Connecting to UES-Enabled Adabas Databases

Prior to Adabas version 7, Entire Net-Work converted all data for mainframe Adabas when necessary from ASCII to EBCDIC. Starting with version 7, Adabas is delivered with its own data conversion capability (module LNKUES); that is, Universal Encoding Support (UES). Entire Net-Work detects when it is connected to a target database with UES support and passes the data through to Adabas without converting it.

In order for UES support to work, various ADALNK modules must be linked to the Adabas UES module, LNKUES. LNKUES converts data in the Adabas buffers and byte swaps, if necessary, depending on the data architecture of the caller.

Note:
If Adabas versions prior to 7.4 are used by Entire Net-Work, you must create a UES-enabled ADALNK module, as described in this chapter.

This chapter covers the following topics:

- Overview of UES Support

- Environment Requirements

- Connecting to UES-Enabled Databases through Entire Net-Work

Overview of UES Support

This section provides a general overview of the UES support provided in Adabas. For detailed information about UES support in Adabas, refer to the Adabas installation documentation for the operating system you are using.

In order for UES support to work, various ADALNK modules and tables must be linked to the Adabas UES module, LNKUES. LNKUES converts data in the Adabas buffers and byte-swaps, if necessary, depending on the data architecture of the caller.

This section covers the following topics:

- UES-Linked Load Modules

- UES Translation Tables

- Job Steps

- Calling LNKUES

- Connection Possibilities

UES-Linked Load Modules

The ADALNK load modules that have been linked with module LNKUES vary, depending on the operating system and environment you are running. For a complete list of the modules that have been linked, read the UES sections of the appropriate Adabas installation documentation.

Note:
If Adabas versions prior to 7.4 are used by Entire Net-Work, you must create a UES-enabled ADALNK module, as described in *Verify Required ADALNK Module Available*.

UES Translation Tables

Two standard translation tables are provided with Adabas UES support:

- ASC2EBC: ASCII to EBCDIC translation

- EBC2ASC: EBCDIC to ASCII translation

The Adabas and Entire Net-Work translation table pairs are provided in the appropriate Adabas installation documentation.

You can use the supplied translation tables, or you may prepare your own customized translation tables, reassemble them , and link them with the LNKUES module. Using your own customized translation tables should only be necessary if you require the use of some country-specific character other than the standard A-Z, a-z, or 0-9 characters in the additions 1 (user ID) or additions 3 field of the control block. For detailed information on using the default or customized translation tables, refer to the UES sections of the appropriate Adabas installation documentation.

If you prefer to use the same translation tables that are used in Entire Net-work, change the COPY statements in ASC2EBC and EBC2ASC from UES2ASC and UES2EBC to NW2ASC and NW2EBC, respectively. After modifying the translation tables, be sure to (re)assemble them and link them with the delivered LNKUES module. The sample jobs referenced in *Connecting to UES-Enabled Databases through Entire Net-Work* include steps that reassemble and link the translation tables with LNKUES.

Job Steps

Job library members are provided with Adabas for each operating system it supports to assemble and link the appropriate modules with the UES components. For more information, read the UES sections of the appropriate Adabas installation documentation.

Calling LNKUES

On all platforms, LNKUES receives control before UEXITB for UES requests and after UEXITA for UES replies.

Connection Possibilities

UES-enabled databases are connected to machines with different architectures through Entire Net-Work. These connections methods are described elsewhere in this section.

Environment Requirements

To support UES-enabled databases, be sure that your environment meets the requirements described in this section.

- Database Requirements

- Data Set Requirements

- SYSPARM Requirements

- Verify Required ADALNK Module Available

Database Requirements

The Adabas database must be UES-enabled. For complete information read about database maintenance tasks in the Adabas DBA tasks documentation and about the ADACMP and the ADADEF utilities in the Adabas utilities documentation.

▶ **In general, to UES-enable an Adabas database:**

- Specify `MODIFY UES=YES` in the Adabas ADADEF utility settings for each target database.

Data Set Requirements

Make sure that the internal product libraries described in this section are loaded and concatenated correctly.

- Required Internal Product Libraries
- Adabas JCL Updates
- Disk Space Requirements for Internal Product Data Sets

Required Internal Product Libraries

Software AG internal product libraries that are required if you intend to enable a database for universal encoding service (UES) support are now delivered separately from the product libraries. For UES support, the following libraries must be loaded and included in the STEPLIB or LIBDEF concatenation:

```
APS272.MVSLDnn
```

where *nn* is the load library level. If the library with a higher level number is not a full replacement for the lower level load library(s), the library with the higher level must precede those with lower numbers in the steplib concatenation.

Also for UES support, the following library must be loaded and included in the session execution JCL:

```
ADABAS.Vvrs.ADAvrs.MVSEC0n
```

This library includes all supported code pages. For more information about the supported code pages, read about *Supplied UES Encodings* in your Adabas documentation.

Adabas JCL Updates

If you intend to enable your database for universal encoding service (UES), the startup job for the Adabas nucleus must be updated as described in this section.

- The MVSLD*nn* internal product libraries must be concatenated in the STEPLIB or LIBDEF. The following is an example of such a STEPLIB concatenation:

```
//STEPLIB DD DISP=SHR,DSN=ADABAS.Vvrs.ADAvrs.MVSLOAD
//        DD DISP=SHR,DSN=ADABAS.Vvrs.APSvrs.MVSLDnn
```

  where *nn* is the load library level. If the library with a higher level number is not a full replacement for the lower level load library(s), the library with the higher level must precede those with lower numbers in the steplib concatenation.

- Also for UES support, the following ECS objects data set must be loaded and included in the session execution JCL:

```
//DDECSOJ DD DISP=SHR,DSN=ADABAS.Vvrs.ADAvrs.MVSEC0n
```

  Note:
  The data set DDECSMF (messages) previously required for UES support no longer exists and reference to it needs to be deleted from your JCL. Likewise, the CONFIG DD "dummy" data set is no longer needed.

Disk Space Requirements for Internal Product Data Sets

The minimum disk space requirements on a 3390 disk for the internal product libraries delivered with Adabas is as follows:

Libraries	3390 Cylinders	3390 Tracks	Directory Blocks
APS272.MVSLD00	5	75	55

SYSPARM Requirements

To support UES, you need to add SYSPARM statements and parameters to your session execution JCL, as follows:

```
//SYSPARM DD*
SYSTEM_ID=ADAAPS
ABEND_RECOVERY=NO
THREAD_ABEND_RECOVERY=NO
```

These SYSPARM statements and parameters are required for the APS internal product.

Verify Required ADALNK Module Available

Ensure that the ADALNK module in Entire Net-Work's STEPLIB or LIBDEF is UES-enabled. If Adabas or Adabas Limited Load Library (WAL) Version 7.4 or later are used by Entire Net-Work, then ADALNK is UES-enabled by default.

If Adabas or WAL versions prior to 7.4 are used by Entire Net-Work, you must create a UES-enabled ADALNK module by completing the steps in *Connecting to UES-Enabled Databases through Entire Net-Work*.

Connecting to UES-Enabled Databases through Entire Net-Work

If you are using Adabas 7.4 or later, there are no additional steps to perform to connect to UES-enabled databases through Entire Net-Work; the ADALNK module has been UES-enabled for you.

If you are using a version of Adabas prior to 7.4, you must create a UES-enabled ADALNK module to use when connecting to UES-enabled databases through Entire Net-Work.

Regardless of the Adabas version you are using, if you have altered the translation tables, you will need to perform the step described in this section (depending on the platform) that assembles and links the updated translation tables into ADALNK.

In all cases, whenever you alter ADALNK, you must be sure to make the updated module available to Entire Net-Work.

- UES-Enabling ADALNK on z/OS Systems

UES-Enabling ADALNK on z/OS Systems

▶ **To create a UES-enabled ADALNK module on z/OS systems:**

1. Modify the standard batch ADALNK:

   ```
   &UES SETB 1
   ```

2. Assemble and link the modified batch ADALNK with the translation tables and LNKUES. You can use the sample JCL found in MVSJOBS member ALNKLNK7 in the WAL libraries. Make sure you:

   - Provide all necessary job card information.

   - Check the symbolic parameter value for version, revision level, and SM level (*vrs*). It must reflect the level of your Adabas source and load libraries.

   - Check the data set names for SYSLIB, SYSIN, SYSLMOD, and SYSLIN in the SAGASM and LINKALL inline procedures.

3. Once it is successfully linked, make ADALNK available to Entire Net-Work's job STEPLIB concatenation list.

For complete instructions on UES-enablement in Adabas, refer to the UES sections of your Adabas documentation.