CONNX SQL Engine

Release Notes

Version 13.5

November 2017

ADABAS & NATURAL

This document applies to CONNX SQL Engine Version 13.5 and all subsequent releases.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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1 Release Notes

These Release Notes contain information for CONNX SQL Engine Version 13.5 and the related products Event Replicator for Open Systems and Adabas SQL Gateway.

2 Release Notes for CONNX SQL Engine Version 13.5

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General Information	Information that applies in general to this CONNX SQL Engine version.
Supported Platforms	Provides information on the platforms supported by this version.
Availability of CONNX Product Features	Provides information on the CONNX features supported for each platform.
Software AG Products	Provides information about the Software AG products supported by this version.
JDBC, JDK, and Other Product Requirements	Provides information about the JDBC, JDK, and other requirements of this release of CONNX SQL Engine.
New Features	An overview of the new features provided with this version.
Changes and Enhancements	Information on changes and enhancements provided in this version.
Known Issues	Information regarding known issues applicable for this version.
Abnormal Terminations	Describes the most common abend codes and their possible causes.
Adabas Response Codes	Describes the Adabas response codes caused by installation and configuration issues.
Migration	Information on migration of an existing CONNX SQL Engine installation to this version.
Installation Considerations	Information which should be considered prior to beginning with product installation.
Documentation and Other Online Information	Information about the product documentation and support.

General Information

CONNX SQL Engine is a product component which enables you to access your business data via SQL.

CONNX SQL Engine is delivered in conjunction with another Software AG product, for example:

- Adabas SQL Gateway
- Natural SQL Gateway
- Event Replicator for Adabas on LUW

This section covers the following topics:

- Product Licenses
- Installation Planning
- Migrating Applications
- Changes in the Documentation

- Last-Minute Changes

Product Licenses

The necessary CONNX licenses are delivered together with the associated Software AG product which you have purchased.

A list of CONNX licenses that are available is provided in the section ***Installation Considerations***.

Important: Before you can begin using the CONNX SQL Engine, you must install the CONNX License Server and activate the CONNX licenses. For further information, please refer to the *CONNX Installation Guide* and the *CONNX Planning Guide*.

Installation Planning

Prior to installing CONNX, it is strongly recommended that product administrators refer to the *CONNX Enterprise Planning Guide* for assistance in developing a comprehensive and appropriate CONNX installation and maintenance strategy.

The *CONNX Planning Guide* is intended to be relatively comprehensive and provides guidance that is not included in the *CONNX Installation Guide* or the *CONNX User Guide*.

Migrating Applications

The section ***Migration*** describes the steps which are to be performed, when –

- Migrating from CONNX Version 11.5 SP1
- Migrating from CONNX Version 12.0

Changes in the Documentation

A revised and updated documentation set is available at ***http://documentation.softwareag.com/*** (Empower login required).

Last-Minute Changes

Information on last-minute changes made just before the product release can be found in the file *readme.txt* that is provided on the installation media.

Supported Platforms

The following table shows the operating system platforms supported by this release:

Operating System	Version	Mode
Windows	Windows 7, Windows 8, Windows 10, Windows 2012 and Windows 2008 Server	64-bit
AIX	7.1 and 7.2	64-bit
HP-UX (Itanium)	11i v3	64-bit
Sun Solaris	Solaris 11	64-bit
Linux (x86)	Red Hat Enterprise 6 & 7 SuSE Enterprise 11 & 12	64-bit
z/Linux	Red Hat Enterprise 6 & 7 SuSE Enterprise 11 & 12	64-bit
z/OS	2.1 & 2.2	31-bit
z/VSE	5.2 & 6.1	31-bit

Availability of CONNX Product Features

The following table shows which features are available for each supported platform.

Platform >>>>	Windows	AIX	HP-UX (Itanium)	Sun Solaris	Linux (x86)	z/Linux	z/OS	z/VSE
Server Features								
License Server	X	X	X	X	X	X		
JDBC Server	X	X	X	X	X	X		
Location of the Data Dictionary (CDD)	X	X	X	X	X	X		
Data Server	X	X	X	X	X	X	X	X
Client Features								
.NET	X	X	X	X	X	X		
OLE DB	X							
ODBC	X	X	X	X	X	X		
JDBC	X	X	X	X	X	X		
Embedded SQL	X	X	X	X	X	X	X	
Utility Features								
License Administrator	X							
Data Dictionary Manager	X							

Platform >>>>	Windows	AIX	HP-UX (Itanium)	Sun Solaris	Linux (x86)	z/Linux	z/OS	z/VSE
Data Dictionary Viewer	X							
Configuration Manager	X							
DSNRegistry (JDBC)	X							
SQLRegistry	X	X	X	X	X	X		
Precompiler for C	X	X	X	X	X	X	X	
Precompiler for Cobol	X	X	X	X	X	X	X	
InfoNaut - Query Tool	X							
ACEINT - Query Tool	X	X	X	X	X	X	X	
Event Replicator								
Replication Administrator	X							
Event Producer	(32-bit)	X	X	X	X	X		
Replication Server	X	X	X	X	X	X		

Software AG Products

This section describes the Software AG products and features which may be used with CONNX.

Adabas and Entire Net-Work Versions Supported

The following table shows the Adabas versions with which CONNX may be used.

Product	Platform: Open Systems	Platform: Mainframe
Adabas SQL Gateway	Adabas Version 6.1 or later	Adabas Version 8.1 or later
Event Replication Adabas to Adabas (LUW)	Adabas 6.3 SP1 or later	Not applicable

Entire Net-Work is required to access Adabas databases which are located on platforms where the CONNX data server is not available (for example, BS2000 and VMS).

Adabas Client Interface

The Adabas client module to be used with the SQL Gateway is both platform and operating system dependent:

Platform	Operating System	Environment	Module
Open Systems	Windows, UNIX, Linux	n/a	ADALNKX
Mainframe	z/OS	Batch / Started Task	ADALNKR
Mainframe	z/OS	CICS	LNCSTUB
Mainframe	z/VSE	CICS	LNCSTUB

When installing under CICS, the SQL Gateway requires the usage of –

- "CICS Command Level Interface" and
- LNCSTUB – the "High Performance Stub"

Important: The data server under CICS must be defined with "EXECKEY CICS"; not doing so will result in an error.

JDBC, JDK, and Other Product Requirements

This section describes the JDBC, JDK and other product requirements for this release of CONNX SQL Engine.

- JDBC Pure Java Client
- Obtaining a Current JDK (Java Development Kit)
- Driver Manager (UNIX/Linux)

JDBC Pure Java Client

The JDBC client requirements are described in *CONNX 13.5 Release Notes*.

Obtaining a Current JDK (Java Development Kit)

The JDK is only required for a CONNX client machine using JDBC.

Your platform vendor is usually the best source for platform specific JDKs. Please follow your vendor's instructions for installation.

For a complete list of URLs where you can download JDKs for specific platforms, read *CONNX 13.5 Release Notes*.

Driver Manager (UNIX/Linux)

Any driver manager can be used with the CONNX SQL Engine; for example, the open source product **unixODBC**. For more information, read *CONNX 13.5 Release Notes*.

New Features

For a complete list of new features available with this release please see the *CONNX 13.5 Release Notes*.

Changes and Enhancements

Information on the issues resolved in this product release can be found in the *CONNX 13.5 Release Notes*.

Default Ports

The following is a list of 32-bit and 64-bit components and the default ports they listen on:

Component Name	Port
32-bit Enterprise Server Service	6500
64-bit Enterprise Server Service	6502
32-bit JDBC Server	7500
64-bit JDBC Server	7502
License Server	7501

Known Issues

For a complete list of known issues with this release please see the *CONNX 13.5 Release Notes*.

Abnormal Terminations

Below is a list of the most common abend codes and their possible causes.

z/OS - ABEND Codes

The most common causes of abnormal terminations on z/OS are installation and configuration issues:

- ADALNKR has not been link-edited with the attributes (`RENT, REUSE`).
- The 'default' SVC in ADALNKR is invalid.
- SAF Interface where the users are not allowed JESSPOOL access, usually to SYSTERM, SYSPRINT, etc.

The following table contains the most frequent abend codes for z/OS:

Abend Code	Description
ABEND S013	SAF Interface - JESSPOOL access.
ABEND S0C1	ADALNKR is not link-edited with (`RENT, REUS`).
ABEND S0C4	ADALNKR is not link-edited with (`RENT, REUS`). Adabas Fastpath requires a correction, when used with the SAF Interface. SAF Interface - JESSPOOL access.
ABEND S378	ADALNKR must be link-edited with (`RENT, REUS`).
ABEND S4C6	Apply IBM PTF OA08358.
ABEND S683	`CNXNOPREAUTHORIZE = 0` and Listener libraries *NOT* APF authorized.
ABEND S806	Migration from Version 9 to Version 10 issue (CNXADAx0).
ABEND S913	SAF Interface - JESSPOOL access.
ABEND SF*xx*	Error occurred executing an installation-defined SVC. The 'default' SVC for the ADALNKR is xF9 (249).

z/VSE - ABEND Codes

The most common causes of abnormal terminations on z/VSE are installation and configuration issues:

- Usage of Adabas DCI (LNCSTUB) / ADATRUE is mandatory under CICS
- Incorrect definitions or usage of Adabas Link Routine (ADATRUE/ADAENAB)
- Ensure the `AMODE` setting of the Adabas Link Routine is set to 31
- CONNX Server components are not defined with EXECKEY 'CICS'

The following table contains the most frequent abend codes for z/VSE:

Abend Code	Description
ABEND AEZD	Definition and usage of Adabas Link Routine.
ABEND ASRA	EXECKEY 'CICS'.

Adabas Response Codes

The following Adabas response codes are caused by installation and configuration issues:

Adabas Response	Access to the Database	Action to be Taken
ADARSP-022	Accessing a read-only nucleus	Use Registry Setting `OPREADONLY=0`
ADARSP-041	Retrieving SUPERDE as COLUMN	Install Adabas Version 5.1.2 or later
ADARSP-145	During UPDATE/DELETE	Use Registry Setting `ADAWAITONHOLD`

Migration

The migration steps to be performed depend upon the product version that is currently in use and/or the version which was used to create the CONNX CDD.

The sections below describe the steps, which are to be performed, when –

- Migrating from CONNX Version 11.5
- Migrating from CONNX Version 12

Migrating from CONNX Version 11.5

The following licensing changes have been made in version 12.0:

- Older versions of CONNX were licensed on a processor / core basis. With CONNX 12.0 this licensing is now enforced.
- Licenses now contain the CONNX product version which is checked at initialization.

Both these new features make it essential that the license server is updated to CONNX 12.0 and new licenses are installed prior to upgrading the base CONNX products. Please refer to the *CONNX Release Notes* for more details.

Migrating from CONNX Version 12

Licenses for CONNX Version 12 are not valid for Version 13. You will need to install new licenses for this version.

Installation Considerations

- Location of Installation Files
- Enterprise Planning Guide
- Product Licenses
- Installation under z/VSE with Adabas V8.1 or Later
- Code Pages

Location of Installation Files

The CONNX product installation files can be found in the Software Download Center (SDC) in Empower at ***https://empower.softwareag.com/*** (Empower login required).

Enterprise Planning Guide

Prior to installing CONNX, it is strongly recommended that product administrators refer to the *CONNX Enterprise Planning Guide* for assistance in developing a comprehensive and appropriate CONNX installation and maintenance strategy.

The *CONNX Planning Guide* is intended to be relatively comprehensive and provides guidance that is not included in the *CONNX Installation Guide* or the *CONNX User Guide*.

Product Licenses

CONNX licenses are available for multiple data sources. Please contact your Software AG representative for further details.

Installation under z/VSE with Adabas V8.1 or Later

Installation under z/VSE with Adabas V8.1 or later

When installing SQL Gateway under z/VSE with Adabas V8.1 or later, the Adabas CICS High-Performance Stub Routine LNCSTUB.A must be modified.

```
Edit the member LNCSTUB.A (located in the appropriate Adabas sublibrary)
Change              &STBNAME SETC  'ADADCI'
To                 &STBNAME SETC  'ADABAS'
```

After modification, LNCSTUB.A should be re-assembled, then re-linked to the SQL Gateway Server using the supplied member CNXINST0.JCL.

If the above change is not made, the SQL Gateway Server will abend with S0c1 when calling Adabas.

Code Pages

Code translation is automatically performed on columns which contain data that is stored in a Single-Byte code page.

The code page of the data can be set via the parameter `SBCCSID`. This setting applies to all files in the database and is stored in the table definitions in the CDD when the tables are defined.

Note: Adabas fields, which are defined with the Adabas field type 'A', may only contain "Single-Byte" data. Multi-Byte data that has been stored in fields with field type 'A' cannot be interpreted correctly.

Documentation and Other Online Information

The following online resources are available for you to obtain up-to-date information about your Software AG products:

- Software AG Documentation Website
- Software AG TECHcommunity
- Software AG Empower Product Support Website

Software AG Documentation Website

You can find documentation for all Software AG products on the Software AG Documentation website at ***http://documentation.softwareag.com***. This site requires Empower credentials. If you do not have an Empower user ID and password yet, you will find instructions for registering on this site (free for customers with maintenance contracts) or you can also use the TECHcommunity website to access the latest documentation.

Software AG TECHcommunity

You can find documentation and other technical information on the Software AG TECHcommunity website at ***http://techcommunity.softwareag.com***. You can:

- Access product documentation, if you have TECHcommunity credentials. If you do not, you will need to register and specify "Documentation" as an area of interest. If you already have TECHcommunity credentials, you can adjust your areas of interest on the TECHcommunity website by editing your TECHcommunity profile. To access documentation in the TECHcommunity once you are logged in, select **Documentation** from the **Communities** menu.
- Access articles, demos, and tutorials.
- Use the online discussion forums, moderated by Software AG professionals, to ask questions, discuss best practices, and learn how other customers are using Software AG technology.
- Link to external websites that discuss open standards and web technology.

Software AG Empower Product Support Website

You can find product information on the Software AG Empower Product Support website at ***https://empower.softwareag.com***. This site requires Empower credentials. If you do not have an Empower user ID and password yet, you will find instructions for registering on this site (free for customers with maintenance contracts).

To submit feature/enhancement requests, get information about product availability, and download products and certified samples, select **Products & Documentation** from the menu once you are logged in.

To get information about fixes and to read early warnings, technical papers, and knowledge base articles, select **Knowledge Center** from the menu once you are logged in.

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This section provides information on changes and enhancements in this version.

General Information	Provides information you should know before you install and use Adabas SQL Gateway.
New Features	An overview of the new features provided with this version.

General Information

This part of the documentation provides information you should be aware of before you install and use the Adabas SQL Gateway.

- Platform Coverage
- Space Requirements
- Adabas Requirements
- Product Installation

Platform Coverage

Please refer to the document *Release Notes for CONNX SQL Engine*, section **Supported Platforms, Availability of CONNX Product Features** for information describing the platforms on which the various components can be installed.

Space Requirements

The installation procedure requires approximately 10 MB disk space in the temporary directory (TEMP). The product space requirements are documented in the Adabas SQL Gateway installation manual.

Adabas Requirements

The following Adabas product versions are supported:

- Open Systems: Adabas 6.1 SP4 or higher (later versions)
- Mainframe: Adabas 8.1 SP4 or higher (later versions) .

Product Installation

Important: The Adabas SQL Gateway product installation is now available in the Software Download Center (SDC) in Empower: ***https://empower.softwareag.com*** (login required). Please consult the file INSTALL.TXT contained in the download file for further details on installation issues.

New Features

For a complete list of new features available with this release please see the *CONNX 13.0 SP1 Release Notes*.

4 Release Notes for Event Replicator for Adabas LUW Version 13.5

- General Information 20
- New Features and Enhancements 21
- Known Issues 22

General Information	Provides information you should be aware of before you install and use Event Replicator for Adabas LUW.
New Features and Enhancements	Provides information on new features/enhancements provided with this version.
Known Issues	Lists the product issues known at the time of the release.

General Information

This part of the documentation provides information you should be aware of before you install and use Event Replicator for Adabas LUW.

- Prerequisites (Minimum Requirements)
- Platform Coverage
- Product Installation

Prerequisites (Minimum Requirements)

Space Requirements

The installation procedure requires ca. 10 MB disk space in the temporary directory (TEMP).

The product space requirements are documented in the Event Replicator for Adabas LUW manual.

Adabas

- For Adabas Event Replication, Adabas 6.1 SP4 or higher is required.
- For Adabas-to-Adabas Event Replication, Adabas 6.3 SP1 or higher is required.

Platform Coverage

Please refer to the document *Release Notes for CONNX SQL Engine*, section **Supported Platforms, Availability of CONNX Product Features** for information describing the platforms on which the various components can be installed.

Product Installation

Important: The Event Replicator for Adabas (LUW) product installation is now available in the Software Download Center (SDC) in Empower: *https://empower.softwareag.com* (login required). Please consult the file INSTALL.TXT contained in the download file for further details on installation issues.

- Adabas Licensing
- Shutdown of all Databases Used as Replication Sources

Adabas Licensing

Note: The following applies only for Adabas LUW Adabas versions 6.3 and below.

Users of Adabas installing Event Replicator for Adabas LUW for the first time, should check their Adabas license for the following line:

```
<Rex>yes</Rex>
```

In addition users who wish to use the new native Adabas-to-Adabas replication feature should have the additional entry:

```
<A2AREP>yes</A2AREP>
```

Important: If this line does not exist, you should apply for a new Adabas license.

Shutdown of all Databases Used as Replication Sources

Before installing Event Replicator for Adabas LUW, all databases that will be used as replication sources must be shutdown / terminated.

New Features and Enhancements

For a complete list of new features available with this release please see the *CONNX 13.5 Release Notes*.

Known Issues

This covers the product issues known at the time of release:

- Undeploying Replications
- CONNXREGISTRY
- Usage of localhost
- Usage of Descriptors with Null Suppression
- Replication of Unicode Data to DB2
- NFS Shares and Installation
- Event Replicator for Adabas LUW Does Not Initialize Successfully
- Configure Servers - Test Connection Button

Undeploying Replications

If you want to undeploy a replication, both the source and target databases must be active. Otherwise, the status of the replication in the databases on restart will be incorrect.

CONNXREGISTRY

The installation terminates with an error, when the environment variable CONNXREGISTRY is not defined; e.g. the 32-bit version of the CONNX registry is not used.

The CONNXREGISTRY environment variable is created during the installation of the SQL Gateway and is a prerequisite for the Event Replicator for Adabas LUW.

Usage of localhost

Do not use localhost as the server name for the Adabas Source or Target tables. In certain instances using localhost as the server name may cause you to lose all your source table records during an initial state.

Usage of Descriptors with Null Suppression

When you choose a source replication index, do not use a descriptor with the null suppression attribute set.

Null values within a null-suppressed descriptor cannot be replicated; if a descriptor contains null values the replication engine will disable during deployment. If the descriptor with the null suppression attribute set does not contain any null values, the tables will replicate but we recommend using another unique descriptor for replication.

If you use a descriptor with the Null Suppression attribute set you will get a warning *if the CDD was created using SQL Gateway 6.6.1 or later;* if the CDD was created in a prior versions the warning message will not appear.

Replication of Unicode Data to DB2

Do not replicate Unicode data from Adabas to DB2. The Replication tool does not currently support replicating Adabas Unicode data into a DB2 database.

NFS Shares and Installation

Do not install the Event Replicator for Adabas LUW on an NFS share. Due to the NFS caching mechanism, replication cannot guarantee data consistency. When NFS data flows over the network, it adds an additional step in accessing the physical disk.

Event Replicator for Adabas LUW Does Not Initialize Successfully

If Event Replicator for Adabas LUW does not initialize successfully, the Adabas database will continue to start, but no replication will be performed.

Configure Servers - Test Connection Button

When the **Test Connection** button is clicked, only the CONNX connections in the CDD are tested using the supplied logon credentials. The individual Event Replicator for Adabas LUW components are not tested.