

# INSTALLATION

Predict Version 3.4 or above is a prerequisite for the installation of Adabas Native SQL. Please check which version of Predict is installed.

The Adabas files and fields that will be used by Adabas Native SQL application programs must be defined in the data dictionary.

This chapter covers the following topics:

- Copying to a z/VSE Disk
- Modifying the Sample JCS Procedures
- Modifying the Global Parameters
- Relinking Adabas Native SQL
- Testing Adabas Native SQL
- Symbolic Device Names

## Copying to a z/VSE Disk

If you are using System Maintenance Aid (SMA), refer to the SMA documentation (included on the current edition of the Natural documentation CD).

If you are not using SMA, follow the instructions below.

This section explains how to:

- Copy data set COPYTAPE.JOB from medium to library.
- Modify this member to conform with your local naming conventions.

The JCL in this member is then used to copy all data sets from medium to disk.

If the datasets for more than one product are delivered on the medium, the member COPYTAPE.JOB contains the JCL to unload the datasets for all delivered products from the medium to your disk, except the datasets that you can directly install from medium, for example, Natural INPL objects.

After that, you will have to perform the individual install procedure for each component.

### Step 1: Copy data set COPYTAPE.JOB from medium to disk

The data set COPYTAPE.JOB (file 5) contains the JCL to unload all other existing data sets from medium to disk. To unload COPYTAPE.JOB, use the following sample JCL:

```
* $$ JOB JNM=LIBRCAT,CLASS=0,                                     +
* $$ DISP=D,LDEST=(*,UID),SYSID=1
* $$ LST CLASS=A,DISP=D
// JOB LIBRCAT
* *****
```

```

*      CATALOG COPYTAPE.JOB TO LIBRARY
*      *****
// ASGN SYS004,nnn                <-----  tape address
// MTC REW,SYS004
// MTC FSF,SYS004,4
ASGN SYSIPT,SYS004
// TLBL IJSYSIN,'COPYTAPE.JOB'
// EXEC LIBR,PARM='MSHP; ACC S=lib.sublib'    <-----  for catalog
/*
// MTC REW,SYS004
ASGN SYSIPT,FEC
/*
/&
* $$ EOJ
    
```

Where:

|                   |   |
|-------------------|---|
| <i>NNN</i>        | is the medium address.                        |
| <i>lib.sublib</i> | is the library and sublibrary of the catalog. |

**Step 2: Modify COPYTAPE.JOB**

Modify COPYTAPE.JOB to conform with your local naming conventions and set the disk space parameters before submitting this job.

**Step 3: Submit COPYTAPE.JOB**

Submit COPYTAPE.JOB to unload all other data sets from the medium to your disk.

## Modifying the Sample JCS Procedures

The following specifications in the procedures should be adapted to suit the system environment. Use the JCS procedure SQLJCL.J to adapt all the JCS procedures.

## Modifying the Global Parameters

The global parameters for Adabas Native SQL must also be modified.

The error message texts for decoding preprocessor-time errors are typically stored in the Natural system file, specified by the global SYSFIL FNAT parameter.

The error messages for decoding run-time errors are typically stored in the data dictionary file. If this is not the case, use the global parameter ABORT FILE to specify the location (number) of this file.

See also chapter *Global Parameters* in the *Adabas Native SQL Reference Manual* for further information.

Typical global parameter definitions:

```

SYSFIL FDIC=(1,11) FNAT=(1,8).
LANG COBOL.
XREF ON.
ABORT FILE=8.
    
```

## Relinking Adabas Native SQL

If a different Adabas interface module is to be used instead of the standard module ADAUSER, Adabas Native SQL must be relinked. The procedure SLLINK.J can be used to link the module ADASQL.

The module ADAUSER reads ADARUN parameters from SYSIPT. If ADALNK is used, no ADARUN card is necessary.

When relinking Adabas Native SQL, be sure to use the correct language-dependent modules:

| Language | Modules                     |
|----------|-----------------------------|
| Ada      | ASQL1A.OBJ and APPEX1DA.OBJ |
| COBOL    | ASQL1C.OBJ and APPEX1DC.OBJ |
| FORTTRAN | ASQL1F.OBJ and APPEX1DF.OBJ |
| PL/I     | ASQL1P.OBJ and APPEX1DP.OBJ |

## Testing Adabas Native SQL

Before testing the examples, check that the files EMPLOYEES and VEHICLES are loaded, and that they are documented in the Predict data dictionary. If the file definitions are not yet present in the data dictionary, they can be loaded from the file PRD $nnn$ .DEMO, which can be found on the Predict installation medium. The notation  $nnn$  represents the Version, Release and SM level of Predict at your site. Ensure that the relationships for soft coupling are defined in the data dictionary. If you wish to use Adabas Native SQL to preprocess FORTRAN programs, ensure that the necessary language synonyms are defined in the data dictionary. See for example Appendix B in the *Adabas Native SQL Reference Manual*.

Adapt the job SQLJCL.J and the appropriate section in this( J.COBOLGO, J.FORTGO, J.PLIGO) to perform the following steps:

1. Preprocess the program with Adabas Native SQL;
2. Compile the preprocessed program (COBOL, FORTRAN or PL/I).
3. Link-edit the program. The following modules may be called by the user program at runtime:

| COBOL        | COBOL/CICS   | PL/I          | Description  |
|--------------|--------------|---------------|--|
| RESPINT (C)  | RESPCICS (C) | RESPINT (C,P) | Error handling routine.  |
| PRTRACE (C)  | PRTRCICS (C) | PRTRACE (C,P) | Runtime trace routine. Activated by the error handling routine if MODE TRACE is set. |
| PRTFLOW (C)  | --           | PRTFLOW (C,P) | Runtime Adabas Native SQL statement printing. Activated if MODE FLOW is set.         |
| PRPABEND (A) | CICSABEND    | PRPABEND (A)  | Terminates program execution. Called by the error handling routine.                  |
| SQFRDATE (C) | SQFRDATE (C) | SQFRDATE (C)  | Routine which converts format D number to numeric date.                              |
| SQFRTIME (C) | SQFRTIME (C) | SQFRTIME (C)  | Routine which converts format T number to numeric date and numeric time.             |
| SQTODATE (C) | SQTODATE (C) | SQTODATE (C)  | Routine which converts numeric date to format D number.                              |
| SQTOTIME (C) | SQTOTIME (C) | SQTOTIME (C)  | Routine which converts numeric date and numeric time to format T number.             |

| <i>Ada</i>   | <i>FORTRAN</i> | <i>Description</i>   |
|--------------|----------------|--|
| RESPF (F)    | RESPF(F)       | Error handling routine.  |
| PRTRAC (F)   | PRTRAC (F)     | Runtime trace routine. Activated by the error handling routine if MODE TRACE is set. |
| PRTFLO (F)   | PRTFLO (F)     | Runtime Adabas Native SQL statement printing. Activated if MODE FLOW is set.         |
| PRPABEND (A) | --             | Terminates program execution. Called by the error handling routine.                  |
| SQFRDATE (C) | SQFRDATE (C)   | Routine which converts format D number to numeric date.                              |
| SQFRTIME (C) | SQFRTIME (C)   | Routine which converts format T number to numeric date and numeric time.             |
| SQTODATE (C) | SQTODATE (C)   | Routine which converts numeric date to format D number.                              |
| SQTOTIME (C) | SQTOTIME (C)   | Routine which converts numeric date and numeric time to format T number.             |

**Notes:**

1. The FORTRAN error handling routine RESPF always returns condition code 8 when the job step terminates. The other error handling routines return the Adabas response code.
2. The characters in parentheses indicate the language in which the routines are written (Assembler, COBOL, FORTRAN or PL/I). Only the Assembler and COBOL modules are supplied in object form; if you wish to use FORTRAN or PL/I modules, you must compile the

source modules.

3. The COBOL object modules of the routines RESPINT, PRTRACE and PRTFLOW supplied by Software AG can be linked with PL/I object modules to produce an executable load module. If you wish to use the PL/I versions of these routines, you must rename them: RESPPL1 - RESPINT, PRTRACP - PRTRACE, PRTFLOP - PRTFLOW, and then compile them, replacing the Software AG-supplied COBOL object modules by the PL/I object modules. The global parameter ABORT PLI should be coded. The procedure as supplied links the standard Adabas interface module ADAUSER to the application program. If a different module is used, the procedure must be modified accordingly.
4. Execute the program.

If the program is to be passed through other preprocessors in addition to Adabas Native SQL, the corresponding job step should be included in the procedure following the Adabas Native SQL step and preceding compilation.

## Symbolic Device Names

Adabas Native SQL refers to files using the following symbolic device names:

| Device Name | Description   |
|-------------|---|
| SYS000      | The Adabas parameters that are used by Adabas Native SQL at preprocessor time. (Second input.)  |
| SYS007      | The global parameter definitions. (First input.) LRECL=80,RECFM=FB  |
| SYS008      | The source program to be preprocessed. (Third input.) LRECL=80,RECFM=FB   |
| SYS010      | A temporary work file. LRECL=80,RECFM=FB  |
| SYS016      | Adabas Native SQL writes messages at preprocessing time to this dataset.  |
| SYS018      | The output of the preprocessor. Embedded Adabas Native SQL statements in the source program appear in this file as comments and are followed by the generated Ada, COBOL, FORTRAN or PL/I code. LRECL=80,RECFM=FB |
| SYS019      | A temporary work file. LRECL=80,RECFM=FB  |

At run time, the application program generated by Adabas Native SQL refers to files using the following symbolic device names (in addition to any other user-defined files):

| Device Name | Description  |
|-------------|--|
| SYS000      | The Adabas parameters that are used by the ADARUN module at run time.                      |
| SYS013      | If the TRACE facility is used, the trace output is written to this file. LRECL=80,RECFM=FB |