEPARATE SQL COMMAND INTO SMALLER COMMANDS.
```

See the *IBM SQL/Data System Planning and Administration for VM* for a description of the Help Tables.

#### 4. Modify Message Extract Program DQSMMTB

The source code for the Message Extract Program is distributed with CA-PAN/SQL and transferred to your disk as file DQSMMTBx ASMB, where x indicates the various versions of the source program. This module contains the SQL statements that retrieve the text data from the IBM SQLDBA.SYSTEXT2 Help Table that is associated with SQL/DS error codes.

Currently, there are two versions of the source program that are specific to the SQL/DS version and release installed at your site.

- Source member DQSMMTB ASMB must be installed if your site has SQL/DS Version 2.1 or lower.
- Source member <sup>DQSMMTB3</sup> ~~DQSMMTB3~~ must be installed if your site has SQL/DS Version 2.2 or greater.

The appropriate source member name must be specified in the installation EXEC.

Before you invoke the installation EXEC, you may need to make the following modifications to DQSMMTB or DQSMMTB3:

- Provide the Help Table Name
- Supply Userid and Password.

These modifications are described below.

##### Provide the Help Table Name

Because DQSMMTBx contains the SQL statements to select data from the Help Text Table, the Message Extract Program explicitly references the table by the name of SQLDBA.SYSTEXT2. If the IBM Help Table is installed with a name other than SQLDBA.SYSTEXT2, then you must modify the source code for module DQSMMTBx to reflect the correct Table name.

The Table name is located at approximately line 114 in the source code:

```
*****
MESSAGE      DS    OH
              EXEC SQL
                  DECLARE C1 CURSOR FOR
                  SELECT ITEM, "SQL/DS HELP"
                  FROM  SQLDBA.SYSTEXT2
                  WHERE ITEM >= :WKITEM
*****
```

*Exhibit 2.3: Provide Help Table Name in DQSMMTBx*

## Supply Userid and Password

DQSMMTBx must also contain the SQL CONNECT statement. DQSMMTBx uses a userid of SQLDBA and a password of SQLDBAPW when executing the CONNECT statement. The DQINSOS or DQINSDOS EXEC uses a userid and password of SQLDBA and SQLDBAPW for all preprocess steps. To install DQSMMTBx, you must do one of the following:

- Supply the correct password for the SQLDBA userid in the DQSMMTBx source code and the DQINSOS or DQINSDOS EXEC

OR

- Temporarily change the password for the SQLDBA userid to SQLDBAPW for the duration of the CA-PAN/SQL installation. This eliminates the necessity of source code modifications and reduces the number of EXEC changes.

Through either method, the userid and password provided for the CONNECT statement variables in DQSMMTBx must be the same as the userid and password specified in the DQINSOS or DQINSDOS EXEC.



The source statements containing the userid and password for the CONNECT statement are located at approximately lines 573 and 574 in source member DQSMMTB, and lines 1021 and 1022 in source member DQSMMTB3:

```

EXEC SQL BEGIN DECLARE SECTION
CPYWRGHT DC H'30000'
CMDITEM  DC H'19099'
WKITEM   DC H'19099'
ITEM205  DC H'20205'
USERID   DC CL8'SQLDBA '
PASSWORD DC CL8'SQLDBAPW'
          DC C'CMDMSG'
CMDMSTXT DC CL60' '
EXEC SQL END DECLARE SECTION

```

*Exhibit 2.4: Provide Password for SQLDBA Userid in DQSMMTBx*

## 5. Modify CA-PAN/SQL Views Statements

The DQINSOS and DQINSDOS EXECs create views that are used by CA-PAN/SQL. File DQCTGVWS DATA contains the SQL statements to create these views. This file also contains the GRANT statements to grant public access to the views. If you do not want public access granted on these views, you must delete the GRANT statements from DQCTGVWS DATA.

The ownerid of the views is SQLDBA. Because the Interface Command Processor module must be preprocessed with an ownerid of SQLDBA, the ownerid of the views named in the Interface Command Processor defaults to SQLDBA. Therefore, the CREATE VIEW statements must not be modified.

The SQL statements below create the Interface catalog views.

```

DROP VIEW SQLDBA.DQUSERID
SET RUNMODE CONTINUE
DROP VIEW SQLDBA.DQTBLEATTR
SET RUNMODE CONTINUE
DROP VIEW SQLDBA.DQTBLECOLS
SET RUNMODE CONTINUE
DROP VIEW SQLDBA.DQUSERTPRV
SET RUNMODE CONTINUE
DROP VIEW SQLDBA.DQTBLEINXS
SET RUNMODE CONTINUE
DROP VIEW SQLDBA.DQSYNONYMS
SET RUNMODE CONTINUE
CREATE VIEW SQLDBA.DQUSERID -
  (USERID) -
AS SELECT -
  SQLDBA.SYSUSERLIST.NAME -
FROM -
  SQLDBA.SYSUSERLIST
CREATE VIEW SQLDBA.DQTBLEATTR -
  (TBLOWNER, -
   TBLNAME, -
   NBRCOLS, -
   NBRROWS, -
   NBRPAGES, -
   TBLTYPE) -
AS SELECT -
  SYSTEM.SYSCATALOG.CREATOR, -
  SYSTEM.SYSCATALOG.TNAME, -
  SYSTEM.SYSCATALOG.NCOLS, -
  SYSTEM.SYSCATALOG.ROWCOUNT, -
  SYSTEM.SYSCATALOG.NPAGES, -
  SYSTEM.SYSCATALOG.TABLETYPE -
FROM -
  SYSTEM.SYSCATALOG
CREATE VIEW SQLDBA.DQTBLECOLS -
  (TBLOWNER, -
   TBLNAME, -
   COLNAME, -
   DATATYPE, -
   UNIQUEVALUES, -
   COLPOS, -
   DATALEN, -
   SYSENGTH, -
   NULLS, -
   LABEL) -

```

continued...

...continued

```

AS SELECT -
  SYSTEM.SYSCOLUMNS.CREATOR, -
  SYSTEM.SYSCOLUMNS.TNAME, -
  SYSTEM.SYSCOLUMNS.CNAME, -
  SYSTEM.SYSCOLUMNS.COLTYPE, -
  SYSTEM.SYSCOLUMNS.COLCOUNT, -
  SYSTEM.SYSCOLUMNS.COLNO, -
  SYSTEM.SYSCOLUMNS.LENGTH, -
  SYSTEM.SYSCOLUMNS.SYSLength, -
  SYSTEM.SYSCOLUMNS.NULLS, -
  SYSTEM.SYSCOLUMNS.CLABEL -
FROM -
  SYSTEM.SYSCOLUMNS
CREATE VIEW SQLDBA.DQUSERTPRV -
  (GRANTEE, -
  TBLOWNER, -
  TBLNAME, -
  GRANTOR, -
  UPDATECOLS, -
  SELECTPRIV, -
  INSERTPRIV, -
  DELETEPRIV, -
  UPDATEPRIV, -
  TBLTYPE, -
  TBLDESCR) -
AS SELECT -
  SYSTEM.SYSTABAUTH.GRANTEE, -
  SYSTEM.SYSTABAUTH.TCREATOR, -
  SYSTEM.SYSTABAUTH.TTNAME, -
  SYSTEM.SYSTABAUTH.GRANTOR, -
  SYSTEM.SYSTABAUTH.UPDATECOLS, -
  SYSTEM.SYSTABAUTH.SELECTAUTH, -
  SYSTEM.SYSTABAUTH.INSERTAUTH, -
  SYSTEM.SYSTABAUTH.DELETEAUTH, -
  SYSTEM.SYSTABAUTH.UPDATEAUTH, -
  SYSTEM.SYSCATALOG.TABLETYPE, -
  SYSTEM.SYSCATALOG.REMARKS -
FROM -
  SYSTEM.SYSTABAUTH, -
  SYSTEM.SYSCATALOG -
WHERE -
  SYSTEM.SYSTABAUTH.TCREATOR = SYSTEM.SYSCATALOG.CREATOR AND -
  SYSTEM.SYSTABAUTH.TTNAME   = SYSTEM.SYSCATALOG.TNAME

```

continued...

...continued

```

CREATE VIEW SQLDBA.DQTBLEINXS -
  (INDEXOWNER, -
   INDEXNAME, -
   TBLOWNER, -
   TBLNAME, -
   INDEXTYPE, -
   NBRCOLS, -
   CLUSTERED, -
   FIRSTKEY, -
   FULLKEY) -
AS SELECT -
  SYSTEM.SYSINDEXES.ICREATOR, -
  SYSTEM.SYSINDEXES.INAME, -
  SYSTEM.SYSINDEXES.CREATOR, -
  SYSTEM.SYSINDEXES.TNAME, -
  SYSTEM.SYSINDEXES.INDEXTYPE, -
  SYSTEM.SYSINDEXES.COLNUMBERS, -
  SYSTEM.SYSINDEXES.CLUSTER, -
  SYSTEM.SYSINDEXES.FIRSTKEYCOUNT, -
  SYSTEM.SYSINDEXES.FULLKEYCOUNT -
FROM -
  SYSTEM.SYSINDEXES
CREATE VIEW SQLDBA.DQSYNONYMS -
  (USERID, -
   ALTNAME, -
   TBLOWNER, -
   TBLNAME) -
AS SELECT -
  SYSTEM.SYSSYNONYMS.USERID, -
  SYSTEM.SYSSYNONYMS.ALTNAME, -
  SYSTEM.SYSSYNONYMS.CREATOR, -
  SYSTEM.SYSSYNONYMS.TNAME -
FROM -
  SYSTEM.SYSSYNONYMS
GRANT SELECT ON SQLDBA.DQUSERID TO PUBLIC
GRANT SELECT ON SQLDBA.DQTBLEATTR TO PUBLIC
GRANT SELECT ON SQLDBA.DQTBLECOLS TO PUBLIC
GRANT SELECT ON SQLDBA.DQUSERTPRV TO PUBLIC
GRANT SELECT ON SQLDBA.DQTBLEINXS TO PUBLIC
GRANT SELECT ON SQLDBA.DQSYNONYMS TO PUBLIC

```

*Exhibit 2.5: Catalog View Statements*

## 6. Modify and Run Install EXEC

Modify the DQINSOS (CMS/OS) or DQINSDOS (CMS/DOS) EXEC by specifying values for the variables below.

| Variable | Value  |
|----------|--|
| &SQLVM   | Provide the userid that owns the SQL/DS minidisk. The default is SQLDBA.   |
| &SQLCCU  | Provide the address of the SQL/DS minidisk in &SQLVM's directory. The default is 195.  |
| &SQLVUU  | Provide the virtual address to LINK the SQL/DS minidisk to.  |
| &SQLMODE | Provide the CMS filemode in which to ACCESS the SQL/DS minidisk. The default is Q.   |
| &SQLPSWD | Provide the password for the SQLDBA userid (the value of &SQLPSWD must be the same as the value specified for PASSWORD in DQSMMTB). The default is SQLDBAPW.   |
| &PREPCMD | Provide the name given to the access module for the Interface Command Processor. The default is DQPS023.   |
| &PREPMTB | Provide the name given to the access module for the Message Extract Program. The default is DQSMMTB.   |
| &DQSMMTB | Provide the name of the source member for the CA-PAN/SQL Message Extract Program. The default is DQSMMTB, which is valid for SQL/DS Version 2.1. If you are running SQL/DS Version 2.2 or greater, you must change the name of the value to DQSMMTB3.                |
| &DQSMCMD | Provide the name of the source member for the CA-PAN/SQL Interface Command Processor. The default is DQSMCMD, which is valid for installations using SQL/DS Version 1 or 2. If you are running SQL/DS Version 3, you must change the name of this value to DQSMCMD3. |
| &TEMPMOD | Provide the CMS filemode of the minidisk used to hold the work data sets and the DOSLIB created during the install process. One cylinder of 3380 work space is required for both CMS/OS and CMS/DOS.   |

| Variable | Value  |
|----------|--|
| &INSTALL | <p>Specify the type of installation. This parameter applies only to a CMS DOS installation. Valid values are:</p> <ul style="list-style-type: none"> <li>• FULL</li> <li>• RELINK</li> </ul> <p>Specify FULL for a complete installation of PAN/SQL. Specify RELINK when only a relink is required after maintenance has been applied to the PAN/SQL Interface. The default value is FULL.</p> |
| &DQSLLIB | <p>Specify the name to be used for the DOSLIB that is generated. This parameter applies only to a CMS DOS installation. The default value is DQSQLDOS.</p>   |

*Exhibit 2.6: Modify DQINSOS or DQINSDOS EXEC*

**NOTE:** Before executing the installation EXEC, you must already have run the SQL/DS SQLINIT EXEC. SQLINIT places the modules ARISISBT and ARISRMBT on your A disk. You must also have write access to the minidisk containing the DQSQLOS or DQSQLDOS TXTLIBs.

While the installation EXECs install the CA-PAN/SQL Interface onto the disk accessed as &TEMPMOD, SQL/DS requires write access to an A disk with approximately 500 (4K) blocks of available space.

To install CA-PAN/SQL for CMS OS simulation, invoke EXEC

***DQINSOS***

To install CA-PAN/SQL for CMS DOS simulation, invoke EXEC

***DQINSDOS***

The EXECs are listed later in this chapter.

## 7. Verify Output from the DOS Link Edit (CMS DOS simulation)

After the execution of the DQINSDOS EXEC has completed, you must verify the output generated from the DOS Link Edit for each of the thirteen CA-PAN/SQL Interface modules. The output is routed to your CMS printer. Each step should complete with a condition code of zero. You should retain a copy of this output for your records.

## 8. Modify EXEC of Host Product

When the installation of CA-PAN/SQL completes, refer to the *Installation Guide* of the Computer Associates product that uses CA-PAN/SQL.

If the host product is a product that runs under CA-EASYTRIEVE/ESP, you must modify the ESP EXEC as follows. Within the lines commented by '/\* SQL':

- Specify values for all parameters prefixed by SQL and PSQL to provide access to the SQL/DS and CA-PAN/SQL minidisks.
- If you changed the name of the CA-PAN/SQL TXTLIB (CMS OS simulation) or the CA-PAN/SQL DOSLIB (for CMS DOS simulation), provide the new name in the GLOBAL TXTLIB or GLOBAL DOSLIB statement.
- Uncomment all statements from:

```
/* SQLDSID = Minidisk name
```

```
through
```

```
/* SQL END
```

by deleting the /\* and \*/ comment characters.

## 9. CMS TXTLIB Maintenance for SQL/DS

The following CA-PAN/SQL files will remain on your installation disk at the completion of the CA-PAN/SQL install:

DQSMMTB ASMB  
 DQSMMTB3 ASMB  
 DQSMCMD ASMB  
 DQSMCMD3 ASMB  
 DQCTGVWS DATA  
 DQSQLCTL CONTROL  
 DQINSOS EXEC  
 DQINSDOS EXEC  
 DQSQLOS TXTLIB  
 DQSOLDOS TXTLIB  
 DQSQLDOS DOSLIB (created for CMS/DOS simulation only)  
 DQSMVRSN

You must keep these files in the event it becomes necessary to:

- Apply maintenance to the SQL Interface
- Reinstall the SQL Interface due to a new version or release of the IBM SQL/DS Product.

CMS provides the ZAP command to apply maintenance to a CMS TXTLIB. For CMS OS simulation, maintenance is applied to DQSQLOS TXTLIB. For CMS DOS simulation, maintenance is applied to DQSQLDOS TXTLIB. Refer to the *VM/SP Operator's Guide (SC19-6202)* for complete information on the ZAP TXTLIB command.

If maintenance is applied to the DQSQLDOS TXTLIB, you must relink the DQSQLDOS DOSLIB. To relink the CA-PAN/SQL DOSLIB, simply execute the *installation exec*, DQINSDOS EXEC, and specify the value of RELINK for the &INSTALL variable.



## Installation EXEC Listing (DQINSOS EXEC) for SQL/DS

```

&TRACE OFF
SET DOS OFF
&CASE U
*****
*
* Variable      Default      Description
* -----
*
* &SQLVM        SQLDBA        Userid that owns the SQL/DS minidisk
* &SQLCUU       195          Address of SQL minidisk in &SQLVM's directory
* &SQLVUU       555          Virtual address to LINK to minidisk as
* &SQLMODE      Q            Filemode to ACCESS the minidisk as
*
* &SQLPSWD      SQLDBAPW      Password for the SQLDBA userid
*
* &PREPCMD      DQPS023        Access module name for PAN/SQL
* &PREPMTB      DQSMMTB      Access module name for Message Extract Program
*
* &TEMPMOD      A            Filemode of minidisk for work space
*
*****
* Space Requirements based upon a 4K blocksize:
* Data Set      Nbr of Blocks
* -----
* DQINSOS EXEC      12
* DQINSDOS EXEC     12
* DQSMCMD ASMB      24
* DQSMMTB ASMB      22
* DQCTGVWS DATA     2
* DQSQLQS TEXT      44
* DQSQLQS TXTLIB     60
*
* ADDITIONAL WORK SPACE 400
* -----
* TOTAL            576
*****
&SQLVM      = SQLDBA
&SQLCUU     = 195
&SQLVUU     = 555
&SQLMODE    = Q
&SQLPSWD    = SQLDBAPW
*
*
&PREPCMD    = DQPS023
&PREPMTB    = DQSMMTB
*
* Source Members for Preprocessing

```

continued...

continued...

```

*
  &DQSMCMD = DQSMCMD
  &DQSMMTB = DQSMMTB
*
  &TEMPMOD = A
*
  * The following values must not be changed
  *
    &USRID   = SQLDBA
    &DQCTGVWS = DQCTGVWS
    &DQSQLTXT = DQSQLQS
    &DQSQLWRK = DQSQLWRK
*****
*
  * THIS EXEC BUILDS A CMS/OS LIBRARY FOR THE PAN/SQL INTERFACE
  *
*****
*
  * LINK TO SQL/DS VM MACHINE
  *
*****
-IDCPU
  DESBUF
  EXECIO * CP (FIFO STRING'Q CPLEVEL
  &READ VAR &VMSYS
  &TYPE VMSYS = &VMSYS
  DESBUF
-QOOC
** Query the RDR to Obtain the Class
EXECIO * CP (LIFO STRING Q OOC
-RDRDSPL
  &READ VAR &A &B &C &D
  &IF &A NE RDR &GOTO -RDRDSPL
  &RDRCLS = &D
-CPLINK
  CP DETACH &SQLVUU
  CP LINK &SQLVM &SQLCUU &SQLVUU RR
  ACC &SQLVUU &SQLMODE
*
  * VERIFY ACCESS TO IBM SQL MODULES AND SQL/CMS MINIDISK
  *
-VERACCS
  STATE ARISISBT MODULE *
  &IF &RC > 0 &GOTO -ACCERR
  STATE ARISMBT MODULE *
  &IF &RC > 0 &GOTO -ACCERR
  STATE ARIRVSTC TEXT *
  &IF &RC > 0 &GOTO -ACCERR
-PART1

```

continued...

continued...

```

*****
*
*   Verify customer has dumped the required data sets to the specified
*   disk
*
*   DQCTGVWS DATA   -   CATALOG VIEWS FOR THE INTERFACE
*   DQSMMTB  ASMB    -   SOURCE CODE FOR MESSAGE EXTRACT PROCESSOR
*   DQSMCMD  ASMB    -   SOURCE CODE FOR INTERFACE COMMAND PROCESSOR
*   DQSQLOS  TXTLIB  -   TXTLIB FOR THE PAN/SQL INTERFACE
*****
STATE &DQSQLTXT TXTLIB *
&IF &RC > 0 &GOTO -ERR1
STATE &DQSMMTB ASMB *
&IF &RC > 0 &GOTO -ERR1
STATE &DQSMCMD ASMB *
&IF &RC > 0 &GOTO -ERR1
STATE &DQCTGVWS DATA *
&IF &RC > 0 &GOTO -ERR1
*****
*
*   The following files are created on the User's installation disk
*   and must be kept for the EXECUTION and MAINTENANCE of the PAN/SQL
*   Interface Option.
*
*       DQSQLOS TXTLIB
*
*****
*
*   This step requires the user to be linked to the IBM SQL/DS minidisk
*   in order that the SQL/DS Resource Manager be copied to the
*   installatin Interface TEXT file.
*
*****
-GETARIR
  FILEDEF INMOVE DISK ARIRVSTC TEXT *
  FILEDEF OUTMOVE DISK ARIRVSTC TEXT &TEMPMOD
  MOVEFILE
  &IF &RC = 0 &GOTO -ADDVSTC
  &EXIT &RC
-ADDVSTC
  &TMRC = -LOCTXT OF &DQSQLTXT ARIRVST
  &IF &TMRC = 0 TXTLIB DEL &DQSQLTXT ARIRVST
  TXTLIB ADD &DQSQLTXT ARIRVSTC
  ERASE ARIRVSTC TEXT &TEMPMOD
-PART2

```

continued...

continued...

```

*****
*
* CREATE CATALOG VIEWS
*
* 'DQCTGVWS DATA' is expected to be found on the User's &TEMPMOD disk.
*
* CREATING THE VIEWS REQUIRES THE FOLLOWING:
* 1) EXECUTE AN SQL 'CONNECT' USING THE SQLDBA USERID AND IT'S
*    PASSWORD.
* 2) STACK ALL OF THE SQL CATALOG COMMANDS; THE CATALOG COMMAND
*    DATA SET CONSISTS OF 'DROP' VIEW STATEMENTS, SET RUNMODE
*    CONTROL STATEMENTS, 'CREATE' VIEW STATEMENTS, AND 'GRANT'
*    STATEMENTS.
* 3) INVOKE 'ISQL' TO EXECUTE THE SQL COMMANDS.
* 4) SPOOL THE CONSOLE LOG TO THE USER'S RDR.
* 5) FIND THE CONSOLE LOG IN THE USER'S RDR AND SCAN THE OUTPUT
*    FROM 'ISQL' TO TEST THE RETURN CODE FROM THE 'CREATE'
*    STATEMENTS ONLY.
*****
-CRTEVIEW
  DESBUF
  &CONNECT = &STRING OF CONNECT SQLDBA IDENTIFIED BY &SQLPSWD
  &STACK &CONNECT
-READCVWS
  EXECIO 1 DISKR &DQCTGVWS DATA *
  &IF &RC = 0 &GOTO -READCVWS
-EXECISQL
  &STACK EXIT
  EXECIO * CP (LIFO STRING Q CONS
-READCONS
  &READ VAR &A &B &C &D &TERM &START &E
  &IF &A NE CONS &GOTO -READCONS
** &READ ARGS
** &READ ARGS
** &READ ARGS
** &READ ARGS
&TYPE Begin Installation of Catalog Views
CP SPOOL CONSOLE CLOSE START TO * NOTERM
EXEC ISQL
EXECIO * CP (LIFO STRING SPOOL CONSOLE CLOSE TO * &TERM &START
&TYPE Complete Installation of Catalog Views
&READ ARGS
&SPOOLID = &3
**
** Place selected RDR entry at top of list
**
-READCON
CP ORDER RDR &SPOOLID
CP SP RDR NOHOLD
CP CHANGE RDR &SPOOLID NOHOLD
CP CHANGE RDR &SPOOLID CLASS &RDRCLS

```

continued...

continued...

```

**
** Write CONSOLE output to User's a-disk.
** CMS will not allow read of CONSOLE class.
**
** Verify that first, second or third record is an ISQL message
** beginning with the characters 'ARI'.
**
-READCARD
READ &DQCTGVWS LISTING &TEMPMOD
FINIS &DQCTGVWS LISTING &TEMPMOD
DESBUF
-EXIOCARD
EXECIO 1 DISKR &DQCTGVWS LISTING &TEMPMOD 0
&READ STRING &CNTLID
&MSG = &SUBSTR OF &CNTLID 1 3
&IF &MSG EQ ARI &GOTO -FINDCRTE
EXECIO 1 DISKR &DQCTGVWS LISTING &TEMPMOD 0
&READ STRING &CNTLID
&MSG = &SUBSTR OF &CNTLID 1 3
&IF &MSG EQ ARI &GOTO -FINDCRTE
EXECIO 1 DISKR &DQCTGVWS LISTING &TEMPMOD 0
&READ STRING &CNTLID
&MSG = &SUBSTR OF &CNTLID 1 3
&IF &MSG EQ ARI &GOTO -FINDCRTE
EXECIO 1 DISKR &DQCTGVWS LISTING &TEMPMOD 0
&READ STRING &CNTLID
&MSG = &SUBSTR OF &CNTLID 1 3
&IF &MSG NE ARI &GOTO -ERR3
***
* Bypass checking the SQL return code from the 'DROP' commands.
* Look for 1ST occurrence of a 'CREATE' view command, then start
* checking the SQL return code.
***
-FINDCRTE
EXECIO 1 DISKR &DQCTGVWS LISTING &TEMPMOD 0
&IF &RC > 2 &GOTO -ERR4
&IF &RC = 2 &GOTO -PART3
&READ VARS &CNST &LIT &EQU &CODE
&IF &CNST NE CREATE &GOTO -FINDCRTE
-CHKSQLCD
*** FIRST CHECK FOR AN ARI MESSAGE BEFORE CHECKING SQLCODE
&MSG = &SUBSTR OF &CNST 1 3
&IF &MSG NE ARI &GOTO -READNEXT
&IF &LIT NE SQLCODE &GOTO -READNEXT
&IF &CODE NE 000 &GOTO -ERR5
-READNEXT
EXECIO 1 DISKR &DQCTGVWS LISTING &TEMPMOD 0
&IF &RC > 2 &GOTO -ERR4
&IF &RC = 2 &GOTO -PART3
&READ VARS &CNST &LIT &EQU &CODE
&GOTO -CHKSQLCD

```

continued...

continued...

```

*****
-PART3
*
  ERASE  &DQCTGVWS LISTING &TEMPMOD
*
* This part of the installation EXEC preprocesses the Interface
* Message Extract Program. This program contains SQL statements
* to read the SQL IBM 'HELP' TEXT tables that are installed at the
* User's site. The source code should already exist on the User's
* &TEMPMOD disk with the CONNECT PASSWORD for SQLDBA modified to
* match that of the installer's site.
* DQSMMTB is first preprocessed, assembled, added to the TXTLIB
* and then executed. The output of the execution of DQSMMTB is then
* assembled to created the Interface SQL Message Table.
*
*****
* This EXEC will create and then erase the following files on your
* a-disk or work disk as a result of preprocessing and assembling the
* PAN/SQL Interface Message Extract module:
*
*      DQSMMTB  ASMB *
*
*      DQSMMTB  ASSEMBLE A
*      DQSMMTB  LISTPREP A
*      DQSMMTB  TEXT    &TEMPMOD
*      DQSMMTB  LISTING  &TEMPMOD
*
* This EXEC will also create and then erase the following files
* as a result of execution the PAN/SQL Interface Message Extract
* module:
*
*      DQMTBASM ASSEMBLE A
*      DQMTBPRT PRINT    A
*      DQMTBLST LISTING  &TEMPMOD
*      DQMTBLST TEXT     &TEMPMOD
*****
  ERASE  &DQSMMTB TEXT    &TEMPMOD
  ERASE  &DQSMMTB LISTING &TEMPMOD
  ERASE  &DQSMMTB ASSEMBLE A
  ERASE  &DQSMMTB LISTPREP A
*****
*
* Run the PAN/SQL Message Extract program through the IBM SQL/DS
* preprocessor.
*
* Assemble the output of the preprocessor.
*
*****
-PREPMTB
  &EQUAL = =
  &NAME = &CONCAT OF (PREPNAME &EQUAL &PREPMTB ,KEEP,NOPRINT,
  &USER = &CONCAT OF USERID &EQUAL &USRID / &SQLPSWD )

```

continued...

continued...

```

&STR1 = &CONCAT OF &NAME ISOL(CS), &USER
&STR2 = &CONCAT OF SYSPRINT( &DQSMMTB )
&STR3 = &CONCAT OF SYSIN( &DQSMMTB &BLANK ASMB &BLANK * )
&STR4 = &CONCAT OF &STR1 &BLANK &STR2 &BLANK &STR3
FILEDEF * CLEAR
EXEC SQLPREP ASM PREPPARM &STR4
&IF &RC NE 0 &GOTO -MTBERR1
-ASMTB
FILEDEF * CLEAR
FILEDEF ASSEMBLE DISK &DQSMMTB ASSEMBLE A
FILEDEF TEXT DISK &DQSMMTB TEXT &TEMPMOD
FILEDEF LISTING DISK &DQSMMTB LISTING &TEMPMOD
&IF &VMSYS EQ VM/ESA &GOTO -GBLESA
GLOBAL MACLIB DMSSP CMSLIB
&GOTO -CHKGBL
-GBLESA
GLOBAL MACLIB DMSOM DMSGPI
-CHKGBL
&IF &RC NE 0 &GOTO -GBLERR1
ASSEMBLE &DQSMMTB (SYSPARM(CMS)
&IF &RC NE 0 &GOTO -MTBERR2
*****
*
* Execute the Error Message Extract program.
*
* Execution of the Error Message Extract program will create
* file 'DQMTBPRT PRINT' if any errors were encountered.
*
* Successful execution of the Error Message Extract program will
* create file 'DQMTBLST ASSEMBLE'
*
*****
-EXECUTE
ERASE &DQSMMTB LISTING &TEMPMOD
ERASE &DQSMMTB ASSEMBLE A
ERASE &DQSMMTB LISTPREP A
ERASE DQMTBLST ASSEMBLE A
ERASE DQMTBPRT PRINT A
GLOBAL TXTLIB &DQSQLTXT
LOAD &DQSMMTB (START
&IF &RC NE 0 &GOTO -LOADERR
*****
*
* Test for error messages written to DQMTBPRT file.
*
*****
STATE DQMTBPRT PRINT A
&IF &RC = 0 &GOTO -MTBERR3
*****
*
* Assemble the error message table source and add object to TXTLIB
*
*****

```

continued...

continued...

-ASMTBL

```
ERASE &DQSMMTB TEXT &TEMPMOD
FILEDEF * CLEAR
FILEDEF ASSEMBLE DISK DQMTBLST ASSEMBLE A
FILEDEF TEXT DISK DQMTBLST TEXT &TEMPMOD
FILEDEF LISTING DISK DQMTBLST LISTING &TEMPMOD
ASSEMBLE DQMTBLST
&IF &RC NE 0 &GOTO -MTBERR4
```

\*\*\*\*\*

\* Add the error message table text to the PAN/SQL TXTLIB

\*\*\*\*\*

-ADDTBL

```
&TMRC = -LOCTXT OF &DQSQLTXT DQSMMTB
&IF &TMRC = 0 TXTLIB DEL &DQSQLTXT DQSMMTB
TXTLIB ADD &DQSQLTXT DQMTBLST
```

\*

```
ERASE DQMTBPRT PRINT A
ERASE DQMTBLST ASSEMBLE A
ERASE DQMTBLST LISTING &TEMPMOD
ERASE DQMTBLST TEXT &TEMPMOD
FILEDEF * CLEAR
```

\*

\*\*\*\*\*

-PART4

\*

\* This part of the installation EXEC will preprocess and assemble  
\* the PAN/SQL Interface command processor.

\*

\*\*\*\*\*

\* The following files will be created on the User's &TEMPMOD disk as  
\* a result of the EXEC.

\*

```
&DQSMCMD ASSEMBLE &TEMPMOD
&DQSMCMD LISTPREP &TEMPMOD
&DQSMCMD TEXT &TEMPMOD
&DQSMCMD LISTING &TEMPMOD
```

\*

\*\*\*\*\*

\* Run the PAN/SQL Interface Command Processor through the IBM  
\* SQL/DS Preprocessor.

\*

\* Assemble the output from the preprocessor.

\*

\*\*\*\*\*

continued...



continued...

```

-PRPCMD
&EQUAL = =
&NAME = &CONCAT OF (PREPNAME &EQUAL &PRPCMD ,KEEP,NOPRINT,
&USER = &CONCAT OF USERID &EQUAL SQLDBA/ &SQLPSWD )
&STR1 = &CONCAT OF &NAME ISOL(CS), &USER
&STR2 = &CONCAT OF SYSPRINT( &DQSMCMD )
&STR3 = &CONCAT OF SYSIN( &DQSMCMD &BLANK ASMB &BLANK * )
&STR4 = &CONCAT OF &STR1 &BLANK &STR2 &BLANK &STR3
FILEDEF * CLEAR
EXEC SQLPREP ASM PREPPARM &STR4
&IF &RC NE 0 &GOTO -CMDERR1
-ASMSQL
FILEDEF * CLEAR
FILEDEF ASSEMBLE DISK &DQSMCMD ASSEMBLE A
FILEDEF TEXT DISK &DQSMCMD TEXT &TEMPMOD
FILEDEF LISTING DISK &DQSMCMD LISTING &TEMPMOD
ASSEMBLE &DQSMCMD
&IF &RC NE 0 &GOTO -CMDERR2
*****
*
* Add the output of the assembly to the PAN/SQL TXTLIB
*
*****
-ADDPREP
&TMRC = -LOCTXT OF &DQSQLTXT DQSMCMD1
&IF &TMRC = 0 TXTLIB DEL &DQSQLTXT DQSMCMD1
TXTLIB ADD &DQSQLTXT &DQSMCMD
ERASE &DQSMCMD TEXT &TEMPMOD
ERASE &DQSMCMD LISTING &TEMPMOD
ERASE &DQSMCMD ASSEMBLE A
ERASE &DQSMCMD LISTPREP A
&GOTO -END
*****
-ACCERR
&BEGTYPE -ACCEND

You currently do not have access to the SQL minidisks containing
the required modules ARISISBT, ARISRBMTQL or ARIRVSTC TEXT.
Please access the appropriate disks and reinvoke this exec.

-ACCEND
&GOTO -END
-ERR1
&TYPE The required 4 installation data sets were not found on the
&TYPE user's specified disk. Please verify that the names used to
&TYPE dump the data sets match the names assigned to this EXEC
&EXIT 12
-ERR2
&TYPE EXEC ERROR, CONSOLE OUTPUT FOR ISQL NOT FOUND IN RDR
&EXIT 16
-ERR3
&TYPE Console file written to user's a-disk is not the output from

```

continued...

continued...

```
&TYPE the PAN/SQL Catalog VIEW create process
&EXIT 16
-EERR4
&TYPE A read error has occurred for the &DQCTGVWS LISTING file
&EXIT 8
-ERR5
&TYPE An SQL error has occurred, please examine the &DQCTGVWS listing
&TYPE that has been created on your a-disk.
&EXIT 12
-GBLERR1
&TYPE MACLIBs DMSSP and CMSLIB NOT FOUND, processing terminated
&EXIT &RC
-LOADERR
&TYPE Error Loading &DQSMMTB, Processing Terminated.
&TYPE Examine &TEMPMOD disk for existence of DQSMMTBs TEXT member
&EXIT &RC
-MTBERR1
  &BEGTYPE -MTB1END
```

Preprocessing of the PAN/SQL Interface message extract program failed.  
This may be due to an incorrect password or errors in the extract  
program. Please examine file DQSMMTB LISTPREP to determine the  
cause of the error.

```
-MTB1END
  &EXIT &RC
-MTBERR2
  &BEGTYPE -MTB2END
```

Assembly of the PAN/SQL Interface Message Extract program failed.  
Please examine file DQSMMTB LISTING to determine the cause of  
the error or contact COMPUTER ASSOCIATES TECHNICAL SUPPORT.

```
-MTB2END
  &EXIT &RC
-MTBERR3
  EXECIO 1 DISKR DQMTBPRT PRINT A ( VAR ERRMSG
  &BEGTYPE -MTB3END
```

Execution of the PAN/SQL Interface Error Message Extract program  
has failed for the following reason.

```
-MTB3END
  &TYPE &ERRMSG
  &EXIT 8
-MTBERR4
  &BEGTYPE -MTB4END
```

Assembly of the PAN/SQL Error Message Table failed. Please  
examine file DQMTBLST LISTING to determine the cause of  
the error or contact COMPUTER ASSOCIATES TECHNICAL SUPPORT.

continued...

continued...

```
-MTB4END
  &EXIT &RC
-CMDERR1
  &BEGTYPE -ENDPREP
```

Preprocessing of the PAN/SQL Interface Command Processor has failed. This may be due to an incorrect password or errors in the Command Processor. Please examine DQSMCMD LISTPREP to determine the cause of the error or contact COMPUTER ASSOCIATES TECHNICAL SUPPORT

```
-ENDPREP
  &EXIT &RC
-CMDERR2
  &BEGTYPE -ENDASME
```

Assembly of the PAN/SQL Interface Command Processor has failed. Please examine file &DQSMCMD LISTING to determine the cause of the error or contact COMPUTER ASSOCIATES TECHNICAL SUPPORT.

```
-ENDASME
  &EXIT &RC
*****
-END
  FILEDEF INMOVE CLEAR
  FILEDEF OUTMOVE CLEAR
*
* The following data sets must remain on the customer's installation
* disk to allow for maintenance or re-installation.
*
* ERASE &DQSMCMD ASMB
* ERASE &DQSMMTB ASMB
* ERASE &DQCTGVWS DATA
*
  DESBUF
  &CONNECT = &STRING OF CONNECT SQLDBA IDENTIFIED BY &SQLPSWD
  &STACK &CONNECT
  &STR1 = &CONCAT OF SQLDBA . &PREPCMD
  &GRANT = &STRING OF GRANT RUN ON &STR1 TO PUBLIC
  &STACK &GRANT
  &STACK EXIT
***CP SPOOL CONSOLE NOTERM START
CP SPOOL CONSOLE CLOSE NOTERM START
EXEC ISQL
CP SPOOL CONSOLE CLOSE &TERM &START
*
  &BEGTYPE -ENDOK
```

This CMS/OS installation is complete.

```
-ENDOK
  &EXIT 0
```

continued...

continued...

\*\*\*\*\*

-LOCTXT

```

    TXTLIB MAP &1 (DISK
    SENTRIES
    &LTB = &RC
    &LOCTAR = &CONCAT OF / &2 /
    EXECIO * DISKR &1 MAP * 1 (FINIS LOCATE &LOCTAR
    SENTRIES

```

```

    &LTE = &RC
    &LTC = &LTE - &LTB
    &LOOP -LOCTXTLOOP &LTC
    &READ VARS &LTX &LTB

```

-LOCTXTLOOP

&amp;LTRC = 0

&amp;IF &amp;LTC = 0 &amp;LTRC = 1

\* &amp;LTRC = 0 IF MEMBER FOUND IN TXTLIB

\* &amp;LTRC = 1 IF MEMBER NOT FOUND IN TXTLIB

ERASE &amp;1 MAP A5

&amp;RETURN &amp;LTRC

\*\*\*\*\*

-EXPLAIN

&amp;BEGTYPE -ENDEXPL

THIS EXEC INSTALLS COMPUTER ASSOCIATES' PAN/SQL INTERFACE OPTION  
FOR THE CMS/OS ENVIRONMENT.

IF ANY PROBLEMS OR QUESTIONS ARISE, CONTACT

TECHNICAL SUPPORT  
COMPUTER ASSOCIATES INCORPORATED  
2400 CABOT DRIVE  
LISLE, ILL 60532  
708/505-9599

-ENDEXPL

&amp;EXIT 0

# Installation EXEC Listing (DQINSDOS EXEC) for SQL/DS

```

&TRACE OFF
SET DOS OFF
&CASE U
*****
*
* Variable      Default      Description
* -----
*
* &SQLVM        SQLDBA        Userid that owns the SQL/DS minidisk
* &SQLCUU       195          Address of SQL minidisk in &SQLVM's directory
* &SQLVUU       555          Virtual address to LINK to minidisk as
* &SQLMODE      Q            Filemode to ACCESS the minidisk as
*
* &SQLPSWD      SQLDBAPW      Password for the SQLDBA userid
*
* &PREPCMD      DQPS023        Access module name for PAN/SQL
* &PREPMTB      DQSMMTB        Access module name for Message Extract Program
*
* &TEMPMOD      A            Filemode of minidisk for work space
*
* &INSTALL      FULL/RELINK  Type of installation; a FULL installation
*                               or a RELINK after maintenance has been
*                               applied
*
* &DQSQLLIB     DQSQLDOS    Provide a name for the PAN/SQL DOSLIB.
*                               The PAN/SQL DOSLIB is created on your A
*                               disk and then copied to your &TEMPMOD disk.
*
*****
&SQLVM      = SQLDBA
&SQLCUU     = 195
&SQLVUU     = 555
&SQLMODE    = Q
*
&SQLPSWD    = SQLDBAPW
*
&PREPMTB    = DQSMMTB
&PREPCMD    = DQPS023
*
* Source Members for Preprocessing
*
&DQSMCMD    = DQSMCMD
&DQSMMTB    = DQSMMTB
*
&TEMPMOD    = A
*

```

continued...

continued...

```

* &INSTALL = FULL
* &INSTALL = RELINK
*
* &DQSLLIB = DQSQDOS
*
* The following values must not be changed
*
* &USRID = SQLDBA
* &DQCTGVWS = DQCTGVWS
* &DQSQLCTL = DQSQLCTL
* &DQSQLTXT = DQSQDOS
* &DQSQLWRK = DQSQLWRK
* &DQSLLNK = DQSLLNK
*****
*
* THIS EXEC BUILDS A CMS/DOS LIBRARY FOR THE PAN/SQL INTERFACE
*
* The assumption is made that the customer has dumped the following
* files to his/her installation disk
*
* DQCTGVWS DATA - CATALOG VIEWS FOR THE INTERFACE
* DQSMMTB ASMB - SOURCE CODE FOR MESSAGE EXTRACT PROCESSOR
* DQSMCMD ASMB - SOURCE CODE FOR INTERFACE COMMAND PROCESSOR
* DQSQDOS TXTLIB - TXTLIB FOR THE ENTIRE INTERFACE
* DQSQLCTL CONTROL - DOS LINK CONTROL CARDS
*****
*
* LINK TO SQL/DS VM MACHINE
*
*****
-IDCPU
DESBUF
EXECIO * CP (FIFO STRING Q CPLEVEL
&READ VAR &VMSYS
&TYPE VMSYS = &VMSYS
DESBUF
-QOOC
*** Query the RDR to Obtain the Class
EXECIO * CP (LIFO STRING Q OOC
-RDRDSPL
&READ VAR &A &B &C &D
&IF &A NE RDR &GOTO -RDRDSPL
&RDRCLS = &D
-CPLINK
CP DETACH &SQLVUU
CP LINK &SQLVM &SQLCUU &SQLVUU RR
ACC &SQLVUU &SQLMODE
***
* VERIFY ACCESS TO IBM SQL MODULES AND SQL/CMS MINIDISK
***

```

continued...

continued...

```

-VERACCS
  STATE ARISISBT MODULE *
  &IF &RC > 0 &GOTO -ACCERR
  STATE ARISMBT MODULE *
  &IF &RC > 0 &GOTO -ACCERR
  STATE ARIRVSTC TEXT *
  &IF &RC > 0 &GOTO -ACCERR
***
*
*   Test if a full install is to be done or simply a relink
*
***
  &IF &INSTALL = RELINK &GOTO -PART5
-PART1
*****
*
*   Verify customer has dumped the required data set to the specified
*       disk
*
*****
  STATE &DQSQLTXT TXTLIB *
  &IF &RC > 0 &GOTO -ERR1
  STATE &DQSQLCTL CONTROL *
  &IF &RC > 0 &GOTO -ERR1
  STATE &DQSMMTB ASMB *
  &IF &RC > 0 &GOTO -ERR1
  STATE &DQSMCMD ASMB *
  &IF &RC > 0 &GOTO -ERR1
  STATE &DQCTGVWS DATA *
  &IF &RC > 0 &GOTO -ERR1
*****
*
*   The following files are created on the User's installation disk
*   and must be kept for the EXECUTION and MAINTENANCE of the PAN/SQL
*   Interface Option.
*
*       DQSQLDOS TXTLIB
*       DQSQLDOS DOSLIB
*
*****
***
*
*   Erase names of intermediate files
*
***
  ERASE &DQSQLWRK TEXT      &TEMPMOD
*****
*

```

continued...

continued...

\* This step requires the user to be linked to the IBM SQL/DS minidisk  
 \* in order that the SQL/DS Resource Manager be copied to the  
 \* installation Interface TXTLIB.

\*\*\*\*\*

-GETARIR

COPY ARIRVSTC TEXT \* ARIRVSTC TEXT &TEMPMOD (REP  
 &IF &RC = 0 &GOTO -ADDVSTC  
 &EXIT &RC

-ADDVSTC

\*\*\*EXECIO 1 DISKW ARIRVSTC TEXT &TEMPMOD 0 F 80 (STRING &BLANK NAME  
 ARIRVSTC

&TMRC = -LOCTXT OF &DQSQLTXT ARIRVST  
 &IF &TMRC = 0 TXTLIB DEL &DQSQLTXT ARIRVST  
 TXTLIB ADD &DQSQLTXT ARIRVSTC  
 ERASE ARIRVSTC TEXT &TEMPMOD

-PART2

\*\*\*\*\*

\* CREATE CATALOG VIEWS

\* 'DQCTGVWS DATA' is expected to be found on the User's &TEMPMOD disk.

\* CREATING THE VIEWS REQUIRES THE FOLLOWING:

- \* 1) EXECUTE AN SQL 'CONNECT' USING THE SQLDBA USERID AND IT'S  
 \* PASSWORD.
- \* 2) STACK ALL OF THE SQL CATALOG COMMANDS; THE CATALOG COMMAND  
 \* DATA SET CONSISTS OF 'DROP' VIEW STATEMENTS, SET RUNMODE  
 \* CONTROL STATEMENTS, 'CREATE' VIEW STATEMENTS, AND LAST  
 \* 'GRANT' STATEMENTS.
- \* 3) INVOKE 'ISQL' TO EXECUTE THE SQL COMMANDS.
- \* 4) SPOOL THE CONSOLE LOG TO THE USER'S RDR.
- \* 5) FIND THE CONSOLE LOG IN THE USER'S RDR AND SCAN THE OUTPUT  
 \* FROM 'ISQL' TO TEST THE RETURN CODE FROM THE 'CREATE'  
 \* STATEMENTS ONLY.

\*\*\*\*\*

-CRTEVIEW

DESBUF

&CONNECT = &STRING OF CONNECT SQLDBA IDENTIFIED BY &SQLPSWD  
 &STACK &CONNECT

-READCVWS

EXECIO 1 DISKR DQCTGVWS DATA \*  
 &IF &RC = 0 &GOTO -READCVWS

-EXECISQL

&STACK EXIT

EXECIO \* CP (LIFO STRING Q CONS

-READCONS

&READ VAR &A &B &C &D &TERM &START &E  
 &IF &A NE CONS &GOTO -READCONS

\*\*\*&READ ARGS

\*\*\*&READ ARGS

continued...



continued...

```

***&READ ARGS
&TYPE Begin Installation of Catalog Views
CP SPOOL CONSOLE CLOSE START TO * NOTERM
EXEC ISQL
EXECIO * CP (LIFO STRING SPOOL CONSOLE CLOSE TO * &TERM &START
&TYPE Complete Installation of Catalog Views
&READ ARGS
&SPOOLID = &3

**
** Place selected RDR entry at top of list
**
-READCON
CP ORDER RDR &SPOOLID
CP SP RDR NOHOLD
CP CHANGE RDR &SPOOLID NOHOLD
CP CHANGE RDR &SPOOLID CLASS &RDRCLS

**
** Write CONSOLE output to User's a-disk.
** CMS will not allow READ of CONSOLE class.
**
** Verify that first, second or third record is an ISQL message
** beginning with the characters 'ARI'.
**
-READCARD
READ DQCTGVWS LISTING &TEMPMOD
FINIS DQCTGVWS LISTING &TEMPMOD
DESBUF
-EXIOCARD
EXECIO 1 DISKR DQCTGVWS LISTING &TEMPMOD 0
&READ STRING &CNTLID
&MSG = &SUBSTR OF &CNTLID 1 3
&IF &MSG EQ ARI &GOTO -FINDCRTE
EXECIO 1 DISKR DQCTGVWS LISTING &TEMPMOD 0
&READ STRING &CNTLID
&MSG = &SUBSTR OF &CNTLID 1 3
&IF &MSG EQ ARI &GOTO -FINDCRTE
EXECIO 1 DISKR DQCTGVWS LISTING &TEMPMOD 0
&READ STRING &CNTLID
&MSG = &SUBSTR OF &CNTLID 1 3
&IF &MSG EQ ARI &GOTO -FINDCRTE
EXECIO 1 DISKR DQCTGVWS LISTING &TEMPMOD 0
&READ STRING &CNTLID
&MSG = &SUBSTR OF &CNTLID 1 3
&IF &MSG NE ARI &GOTO -ERR3
***
* Bypass checking the SQL return code from the 'DROP' commands.
* Look for 1st occurrence of a 'CREATE' view command, then start
* checking the SQL return code.
***
-FINDCRTE
EXECIO 1 DISKR DQCTGVWS LISTING &TEMPMOD 0
&IF &RC > 2 &GOTO -ERR4

```

continued...

---

continued...

```

&IF &RC = 2 &GOTO -PART3
&READ VARS &CNST &LIT &EQU &CODE
&IF &CNST NE CREATE &GOTO -FINDCRTE
-CHKSQLCD
** FIRST CHECK FOR AN ARI MESSAGE BEFORE CHECKING SQLCODE
&MSG = &SUBSTR OF &CNST 1 3
&IF &MSG NE ARI &GOTO -READNEXT
&IF &LIT NE SQLCODE &GOTO -READNEXT
&IF &CODE NE 000 &GOTO -ERR5
-READNEXT
EXECIO 1 DISKR DQCTGVWS LISTING &TEMPMOD 0
&IF &RC > 2 &GOTO -ERR4
&IF &RC = 2 &GOTO -PART3
&READ VARS &CNST &LIT &EQU &CODE
&GOTO -CHKSQLCD
*****
-PART3
****
*
*   Erase catalog files after successful install
*
****
*
*   ERASE DQCTGVWS LISTING &TEMPMOD
*
***
*
*   This part of the installation EXEC preprocesses the Interface
*   Message Extract Program. This program contains SQL statements
*   to read the SQL IBM 'HELP' TEXT tables that are installed at the
*   User's site. The source code should already exist on the User's
*   &TEMPMOD disk with the CONNECT PASSWORD for SQLDBA modified to
*   match that of the installer's site.
*   DQSMMTB is first preprocessed, assembled, added to the TXTLIB
*   and then executed. The output of the execution of DQSMMTB is then
*   assembled to create the Interface SQL Message Table.
*
*****
*   This EXEC will create and then erase the following files on your
*   a-disk or work disk as a result of preprocessing and assembling the
*   PAN/SQL Interface Message Extract module:
*
*       DQSMMTB ASMB *
*
*       DQSMMTB ASSEMBLE A
*       DQSMMTB LISTPREP A
*       DQSMMTB TEXT      &TEMPMOD
*       DQSMMTB LISTING   &TEMPMOD
*
*   This EXEC will also create and then erase the following files
*   as a result of executing the PAN/SQL Interface Message Extract
*   module:
*

```

continued...

continued...

```

*      DQMTBASM ASSEMBLE A
*      DQMTBPRT PRINT      A
*      DQMTBLST LISTING    &TEMPMOD
*      DQMTBLST TEXT       &TEMPMOD
*****
      ERASE &DQSMMTB TEXT      &TEMPMOD
      ERASE &DQSMMTB LISTING  &TEMPMOD
      ERASE &DQSMMTB ASSEMBLE A
      ERASE &DQSMMTB LISTPREP A
*****
*
*      Run the PAN/SQL Message Extract program through the IBM SQL/DS
*      preprocessor.
*
*      Assemble the output from the preprocessor.
*
*****
-PREPMTB
  &EQUAL = =
  &NAME = &CONCAT OF (PREPNAME &EQUAL &PREPMTB ,KEEP,NOPRINT,
  &USER = &CONCAT OF USERID &EQUAL &USRID / &SQLPSWD )
  &STR1 = &CONCAT OF &NAME ISOL(CS), &USER
  &STR2 = &CONCAT OF SYSPRINT( &DQSMMTB )
  &STR3 = &CONCAT OF SYSIN( &DQSMMTB &BLANK ASMB &BLANK * )
  &STR4 = &CONCAT OF &STR1 &BLANK &STR2 &BLANK &STR3
  FILEDEF * CLEAR
  EXEC SQLPREP ASM PREPPARM &STR4
  &IF &RC NE 0 &GOTO -MTBERR1
-ASMTB
  FILEDEF * CLEAR
  FILEDEF ASSEMBLE DISK &DQSMMTB ASSEMBLE A
  FILEDEF TEXT     DISK &DQSMMTB TEXT      &TEMPMOD
  FILEDEF LISTING  DISK &DQSMMTB LISTING  &TEMPMOD
  &IF &VMSYS EQ VM/ESA &GOTO -GBLESA
  GLOBAL MACLIB DMSSP CMSLIB
  &GOTO -CHKGBL
-GBLESA
  GLOBAL MACLIB DMSOM DMSGPI
-CHKGBL
  &IF &RC NE 0 &GOTO -GBLERR1
  ASSEMBLE &DQSMMTB (SYSPARM(CMS))
  &IF &RC NE 0 &GOTO -MTBERR2
*****
*
*      Execute the Error Message Extract program.
*
*      Execution of the Error Message Extract program will create
*      file 'DQMTBPRT PRINT' if any errors were encountered.
*
*      Successful execution of the error message extract program will

```

continued...

continued...

```

* create file 'DQMTBLST ASSEMBLE'
*
*****
-EXECUTE
  ERASE &DQSMMTB LISTING &TEMPMOD
  ERASE &DQSMMTB ASSEMBLE A
  ERASE &DQSMMTB LISTPREP A
  ERASE DQMTBLST ASSEMBLE A
  ERASE DQMTBPRT PRINT A
  GLOBAL TXTLIB &DQSQLTXT
  LOAD &DQSMMTB (START
  &IF &RC NE 0 &GOTO -LOADERR
*****
*
* Test for error messages written to DQMTBPRT file.
*
*****
  STATE DQMTBPRT PRINT A
  &IF &RC = 0 &GOTO -MTBERR3
*****
*
* Assemble the Error Message Table source and add object to TXTLIB.
*
*****
-ASMTBL
  ERASE &DQSMMTB TEXT &TEMPMOD
  FILEDEF * CLEAR
  FILEDEF ASSEMBLE DISK DQMTBLST ASSEMBLE A
  FILEDEF TEXT DISK DQMTBLST TEXT &TEMPMOD
  FILEDEF LISTING DISK DQMTBLST LISTING &TEMPMOD
  ASSEMBLE DQMTBLST
  &IF &RC NE 0 &GOTO -MTBERR4
*****
*
* Add the Error Message Table TEXT to the PAN/SQL Interface TXTLIB.
*
*****
-ADDTBL
  EXECIO 1 DISKW DQMTBLST TEXT &TEMPMOD 0 F 80 (STRING &BLANK NAME
  OMSMMTB1
  &TMRC = -LOCTXT OF &DQSQLTXT OMSMMTB1
  &IF &TMRC = 0 TXTLIB DEL &DQSQLTXT OMSMMTB1
  TXTLIB ADD &DQSQLTXT DQMTBLST
***
*
  ERASE DQMTBPRT PRINT A
  ERASE DQMTBLST ASSEMBLE A
  ERASE DQMTBLST LISTING &TEMPMOD
  ERASE DQMTBLST TEXT &TEMPMOD
  FILEDEF * CLEAR
*
*****

```

continued...

continued...

```

*
-PART4
*
* This part of the installation EXEC will preprocess and assemble
* the PAN/SQL Interface Command Processor.
*
*****
*
* The following files will be created on the User's &TEMPMOD disk
* as a result of the EXEC.
*
*      &DQSMCMD ASSEMBLE &TEMPMOD
*      &DQSMCMD LISTPREP &TEMPMOD
*      &DQSMCMD TEXT      &TEMPMOD
*      &DQSMCMD LISTING  &TEMPMOD
*
*****
*
* Run the PAN/SQL Interface Command Processor through the IBM SQL/DS
* Preprocessor.
*
* Assemble the output from the Preprocessor.
*
*****
-PREPCMD
&EQUAL = =
&NAME = &CONCAT OF (PREPNAME &EQUAL &PREPCMD ,KEEP,NOPRINT,
&USER = &CONCAT OF USERID &EQUAL SQLDBA/ &SQLPSWD )
&STR1 = &CONCAT OF &NAME ISOL(CS), &USER
&STR2 = &CONCAT OF SYSPRINT( &DQSMCMD )
&STR3 = &CONCAT OF SYSIN( &DQSMCMD &BLANK ASMB &BLANK * )
&STR4 = &CONCAT OF &STR1 &BLANK &STR2 &BLANK &STR3
FILEDEF * CLEAR
EXEC SQLPREP ASM PREPPARM &STR4
&IF &RC NE 0 &GOTO -CMDERR1
ERASE &DQSMCMD LISTPREP A
-ASMSQL
FILEDEF * CLEAR
FILEDEF ASSEMBLE DISK &DQSMCMD ASSEMBLE A
FILEDEF TEXT DISK &DQSMCMD TEXT &TEMPMOD
FILEDEF LISTING DISK &DQSMCMD LISTING &TEMPMOD
ASSEMBLE &DQSMCMD
&IF &RC NE 0 &GOTO -CMDERR2
*****
*
* Add the output from the assembly to the PAN/SQL Interface TXTLIB.
*
*****

```

continued...

continued...

```

-ADDPREP
EXECIO 1 DISKW &DQSMCMD TEXT &TEMPMOD 0 F 80 (STRING &BLANK NAME
OMSMCMD1
&TMRC = -LOCTXT OF &DQSQLTXT OMSMCM1
&IF &TMRC = 0 TXTLIB DEL &DQSQLTXT OMSMCM1
TXTLIB ADD &DQSQLTXT &DQSMCMD
ERASE &DQSMCMD TEXT &TEMPMOD
ERASE &DQSMCMD LISTING &TEMPMOD
ERASE &DQSMCMD ASSEMBLE A
&GOTO -PART5

```

```

*****
* The following intermediate files are created and erased:
*

```

```

*       ARIRVSTC TEXT      &TEMPMOD
*       DQSQLDOS TEXT      &TEMPMOD
*       DQSQLWRK TEXT      &TEMPMOD
*       DQSQLLNK DOSLNK    &TEMPMOD
*

```

```

*****

```

```

-PART5
STATE &DQSQLTXT TXTLIB *
&IF &RC > 0 &GOTO -ERR8
STATE &DQSQLCTL CONTROL *
&IF &RC > 0 &GOTO -ERR9

```

```

-EXTRCNTL
ERASE &DQSQLLIB DOSLIB &TEMPMOD
ERASE &DQSQLLNK DOSLNK &TEMPMOD

```

```

*****

```

```

* File DQSQLCTL CONTROL is expected to be on the user's installation
* disk.

```

```

* Processing;

```

```

* Read each link control card. For each INCLUDE card found, expand
* the TEXT, copy it to the DOSLINK file. All other control cards
* get written to the DOSLINK file. An ENTRY control card causes a
* LINK to be performed for the given PHASE.

```

```

*****

```

```

* Link control member contains a dummy phase card at the end in order
* to signal 'end of input' for this exec. (PHASE END)

```

```

*****

```

```

&TYPE Begin Link of PAN/SQL DOS Modules

```

```

-READCNTL
EXECIO 1 DISKR &DQSQLCTL CONTROL * 0
&IF &RC > 0 &GOTO -END
&READ VARS &LITRL &MBR
&IF &LITRL = PHASE &GOTO -LINK
&IF &LITRL = INCLUDE &GOTO -EXPAND

```

continued...

continued...

```

    &GOTO -WRTECNL
-LINK
    STATE &DQSLLNK DOSLNK *
    &IF &RC > 0 &GOTO -LINKEND
    SET DOS ON
    DOSLKED &DQSLLNK &DQSLLIB (PRINT
    SET DOS OFF
    ERASE &DQSLLNK DOSLNK &TEMPMOD
    &IF &TEMPMOD = A &GOTO -LINKEND
    STATE &DQSLLIB DOSLIB A
    &IF &RC NE 0 &GOTO -LINKEND
    COPY &DQSLLIB DOSLIB A = &TEMPMOD (REP
    ERASE &DQSLLIB DOSLIB A
-LINKEND
-WRTECNL
    EXECIO 1 DISKW &DQSLLNK DOSLNK &TEMPMOD 0 F 80 (STRING &BLANK &LITRL
&MBR
    &GOTO -READCNL
-EXPAND
    FILEDEF INMOVE DISK &DQSLLTX TXTLIB * (MEMBER &MBR
    FILEDEF OUTMOVE DISK &DQSLLNK DOSLNK &TEMPMOD (DISP MOD
    MOVEFILE
    &IF &RC NE 0 &GOTO -LINKERR1
    &GOTO -READCNL
*****
-ACCERR
    &BEGTYPE -ACCEND

    You currently do not have access to the SQL minidisks containing
    the required modules ARISISBT, ARISRMBTQL or ARIRVSTC TEXT.
    Please access the appropriate disks and reinvoke this EXEC.

-ACCEND
    &GOTO -END
-ERR1
    &TYPE The required 5 installations datasets were not found on the
    &TYPE user's specified disk. Please verify that the names used to
    &TYPE dump the data sets match the names assigned to this EXEC
    &EXIT 12
-ERR2
    &TYPE EXEC ERROR, CONSOLE OUTPUT FOR ISQL NOT FOUND IN RDR
    &EXIT 16
-ERR3
    &TYPE Console file written to user's a-disk is not the output from
    &TYPE the PAN/SQL Catalog VIEW create process
    &EXIT 16
-ERR4
    &TYPE A read error has occurred for the DQCTGVWS LISTING file
    &EXIT 8
-ERR5
    &TYPE An SQL error has occurred, please examine the DQCTGVWS listing

```

continued...

continued...

```

&TYPE that has been created on your a-disk.
&EXIT 12
-ERR8
&TYPE Dataset &DQSQLTXT TXTLIB was not found on the user's installation
&TYPE disk. Relink not possible.
&EXIT 12
-ERR9
&TYPE Data set &DQSQLCTL CONTROL was not found on the user's
&TYPE installation disk. Relink not possible.
&EXIT 12
-GBLERR1
&TYPE MACLIBs DMSSP and CMSLIB NOT FOUND, Processing Terminated
&EXIT &RC
-LOADERR
&TYPE Error Loading DQSMMTB, processing terminated
&TYPE Examine &TEMPMOD disk for existence of DQSMMTBs TEXT member
&EXIT &RC
-MTBERR1
&BEGTYPE -MTB1END

```

Preprocessing of the SQL Interface message extract program failed.  
This may be due to an incorrect password or errors in the extract  
program. Please examine file DQSMMTB LISTPREP to determine the  
cause of the error.

```

-MTB1END
&EXIT &RC
-MTBERR2
&BEGTYPE -MTB2END

```

Assembly of the PAN/SQL Interface Message Extract program failed.  
Please examine file DQSMMTB LISTING to determine the cause of  
the error or contact COMPUTER ASSOCIATES TECHNICAL SUPPORT.

```

-MTB2END
&EXIT &RC
-MTBERR3
EXECIO 1 DISKR DQMTBPRT PRINT A ( VAR ERRMSG
&BEGTYPE -MTB3END

```

Execution of the PAN/SQL Interface Error Message Extract program  
has failed for the following reason.

```

-MTB3END
&TYPE &ERRMSG
&EXIT 8
-MTBERR4
&BEGTYPE -MTB4END

```

Assembly of the PAN/SQL Error Message table failed. Please  
examine file DQMTBLST LISTING to determine the cause of  
the error or contact COMPUTER ASSOCIATES TECHNICAL SUPPORT.

continued...



continued...

```
-MTB4END
  &EXIT &RC
-CMDERR1
  &BEGTYPE -ENDPREP
```

Preprocessing of the PAN/SQL Interface command processor failed.  
This may be due to an incorrect password or errors in the command processor. The incorrect source member may have be specified for assembly.

```
-ENDPREP
  &TYPE      Examine file &DQSMCMD LISTPREP and &DQSMCMD ASSEMBLE to
  &TYPE      determine the cause of the error. Correct the sql error
  &TYPE      and rerun this EXEC.
  &EXIT &RC
```

```
-CMDERR2
  &BEGTYPE -ENDASME
```

Assembly of the PAN/SQL Interface command processor failed.  
Please examine file DQSMCMD LISTING to determine the cause of the error or contact COMPUTER ASSOCIATES TECHNICAL SUPPORT.

```
-ENDASME
  &EXIT &RC
```

```
-LINKERR1
  &TYPE
  &TYPE Module &MBR was not found in the PAN/SQL Interface TXTLIB.
  &TYPE The DOSLKED has terminated. If this is a relink of the
  &TYPE Interface, please verify that a full installation completed
  &TYPE successfully. If not,
  &TYPE contact COMPUTER ASSOCIATES TECHNICAL SUPPORT.
  &TYPE
  &EXIT 12
```

\*\*\*\*\*

```
-END
  FILEDEF INMOVE CLEAR
  FILEDEF OUTMOVE CLEAR
  ERASE &DQSLLNK DOSLNK &TEMPMOD
  &IF &INSTALL = RELINK &GOTO -ENDMSG
```

\*\*\*

\*

\* THE FOLLOWING DATA SETS MUST REMAIN ON THE CUSTOMER'S INSTALLATION  
\* DISK TO ALLOW FOR MAINTENANCE OR A RE-INTALL TO TAKE PLACE.

\*

```
*      DQSMCMD ASMB      &TEMPMOD
*      DQSMCMD ASMB      &TEMPMOD
*      DQCTGVWS DATA    &TEMPMOD
```

\*

continued...

continued...

\*\*\*

```

DESBUF
&CONNECT = &STRING OF CONNECT SQLDBA IDENTIFIED BY &SQLPSWD
&STACK &CONNECT
&STR1 = &CONCAT OF SQLDBA . &PREPCMD
&GRANT = &STRING OF GRANT RUN ON &STR1 TO PUBLIC
&STACK &GRANT
&STACK EXIT
CP SPOOL CONSOLE CLOSE NOTERM START
EXEC ISQL
CP SPOOL CONSOLE CLOSE &TERM &START
ERASE LOAD MAP A

```

\*

-ENDMSG

\*

&amp;BEGTYPE -ENDOK

The CMS/DOS installation is complete. Please verify the output of the 13 link jobs which have resulted from this install. If any link job was unsuccessful, notify COMPUTER ASSOCIATES TECHNICAL SUPPORT.

-ENDOK

&amp;EXIT 0

\*\*\*\*\*

-LOCTXT

```

TXTLIB MAP &1 (DISK
SENTRIES
&LTB = &RC
&LOCTAR = &CONCAT OF / &2 /
EXECIO * DISKR &1 MAP * 1 (FINIS LOCATE &LOCTAR
SENTRIES
&LTE = &RC
&LTC = &LTE - &LTB
&LOOP -LOCTXTLOOP &LTC
&READ VARS &LTX &LTB

```

-LOCTXTLOOP

&amp;LTRC = 0

\* IF &amp;LTC = 0 &amp;LTRC = 1

\* &amp;LTRC = 0 IF MEMBER FOUND IN TXTLIB

\* &amp;LTRC = 1 IF MEMBER NOT FOUND IN TXTLIB

ERASE &amp;1 MAP A5

&amp;RETURN &amp;LTRC

\*\*\*\*\*

-EXPLAIN

&amp;BEGTYPE -ENDEXPL

THIS EXEC INSTALLS COMPUTER ASSOCIATES SQL INTERFACE OPTION FOR THE CMS/DOS ENVIRONMENT.

continued...

continued...

IF ANY PROBLEMS OR QUESTIONS ARISE, CONTACT

TECHNICAL SUPPORT  
COMPUTER ASSOCIATES, INCORPORATED  
2400 CABOT DRIVE  
LISLE, ILL 60532  
708/505-9599

-ENDEXPL  
&EXIT 0

## Introduction for ORACLE

The installation procedure transfers the CA-PAN/SQL Interface TXTLIB from the installation tape to a disk file at your site. You should install CA-PAN/SQL for ORACLE in a separate TXTLIB from the Computer Associates product or products using the SQL Interface.

You **must** install the CA-PAN/SQL ORACLE Interface in a separate TXTLIB from any other CA-PAN/SQL database Interface since the interface modules are named the same across the various databases. The name of this TXTLIB must then be supplied in the EXECs required to execute the host product or products.

To simplify modifications to the host product EXEC, you should install CA-PAN/SQL on the same minidisk as the Computer Associates products that use CA-PAN/SQL. For EXEC modifications, refer to the *Installation Guide* for each host product.

# Installing CA-PAN/SQL for ORACLE

The steps to install CA-PAN/SQL for ORACLE in CMS are:

1. Determine DASD requirements for CA-PAN/SQL files.
2. Transfer the CA-PAN/SQL TXTLIB from the tape to disk files.
3. Modify EXEC of Host Product.

## 1. Determine DASD Requirements for the CA-PAN/SQL ORACLE Interface

The total disk space required for the CA-PAN/SQL ORACLE TXTLIB is approximately 50 blocks on a minidisk formatted with a blocksize of 4096 bytes.

## 2. Transfer CA-PAN/SQL ORACLE Interface

The installation tape has an external label identifying the operating system as CMS. To transfer the CA-PAN/SQL file from the tape to your disk, have the VM operator:

1. ATTACH a tape drive to your USERID as 181.
2. MOUNT the CA-PAN/SQL installation tape.
3. READY the tape drive.

When the tape is ready, issue the following CMS commands:

```
TAPE REW  
TAPE LOAD * * fm
```

where *fm* is the filemode of the read/write CA-PAN/SQL disk. This transfers file DQSQLOS TXTLIB to your disk. The installation of the CA-PAN/SQL ORACLE Interface is complete.

### 3. Modify EXEC of Host Product

Refer to the *Installation Guide* of the Computer Associates host product that uses the CA-PAN/SQL Interface for additional EXEC modifications.

### 4. CMS TXTLIB Maintenance for ORACLE

CMS provides the ZAP command to apply maintenance to a CMS TXTLIB. If it becomes necessary to apply maintenance to the CA-PAN/SQL Interface for ORACLE, you will receive a CMS ZAP TXTLIB file (IMASPZAP format) from Computer Associates. This maintenance is to be applied to DQSQLOS TXTLIB.

Refer to the *VM/SP Operator's Guide (SC19-6202)* for complete information on the ZAP TXTLIB command.

## Chapter 3

### **MVS Installation**

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# Chapter 3

## MVS Installation

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|                                 |      |
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### 3. MVS Installation

## Introduction for DB2

This chapter describes how to install the Computer Associates SQL Interface Option (CA-PAN/SQL) for DB2 in MVS. The installation procedure transfers CA-PAN/SQL from the installation tape to disk files at your site.

You should install CA-PAN/SQL in a separate LOAD library from the Computer Associates product or products using CA-PAN/SQL. This separate LOAD library must then be supplied in the JCL or TSO STEPLIB required to execute the host product or products. For JCL modifications, see the *Installation Guide* for each product.

All CA-PAN/SQL Interface modules are link-edited in the LOAD library with a prefix of DQSPS. All modules are re-entrant.

The complete installation procedure installs the following components:

- CA-PAN/SQL Views
- CA-PAN/SQL Interface Command Processor
- Batch Interface
- CICS Interface

Note that if you are operating in TSO or Batch only, you can omit the CICS installation without affecting the operation of CA-PAN/SQL. If you are operating in CICS, however, it is recommended that you install both the CICS Interface *and* the Batch Interface.

Assembly of the Interface Command Processor creates an object deck that is linked with both the CICS and the Batch Interface modules. By installing both interfaces, you avoid the possibility of DB2 time stamp errors if the object deck is deleted or the Interface Command Processor is reassembled. Also, the Batch Interface Load library contains module DQSCGEN which is required for the generation of "static" DB2 programs.

The installation components are described next.

## CA-PAN/SQL Views

CA-PAN/SQL uses **views** to obtain data from the DB2 system catalogs. Authorization can then be granted on the views rather than on the DB2 system catalog tables.

## CA-PAN/SQL Interface Command Processor

CA-PAN/SQL module **DQSMCMD** is referred to as the **Interface Command Processor**. CA-PAN/SQL installation requires that you preprocess and assemble this module, customizing options to your site's requirements. The source code for DQSMCMD is distributed with CA-PAN/SQL.

Because the Command Processor is used by several Computer Associates products in both CICS and Batch, your customization of DQSMCMD must satisfy the requirements of the various products in both environments.

The preprocess step creates a DBRM that provides input to the DB2 bind step. Assembly of the Command Processor creates an object deck that is linked with both CICS and Batch Interface modules.

## TSO and Batch Interface

CA-PAN/SQL installation for the **TSO** and **Batch** environment consists of a link-edit step. This link-edit includes the object deck produced by the assembly of the Interface Command Processor.

## CICS Interface

CA-PAN/SQL installation for **CICS** includes updating the CICS tables and a link-edit step. The link-edit includes the object deck produced by the assembly of the Interface Command Processor.

# Installing CA-PAN/SQL for DB2

The steps to install CA-PAN/SQL for DB2 in MVS are:

1. Determine DASD requirements for CA-PAN/SQL libraries.
2. Retrieve UNLOAD JCL.
3. Edit and run UNLOAD JCL.
4. Install CA-PAN/SQL Views.
5. Install CA-PAN/SQL Interface Command Processor.
6. Modify and Run Installation JCL.
7. Install Groupid authorization modules (optional).
8. Install CA-PAN/SQL for TSO and Batch.
9. Install CA-PAN/SQL for CICS.
10. Install CA-PAN/SQL in an alternate DB2 Subsystem (optional).

## 1. Determine DASD Requirements for CA-PAN/SQL Libraries

The CA-PAN/SQL installation procedure unloads the installation components to three libraries: a SOURCE library, a TSO/Batch LOAD library, and a CICS LOAD library. The installation creates output requiring two additional libraries: an OBJECT library, and a DBRM library.

Use the table below as a guideline for determining the amount of DASD space required for each library.

| Library          | KBs | Directory Blocks |
|------------------|-----|------------------|
| SOURCE           | 150 | 5                |
| LOAD (TSO/Batch) | 800 | 5                |
| LOAD (CICS)      | 800 | 5                |
| OBJECT           | 150 | 2                |
| DBRMlib          | 150 | 2                |

*Exhibit 3.1: DASD Requirements (DB2)*

## 2. Retrieve UNLOAD JCL

The CA-PAN/SQL installation tape has an external label identifying the operating system as OS. The files are in IEBCOPY format. Use the following IEBGENER job to retrieve the UNLOAD JCL from FILE01 of the installation tape:

```
//SQLGENR JOB (acct info),'UNLOAD PAN/SQL JCL',CLASS=x,
// MSGCLASS=x,MSGLEVEL=(1,1),REGION=2048K
//*****
//*
//* STEP1: UNLOAD PAN/SQL INSTALL JCL
//*
//*****
//STEP1 EXEC PGM=IEBGENER
//SYSUT1 DD DSN=FILE01,DISP=(OLD,KEEP),UNIT=TAPE,
// LABEL=(1,SL),VOL=SER=ssssss
//SYSUT2 DD DISP=(NEW,CATLG,DELETE),DSN=pansql.install.unload.jcl,
// UNIT=SYSDA,SPACE=(TRK,(1,1))
//SYSUT3 DD UNIT=SYSDA,SPACE=(TRK,(1,1))
//SYSUT4 DD UNIT=SYSDA,SPACE=(TRK,(1,1))
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
//*
//
```



### 3. Edit and Run UNLOAD JCL

Modify the UNLOAD JCL as described below (see *UNLOAD JCL for DB2* later in this chapter).

- Change the JOB card to conform to your installation's standards.
- Modify the space allocation for the five libraries created by step CRTLIB, if necessary. The Install JCL reflects DASD allocation for a 3380 disk drive.
- Provide a volume serial number for the libraries in the VOL parameter.
- Set the name of the SOURCE library in the PSQLSRC parameter.
- Set the name of the TSO/Batch load library in the PSQLOTSO parameter.
- Set the name of the CICS load library in the PSQLCIC parameter.
- Set the name of the OBJECT library in the PSQLOBJ parameter.
- Set the name of the DBRM library in the PSQLDBR parameter. If you want to refer to an existing DBRMlib at your site, then remove this parameter from the PROC and remove the DD5 DD card from both the SCRATCH and CRTLIB steps.

The UNLOAD job allocates the libraries necessary for CA-PAN/SQL installation. Prior to the allocation of the libraries, a SCRATCH step exists that allows you to rerun this job if needed. The remaining steps unload the files from the tape to the libraries specified.

Submit the UNLOAD JCL and review the results (see *UNLOAD JCL for DB2* later in this chapter). Each step should complete with a condition code of zero.

The UNLOAD job transfers the following files:

| File   | Library | Member   | Description  |
|--------|---------|----------|--|
| FILE02 | SOURCE  | CICSPPT  | CICS PPT entries for the CA-PAN/SQL modules  |
|        |         | DQCTGVWS | Create Catalog View statements   |
|        |         | DQSMCMD  | Interface Command Processor macro  |
|        |         | DQSMRCFM | Source code for Groupid (RACF) module for the TSO/Batch environment                            |
|        |         | DQSMRCFS | Source code for Groupid (RACF) module for the CICS environment                                 |
|        |         | GIXMINST | JCL to assemble the Groupid module for TSO/Batch   |
|        |         | GIXSINST | JCL to assemble the Groupid module for CICS  |
|        |         | LINKCICS | Control cards to link CA-PAN/SQL for CICS environment  |
|        |         | LINKTSO  | Control cards to link CA-PAN/SQL for the TSO and Batch environment                             |
|        |         | PSQLVRSN | Data control cards indentifying the version/release and gen-level of the CA-PAN/SQL Interface. |
|        |         | SQLINST1 | JCL to install the CA-PAN/SQL Views and the Interface Command Processor                        |
|        |         | SQLINST2 | JCL to install CA-PAN/SQL for the TSO and Batch environment                                    |
|        |         | SQLINST3 | JCL to install CA-PAN/SQL for the CICS environment   |
|        |         | SQLINST4 | JCL to install CA-PAN/SQL in an alternate DB2 subsystem  |

| File   | Library  | Member   | Description                                    |
|--------|----------|----------|--|
| FILE03 | TSOLOAD  | DQSCGEN  | Static Command Program Generator               |
|        |          | TQSPSxxx | Load modules for the TSO and Batch environment |
| FILE04 | CICSLOAD | TQSPSxxx | Load modules for the CICS environment          |

*Exhibit 3.2: Tape Files (DB2)*

#### 4. Install CA-PAN/SQL Views

Step CTGVIEWS of job SQLINST1 creates the views that are used by CA-PAN/SQL. Source member DQCTGVWS contains the SQL statements to create these views.

You can execute the CREATE VIEW statements if you (the userid on the JOB card) have either System Administrator (SYSADM) authority or select privilege on every table or view named in the CREATE VIEW statements.

Whether you use the default ownerid and userid of PANSQL or select another ownerid for the views, the following conditions must be met:

- A DB2 System Administrator (SYSADM authority) must grant the ownerid the select privilege on the DB2 system catalog tables by executing the following GRANT commands:

```

GRANT SELECT ON SYSIBM.SYSCOLUMNS TO ownerid WITH GRANT OPTION
GRANT SELECT ON SYSIBM.SYSINDEXES TO ownerid WITH GRANT OPTION
GRANT SELECT ON SYSIBM.SYSSYNONYMS TO ownerid WITH GRANT OPTION
GRANT SELECT ON SYSIBM.SYSTABLES TO ownerid WITH GRANT OPTION
GRANT SELECT ON SYSIBM.SYSTABLESPACE TO ownerid WITH GRANT OPTION
GRANT SELECT ON SYSIBM.SYSTABAUTH TO ownerid WITH GRANT OPTION

```

where *ownerid* is the ownerid chosen for the Interface Catalog Views

- If you select an ownerid other than PANSQL, you must modify the source statements for the catalog views (DQCTGVWS) to reflect the new ownerid.
- The ownerid of the views must match the VWOWNR parm provided as input to the ASMMACR.SYSIN statement of job SQLINST1. This step installs the Interface Command Processor which contains the names of the catalog views. The default value is PANSQL.

- You must either provide a userid with SYSADM authority on the JOB card, or use the ownerid of the catalog views. The userid provided on the JOB card becomes the ownerid of the CA-PAN/SQL Interface PLAN. The PLAN name is provided on the PLAN parameter which is input to the ASMMACR.SYSIN statement of the installation job.
- The userid on the JOB card must have BINDADD authority.

The source statements to create the catalog views (DQCTGVWS) also contain the DB2 GRANT statements to grant the select privilege on all of these views to PUBLIC. If you do not want to grant public access to these views, delete the GRANT statements. Individual access must then be granted as needed.

The following statements create the catalog views.

```

DROP VIEW PANSQL.DQUSERID;
DROP VIEW PANSQL.DQTBLEATTR;
DROP VIEW PANSQL.DQTBLECOLS;
DROP VIEW PANSQL.DQTBLEINXS;
DROP VIEW PANSQL.DQUSERTPRV;
DROP VIEW PANSQL.DQSYNONYMS;
CREATE VIEW PANSQL.DQUSERID
  (USERID)
AS SELECT
  SYSIBM.SYSTABLES.CREATOR
FROM
  SYSIBM.SYSTABLES;
CREATE VIEW PANSQL.DQTBLEATTR
  (TBLOWNER,
   TBLNAME,
   NBRCOLS,
   NBRROWS,
   NBRPAGES,
   TBLTYPE,
   PAGESIZE)
AS SELECT
  SYSIBM.SYSTABLES.CREATOR,
  SYSIBM.SYSTABLES.NAME,
  SYSIBM.SYSTABLES.COLCOUNT,
  SYSIBM.SYSTABLES.CARD,
  SYSIBM.SYSTABLES.NPAGES,
  SYSIBM.SYSTABLES.TYPE,
  SYSIBM.SYSTABLESPACE.PGSIZE
FROM
  SYSIBM.SYSTABLES,
  SYSIBM.SYSTABLESPACE
WHERE
  SYSIBM.SYSTABLES.TSNAME = SYSIBM.SYSTABLESPACE.NAME;

```

continued...

...continued

```

CREATE VIEW PANSQL.DQTBLECOLS
(TBLOWNER,
 TBLNAME,
 COLNAME,
 DATATYPE,
 UNIQUEVALUES,
 COLPOS,
 DATALEN,
 SCALE,
 NULLS,
 LABEL)
AS SELECT
  SYSIBM.SYSCOLUMNS.TBCREATOR,
  SYSIBM.SYSCOLUMNS.TBNAME,
  SYSIBM.SYSCOLUMNS.NAME,
  SYSIBM.SYSCOLUMNS.COLTYPE,
  SYSIBM.SYSCOLUMNS.COLCARD,
  SYSIBM.SYSCOLUMNS.COLNO,
  SYSIBM.SYSCOLUMNS.LENGTH,
  SYSIBM.SYSCOLUMNS.SCALE,
  SYSIBM.SYSCOLUMNS.NULLS,
  SYSIBM.SYSCOLUMNS.LABEL
FROM
  SYSIBM.SYSCOLUMNS;
CREATE VIEW PANSQL.DQTBLEINXS
(INDEXOWNER,
 INDEXNAME,
 TBLOWNER,
 TBLNAME,
 INDEXTYPE,
 NBRCOLS,
 CLUSTERED,
 FIRSTKEY,
 FULLKEY)
AS SELECT
  SYSIBM.SYSINDEXES.CREATOR,
  SYSIBM.SYSINDEXES.NAME,
  SYSIBM.SYSINDEXES.TBCREATOR,
  SYSIBM.SYSINDEXES.TBNAME,
  SYSIBM.SYSINDEXES.UNIQUERULE,
  SYSIBM.SYSINDEXES.COLCOUNT,
  SYSIBM.SYSINDEXES.CLUSTERED,
  SYSIBM.SYSINDEXES.FIRSTKEYCARD,
  SYSIBM.SYSINDEXES.FULLKEYCARD
FROM
  SYSIBM.SYSINDEXES;
CREATE VIEW PANSQL.DQUSERTPRV
(GRANTEE,
 TBLOWNER,

```

continued...

...continued

```

        TBLNAME,
        GRANTOR,
        UPDATECOLS,
        SELECTPRIV,
        INSERTPRIV,
        DELETEPRIV,
        UPDATEPRIV,
        TBLTYPE,
        TBLDESCR)
AS SELECT
    SYSIBM.SYSTABAUTH.GRANTEE,
    SYSIBM.SYSTABAUTH.TCREATOR,
    SYSIBM.SYSTABAUTH.TTNAME,
    SYSIBM.SYSTABAUTH.GRANTOR,
    SYSIBM.SYSTABAUTH.UPDATECOLS,
    SYSIBM.SYSTABAUTH.SELECTAUTH,
    SYSIBM.SYSTABAUTH.INSERTAUTH,
    SYSIBM.SYSTABAUTH.DELETEAUTH,
    SYSIBM.SYSTABAUTH.UPDATEAUTH,
    SYSIBM.SYSTABLES.TYPE,
    SYSIBM.SYSTABLES.REMARKS
FROM
    SYSIBM.SYSTABAUTH,
    SYSIBM.SYSTABLES
WHERE
    SYSIBM.SYSTABAUTH.TCREATOR = SYSIBM.SYSTABLES.CREATOR AND
    SYSIBM.SYSTABAUTH.TTNAME   = SYSIBM.SYSTABLES.NAME;
CREATE VIEW PANSQL.DQSYNONYMS
    (USERID,
     ALTNAME,
     TBLOWNER,
     TBLNAME)
AS SELECT
    SYSIBM.SYSSYNONYMS.CREATOR,
    SYSIBM.SYSSYNONYMS.NAME,
    SYSIBM.SYSSYNONYMS.TBCREATOR,
    SYSIBM.SYSSYNONYMS.TBNAME
FROM
    SYSIBM.SYSSYNONYMS;
GRANT SELECT ON PANSQL.DQUSERID TO PUBLIC;
GRANT SELECT ON PANSQL.DQTBLEATTR TO PUBLIC;
GRANT SELECT ON PANSQL.DQTBLECOLS TO PUBLIC;
GRANT SELECT ON PANSQL.DQTBLEINXS TO PUBLIC;
GRANT SELECT ON PANSQL.DQUSERTPRV TO PUBLIC;
GRANT SELECT ON PANSQL.DQSYNONYMS TO PUBLIC;

```

## 5. Install CA-PAN/SQL Interface Command Processor

Steps ASMMACR, DB2COMP, and ASMCMDP of job SQLINST1 generate the Interface Command Processor. Step DB2BIND binds the PLAN for the Interface and authorizes public access on the plan. You must specify six installation options to generate the Interface Command Processor:

- Maximum number of non-cursor statements
- Maximum number of cursors declared in any task
- A name for the Interface plan
- The ownerid of the catalog views
- The version and release level of your site's IBM DB2 Program Product
- Maximum number of Groupids (secondary authorization Ids) that can be defined for any DB2 user.

These options are explained next.

### MAXSTMT

This option specifies the maximum number of noncursor SQL statements that will be defined for the execution of a given user task, transaction, or program. This parameter affects only the dynamic execution of programs. If too small a value is specified, the performance of a user program may be affected due to the repetitive dynamic PREPARE of statements. Any value between 1 and 99 is valid. The default is 10.

### MAXCUR

This value specifies the maximum number of cursors that will be defined for the execution of any user task, transaction, or program. This parameter affects only the dynamic execution of the programs. If too small of a value is specified, programs may fail execution, and a warning message is reported at the end of compile phase processing. The user must then specify a larger value for this option and reinstall the Interface.

A value between 1 and 99 is valid. The default value is 6. This means that no user program can use more than 6 cursors for execution. The value that is specified affects the size of the CA-PAN/SQL Interface Command Processor, its PLAN, and each interface module.

## PLAN

This value specifies the name for the Interface PLAN. The ownerid of the PLAN defaults to the userid specified on the JOB card. The default PLAN name is **DQPSnnn**, where *nnn* is the release level of this Interface.

CA-PAN/SQL obtains the name of the Interface PLAN from the Interface Command Processor which is link-edited with the various modules of the Interface. Therefore, the PLAN name provided for the generation of the Command Processor must be the same name specified for the PLAN name in the DB2 BIND statement.

## VWOWNR

This value specifies the ownerid of the CA-PAN/SQL catalog views. It must match the ownerid specified in the CREATE VIEW statements of source member **DQCTGVWS**.

## DB2REL

This value specifies the version (vv) and release level (r) of the IBM Database2 Program Product that is used for installing the CA-PAN/SQL Interface.

The CA-PAN/SQL DB2 command processor macro generates the SQL statements that are supported by the SQL Interface. Some SQL statements are dependent upon the version/release level of the IBM DB2 Product.

One such statement is the SET CURRENT SQLID command. This statement is only generated for a DB2REL (version/release) set greater than 020 (vvr). The default value is 021.

## MAXGRP

This value specifies the maximum number of Groupids (secondary authorization IDs) that can be assigned to any DB2 user. A value between 1 and 150 is valid. The default value is 10.

**NOTE:** If your site does not have secondary authorization implemented, or does not have the Computer Associates CA-EASYTRIEVE/IQ product installed, a value of 1 should be used.

*largest  
# in  
all groups*



## 6. Modify and Run SQLINST1

The CA-PAN/SQL SOURCE library contains three JCL members used to install the Interface; SQLINST1, SQLINST2, and SQLINST3. Member SQLINST1 installs the views and the Interface Command Processor.

Before submitting job SQLINST1, you must make the JCL modifications shown below. See *SQLINST1 JCL for DB2* later in this chapter.

### SQLINST1

|       |         |  |
|-------|---------|--|
| **1** | USER    | Provide the ownerid that was chosen for the CA-PAN/SQL catalog views or a userid with SYSADM authority. The default value is PANSQL. |
| **2** | PSQLOBJ | Provide the name of the CA-PAN/SQL Object library initially specified for the tape unload job SQLUNLD.                               |
| **3** | PSQLSRC | Provide the name of the CA-PAN/SQL Source library initially specified for the tape unload job SQLUNLD.                               |
| **4** | SSPGM   | Provide the name of the DB2 subsystem program library that contains modules DSNHPC, DSNALI, and DSNHLI.                              |
| **5** | DBRMLIB | Provide the name of your DB2 DBRMLIB that will contain the DBRM for the CA-PAN/SQL Interface Command Processor.                      |
| **6** | MNAME   | Provide the name of the DBRM that is generated for the CA-PAN/SQL Interface. <i>object deck</i>                                      |

*Exhibit 3.3: Modify SQLINST1*

### CTGVIEWS.SYSTSIN

|       |        |  |
|-------|--------|--|
| **7** | SYSTEM | Provide the name of the DB2 subsystem where the CA-PAN/SQL Interface is to be installed. |
|       | PLAN   | Provide the name of the PLAN for the DB2 utility program DSNTIAD.                        |
|       | LIB    | Provide the name of your IBM DB2 runtime library which contains the module DSNTIAD.      |

*Exhibit 3.4: Modify CTGVIEWS.SYSTSIN*

## ASMMACR.SYSIN

**\*\*8\*\* MAXSTMT** Provide a value for the maximum number of noncursor SQL statements that will be defined for the execution of a given user task, transaction, or program. This parameter affects only the dynamic execution of programs. If too small of a value is chosen, the performance of a user program may be affected due to the repetitive PREPARE of statements.

Any value between 1 and 99 is valid. The default is 10.

**MAXCUR** Provide a value for the maximum number of cursors that will be defined for the execution of any user task, transaction, or program. This parameter affects only the dynamic execution of programs. If too small of a value is chosen, programs may fail execution.

A value between 1 and 99 is valid. The default value is 6.

**PLAN** Provide the name for the CA-PAN/SQL Interface PLAN. The ownerid of the PLAN defaults to the userid specified on the JOB card.

The default PLAN name is **DQPSnnn**, where nnn is the release level of this Interface. This name must then match the PLAN name specified for the DB2BIND step of this job.

**VWOWNR** Provide the ownerid that was chosen for the CA-PAN/SQL catalog views. This value must match the ownerid specified in the CREATE VIEW statements of source member DQCTGVWS. The default is PANSQL.

**DB2REL** Provide the version (vv) and release (r) level of your IBM Database2 (DB2) Program Product. The default is 021 (version 02, release 1).

**MAXGRP** Provide a value for the maximum number of secondary authorization Ids that can be assigned to a DB2 user. Any value between 1 and 150 is valid. The default is 10.

Exhibit 3.5: Modify ASMMACR.SYSIN

HUDCUR = hh  
ENV = EZELEZ

**DB2BIND.SYSTSIN**

|               |               |   |
|---------------|---------------|---|
| <b>**9**</b>  | <b>SYSTEM</b> | Provide the name of the DB2 subsystem where the CA-PAN/SQL Interface is to be installed. The subsystem ID provided for this step must match the subsystem ID provided on the CTGVIEWS step. |
|               | <b>PLAN</b>   | Provide the name of the CA-PAN/SQL PLAN. This name must match the name specified on the PLAN parameter for the ASMMACR step.  |
|               | <b>MEMBER</b> | Provide the name of the DBRM for the CA-PAN/SQL Interface Command Processor. This name must match the value specified on the MNAME parameter of the PROCEDURE statement for this job.       |
| <b>**10**</b> | <b>PLAN</b>   | Provide the name of the PLAN for the DB2 utility program DSNTIAD.   |
|               | <b>LIB</b>    | Provide the name of your IBM DB2 runlib that contains the module DSNTIAD.   |

*Exhibit 3.6: Modify DB2BIND.SYSTSIN***DB2BIND.SYSIN**

|               |                 |  |
|---------------|-----------------|--|
| <b>**11**</b> | <b>pppppppp</b> | Provide the name of the CA-PAN/SQL Interface PLAN. This name must be the same name specified for the PLAN parameter of the ASMMACR step and the PLAN name specified on the BIND statement of the DB2BIND step. |
|---------------|-----------------|--|

*Exhibit 3.7: Modify DB2BIND.SYSIN*

The SQLINST1 JCL for DB2 is shown later in this chapter. Submit the job and verify the results. All steps should complete with a condition code of zero except for step DB2COMP. Step DB2COMP completes with a condition code of 4 and the following warning message:

**DSNH050I warnings have been suppressed due to lack of table declarations.**

## 7. Install Groupid Authorization Modules (optional)

The SQL Interface supports secondary authorization for use by Computer Associates's CA-EASYTRIEVE/IQ product. The ViewList function of CA-EASYTRIEVE/IQ displays all DB2 tables and views for which the user holds some privilege.

Installation of the Groupid modules is an optional step to the installation of the SQL Interface. If your site has the Computer Associates CA-EASYTRIEVE/IQ product, with the SQL Interface Option, and has implemented secondary authorization, with either the IBM RACF product or CA-TOP SECRET, then you may want to assemble the appropriate Groupid support module.

**NOTE:** The Groupid Authorization Modules are valid for CA-TOP SECRET, Version 4.3.

**If your site does not require support for secondary authorization for the CA-EASYTRIEVE/IQ product, proceed to Step 7b.**

The CA-PAN/SQL installation SOURCE library contains the source code for the following two programs, which provide support for secondary authorization as needed by the CA-EASYTRIEVE/IQ product:

- DQSMRCFM - TSO/Batch
- DQSMRCFS - CICS.

**NOTE:** Installation of the Groupid module for CICS requires a CICS MACLIB of release level 1.7 or greater.

The following members also exist in the CA-PAN/SQL installation SOURCE library:

- GIXMINST - JCL required to assemble DQSMRCFM
- GIXSINST - JCL required to assemble DQSMRCFS.

Both GIXMINST and GIXSINST require access to your system's AMODGEN library.

## 7a. Install Secondary Authorization Support

### TSO/Batch

To install the Groupid authorization module for TSO/Batch:

- Modify and run GIXMINST.

GIXMINST creates an object deck named OMSMGIXM which is then link-edited with the catalog component of the SQL Interface. Before submitting GIXMINST for execution, modify the JCL as described below:

- Modify the JOB card to conform to your installation's standards.
- Specify the name of your CA-PAN/SQL OBJECT library in the PSQLOBJ parameter. Assembly of this module creates an object deck named OMSMGIXM.
- Specify the name of your CA-PAN/SQL SOURCE library in the PSQLSRC parameter. This library contains member DQSMRCFM.
- Specify the name of your MVS system MACLIB in the MACLIB parameter. This library contains the definition of system control blocks necessary to assemble the Groupid module.
- Specify the name of your MVS system AMODGEN library in the AMODGEN parameter. This library contains the definition of the Security control blocks necessary to assemble the Groupid module.
- Specify the name of the Groupid exit module to be assembled. Currently, support exists only for the IBM RACF and CA-TOP SECRET (Version 4.3) security products. This parameter contains the name of the Groupid module DQSMRCFM.
- Submit job GIXMINST and verify the results. The JCL for this job is listed later in this chapter.

## CICS

To install the Groupid authorization module for CICS:

- Modify and run GIXSINST.

GIXSINST creates an object deck named OMSMGIXS which is then link-edited with the catalog component of the SQL Interface. Before submitting GIXSINST for execution, modify the JCL as described below:

- Modify the JOB card to conform to your installation's standards.
- Specify the name of your CA-PAN/SQL OBJECT library in the PSQLOBJ parameter. Assembly of this module creates an object deck named OMSMGIXS.
- Specify the name of your CA-PAN/SQL SOURCE library in the PSQLSRC parameter. This library contains member DQSMRCFS.
- Specify the name of your MVS system MACLIB in the MACLIB parameter. This library contains the definition of system control blocks necessary to assemble the Groupid module.
- Specify the name of your MVS system AMODGEN library in the AMODGEN parameter. This library contains the definition of the security control blocks necessary to assemble the Groupid module.
- Specify the name of your IBM CICS MACLIB in the CICMACL parameter. Assembly of this module requires a Release level of 1.7 or greater for the CICS libraries.
- Specify the name of your IBM CICS LOADLIB in the CICLOAD parameter. This library contains program DFHEAP1\$.
- Specify the name of the Groupid exit module to be assembled. Currently, support exists only for the IBM RACF or CA-TOP SECRET (Version 4.3) security products. This parameter contains the name of the RACF Group ID module DQSMRCFS.

Submit job GIXSINST and verify the results. The JCL for this job is listed later in this chapter. Assembly of this program completes with a condition code of 4.

## 7b. Install Default Authorization Support

If you do not require installation of the secondary authorization modules, then you must:

- Modify the link control cards for the TSO/Batch environment

OR

- Modify the link control cards for the CICS environment

## TSO/Batch

Member LINKTSO exists in the CA-PAN/SQL installation SOURCE library. The link control cards for module DQSPSCG contain an INCLUDE for member OMSMGIXM. Simply remove this card if you are not installing the Groupid authorization module.

Listed below are the TSO/Batch link control cards for the Catalog Component of the SQL Interface:

```
INCLUDE OBJLIB(OMSMCMD2)
INCLUDE OBJLIB(OMSMGIXM) ← (Remove this card)
INCLUDE DB2LIB(DSNTIAR)
INCLUDE SYSLMOD(TQSPSCG)
ENTRY DQSPSCG
NAME DQSPSCG(R)
```

*1 card only*

## CICS

Member LINKCICS exists in the CA-PAN/SQL installation SOURCE library. The link control cards for module DQSPSCG contain an INCLUDE for member OMSMGIXS. Simply remove this card if you are not installing the Groupid authorization module.

Listed below are the CICS link control cards for the Catalog Component of the SQL Interface:

```

INCLUDE CICS LIB(DFHEAI)
INCLUDE OBJ LIB(OMSMCMD2)
→ INCLUDE OBJ LIB(OMSMGIXS)
INCLUDE CICS LIB(DFHEAI0)
INCLUDE DB2 LIB(DSNCLT)
INCLUDE DB2 LIB(DSNTIAR)
INCLUDE SYSLMOD(TQSPSCG)
ORDER DFHEAI,DQSPSCG
NAME DQSPSCG(R)

```

(Remove this card)

## 8. Install CA-PAN/SQL for TSO and Batch

To install CA-PAN/SQL for Batch:

- Modify and run SQLINST2
- Modify JCL for host product or TSO logon PROC.

### Modify and Run SQLINST2

Job SQLINST2 (member SQLINST2 of the SOURCE library) installs CA-PAN/SQL for TSO/Batch. This job simply executes a LINK step.

**NOTE:** If your site does not utilize DB2 secondary authorization, be sure that you have correctly modified the link control cards as described in the previous step. If the link control card for the Groupid module is not removed, the following error message is generated when SQLINST2 is executed:

IEW0342 ERROR - Library specified does not contain module.

If this occurs, simply repeat this step after removing the link card for the Groupid module.

Before submitting this job for execution, modify the JCL as shown below (see *SQLINST2 JCL for DB2* later in this chapter).

- Modify the JOB card to conform to your installation's standards.
- Specify the name of your CA-PAN/SQL OBJECT library in the PSQLOBJ parameter. The OBJECT library contains the output from the assembly of the Interface Command Processor from job SQLINST1.



- Specify the name of your CA-PAN/SQL TSO/Batch LOAD library in the PSQLOTSO parameter. This is the name of the TSO/Batch library specified for the UNLOAD job.
- Specify the name of your CA-PAN/SQL SOURCE library in the PSQLSRC parameter. This library contains the link control cards (member LINKTSO) required for the LINK step.
- Specify the name your IBM DB2 Subsystem Program library which contains modules DSNHLI, DSNALI, and DSNTIAR.

Submit job SQLINST2 and verify the results (the JCL is listed later in this chapter). The Link step should complete with a condition code of zero.

## Modify JCL or TSO Logon Procedure

When the installation of the CA-PAN/SQL Interface completes, see the *Installation Guide* of the Computer Associates product or products that use CA-PAN/SQL. Incorporate the CA-PAN/SQL Interface Batch LOAD library and the required IBM DB2 libraries into the product's runtime JCL or user's TSO procedure.

**TSO NOTE:** Under TSO, you must add the SQL Interface library and the IBM DB2 libraries either to each user's TSO logon PROC or in the LNKSTxx member of SYS1.PARMLIB. Under TSO/ISPF, you must add these libraries to the ISPLLIB file statement of your allocation CLIST.

## 9. Install CA-PAN/SQL for CICS

To install CA-PAN/SQL for CICS:

- Modify and run SQLINST3
- Rename the CA-PAN/SQL Modules (Optional)
- Update PPT
- Update RCT
- Modify CICS Startup JCL.

These steps are described next.

### Modify and Run SQLINST3

Job SQLINST3 (member SQLINST3 of the SOURCE library) installs CA-PAN/SQL for CICS (see *SQLINST3 JCL for DB2* later in this chapter). Execution of this job simply executes a LINK step.

**NOTE:** If your site does not utilize DB2 secondary authorization, be sure that you have correctly modified the link control cards as described in Step 7. If the link control card for the Groupid module is not removed, the following error message is generated when you execute SQLINST3:

**IEW0342 ERROR - Library specified does not contain module.**

If this occurs, simply repeat this step after removing the link card for the Groupid module.

Before submitting this job for execution, modify the JCL as follows:

- Modify the JOB card to conform to your installation's standards.
- Specify the name of your CA-PAN/SQL OBJECT library in the PSQLOBJ parameter. The OBJECT library contains the output from the assembly of the Interface Command Processor from job SQLINST1.
- Specify the name of your CA-PAN/SQL CICS LOAD library in the PSQLCIC parameter. This is the name of the CICS library specified for the UNLOAD job.

- Specify the name of your CA-PAN/SQL SOURCE library in the PSQLSRC parameter. This library contains the link control cards (member LINKCICS) required for the LINK step.
- Specify the name of your IBM CICS LOAD library that contains the module DFHEAI0.
- Specify the name your IBM DB2 Subsystem Program library which contains modules DSNHLI, DSNALI, and DSNTIAR.

Submit the job SQLINST3 and verify the results. The Link step should complete with a condition code of **zero**.

The SQLINST3 JCL for DB2 is listed later in this chapter.

## Renaming the CA-PAN/SQL Modules (Optional)

The CA-PAN/SQL modules exist in the Interface CICS LOAD library with a prefix of DQSPS. If this naming convention conflicts with existing CICS modules at your site, Computer Associates' CA-EASYTRIEVE/ESP and CA-GENER/OL products allow for the Interface modules to be renamed.

Since CA-PAN/SQL is a common SQL Interface product whose modules are shared by several Computer Associates' products, you must follow the instructions for each host product to accommodate the renamed modules. Refer to the *Installation Guide* for each host product as to the correct installation procedure for renamed CA-PAN/SQL modules.

## Update the CICS PPT

The following entries must be added to your CICS Program Processing Table. These table entries can be found in member CICSPT of the CA-PAN/SQL SOURCE library. If you renamed the CA-PAN/SQL modules, then the program names specified in the PPT entries must be changed to reflect the new names.

```
DFHPPT TYPE=ENTRY, PROGRAM=DQSPSCC, PGMLANG=ASSEMBLER
DFHPPT TYPE=ENTRY, PROGRAM=DQSPSCF, PGMLANG=ASSEMBLER
DFHPPT TYPE=ENTRY, PROGRAM=DQSPSCG, PGMLANG=ASSEMBLER
DFHPPT TYPE=ENTRY, PROGRAM=DQSPSCI, PGMLANG=ASSEMBLER
DFHPPT TYPE=ENTRY, PROGRAM=DQSPSCR, PGMLANG=ASSEMBLER
DFHPPT TYPE=ENTRY, PROGRAM=DQSPSCS, PGMLANG=ASSEMBLER
DFHPPT TYPE=ENTRY, PROGRAM=DQSPSCT, PGMLANG=ASSEMBLER
DFHPPT TYPE=ENTRY, PROGRAM=DQSPSXC, PGMLANG=ASSEMBLER
DFHPPT TYPE=ENTRY, PROGRAM=DQSPSXM, PGMLANG=ASSEMBLER
DFHPPT TYPE=ENTRY, PROGRAM=DQSPSXI, PGMLANG=ASSEMBLER
DFHPPT TYPE=ENTRY, PROGRAM=DQSPSXR, PGMLANG=ASSEMBLER
DFHPPT TYPE=ENTRY, PROGRAM=DQSPSXS, PGMLANG=ASSEMBLER
DFHPPT TYPE=ENTRY, PROGRAM=DQSPSXT, PGMLANG=ASSEMBLER
```

## Update the RCT

*you code  
program  
that  
handles  
this*

If your site has not implemented dynamic plan allocation, then you must define an RCT entry for each Computer Associates product that is using CA-PAN/SQL in the MVS/CICS environment. The following is a sample RCT entry:

```
DSNCRCT TYPE=ENTRY, TXID=xxxx, PLAN=DQPS023, AUTH=USERID
```

where xxxx is the CICS transaction code of the Computer Associates product.

**NOTE:** If you are installing CA-PAN/SQL for a product that runs under CA-EASYTRIEVE/ESP, the RCT entry transaction code is **ESP**. The value for PLAN is the PLANname of the SQL Interface. This is the name specified for the installation job SQLINST1; the default plan name is **DQPS023**.

Most RCT parameters are dependent on your standards and environment.

**NOTE:** See the host product *Installation Guide* for more information on the RCT entry and additional required entries.

## Modify CICS Startup JCL

When the installation of CA-PAN/SQL completes, modify your CICS startup JCL to include the CA-PAN/SQL Interface CICS LOAD library ( your.pansql.cics.load.library ).

See the *Installation Guide* of the Computer Associates host product for additional changes to the CICS startup JCL.

## 10. Installing CA-PAN/SQL for an Alternate DB2 Subsystem (optional)

Member SQLINST4 in the SOURCE library contains the JCL to install CA-PAN/SQL in an alternate DB2 system. You need only to install the Interface Catalog Views and BIND the Interface PLAN. Modify the JCL as described below. Where a name is required, specify the same parameter value that you provided for job SQLINST1.

- Modify the JOB statement to conform to your installation's standards.
- Provide authorization for the alternate DB2 subsystem to the ownerid selected for the views. See step 4, *Install CA-PAN/SQL Views*.
- Provide the name of your CA-PAN/SQL SOURCE library that contains DQCTGVWS, the source statements for creating the catalog views.
- Provide the name of your IBM DB2 Subsystem Program Library that contains module DSNTIAD.
- Provide the name of your DBRMlib that contains the DBRM for the Interface Command Processor created by job SQLINST1.
- Provide the alternate DB2 subsystem id (ssid2) for the CTGVIEWWS and DB2BIND SYSTSIN statements.
- Provide the name of your IBM DB2 Runlib for both the CTGVIEWWS and DB2BIND SYSTSIN statements.

- Provide the name of the Interface DBRM that was created by job SQLINST1 for the mmmmmmmmm variable.
- Provide the name of the Interface PLAN that was created by job SQLINST1 for the pppppppp variable. This name must be the same PLAN name specified for the SQLINST1 job.

The SQLINST4 for DB2 is listed later in this chapter. All steps should complete with a condition code zero.

## 11. Re-Installing the SQL Interface

If the installation parameters must be changed to support a larger number of cursors across the execution of a transaction, the following steps must be executed:

- In job SQLINST1, change the parameters for the DB2 Interface command processor as needed.
- In job SQLINST2, re-link the SQL Interface for TSO and batch.
- In job SQLINST3, re-link the SQL Interface for CICS.
- In job SQLINST4, re-install the DB2 Interface Command Processor for any required alternate subsystems.

## Product Tape Contents

| <b>Tape<br/>File</b> | <b>DSN</b> | <b>Format</b>      | <b>Description</b>  |
|----------------------|------------|--------------------|---|
| 1                    | FILE01     | Blocked<br>80/3200 | JCL to unload CA-PAN/SQL  |
| 2                    | FILE02     | Spanned            | CA-PAN/SQL Source in IEBCOPY<br>unloaded PDS format             |
| 3                    | FILE03     | Spanned            | CA-PAN/SQL Batch Load modules in<br>IEBCOPY unloaded PDS format |
| 4                    | FILE04     | Spanned            | CA-PAN/SQL CICS Load modules in<br>IEBCOPY unloaded PDS format  |

*Exhibit 3.8: CA-PAN/SQL MVS Product Tape Contents*

# Installation JCL Listings for DB2

## UNLOAD JCL

```
//SQLUNLD JOB (acct info)..'UNLOAD PAN/SQL TAPE',CLASS=x,
// MSGCLASS=x,MSGLEVEL=(1,1),REGION=2048K
//*****
//SQLDUMP PROC TAPE='tapser',
//          VOL='volume',
//          PSQLSRC='your.pansql.source.library',
//          PSQLTSO='your.pansql.tso.load.library',
//          PSQLCIC='your.pansql.cics.load.library',
//          PSQLOBJ='your.pansql.object.library',
//          PSQLDBR='your.pansql.dbrm.library'
//*****
//*
//* Scratch libraries to allow for a rerun if necessary
//*
//*****
//SCRATCH EXEC PGM=IEFBR14
//DD1 DD DSN=&PSQLSRC,
//      DISP=(MOD,DELETE),UNIT=DISK,
//      SPACE=(TRK,(0,0))
//DD2 DD DSN=&PSQLTSO,
//      DISP=(MOD,DELETE),UNIT=DISK,
//      SPACE=(TRK,(0,0))
//DD3 DD DSN=&PSQLCIC,
//      DISP=(MOD,DELETE),UNIT=DISK,
//      SPACE=(TRK,(0,0))
//DD4 DD DSN=&PSQLOBJ,
//      DISP=(MOD,DELETE),UNIT=DISK,
//      SPACE=(TRK,(0,0))
//DD5 DD DSN=&PSQLDBR,
//      DISP=(MOD,DELETE),UNIT=DISK,
//      SPACE=(TRK,(0,0))
//*****
//*
//* Create libraries required for the PAN/SQL Interface
//*
//*****
//CRTELIB EXEC PGM=IEFBR14
//DD1 DD DSN=&PSQLSRC,
//      DISP=(NEW,CATLG,DELETE),
//      DCB=(RECFM=FB,LRECL=80,BLKSIZE=3200),
//      UNIT=DISK,SPACE=(CYL,(1,1,5)),VOL=SER=&VOL
```

continued...



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**CA-PAN/SQL™**

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## **SQL Interface Installation Guide**

**Release 2.3**

**MVS, CMS, VSE**



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**SQL Interface Installation Guide**

**Release 2.3**

**MVS, CMS, VSE**



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SQL INTERFACE  
INSTALLATION

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SQL Interface Installation Guide

SQLII-9007-T



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SQL Interface Installation Guide

## About This Guide

This document describes how to install the Computer Associate SQL Interface (CA-PAN/SQL), an optional component to several Computer Associates products.

This guide assumes that you are familiar with the IBM SQL/DS or DB2 database management system, the ORACLE relational database management system, or CA-DATACOM/DB for SQL. Throughout this guide, *you* refers to the person who installs CA-PAN/SQL. *User* refers to a person using any of the products that use CA-PAN/SQL. *Host product* refers to a product using the SQL Interface (CA-PAN/SQL).

## **Revision Summary**

### **Product Changes**

- Additional installation modules required for the CA-GENER/OL host product.
- Application of any existing PTFs.

### **Documentation Changes**

- Installation modifications specific to the Version and Release level of the underlying SQL/DS DBMS.
- Installation of CA-PAN/SQL for CA-DATACOM/DB.

## Command Notation

This guide uses the following command notation:

| Notation                | Meaning   |
|-------------------------|---|
| <b>bold</b>             | Panel titles and panel fields appear in <b>bold</b> text.   |
| <b><i>bold ital</i></b> | Text that you must type appears in <b><i>bold italic</i></b> .  |
| "enter"                 | The verb "enter" refers only to the Enter (Return) key.   |
| [ ]                     | Optional fields or parameters are enclosed in brackets: [ ] . For example, in COMMAND PARM1 [,PARM2], the second parameter is optional. |
| symbols                 | All other punctuation, such as comma (,), period (.), and equal (=) must be specified as shown.   |
| function keys           | <b>F10</b> refers to Function Key 10.   |

# Chapter 1

## Introduction

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# 1. Introduction

## Overview

This *Installation Guide* describes how to install the Computer Associates SQL Interface (CA-PAN/SQL), an optional component to several Computer Associates products. If the current release of CA-PAN/SQL is already installed at your site, do not reinstall it; however, be sure that you have the latest release of the CA-PAN/SQL for the CA product that you are also installing.

CA-PAN/SQL is installed once for a given environment and then shared among the various products that use it.

This guide assumes that you are familiar with the IBM SQL/DS or the DB2 database management system, the ORACLE relational database management system, or CA-DATACOM/DB.

This guide contains separate chapters for each environment. These chapters are described in "About This Guide." After reading "About This Guide" and Chapter 1, you should read only the chapter that is appropriate to your environment.

## SQL System Dependencies

Several database management system modules are link edited with the Computer Associates SQL Interface modules during the installation process. If maintenance is ever applied to these database modules, CA-PAN/SQL must be relinked to incorporate these fixes.

The following database management system modules are linked with CA-PAN/SQL:

| DBMS   | Environment | DBMS Module     | Installation Job/Exec |
|--------|-------------|-----------------|-----------------------|
| DB2    | MVS (Batch) | DSNTIAR         | SQLINST2              |
| DB2    | MVS (CICS)  | DSNCLI, DSNTIAR | SQLINST3              |
| SQL/DS | VSE (Batch) | ARIPRDID        | SQLINST2              |
| SQL/DS | VSE (CICS)  | ARIRRTED        | SQLINST3              |
| SQL/DS | VM (CMS)    | ARIRVST         | DQINSOS or DQINSDOS   |
| ORACLE | MVS (Batch) | HLISTUB         | SQLINST1              |

*Exhibit 1.2: IBM Modules Linked with CA-PAN/SQL*



## Chapter 2

### CMS Installation

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## 2. CMS Installation

### Introduction for SQL/DS

This chapter describes how to install the Computer Associates SQL Interface Option (CA-PAN/SQL) in CMS for both OS simulation and DOS simulation. The installation procedures are basically the same for OS and DOS simulation. Where a difference exists between the two, the specific environment is clearly noted.

The installation procedure transfers CA-PAN/SQL from the installation tape to disk files at your site. File01 of the installation tape contains all of the files necessary to install CA-PAN/SQL for both OS and DOS simulation.

Installation of CA-PAN/SQL for CMS using OS simulation results in the generation of a TXTLIB. Installation of CA-PAN/SQL for DOS simulation results in the generation of a DOSLIB. You should install CA-PAN/SQL in a separate TXTLIB or DOSLIB from the Computer Associates product or products that use CA-PAN/SQL. You must install the CA-PAN/SQL SQL/DS Interface in a separate TXTLIB from any other CA-PAN/SQL database Interface since the interface modules are named the same across the various databases. The name of this TXTLIB or DOSLIB must then be supplied in the EXECs required to execute the host product or products.

To simplify modifications to the host product EXEC, you should install CA-PAN/SQL on the same minidisk as the Computer Associates product using the SQL Interface. For EXEC modifications, refer to the *Installation Guide* for each host product.

All CA-PAN/SQL Interface modules exist in the TXTLIB or DOSLIB with a prefix of DQSPS. All modules are re-entrant.

## **Installing CA-PAN/SQL for SQL/DS**

The steps to install CA-PAN/SQL for SQL/DS in CMS are:

1. Determine DASD requirements for CA-PAN/SQL files.
2. Transfer installation EXEC and CA-PAN/SQL files.
3. Verify installation of IBM SQL/DS Help Tables.
4. Modify CA-PAN/SQL Message Extract Program for SQL/DS userid and password (source member DQSMMTB).
5. Modify CA-PAN/SQL View statements regarding public authorization (optional).
6. Modify and run the Install EXEC
  - DQINSOS - installation EXEC for CMS OS simulation
  - DQINSDOS - installation EXEC for CMS DOS simulation.
7. For CMS DOS installation, verify the output generated from the DOS link edit of the CA-PAN/SQL Interface modules.
8. Modify EXEC of Computer Associates host product to incorporate the CA-PAN/SQL Interface.
9. CMS TXTLIB Maintenance for SQL/DS.

The following files are transferred:

| File     | File type | Description   |
|----------|-----------|---|
| DQCTGVWS | DATA      | Source statements to create the Interface Catalog Views                               |
| DQSMMTB  | ASMB      | Source code for the PAN/SQL Message Extract Program for SQL/DS Version 2.1 or lower   |
| DQSMMTB3 | ASMB      | Source code for the PAN/SQL Message Extract Program for SQL/DS Version 2.2 or greater |
| DQSMCMD  | ASMB      | Source code for the PAN/SQL Interface Command Processor for SQL/DS Version 1 or 2     |
| DQSMCMD3 | ASMB      | Source code for the PAN/SQL Interface Command Processor for SQL/DS Version 3          |
| DQINSOS  | EXEC      | Installation EXEC for CMS OS simulation   |
| DQINDOS  | EXEC      | Installation EXEC for CMS DOS simulation  |
| DQSQLCTL | CONTROL   | Link Control cards for generating the PAN/SQL Interface DOSLIB for CMS DOS simulation |
| DQSQLOS  | TXTLIB    | PAN/SQL TXTLIB for CMS OS simulation  |
| DQSQLDOS | TXTLIB    | PAN/SQL TXTLIB for CMS DOS simulation   |
| DQSMVRSN |           | Data control card identifying the version, release and gen-level of CA-PAN/SQL.       |

*Exhibit 2.2: Tape Files (SQL/DS CMS)*

#### 4. Modify Message Extract Program DQSMMTB

The source code for the Message Extract Program is distributed with CA-PAN/SQL and transferred to your disk as file DQSMMTBx ASMB, where x indicates the various versions of the source program. This module contains the SQL statements that retrieve the text data from the IBM SQLDBA.SYSTEXT2 Help Table that is associated with SQL/DS error codes.

Currently, there are two versions of the source program that are specific to the SQL/DS version and release installed at your site.

- Source member DQSMMTB ASMB must be installed if your site has SQL/DS Version 2.1 or lower.
- Source member <sup>DQSMMTB3</sup> DQMMTB3 must be installed if your site has SQL/DS Version 2.2 or greater.

The appropriate source member name must be specified in the installation EXEC.

Before you invoke the installation EXEC, you may need to make the following modifications to DQSMMTB or DQSMMTB3:

- Provide the Help Table Name
- Supply Userid and Password.

These modifications are described below.

##### Provide the Help Table Name

Because DQSMMTBx contains the SQL statements to select data from the Help Text Table, the Message Extract Program explicitly references the table by the name of SQLDBA.SYSTEXT2. If the IBM Help Table is installed with a name other than SQLDBA.SYSTEXT2, then you must modify the source code for module DQSMMTBx to reflect the correct Table name.

The source statements containing the userid and password for the CONNECT statement are located at approximately lines 573 and 574 in source member DQSMMTB, and lines 1021 and 1022 in source member DQSMMTB3:

```

EXEC SQL BEGIN DECLARE SECTION
CPYWRGHT DC H'30000'
CMDITEM  DC H'19099'
WKITEM   DC H'19099'
ITEM205  DC H'20205'
USERID   DC CL8'SQLDBA '
PASSWORD DC CL8'SQLDBAPW'
          DC C'CMDMSG'
CMDMSTXT DC CL60' '
EXEC SQL END DECLARE SECTION

```

*Exhibit 2.4: Provide Password for SQLDBA Userid in DQSMMTBx*

## 5. Modify CA-PAN/SQL Views Statements

The DQINSOS and DQINSDOS EXECs create views that are used by CA-PAN/SQL. File DQCTGVWS DATA contains the SQL statements to create these views. This file also contains the GRANT statements to grant **public access** to the views. If you do not want public access granted on these views, you must delete the GRANT statements from DQCTGVWS DATA.

The ownerid of the views is SQLDBA. Because the Interface Command Processor module must be preprocessed with an ownerid of SQLDBA, the ownerid of the views named in the Interface Command Processor defaults to SQLDBA. Therefore, the CREATE VIEW statements must not be modified.

...continued

```

AS SELECT -
  SYSTEM.SYSCOLUMNS.CREATOR, -
  SYSTEM.SYSCOLUMNS.TNAME, -
  SYSTEM.SYSCOLUMNS.CNAME, -
  SYSTEM.SYSCOLUMNS.COLTYPE, -
  SYSTEM.SYSCOLUMNS.COLCOUNT, -
  SYSTEM.SYSCOLUMNS.COLNO, -
  SYSTEM.SYSCOLUMNS.LENGTH, -
  SYSTEM.SYSCOLUMNS.SYSLength, -
  SYSTEM.SYSCOLUMNS.NULLS, -
  SYSTEM.SYSCOLUMNS.CLABEL -
FROM -
  SYSTEM.SYSCOLUMNS
CREATE VIEW SQLDBA.DQUSERTPRV -
  (GRANTEE, -
  TBLOWNER, -
  TBLNAME, -
  GRANTOR, -
  UPDATECOLS, -
  SELECTPRIV, -
  INSERTPRIV, -
  DELETEPRIV, -
  UPDATEPRIV, -
  TBLTYPE, -
  TBLDESCR) -
AS SELECT -
  SYSTEM.SYSTABAUTH.GRANTEE, -
  SYSTEM.SYSTABAUTH.TCREATOR, -
  SYSTEM.SYSTABAUTH.TTNAME, -
  SYSTEM.SYSTABAUTH.GRANTOR, -
  SYSTEM.SYSTABAUTH.UPDATECOLS, -
  SYSTEM.SYSTABAUTH.SELECTAUTH, -
  SYSTEM.SYSTABAUTH.INSERTAUTH, -
  SYSTEM.SYSTABAUTH.DELETEAUTH, -
  SYSTEM.SYSTABAUTH.UPDATEAUTH, -
  SYSTEM.SYSCATALOG.TABLETYPE, -
  SYSTEM.SYSCATALOG.REMARKS -
FROM -
  SYSTEM.SYSTABAUTH, -
  SYSTEM.SYSCATALOG -
WHERE -
  SYSTEM.SYSTABAUTH.TCREATOR = SYSTEM.SYSCATALOG.CREATOR AND -
  SYSTEM.SYSTABAUTH.TTNAME   = SYSTEM.SYSCATALOG.TNAME

```

continued...



## 6. Modify and Run Install EXEC

Modify the DQINSOS (CMS/OS) or DQINSDOS (CMS/DOS) EXEC by specifying values for the variables below.

| Variable | Value  |
|----------|--|
| &SQLVM   | Provide the userid that owns the SQL/DS minidisk. The default is SQLDBA.   |
| &SQLCCU  | Provide the address of the SQL/DS minidisk in &SQLVM's directory. The default is 195.  |
| &SQLVUU  | Provide the virtual address to LINK the SQL/DS minidisk to.  |
| &SQLMODE | Provide the CMS filemode in which to ACCESS the SQL/DS minidisk. The default is Q.   |
| &SQLPSWD | Provide the password for the SQLDBA userid (the value of &SQLPSWD must be the same as the value specified for PASSWORD in DQSMMTB). The default is SQLDBAPW.   |
| &PREPCMD | Provide the name given to the access module for the Interface Command Processor. The default is DQPS023.   |
| &PREPMTB | Provide the name given to the access module for the Message Extract Program. The default is DQSMMTB.   |
| &DQSMMTB | Provide the name of the source member for the CA-PAN/SQL Message Extract Program. The default is DQSMMTB, which is valid for SQL/DS Version 2.1. If you are running SQL/DS Version 2.2 or greater, you must change the name of the value to DQSMMTB3.                |
| &DQSMCMD | Provide the name of the source member for the CA-PAN/SQL Interface Command Processor. The default is DQSMCMD, which is valid for installations using SQL/DS Version 1 or 2. If you are running SQL/DS Version 3, you must change the name of this value to DQSMCMD3. |
| &TEMPMOD | Provide the CMS filemode of the minidisk used to hold the work data sets and the DOSLIB created during the install process. One cylinder of 3380 work space is required for both CMS/OS and CMS/DOS.   |

## 7. Verify Output from the DOS Link Edit (CMS DOS simulation)

After the execution of the DQINSDOS EXEC has completed, you must verify the output generated from the DOS Link Edit for each of the thirteen CA-PAN/SQL Interface modules. The output is routed to your CMS printer. Each step should complete with a condition code of zero. You should retain a copy of this output for your records.

## 8. Modify EXEC of Host Product

When the installation of CA-PAN/SQL completes, refer to the *Installation Guide* of the Computer Associates product that uses CA-PAN/SQL.

If the host product is a product that runs under CA-EASYTRIEVE/ESP, you must modify the ESP EXEC as follows. Within the lines commented by '/\* SQL':

- Specify values for all parameters prefixed by SQL and PSQL to provide access to the SQL/DS and CA-PAN/SQL minidisks.
- If you changed the name of the CA-PAN/SQL TXTLIB (CMS OS simulation) or the CA-PAN/SQL DOSLIB (for CMS DOS simulation), provide the new name in the GLOBAL TXTLIB or GLOBAL DOSLIB statement.
- Uncomment all statements from:

```
/* SQLDSID = Minidisk name
```

```
through
```

```
/* SQL END
```

by deleting the /\* and \*/ comment characters.

# Installation EXEC Listing (DQINSOS EXEC) for SQL/DS

```

&TRACE OFF
SET DOS OFF
&CASE U
*****
*
* Variable      Default      Description
* -----
*
* &SQLVM        SQLDBA       Userid that owns the SQL/DS minidisk
* &SQLCUU       195          Address of SQL minidisk in &SQLVM's directory
* &SQLVUU       555          Virtual address to LINK to minidisk as
* &SQLMODE      Q            Filemode to ACCESS the minidisk as
*
* &SQLPSWD      SQLDBAPW     Password for the SQLDBA userid
*
* &PREPCMD      DQPS023       Access module name for PAN/SQL
* &PREPMTB      DQSMMTB      Access module name for Message Extract Program
*
* &TEMPMOD      A            Filemode of minidisk for work space
*
*****
* Space Requirements based upon a 4K blocksize:
* Data Set      Nbr of Blocks
* -----
*
* DQINSOS EXEC      12
* DQINSDOS EXEC     12
* DQSMCMD ASMB      24
* DQSMMTB ASMB      22
* DQCTGVWS DATA     2
* DQSQLOS TEXT      44
* DQSQLOS TXTLIB     60
*
* ADDITIONAL WORK SPACE  400
* -----
* TOTAL                576
*****
&SQLVM      = SQLDBA
&SQLCUU     = 195
&SQLVUU     = 555
&SQLMODE    = Q
&SQLPSWD    = SQLDBAPW
*
*
&PREPCMD    = DQPS023
&PREPMTB    = DQSMMTB
*
* Source Members for Preprocessing

```

continued...

continued...

```

*****
*
*   Verify customer has dumped the required data sets to the specified
*   disk
*
*   DQCTGVWS DATA    - CATALOG VIEWS FOR THE INTERFACE
*   DQSMMTB ASMB      - SOURCE CODE FOR MESSAGE EXTRACT PROCESSOR
*   DQSMCMD ASMB      - SOURCE CODE FOR INTERFACE COMMAND PROCESSOR
*   DQSQLQS TXTLIB    - TXTLIB FOR THE PAN/SQL INTERFACE
*****
STATE &DQSQLTXT TXTLIB *
&IF &RC > 0 &GOTO -ERR1
STATE &DQSMMTB ASMB *
&IF &RC > 0 &GOTO -ERR1
STATE &DQSMCMD ASMB *
&IF &RC > 0 &GOTO -ERR1
STATE &DQCTGVWS DATA *
&IF &RC > 0 &GOTO -ERR1
*****
*
*   The following files are created on the User's installation disk
*   and must be kept for the EXECUTION and MAINTENANCE of the PAN/SQL
*   Interface Option.
*
*       DQSQLQS TXTLIB
*
*****
*****
*
*   This step requires the user to be linked to the IBM SQL/DS minidisk
*   in order that the SQL/DS Resource Manager be copied to the
*   installatin Interface TEXT file.
*
*****
-GETARIR
  FILEDEF INMOVE DISK ARIRVSTC TEXT *
  FILEDEF OUTMOVE DISK ARIRVSTC TEXT &TEMPMOD
  MOVEFILE
  &IF &RC = 0 &GOTO -ADDVSTC
  &EXIT &RC
-ADDVSTC
  &TMRC = -LOCTXT OF &DQSQLTXT ARIRVST
  &IF &TMRC = 0 TXTLIB DEL &DQSQLTXT ARIRVST
  TXTLIB ADD &DQSQLTXT ARIRVSTC
  ERASE ARIRVSTC TEXT &TEMPMOD
-PART2

```

continued...

continued...

```

**
** Write CONSOLE output to User's a-disk.
** CMS will not allow read of CONSOLE class.
**
** Verify that first, second or third record is an ISQL message
** beginning with the characters 'ARI'.
**
-READCARD
READ &DQCTGVWS LISTING &TEMPMOD
FINIS &DQCTGVWS LISTING &TEMPMOD
DESBUF
-EXIOCARD
EXECIO 1 DISKR &DQCTGVWS LISTING &TEMPMOD 0
&READ STRING &CNTLID
&MSG = &SUBSTR OF &CNTLID 1 3
&IF &MSG EQ ARI &GOTO -FINDCRTE
EXECIO 1 DISKR &DQCTGVWS LISTING &TEMPMOD 0
&READ STRING &CNTLID
&MSG = &SUBSTR OF &CNTLID 1 3
&IF &MSG EQ ARI &GOTO -FINDCRTE
EXECIO 1 DISKR &DQCTGVWS LISTING &TEMPMOD 0
&READ STRING &CNTLID
&MSG = &SUBSTR OF &CNTLID 1 3
&IF &MSG EQ ARI &GOTO -FINDCRTE
EXECIO 1 DISKR &DQCTGVWS LISTING &TEMPMOD 0
&READ STRING &CNTLID
&MSG = &SUBSTR OF &CNTLID 1 3
&IF &MSG NE ARI &GOTO -ERR3
***
* Bypass checking the SQL return code from the 'DROP' commands.
* Look for 1ST occurrence of a 'CREATE' view command, then start
* checking the SQL return code.
***
-FINDCRTE
EXECIO 1 DISKR &DQCTGVWS LISTING &TEMPMOD 0
&IF &RC > 2 &GOTO -ERR4
&IF &RC = 2 &GOTO -PART3
&READ VARS &CNST &LIT &EQU &CODE
&IF &CNST NE CREATE &GOTO -FINDCRTE
-CHKSQLCD
*** FIRST CHECK FOR AN ARI MESSAGE BEFORE CHECKING SQLCODE
&MSG = &SUBSTR OF &CNST 1 3
&IF &MSG NE ARI &GOTO -READNEXT
&IF &LIT NE SQLCODE &GOTO -READNEXT
&IF &CODE NE 000 &GOTO -ERR5
-READNEXT
EXECIO 1 DISKR &DQCTGVWS LISTING &TEMPMOD 0
&IF &RC > 2 &GOTO -ERR4
&IF &RC = 2 &GOTO -PART3
&READ VARS &CNST &LIT &EQU &CODE
&GOTO -CHKSQLCD

```

continued...

continued...

```

&STR1 = &CONCAT OF &NAME ISOL(CS), &USER
&STR2 = &CONCAT OF SYSPRINT( &DQSMMTB )
&STR3 = &CONCAT OF SYSIN( &DQSMMTB &BLANK ASMB &BLANK * )
&STR4 = &CONCAT OF &STR1 &BLANK &STR2 &BLANK &STR3
FILEDEF * CLEAR
EXEC SQLPREP ASM PREPPARM &STR4
&IF &RC NE 0 &GOTO -MTBERR1
-ASMMTB
FILEDEF * CLEAR
FILEDEF ASSEMBLE DISK &DQSMMTB ASSEMBLE A
FILEDEF TEXT DISK &DQSMMTB TEXT &TEMPMOD
FILEDEF LISTING DISK &DQSMMTB LISTING &TEMPMOD
&IF &VMSYS EQ VM/ESA &GOTO -GBLESA
GLOBAL MACLIB DMSSP CMSLIB
&GOTO -CHKGBL
-GBLESA
GLOBAL MACLIB DMSOM DMSGPI
-CHKGBL
&IF &RC NE 0 &GOTO -GBLERR1
ASSEMBLE &DQSMMTB (SYSPARM(CMS))
&IF &RC NE 0 &GOTO -MTBERR2
*****
*
* Execute the Error Message Extract program.
*
* Execution of the Error Message Extract program will create
* file 'DQMTBPRT PRINT' if any errors were encountered.
*
* Successful execution of the Error Message Extract program will
* create file 'DQMTBLST ASSEMBLE'
*
*****
-EXECUTE
ERASE &DQSMMTB LISTING &TEMPMOD
ERASE &DQSMMTB ASSEMBLE A
ERASE &DQSMMTB LISTPREP A
ERASE DQMTBLST ASSEMBLE A
ERASE DQMTBPRT PRINT A
GLOBAL TXTLIB &DQSQLTXT
LOAD &DQSMMTB (START
&IF &RC NE 0 &GOTO -LOADERR
*****
*
* Test for error messages written to DQMTBPRT file.
*
*****
STATE DQMTBPRT PRINT A
&IF &RC = 0 &GOTO -MTBERR3
*****
*
* Assemble the error message table source and add object to TXTLIB
*
*****

```

continued...

continued...

```

-PRPCMD
  &EQUAL = =
  &NAME = &CONCAT OF (PREPNAME &EQUAL &PRPCMD ,KEEP,NOPRINT,
  &USER = &CONCAT OF USERID &EQUAL SQLDBA/ &SQLPSWD )
  &STR1 = &CONCAT OF &NAME ISOL(CS), &USER
  &STR2 = &CONCAT OF SYSPRINT( &DQSMCMD )
  &STR3 = &CONCAT OF SYSIN( &DQSMCMD &BLANK ASMB &BLANK * )
  &STR4 = &CONCAT OF &STR1 &BLANK &STR2 &BLANK &STR3
  FILEDEF * CLEAR
  EXEC SQLPREP ASM PREPPARM &STR4
  &IF &RC NE 0 &GOTO -CMDERR1
-ASMSQL
  FILEDEF * CLEAR
  FILEDEF ASSEMBLE DISK &DQSMCMD ASSEMBLE A
  FILEDEF TEXT DISK &DQSMCMD TEXT &TEMPMOD
  FILEDEF LISTING DISK &DQSMCMD LISTING &TEMPMOD
  ASSEMBLE &DQSMCMD
  &IF &RC NE 0 &GOTO -CMDERR2
*****
*
* Add the output of the assembly to the PAN/SQL TXTLIB
*
*****
-ADDPREP
  &TMRC = -LOCTXT OF &DQSQLTXT DQSMCMD1
  &IF &TMRC = 0 TXTLIB DEL &DQSQLTXT DQSMCMD1
  TXTLIB ADD &DQSQLTXT &DQSMCMD
  ERASE &DQSMCMD TEXT &TEMPMOD
  ERASE &DQSMCMD LISTING &TEMPMOD
  ERASE &DQSMCMD ASSEMBLE A
  ERASE &DQSMCMD LISTPREP A
  &GOTO -END
*****
-ACCERR
  &BEGTYPE -ACCEND

  You currently do not have access to the SQL minidisks containing
  the required modules ARISISBT, ARISRBMTQL or ARIRVSTC TEXT.
  Please access the appropriate disks and reinvoke this exec.

-ACCEND
  &GOTO -END
-ERR1
  &TYPE The required 4 installation data sets were not found on the
  &TYPE user's specified disk. Please verify that the names used to
  &TYPE dump the data sets match the names assigned to this EXEC
  &EXIT 12
-ERR2
  &TYPE EXEC ERROR, CONSOLE OUTPUT FOR ISQL NOT FOUND IN RDR
  &EXIT 16
-ERR3
  &TYPE Console file written to user's a-disk is not the output from

```

continued...

continued...

```
-MTB4END
  &EXIT &RC
-CMDERR1
  &BEGTYPE -ENDPREP
```

Preprocessing of the PAN/SQL Interface Command Processor has failed. This may be due to an incorrect password or errors in the Command Processor. Please examine DQSMCMD LISTPREP to determine the cause of the error or contact COMPUTER ASSOCIATES TECHNICAL SUPPORT

```
-ENDPREP
  &EXIT &RC
-CMDERR2
  &BEGTYPE -ENDASME
```

Assembly of the PAN/SQL Interface Command Processor has failed. Please examine file &DQSMCMD LISTING to determine the cause of the error or contact COMPUTER ASSOCIATES TECHNICAL SUPPORT.

```
-ENDASME
  &EXIT &RC
*****
-END
  FILEDEF INMOVE CLEAR
  FILEDEF OUTMOVE CLEAR
*
* The following data sets must remain on the customer's installation
* disk to allow for maintenance or re-installation.
*
* ERASE &DQSMCMD ASMB
* ERASE &DQSMMTB ASMB
* ERASE &DQCTGVWS DATA
*
  DESBUF
  &CONNECT = &STRING OF CONNECT SQLDBA IDENTIFIED BY &SQLPSWD
  &STACK &CONNECT
  &STR1 = &CONCAT OF SQLDBA . &PREPCMD
  &GRANT = &STRING OF GRANT RUN ON &STR1 TO PUBLIC
  &STACK &GRANT
  &STACK EXIT
***CP SPOOL CONSOLE NOTERM START
  CP SPOOL CONSOLE CLOSE NOTERM START
  EXEC ISQL
  CP SPOOL CONSOLE CLOSE &TERM &START
*
  &BEGTYPE -ENDOK
```

This CMS/OS installation is complete.

```
-ENDOK
  &EXIT 0
```

continued...



## Installation EXEC Listing (DQINSDOS EXEC) for SQL/DS

```

&TRACE OFF
SET DOS OFF
&CASE U
*****
*
* Variable      Default      Description
* -----
*
* &SQLVM        SQLDBA        Userid that owns the SQL/DS minidisk
* &SQLCUU       195          Address of SQL minidisk in &SQLVM's directory
* &SQLVUU       555          Virtual address to LINK to minidisk as
* &SQLMODE      Q            Filemode to ACCESS the minidisk as
*
* &SQLPSWD      SQLDBAPW      Password for the SQLDBA userid
*
* &PREPCMD      DQPS023       Access module name for PAN/SQL
* &PREPMTB      DQSMMTB      Access module name for Message Extract Program
*
* &TEMPMOD      A            Filemode of minidisk for work space
*
* &INSTALL      FULL/RELINK  Type of installation; a FULL installation
*                               or a RELINK after maintenance has been
*                               applied
*
* &DQSQLLIB     DQSQLDOS   Provide a name for the PAN/SQL DOSLIB.
*                               The PAN/SQL DOSLIB is created on your A
*                               disk and then copied to your &TEMPMOD disk.
*
*****
&SQLVM      = SQLDBA
&SQLCUU     = 195
&SQLVUU     = 555
&SQLMODE    = Q
*
&SQLPSWD    = SQLDBAPW
*
&PREPMTB    = DQSMMTB
&PREPCMD    = DQPS023
*
* Source Members for Preprocessing
*
&DQSMCMD    = DQSMCMD
&DQSMMTB    = DQSMMTB
*
&TEMPMOD    = A
*

```

continued...

continued...

```

-VERACCS
  STATE ARISISBT MODULE *
  &IF &RC > 0 &GOTO -ACCERR
  STATE ARISRBMT MODULE *
  &IF &RC > 0 &GOTO -ACCERR
  STATE ARIRVSTC TEXT *
  &IF &RC > 0 &GOTO -ACCERR
***
*
* Test if a full install is to be done or simply a relink
*
***
  &IF &INSTALL = RELINK &GOTO -PART5
-PART1
*****
*
* Verify customer has dumped the required data set to the specified
*      disk
*
*****
  STATE &DQSQLTXT TXTLIB *
  &IF &RC > 0 &GOTO -ERR1
  STATE &DQSQLCTL CONTROL *
  &IF &RC > 0 &GOTO -ERR1
  STATE &DQSMMTB ASMB *
  &IF &RC > 0 &GOTO -ERR1
  STATE &DQSMCMD ASMB *
  &IF &RC > 0 &GOTO -ERR1
  STATE &DQCTGVWS DATA *
  &IF &RC > 0 &GOTO -ERR1
*****
*
* The following files are created on the User's installation disk
* and must be kept for the EXECUTION and MAINTENANCE of the PAN/SQL
* Interface Option.
*
*      DQSQLDOS TXTLIB
*      DQSQLDOS DOSLIB
*
*****
***
*
* Erase names of intermediate files
*
***
  ERASE &DQSQLWRK TEXT      &TEMPMOD
*****
*

```

continued...

continued...

```

***&READ ARGS
  &TYPE Begin Installation of Catalog Views
  CP SPOOL CONSOLE CLOSE START TO * NOTERM
  EXEC ISQL
  EXECIO * CP (LIFO STRING SPOOL CONSOLE CLOSE TO * &TERM &START
  &TYPE Complete Installation of Catalog Views
  &READ ARGS
  &SPOOLID = &3
**
** Place selected RDR entry at top of list
**
-READCON
  CP ORDER RDR &SPOOLID
  CP SP RDR NOHOLD
  CP CHANGE RDR &SPOOLID NOHOLD
  CP CHANGE RDR &SPOOLID CLASS &RDRCLS
**
** Write CONSOLE output to User's a-disk.
** CMS will not allow READ of CONSOLE class.
**
** Verify that first, second or third record is an ISQL message
** beginning with the characters 'ARI'.
**
-READCARD
  READ DQCTGVWS LISTING &TEMPMOD
  FINIS DQCTGVWS LISTING &TEMPMOD
  DESBUF
-EXIOCARD
  EXECIO 1 DISKR DQCTGVWS LISTING &TEMPMOD 0
  &READ STRING &CNTLID
  &MSG = &SUBSTR OF &CNTLID 1 3
  &IF &MSG EQ ARI &GOTO -FINDCRTE
  EXECIO 1 DISKR DQCTGVWS LISTING &TEMPMOD 0
  &READ STRING &CNTLID
  &MSG = &SUBSTR OF &CNTLID 1 3
  &IF &MSG EQ ARI &GOTO -FINDCRTE
  EXECIO 1 DISKR DQCTGVWS LISTING &TEMPMOD 0
  &READ STRING &CNTLID
  &MSG = &SUBSTR OF &CNTLID 1 3
  &IF &MSG EQ ARI &GOTO -FINDCRTE
  EXECIO 1 DISKR DQCTGVWS LISTING &TEMPMOD 0
  &READ STRING &CNTLID
  &MSG = &SUBSTR OF &CNTLID 1 3
  &IF &MSG NE ARI &GOTO -ERR3
***
* Bypass checking the SQL return code from the 'DROP' commands.
* Look for 1st occurrence of a 'CREATE' view command, then start
* checking the SQL return code.
***
-FINDCRTE
  EXECIO 1 DISKR DQCTGVWS LISTING &TEMPMOD 0
  &IF &RC > 2 &GOTO -ERR4

```

continued...

- - -

continued...

```

*      DQMTBASM ASSEMBLE A
*      DQMTBPRT PRINT      A
*      DQMTBLST LISTING  &TEMPMOD
*      DQMTBLST TEXT      &TEMPMOD
*****
      ERASE &DQSMMTB TEXT      &TEMPMOD
      ERASE &DQSMMTB LISTING  &TEMPMOD
      ERASE &DQSMMTB ASSEMBLE A
      ERASE &DQSMMTB LISTPREP A
*****
*
* Run the PAN/SQL Message Extract program through the IBM SQL/DS
* preprocessor.
*
* Assemble the output from the preprocessor.
*
*****
-PREPMTB
&EQUAL = =
&NAME = &CONCAT OF (PREPNAME &EQUAL &PREPMTB ,KEEP,NOPRINT,
&USER = &CONCAT OF USERID &EQUAL &USRID / &SQLPSWD )
&STR1 = &CONCAT OF &NAME ISOL(CS), &USER
&STR2 = &CONCAT OF SYSPRINT( &DQSMMTB )
&STR3 = &CONCAT OF SYSIN( &DQSMMTB &BLANK ASMB &BLANK * )
&STR4 = &CONCAT OF &STR1 &BLANK &STR2 &BLANK &STR3
FILEDEF * CLEAR
EXEC  SQLPREP ASM PREPPARM &STR4
&IF &RC NE 0 &GOTO -MTBERR1
-ASMTB
FILEDEF * CLEAR
FILEDEF ASSEMBLE  DISK &DQSMMTB ASSEMBLE A
FILEDEF TEXT      DISK &DQSMMTB TEXT      &TEMPMOD
FILEDEF LISTING   DISK &DQSMMTB LISTING  &TEMPMOD
&IF &VMSYS EQ VM/ESA &GOTO -GBLESA
GLOBAL MACLIB DMSSP CMSLIB
&GOTO -CHKGBL
-GBLESA
GLOBAL MACLIB DMSOM DMSGPI
-CHKGBL
&IF &RC NE 0 &GOTO -GBLERR1
ASSEMBLE &DQSMMTB (SYSPARM(CMS))
&IF &RC NE 0 &GOTO -MTBERR2
*****
*
* Execute the Error Message Extract program.
*
* Execution of the Error Message Extract program will create
* file 'DQMTBPRT PRINT' if any errors were encountered.
*
* Successful execution of the error message extract program will

```

continued...

continued...

```

*
-PART4
*
* This part of the installation EXEC will preprocess and assemble
* the PAN/SQL Interface Command Processor.
*
*****
*
* The following files will be created on the User's &TEMPMOD disk
* as a result of the EXEC.
*
*      &DQSMCMD ASSEMBLE &TEMPMOD
*      &DQSMCMD LISTPREP &TEMPMOD
*      &DQSMCMD TEXT      &TEMPMOD
*      &DQSMCMD LISTING   &TEMPMOD
*
*****
*
* Run the PAN/SQL Interface Command Processor through the IBM SQL/DS
* Preprocessor.
*
* Assemble the output from the Preprocessor.
*
*****
-PREPCMD
  &EQUAL = =
  &NAME = &CONCAT OF (PREPNAME &EQUAL &PREPCMD ,KEEP,NOPRINT,
  &USER = &CONCAT OF USERID &EQUAL SQLDBA/ &SQLPSWD )
  &STR1 = &CONCAT OF &NAME ISOL(CS), &USER
  &STR2 = &CONCAT OF SYSPRINT( &DQSMCMD )
  &STR3 = &CONCAT OF SYSIN( &DQSMCMD &BLANK ASMB &BLANK * )
  &STR4 = &CONCAT OF &STR1 &BLANK &STR2 &BLANK &STR3
  FILEDEF * CLEAR
  EXEC SQLPREP ASM PREPPARM &STR4
  &IF &RC NE 0 &GOTO -CMDERR1
  ERASE &DQSMCMD LISTPREP A
-ASMSQL
  FILEDEF * CLEAR
  FILEDEF ASSEMBLE DISK &DQSMCMD ASSEMBLE A
  FILEDEF TEXT DISK &DQSMCMD TEXT &TEMPMOD
  FILEDEF LISTING DISK &DQSMCMD LISTING &TEMPMOD
  ASSEMBLE &DQSMCMD
  &IF &RC NE 0 &GOTO -CMDERR2
*****
*
* Add the output from the assembly to the PAN/SQL Interface TXTLIB.
*
*****

```

continued...

continued...

```

    &GOTO -WRTECTL
-LINK
    STATE &DQSLLNK DOSLNK *
    &IF &RC > 0 &GOTO -LINKEND
    SET DOS ON
    DOSLKED &DQSLLNK &DQSLLIB (PRINT
    SET DOS OFF
    ERASE &DQSLLNK DOSLNK &TEMPMOD
    &IF &TEMPMOD = A &GOTO -LINKEND
    STATE &DQSLLIB DOSLIB A
    &IF &RC NE 0 &GOTO -LINKEND
    COPY &DQSLLIB DOSLIB A = = &TEMPMOD (REP
    ERASE &DQSLLIB DOSLIB A
-LINKEND
-WRTECTL
    EXECIO 1 DISKW &DQSLLNK DOSLNK &TEMPMOD 0 F 80 (STRING &BLANK &LITRL
&MBR
    &GOTO -READCTL
-EXPAND
    FILEDEF INMOVE DISK &DQSLLTX TXTLIB * (MEMBER &MBR
    FILEDEF OUTMOVE DISK &DQSLLNK DOSLNK &TEMPMOD (DISP MOD
    MOVEFILE
    &IF &RC NE 0 &GOTO -LINKERR1
    &GOTO -READCTL
*****
-ACCERR
    &BEGTYPE -ACCEND

    You currently do not have access to the SQL minidisks containing
    the required modules ARISISBT, ARISRMBTQL or ARIRVSTC TEXT.
    Please access the appropriate disks and reinvoke this EXEC.

-ACCEND
    &GOTO -END
-ERR1
    &TYPE The required 5 installations datasets were not found on the
    &TYPE user's specified disk. Please verify that the names used to
    &TYPE dump the data sets match the names assigned to this EXEC
    &EXIT 12
-ERR2
    &TYPE EXEC ERROR, CONSOLE OUTPUT FOR ISQL NOT FOUND IN RDR
    &EXIT 16
-ERR3
    &TYPE Console file written to user's a-disk is not the output from
    &TYPE the PAN/SQL Catalog VIEW create process
    &EXIT 16
-ERR4
    &TYPE A read error has occurred for the DQCTGVWS LISTING file
    &EXIT 8
-ERR5
    &TYPE An SQL error has occurred, please examine the DQCTGVWS listing

```

continued...

continued...

```
-MTB4END
  &EXIT &RC
-CMDERR1
  &BEGTYPE -ENDPREP
```

Preprocessing of the PAN/SQL Interface command processor failed.  
This may be due to an incorrect password or errors in the command processor. The incorrect source member may have be specified for assembly.

```
-ENDPREP
  &TYPE      Examine file &DQSMCMD LISTPREP and &DQSMCMD ASSEMBLE to
  &TYPE      determine the cause of the error. Correct the sql error
  &TYPE      and rerun this EXEC.
  &EXIT &RC
```

```
-CMDERR2
  &BEGTYPE -ENDASME
```

Assembly of the PAN/SQL Interface command processor failed.  
Please examine file DQSMCMD LISTING to determine the cause of the error or contact COMPUTER ASSOCIATES TECHNICAL SUPPORT.

```
-ENDASME
  &EXIT &RC
```

```
-LINKERR1
  &TYPE
  &TYPE Module &MBR was not found in the PAN/SQL Interface TXTLIB.
  &TYPE The DOSLKED has terminated. If this is a relink of the
  &TYPE Interface, please verify that a full installation completed
  &TYPE successfully. If not,
  &TYPE contact COMPUTER ASSOCIATES TECHNICAL SUPPORT.
  &TYPE
  &EXIT 12
```

\*\*\*\*\*

```
-END
  FILEDEF INMOVE CLEAR
  FILEDEF OUTMOVE CLEAR
  ERASE &DQSQLLNK DOSLNK &TEMPMOD
  &IF &INSTALL = RELINK &GOTO -ENDMSG
```

\*\*\*

```
*
* THE FOLLOWING DATA SETS MUST REMAIN ON THE CUSTOMER'S INSTALLATION
* DISK TO ALLOW FOR MAINTENANCE OR A RE-INTALL TO TAKE PLACE.
```

```
*
*      DQSMCMD ASMB      &TEMPMOD
*      DQSMCMD ASMB      &TEMPMOD
*      DQCTGVWS DATA    &TEMPMOD
*
```

continued...

continued...

IF ANY PROBLEMS OR QUESTIONS ARISE, CONTACT

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-ENDEXPL  
&EXIT 0



# Installing CA-PAN/SQL for ORACLE

The steps to install CA-PAN/SQL for ORACLE in CMS are:

1. Determine DASD requirements for CA-PAN/SQL files.
2. Transfer the CA-PAN/SQL TXTLIB from the tape to disk files.
3. Modify EXEC of Host Product.

## 1. Determine DASD Requirements for the CA-PAN/SQL ORACLE Interface

The total disk space required for the CA-PAN/SQL ORACLE TXTLIB is approximately 50 blocks on a minidisk formatted with a blocksize of 4096 bytes.

## 2. Transfer CA-PAN/SQL ORACLE Interface

The installation tape has an external label identifying the operating system as CMS. To transfer the CA-PAN/SQL file from the tape to your disk, have the VM operator:

1. ATTACH a tape drive to your USERID as 181.
2. MOUNT the CA-PAN/SQL installation tape.
3. READY the tape drive.

When the tape is ready, issue the following CMS commands:

```
TAPE REW  
TAPE LOAD * * fm
```

where *fm* is the filemode of the read/write CA-PAN/SQL disk. This transfers file DQSQLOS TXTLIB to your disk. The installation of the CA-PAN/SQL ORACLE Interface is complete.

## Chapter 3

### MVS Installation

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### 3. MVS Installation

## Introduction for DB2

This chapter describes how to install the Computer Associates SQL Interface Option (CA-PAN/SQL) for DB2 in MVS. The installation procedure transfers CA-PAN/SQL from the installation tape to disk files at your site.

You should install CA-PAN/SQL in a separate LOAD library from the Computer Associates product or products using CA-PAN/SQL. This separate LOAD library must then be supplied in the JCL or TSO STEPLIB required to execute the host product or products. For JCL modifications, see the *Installation Guide* for each product.

All CA-PAN/SQL Interface modules are link-edited in the LOAD library with a prefix of DQSPS. All modules are re-entrant.

The complete installation procedure installs the following components:

- CA-PAN/SQL Views
- CA-PAN/SQL Interface Command Processor
- Batch Interface
- CICS Interface

Note that if you are operating in TSO or Batch only, you can omit the CICS installation without affecting the operation of CA-PAN/SQL. If you are operating in CICS, however, it is recommended that you install both the CICS Interface *and* the Batch Interface.

Assembly of the Interface Command Processor creates an object deck that is linked with both the CICS and the Batch Interface modules. By installing both interfaces, you avoid the possibility of DB2 time stamp errors if the object deck is deleted or the Interface Command Processor is reassembled. Also, the Batch Interface Load library contains module DQSCGEN which is required for the generation of "static" DB2 programs.

The installation components are described next.

# Installing CA-PAN/SQL for DB2

The steps to install CA-PAN/SQL for DB2 in MVS are:

1. Determine DASD requirements for CA-PAN/SQL libraries.
2. Retrieve UNLOAD JCL.
3. Edit and run UNLOAD JCL.
4. Install CA-PAN/SQL Views.
5. Install CA-PAN/SQL Interface Command Processor.
6. Modify and Run Installation JCL.
7. Install Groupid authorization modules (optional).
8. Install CA-PAN/SQL for TSO and Batch.
9. Install CA-PAN/SQL for CICS.
10. Install CA-PAN/SQL in an alternate DB2 Subsystem (optional).

## 1. Determine DASD Requirements for CA-PAN/SQL Libraries

The CA-PAN/SQL installation procedure unloads the installation components to three libraries: a SOURCE library, a TSO/Batch LOAD library, and a CICS LOAD library. The installation creates output requiring two additional libraries: an OBJECT library, and a DBRM library.

Use the table below as a guideline for determining the amount of DASD space required for each library.

| Library          | KBs | Directory Blocks |
|------------------|-----|------------------|
| SOURCE           | 150 | 5                |
| LOAD (TSO/Batch) | 800 | 5                |
| LOAD (CICS)      | 800 | 5                |
| OBJECT           | 150 | 2                |
| DBRMlib          | 150 | 2                |

*Exhibit 3.1: DASD Requirements (DB2)*

### 3. Edit and Run UNLOAD JCL

Modify the UNLOAD JCL as described below (see *UNLOAD JCL for DB2* later in this chapter).

- Change the JOB card to conform to your installation's standards.
- Modify the space allocation for the five libraries created by step CRTLIB, if necessary. The Install JCL reflects DASD allocation for a 3380 disk drive.
- Provide a volume serial number for the libraries in the VOL parameter.
- Set the name of the SOURCE library in the PSQLSRC parameter.
- Set the name of the TSO/Batch load library in the PSQLOTSO parameter.
- Set the name of the CICS load library in the PSQLCIC parameter.
- Set the name of the OBJECT library in the PSQLOBJ parameter.
- Set the name of the DBRM library in the PSQLDDBR parameter. If you want to refer to an existing DBRMlib at your site, then remove this parameter from the PROC and remove the DD5 DD card from both the SCRATCH and CRTLIB steps.

The UNLOAD job allocates the libraries necessary for CA-PAN/SQL installation. Prior to the allocation of the libraries, a SCRATCH step exists that allows you to rerun this job if needed. The remaining steps unload the files from the tape to the libraries specified.

Submit the UNLOAD JCL and review the results (see *UNLOAD JCL for DB2* later in this chapter). Each step should complete with a condition code of zero.

| File   | Library  | Member   | Description                                    |
|--------|----------|----------|--|
| FILE03 | TSOLOAD  | DQSCGEN  | Static Command Program Generator               |
|        |          | TQSPSxxx | Load modules for the TSO and Batch environment |
| FILE04 | CICSLOAD | TQSPSxxx | Load modules for the CICS environment          |

*Exhibit 3.2: Tape Files (DB2)*

#### 4. Install CA-PAN/SQL Views

Step CTGVIEWS of job SQLINST1 creates the views that are used by CA-PAN/SQL. Source member DQCTGVWS contains the SQL statements to create these views.

You can execute the CREATE VIEW statements if you (the userid on the JOB card) have either System Administrator (SYSADM) authority or select privilege on every table or view named in the CREATE VIEW statements.

Whether you use the default ownerid and userid of PANSQL or select another ownerid for the views, the following conditions must be met:

- A DB2 System Administrator (SYSADM authority) must grant the ownerid the select privilege on the DB2 system catalog tables by executing the following GRANT commands:

```

GRANT SELECT ON SYSIBM.SYSCOLUMNS TO ownerid WITH GRANT OPTION
GRANT SELECT ON SYSIBM.SYSINDEXES TO ownerid WITH GRANT OPTION
GRANT SELECT ON SYSIBM.SYSSYNONYMS TO ownerid WITH GRANT OPTION
GRANT SELECT ON SYSIBM.SYSTABLES TO ownerid WITH GRANT OPTION
GRANT SELECT ON SYSIBM.SYSTABLESPACE TO ownerid WITH GRANT OPTION
GRANT SELECT ON SYSIBM.SYSTABAUTH TO ownerid WITH GRANT OPTION

```

where *ownerid* is the ownerid chosen for the Interface Catalog Views

- If you select an ownerid other than PANSQL, you must modify the source statements for the catalog views (DQCTGVWS) to reflect the new ownerid.
- The ownerid of the views must match the VWOWNR parm provided as input to the ASMMACR.SYSIN statement of job SQLINST1. This step installs the Interface Command Processor which contains the names of the catalog views. The default value is PANSQL.



...continued

```

CREATE VIEW PANSQL.DQTBLECOLS
(TBLOWNER,
 TBLNAME,
 COLNAME,
 DATATYPE,
 UNIQUEVALUES,
 COLPOS,
 DATALEN,
 SCALE,
 NULLS,
 LABEL)
AS SELECT
 SYSIBM.SYSCOLUMNS.TBCREATOR,
 SYSIBM.SYSCOLUMNS.TBLNAME,
 SYSIBM.SYSCOLUMNS.NAME,
 SYSIBM.SYSCOLUMNS.COLTYPE,
 SYSIBM.SYSCOLUMNS.COLCARD,
 SYSIBM.SYSCOLUMNS.COLNO,
 SYSIBM.SYSCOLUMNS.LENGTH,
 SYSIBM.SYSCOLUMNS.SCALE,
 SYSIBM.SYSCOLUMNS.NULLS,
 SYSIBM.SYSCOLUMNS.LABEL
FROM
 SYSIBM.SYSCOLUMNS;
CREATE VIEW PANSQL.DQTBLEINXS
(INDEXOWNER,
 INDEXNAME,
 TBLOWNER,
 TBLNAME,
 INDEXTYPE,
 NBRCOLS,
 CLUSTERED,
 FIRSTKEY,
 FULLKEY)
AS SELECT
 SYSIBM.SYSINDEXES.CREATOR,
 SYSIBM.SYSINDEXES.NAME,
 SYSIBM.SYSINDEXES.TBCREATOR,
 SYSIBM.SYSINDEXES.TBLNAME,
 SYSIBM.SYSINDEXES.UNIQUERULE,
 SYSIBM.SYSINDEXES.COLCOUNT,
 SYSIBM.SYSINDEXES.CLUSTERED,
 SYSIBM.SYSINDEXES.FIRSTKEYCARD,
 SYSIBM.SYSINDEXES.FULLKEYCARD
FROM
 SYSIBM.SYSINDEXES;
CREATE VIEW PANSQL.DQUSERTPRV
(GRANTEE,
 TBLOWNER,

```

continued...

## 5. Install CA-PAN/SQL Interface Command Processor

Steps ASMMACR, DB2COMP, and ASMCMDP of job SQLINST1 generate the Interface Command Processor. Step DB2BIND binds the PLAN for the Interface and authorizes public access on the plan. You must specify six installation options to generate the Interface Command Processor:

- Maximum number of non-cursor statements
- Maximum number of cursors declared in any task
- A name for the Interface plan
- The ownerid of the catalog views
- The version and release level of your site's IBM DB2 Program Product
- Maximum number of Groupids (secondary authorization Ids) that can be defined for any DB2 user.

These options are explained next.

### MAXSTMT

This option specifies the maximum number of noncursor SQL statements that will be defined for the execution of a given user task, transaction, or program. This parameter affects only the dynamic execution of programs. If too small a value is specified, the performance of a user program may be affected due to the repetitive dynamic PREPARE of statements. Any value between 1 and 99 is valid. The default is 10.

### MAXCUR

This value specifies the maximum number of cursors that will be defined for the execution of any user task, transaction, or program. This parameter affects only the dynamic execution of the programs. If too small of a value is specified, programs may fail execution, and a warning message is reported at the end of compile phase processing. The user must then specify a larger value for this option and reinstall the Interface.

A value between 1 and 99 is valid. The default value is 6. This means that no user program can use more than 6 cursors for execution. The value that is specified affects the size of the CA-PAN/SQL Interface Command Processor, its PLAN, and each interface module.

*the larger these numbers are the larger the module*

*Insert  
Delete*

## 6. Modify and Run SQLINST1

The CA-PAN/SQL SOURCE library contains three JCL members used to install the Interface; SQLINST1, SQLINST2, and SQLINST3. Member SQLINST1 installs the views and the Interface Command Processor.

Before submitting job SQLINST1, you must make the JCL modifications shown below. See *SQLINST1 JCL for DB2* later in this chapter.

### SQLINST1

|       |         |  |
|-------|---------|--|
| **1** | USER    | Provide the ownerid that was chosen for the CA-PAN/SQL catalog views or a userid with SYSADM authority. The default value is <b>PANSQL</b> . |
| **2** | PSQLOBJ | Provide the name of the CA-PAN/SQL Object library initially specified for the tape unload job SQLUNLD.                                       |
| **3** | PSQLSRC | Provide the name of the CA-PAN/SQL Source library initially specified for the tape unload job SQLUNLD.                                       |
| **4** | SSPGM   | Provide the name of the DB2 subsystem program library that contains modules DSNHPC, DSNALI, and DSNHLI.                                      |
| **5** | DBRMLIB | Provide the name of your DB2 DBRMLIB that will contain the DBRM for the CA-PAN/SQL Interface Command Processor.                              |
| **6** | MNAME   | Provide the name of the DBRM that is generated for the CA-PAN/SQL Interface. <i>object deck</i>  |

*Exhibit 3.3: Modify SQLINST1*

### CTGVIEWS.SYSTSIN

|       |        |  |
|-------|--------|--|
| **7** | SYSTEM | Provide the name of the DB2 subsystem where the CA-PAN/SQL Interface is to be installed. |
|       | PLAN   | Provide the name of the PLAN for the DB2 utility program DSNTIAD.                        |
|       | LIB    | Provide the name of your IBM DB2 runtime library which contains the module DSNTIAD.      |

*Exhibit 3.4: Modify CTGVIEWS.SYSTSIN*

HUDCUR = hh  
ENV = EZEZEC

**DB2BIND.SYSTSIN**

|               |               |   |
|---------------|---------------|---|
| <b>**9**</b>  | <b>SYSTEM</b> | Provide the name of the DB2 subsystem where the CA-PAN/SQL Interface is to be installed. The subsystem ID provided for this step must match the subsystem ID provided on the CTGVIEWS step. |
|               | <b>PLAN</b>   | Provide the name of the CA-PAN/SQL PLAN. This name must match the name specified on the PLAN parameter for the ASMMACR step.  |
|               | <b>MEMBER</b> | Provide the name of the DBRM for the CA-PAN/SQL Interface Command Processor. This name must match the value specified on the MNAME parameter of the PROCEDURE statement for this job.       |
| <b>**10**</b> | <b>PLAN</b>   | Provide the name of the PLAN for the DB2 utility program DSNTIAD.   |
|               | <b>LIB</b>    | Provide the name of your IBM DB2 runlib that contains the module DSNTIAD.   |

*Exhibit 3.6: Modify DB2BIND.SYSTSIN***DB2BIND.SYSIN**

|               |                 |  |
|---------------|-----------------|--|
| <b>**11**</b> | <b>pppppppp</b> | Provide the name of the CA-PAN/SQL Interface PLAN. This name must be the same name specified for the PLAN parameter of the ASMMACR step and the PLAN name specified on the BIND statement of the DB2BIND step. |
|---------------|-----------------|--|

*Exhibit 3.7: Modify DB2BIND.SYSIN*

The SQLINST1 JCL for DB2 is shown later in this chapter. Submit the job and verify the results. All steps should complete with a condition code of zero except for step DB2COMP. Step DB2COMP completes with a condition code of 4 and the following warning message:

DSNH050I warnings have been suppressed due to lack of table declarations.

## 7a. Install Secondary Authorization Support

### TSO/Batch

To install the Groupid authorization module for TSO/Batch:

- Modify and run GIXMINST.

GIXMINST creates an object deck named OMSMGIXM which is then link-edited with the catalog component of the SQL Interface. Before submitting GIXMINST for execution, modify the JCL as described below:

- Modify the JOB card to conform to your installation's standards.
- Specify the name of your CA-PAN/SQL OBJECT library in the PSQLOBJ parameter. Assembly of this module creates an object deck named OMSMGIXM.
- Specify the name of your CA-PAN/SQL SOURCE library in the PSQLSRC parameter. This library contains member DQSMRCFM.
- Specify the name of your MVS system MACLIB in the MACLIB parameter. This library contains the definition of system control blocks necessary to assemble the Groupid module.
- Specify the name of your MVS system AMODGEN library in the AMODGEN parameter. This library contains the definition of the Security control blocks necessary to assemble the Groupid module.
- Specify the name of the Groupid exit module to be assembled. Currently, support exists only for the IBM RACF and CA-TOP SECRET (Version 4.3) security products. This parameter contains the name of the Groupid module DQSMRCFM.
- Submit job GIXMINST and verify the results. The JCL for this job is listed later in this chapter.

## 7b. Install Default Authorization Support

If you do not require installation of the secondary authorization modules, then you must:

- Modify the link control cards for the TSO/Batch environment

OR

- Modify the link control cards for the CICS environment

### TSO/Batch

Member LINKTSO exists in the CA-PAN/SQL installation SOURCE library. The link control cards for module DQSPSCG contain an INCLUDE for member OMSMGIXM. Simply remove this card if you are not installing the Groupid authorization module.

Listed below are the TSO/Batch link control cards for the Catalog Component of the SQL Interface:

```
INCLUDE OBJLIB(OMSMCMD2)
INCLUDE OBJLIB(OMSMGIXM) ← (Remove this card)
INCLUDE DB2LIB(DSNTIAR)
INCLUDE SYSLMOD(TQSPSCG)
ENTRY DQSPSCG
NAME DQSPSCG(R)
```

*1 card only*

### CICS

Member LINKCICS exists in the CA-PAN/SQL installation SOURCE library. The link control cards for module DQSPSCG contain an INCLUDE for member OMSMGIXS. Simply remove this card if you are not installing the Groupid authorization module.

- Specify the name of your CA-PAN/SQL TSO/Batch LOAD library in the PSQLTSO parameter. This is the name of the TSO/Batch library specified for the UNLOAD job.
- Specify the name of your CA-PAN/SQL SOURCE library in the PSQLSRC parameter. This library contains the link control cards (member LINKTSO) required for the LINK step.
- Specify the name your IBM DB2 Subsystem Program library which contains modules DSNHLI, DSNALI, and DSNTIAR.

Submit job SQLINST2 and verify the results (the JCL is listed later in this chapter). The Link step should complete with a condition code of zero.

## Modify JCL or TSO Logon Procedure

When the installation of the CA-PAN/SQL Interface completes, see the *Installation Guide* of the Computer Associates product or products that use CA-PAN/SQL. Incorporate the CA-PAN/SQL Interface Batch LOAD library and the required IBM DB2 libraries into the product's runtime JCL or user's TSO procedure.

**TSO NOTE:** Under TSO, you must add the SQL Interface library and the IBM DB2 libraries either to each user's TSO logon PROC or in the LNKLSSTxx member of SYS1.PARMLIB. Under TSO/ISPF, you must add these libraries to the ISPLLIB file statement of your allocation CLIST.

- Specify the name of your CA-PAN/SQL SOURCE library in the PSQLSRC parameter. This library contains the link control cards (member LINKCICS) required for the LINK step.
- Specify the name of your IBM CICS LOAD library that contains the module DFHEAI0.
- Specify the name your IBM DB2 Subsystem Program library which contains modules DSNHLI, DSNALI, and DSNTIAR.

Submit the job SQLINST3 and verify the results. The Link step should complete with a condition code of zero.

The SQLINST3 JCL for DB2 is listed later in this chapter.

## Renaming the CA-PAN/SQL Modules (Optional)

The CA-PAN/SQL modules exist in the Interface CICS LOAD library with a prefix of DQSPS. If this naming convention conflicts with existing CICS modules at your site, Computer Associates' CA-EASYTRIEVE/ESP and CA-GENER/OL products allow for the Interface modules to be renamed.

Since CA-PAN/SQL is a common SQL Interface product whose modules are shared by several Computer Associates' products, you must follow the instructions for each host product to accommodate the renamed modules. Refer to the *Installation Guide* for each host product as to the correct installation procedure for renamed CA-PAN/SQL modules.



## Modify CICS Startup JCL

When the installation of CA-PAN/SQL completes, modify your CICS startup JCL to include the CA-PAN/SQL Interface CICS LOAD library ( your.pansql.cics.load.library ).

See the *Installation Guide* of the Computer Associates host product for additional changes to the CICS startup JCL.

## 10. Installing CA-PAN/SQL for an Alternate DB2 Subsystem (optional)

Member SQLINST4 in the SOURCE library contains the JCL to install CA-PAN/SQL in an alternate DB2 system. You need only to install the Interface Catalog Views and BIND the Interface PLAN. Modify the JCL as described below. Where a name is required, specify the same parameter value that you provided for job SQLINST1.

- Modify the JOB statement to conform to your installation's standards.
- Provide authorization for the alternate DB2 subsystem to the ownerid selected for the views. See step 4, *Install CA-PAN/SQL Views*.
- Provide the name of your CA-PAN/SQL SOURCE library that contains DQCTGVWS, the source statements for creating the catalog views.
- Provide the name of your IBM DB2 Subsystem Program Library that contains module DSNTIAD.
- Provide the name of your DBRMlib that contains the DBRM for the Interface Command Processor created by job SQLINST1.
- Provide the alternate DB2 subsystem id (ssid2) for the CTGVIEWS and DB2BIND SYSTSIN statements.
- Provide the name of your IBM DB2 Runlib for both the CTGVIEWS and DB2BIND SYSTSIN statements.

## Product Tape Contents

| Tape File | DSN    | Format             | Description   |
|-----------|--------|--------------------|---|
| 1         | FILE01 | Blocked<br>80/3200 | JCL to unload CA-PAN/SQL  |
| 2         | FILE02 | Spanned            | CA-PAN/SQL Source in IEBCOPY<br>unloaded PDS format             |
| 3         | FILE03 | Spanned            | CA-PAN/SQL Batch Load modules in<br>IEBCOPY unloaded PDS format |
| 4         | FILE04 | Spanned            | CA-PAN/SQL CICS Load modules in<br>IEBCOPY unloaded PDS format  |

*Exhibit 3.8: CA-PAN/SQL MVS Product Tape Contents*