

## Fujitsu Software BS2000 UDS/SQL and UDS-D

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Release Notice

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# 1 General

This Release Notice is a summary of the major extensions, dependencies and operating information with respect to

UDS/SQL (BS2000) V2.8A and  
UDS-D (BS2000) V2.8A

The release level is that of: March 2016.

This and other current Release Notices are shipped on the SoftBooks DVD and are available online at <http://manuals.ts.fujitsu.com/>.

If one or more previous versions are skipped when this product version is used, the information from the Release Notices (and README files) of the previous versions must also be noted.

UDS/SQL is based on the design concept of CODASYL but contains many more options and also features coexistence with the relational model for the same data.

UDS-D is a supplement to the UDS/SQL database system and enables transaction-secured access to UDS databases across multiple computers. UDS-D eliminates the strict assignment of databases and UDS applications to the same computer. The data can be maintained on the computer where it is mainly needed. UDS applications on remote computers can query and modify this data if necessary.

UDS-D monitors distributed transaction processing with network-wide deadlock detection and resolution and corresponding deadlock analysis. If an error occurs during a UDS transaction, UDS-D makes sure that during a warm reboot the data consistency of all databases is maintained on the computers involved.

## 1.1 Ordering

UDS/SQL V2.8A and UDS-D V2.8A can be ordered from your local distributors.

## 1.2 Delivery

The UDS/SQL V2.8A and UDS-D V2.8A files are supplied via SOLIS.

The table below lists the release units that are supplied with a particular delivery unit.

<b>Delivery unit</b>	<b>Release unit</b>
UDS/SQL	UDS-SQL UDS-SQL-T ODBC-DEMO-UDS V3.7 <sup>1</sup>
UDS-D	UDS-D

The following delivery components are required regardless of the HSI:

### **Release unit UDS-SQL:**

SYSLNK.UDS-SQL.028	Module library containing the modules for UDS/SQL
SYSLIB.UDS-SQL.028	Macro library for UDS/SQL
SYSSDF.UDS-SQL.028	SDF system syntax file for UDS/SQL und UDS-D
SYSSDF.UDS-SQL.028.USER	SDF user syntax file for UDS/SQL und UDS-D
SYSSSC.UDS-SQL.028	Subsystem definition for UDS/SQL
SYSMES.UDS-SQL.028	Message file for UDS/SQL und UDS-D
SYSSII.UDS-SQL.028	File for installation of the release unit UDS-SQL with IMON
SYSFGM.UDS-SQL.028.D	Note for the release notice (German) in PDF-Format
SYSFGM.UDS-SQL.028.E	Note for the release notice (English) in PDF-Format

### **Release unit UDS-SQL-T:**

SIPPRG.UDS-SQL-T.028	Library for class B tools (e.g. BTRANS24, UDSSTAT, ...)
SIPLIB.UDS-SQL-T.028	Library with procedures for class B tools (e.g. P.BINIPARAM, ...)
SIPDAT.UDS-SQL-T.028.D	Library with tool information in German (e.g. INFO.BINIPARAM, ...)
SIPDAT.UDS-SQL-T.028.E	Library with tool information in English
SYSSII.UDS-SQL-T.028	File for installation of the release unit UDS-SQL-T with IMON

### **Release unit UDS-D:**

SYSLNK.UDS-D.028	Module library containing the modules for UDS-D
SYSSSC.UDS-D.028	Subsystem definition for UDS-D
SYSSII.UDS-D.028	File for installation of the release unit UDS-D with IMON

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<sup>1</sup> The release unit ODBC-DEMO-UDS V3.7 is shipped with UDS/SQL, but is not a UDS component. It is a demo version of the ODBC driver, ODBC Rocket from gfs (client and server parts). This provides transparent access to UDS databases from a PC via the ODBC interface. Refer to the ODBC-DEMO-UDS Release Notice for detailed information.

A CD-ROM with the following contents is delivered with the release unit UDS-SQL (the relevant directory names are in parentheses):

- Demo version of ODBC-Rocket from gfs, Gesellschaft für Informationssysteme mbH & Co. KG, Hamburg with client software (ODBC-Demo\client), documentation (ODBC-Demo\doc) and Release Notice (ODBC-Demo\server)
- Release Notices in German and English in pdf format (Produktinfo)
- Tools for processing the output of utility programs in csv format, e.g. EXCEL macros (Tools\csv\EXCEL) and Perl scripts (Tools\csv\CSV2XML) and a description of UDSSTAT (Tools\UDSSTAT) including an EXCEL macro for processing the output from UDSSTAT.
- Frequently asked questions in HTML format (FAQ).

The current file and volume characteristics are listed in the SOLIS2 delivery cover letter.

### 1.3 Documentation

The BS2000 documentation is available in German and English on DVD with the title BS2000 SoftBooks.

The documentation is also available in the form of online manuals at <http://manuals.ts.fujitsu.com> or can be ordered at extra cost at <http://manualshop.ts.fujitsu.com>. In the manual shop only manuals are available for products which are still orderable.

The manuals may be supplemented with README files. These contain changes and extensions to the manual of the product concerned. The file names are made up as follows:

SYSRME.UDS-SQL.028.E            (file with English text)

When printing the files, you should specify the CONTR-CHAR=EBCDIC operand in the PRINT-FILE command.

## 2 Software extensions

The extensions and improvements compared to the previous version UDS/SQL V2.7A are described in the following section.

### 2.1 Improvements in UDSMON – TA-Time and DB-Counters

In UDS/SQL V2.8A the requirement is fulfilled to output the average TA time with a higher precision. The new output contains seconds and milliseconds (e.g. 000.567s). This is motivated by the fact that the TA times get smaller and smaller. In addition the DB counters per database are output with the UDSMON statement DISPLAY COUNTERS. See next extension.

### 2.2 Database Operation – Number of DML and IO per database

In UDS/SQL V2.8A the requirement is fulfilled to output the DML and IO counter not only globally, but also specific for each database. For this the DML and IO counters are output both when dropping the database and when terminating the DBH.

In addition these counters can be output during database operation by UDSMON. See previous extension.

### 2.3 BSTATUS – Limit the TABLE STATISTICS FOR OWNER IN SET

In UDS/SQL V2.8A the requirement is fulfilled to limit the output of the owner statistics in BSTATUS to certain owner RSQs. For this the DISPLAY TABLE FOR OWNER statement was extended by a RSQ specification.

### 2.4 BOUTLOAD – Output in CSV-Format

As of UDS/SQL V2.8A the output of BOUTLOAD can be done in csv format. In this output format the single fields of a record type can be separated by semicolon. Additionally it can be specified if the set information is to be output in CSV format.

### 2.5 ONLINE-UTILITY – Reorganize Pointers

In UDS/SQL V2.8A the online utility was extended by a new feature to update the PPPs. After a successful update of the PPPs in all user realms the pages need not be formatted in case of realm extension.

This is according to the REORGANIZE POINTER statement of BREORG.

## 3 Technical information

### 3.1 Resource requirements

In UDS/SQL V2.8A and UDS-D V2.8A the requirement of resources are not significantly increased with respect to the previous version.

### 3.2 Software configuration

For UDS/SQL V2.8A und UDS-D V2.8A

BS2000/OSD-BC as of V8.0A

OSD/XC as of V4.0A

is required.

Other Software required for production operation:

CRTE as of V2.8A

SORT as of V7.9A when sorting more than 2.147.483.647 records: as of V8.0A

openNet Server as of V3.3A

Software recommended for backups on tapes:

ARCHIVE as of V9.0A

HSMS as of V9.0A

Optional software products for specific functions:

UDS-D only V2.8A own configuration

UDS-D as of V2.5A external configuration

UDS-IQS as of V4.0A

ODBC-Rocket as of V3.7A see \*1 below

JV as of V15.0A

SDF-P as of V2.5A

COBOL85 as of V2.3A

COBOL2000 as of V1.4B when using FIND/FETCH-1 with OR NEXT/PRIOR: as of V1.5A

DRIVE/WINDOWS only V2.1B40 see \*2 below

openUTM as of V5.3A when outputting AAID through

UDSMON: as of V5.3A30

openSM2 as of V8.0A

\*1: ODBC-Rocket is a product from our partner company gfs.

\*2: Follow-up versions of DRIVE, such as V2.2 or V3.1, may not be used since they no longer offer UDS support.

### 3.3 Product installation

Installation of the product UDS/SQL V2.8A and UDS-D V2.8A with the IMON installation monitor is mandatory. You must follow the information concerning installation in the delivery cover letter and in the product documentation as well as the information in this Release Notice.

Before starting IMON, you have to perform the following actions, if the installation does not run parallel to operation (see 3.3.1):

- The databases must be brought into a consistent state before updating to UDS/SQL V2.8A. This is best achieved by stopping all UDS sessions in an orderly manner.
- UTM applications linked to UDS/SQL should also be shut down correctly with "KDCSHUT N".

After these actions have been executed you have to install the product with IMON. The necessary inputs and the sequence of the installation are described in the IMON documentation.

After successful installation of the product with IMON you have to carry out the following actions:

- If the UDS subsystem is to be used, it must be reactivated after installation (/START-SUBSYSTEM).

#### 3.3.1 Installing with IMON parallel to operation

UDS/SQL V2.8A can also be installed with IMON while current operation is in progress.

However, in order to be able to continue working correctly with a UDS session and other applications that are currently running, all running DBH and user processes must have their version selected with the SELECT-PRODUCT-VERSION command. (cf. 'UDS/SQL V2.8 – Database Operation' manual)

#### 3.3.2 Special requirements

After successful installation of the product with IMON you have to carry out the following actions:

1. If the call via START-EXECUTABLE-PROGRAM is used instead of the UDS-START commands, the following file names must be matched to the new names in the procedures used

the UDS message file	(SYSMES.)
the UDS SDF syntax file	(SYSSDF.)
the UDS module library	(SYSLNK.)

2. The file SYSMES.UDS-SQL.028 is taken over into BS2000-MIP during installation with IMON. If different UDS versions are run in parallel, a version-specific message file can also be assigned e.g. via a LOGON-USER procedure as follows:

```
/MODIFY-MSG-FILE-ASSIGNMENT -
/          ADD-FILE = $<user-id>.SYSMES.UDS-SQL.<version>
```

with <user-id> = storage ID of the UDS message file  
and <version> = version 'nnn' of the Product

Example:

```
/MODIFY-MSG-FILE-ASSIGNMENT -
```



```
/          ADD-FILE = $.SYSMES.UDS-SQL.028
```

3. A SDF-USER syntax file called SYSSDF.UDS-SQL.028.USER is supplied for user-specific use. Use this file if system-wide use is not desired. Assign the file as follows.

```
/MODIFY-SDF-OPTIONS -
/ SYNTAX-FILE = *ADD ( -
/          ADD-NAME = $<user-id>.SYSSDF.UDS-SQL.<version>.USER )
```

Example:

```
/MODIFY-SDF-OPTIONS -
/ SYNTAX-FILE = *ADD ( -
/          ADD-NAME = $.SYSSDF.UDS-SQL.028.USER )
```

However, the USER syntax file does not support the UDS-START commands.

## 3.4 Product use

### 3.4.1 Information about converting to UDS/SQL V2.8

The following information applies for converting from UDS/SQL V2.7. When converting from a version smaller than 2.7 the Release Notices of the original versions must be observed.

#### 3.4.1.1 Using databases from UDS/SQL V2.7

The conversion from UDS/SQL V2.7 to UDS/SQL V2.8 is not linked with a higher DB layout version. Existing databases from UDS/SQL V2.7 can also be used in UDS/SQL V2.8 without any problem. When using older databases, please note the information in the manual "Creation and Restructuring"

#### 3.4.1.2 Downgrade to UDS/SQL V2.7

As the supported DB layout versions is contrast to UDS/SQL V2.7 have not changed, a downgrade to UDS/SQL V2.7 is possible at any time. For this purpose, the status of the databases has to be consistent.

### 3.4.2 Operating batch applications that have not been relinked

Batch applications that have been linked with an old, version-independent link module UDSLNKx before UDS/SQL V2.2, require a library UDS.MODLIB for reloading the connecting module. There are three alternatives for this:

1. A UDS.MODLIB library is created in the local ID of the application and the object modules UDSBCCON (for independent DBH) and LCCONNECT (for linked-in DBH) from SYSLNK.UDS-SQL.028 are then copied into it.
2. An empty UDS.MODLIB library is created in the local ID of the application. A link to the installed product library SYSLNK.UDS-SQL.028 is created with a TASKLIB assignment.
3. ACS is used to create an alternative catalog entry UDS.MODLIB in the local ID that points to the installed product library SYSLNK.UDS-SQL.028.

### 3.4.3 Applications in AMODE 24

If UDS/SQL is loaded as a subsystem (above 16MB) and an application is started in AMODE 24, messages may be issued by the linker-loader system because connection to a subsystem loaded above 16 MB is not possible. These messages

can be ignored since UDS/SQL subsequently loads the relevant module into the task local address space.

### 3.4.4 UDS/SQL V2.8A tools

Various tools are supplied with UDS/SQL (libraries SIPPRG.UDS-SQL-T.028 and SIPLIB.UDS-SQL-T.028 or on the UDS/SQL V2.8 CD-ROM). These tools, which are mainly intended for service purposes, are not part of the contract and are not included in the maintenance obligations. The tools are not described in the manuals.

If nothing else is specified in the following overview, detailed descriptions are in the library SIPDAT.UDS-SQL-T.028.D under INFO.<toolname> (German) or SIPDAT.UDS-SQL-T.028.E under INFO.<toolname>.E (English).

#### 3.4.4.1 BINIPARAM

This procedure supplements the BOUTLOAD outputs with the subschema name and writes for each record type BINILOAD statement in its own output file.

Call with the command:

```
/CALL-PROCEDURE FROM-FILE = *LIBRARY-ELEMENT ( -
/      LIBRARY = SIPLIB.UDS-SQL-T.028, -
/      ELEMENT = P.BINIPARAM )
```

#### 3.4.4.2 BPRIVACYPARAM

The output of a SHOW-USER-GROUP statement with USER-GROUP-NAME = \*ALL of the utility BPRIVACY is converted to BPRIVACY statements, with which these BPRIVACY specifications can be saved.

Call with the command:

```
/CALL-PROCEDURE FROM-FILE = *LIBRARY-ELEMENT ( -
/      LIBRARY = SIPLIB.UDS-SQL-T.028, -
/      ELEMENT = P.BPRIVACYPARAM )
```

#### 3.4.4.3 CHECKPARAM

The procedure P.CHECKPARAM generates from the result of a CHECK SUMMING run a procedure which starts a CHECK SORTING run corresponding to the result.

Call with the command:

```
/CALL-PROCEDURE FROM-FILE = *LIBRARY-ELEMENT ( -
/      LIBRARY = SIPLIB.UDS-SQL-T.028, -
/      ELEMENT = P.CHECKPARAM )
```

#### 3.4.4.4 RLOGPASS

RLOGPASS is used to set the password for the RLOG files. The user enters (requested via prompting) the time stamp of the RLOG file. RLOGPASS calculates the password and issues it.

Attention: The password is to prevent the RLOG files from overwriting or deleting by mistake and must not be set normally. UDS/SQL sets the password when processing the RLOG files.

Start the program with the command:

```
/START-EXECUTABLE-PROGRAM FROM-FILE = *LIBRARY-ELEMENT (-  
/      LIBRARY = SIPPRG.UDS-SQL-T.028, -  
/      ELEMENT = RLOGPASS )
```

#### 3.4.4.5 UDSTRACE

The UDS trace is used to gather detailed knowledge about the runtime behaviour of the UDS applications. It can always be used if applications are not running satisfactorily, e.g. bad response times, too many disables, deadlocks, etc. However, it can also be used in application development in order to uncover programming weak-points at an early stage or for documentation purposes.

Call with the command:

```
/CALL-PROCEDURE FROM-FILE = *LIBRARY-ELEMENT (-  
/      LIBRARY = SIPLIB.UDS-SQL-T.028, -  
/      ELEMENT = P.UTA )
```

#### 3.4.4.6 DBSTRUKT

This description provides the user with information about technical details which go beyond that provided in the manuals. The parts are copied from the technical description so that there is only a German version. This description does however have parts in German.

#### 3.4.4.7 UDSSTAT

UDSSTAT is used to evaluate UDSMON files.

The description is on the CD-ROM (see Tools/UDSSTAT/udsstat.pdf).

#### 3.4.4.8 CSV-Tools

Sample scripts are offered which facilitate further processing of the outputs of utilities in CSV format.

A description is on the CD-ROM (see Tools/csv/readme-csv-tools.pdf) and as inline documentation in the procedure P.GEN-FILE-BPGSIZE in the library SIPLIB.UDS-SQL-T.028.

### 3.5 Discontinued functions (and those to be discontinued)

None

## 3.6 Incompatibilities

UDS/SQL V2.8A has the compatibility behaviour described below:

### 3.6.1 openUTM applications

UTM-DB applications must only be linked again when the version-dependent connection module UDSCON of a version < V2.8 is integrated (see manual "Program applications", section "Cooperation with a UDS/SQL-openUTM application"). If they are regenerated e.g. due to integrated version-dependent UDS components, the corresponding KDCDB macro must be used when compiling KDCROOT from the UDS macro library SYSLIB.UDS-SQL.028.

### 3.6.2 CODASYL und SQL interface

The program interfaces are upward-compatible with respect to UDS/SQL V2.8A. Existing applications continue to run after a UDS version change without any modifications.

## 3.7 Restrictions

None

## 3.8 Procedure in the event of errors

If an error occurs, the following error documents are needed for diagnostics:

- A detailed description of the error condition, indicating whether and how the error can be reproduced.
- The error must be reported to the appropriate service provider.  
A PERLE error report will be opened for Second Level Support.
- UDS/SQL applications should be started with  
/MODIFY-JOB-OPTIONS LOGGING = \*PARAMETERS (LISTING = \*YES)  
in order to detect user errors.
- To get the diagnostic information needed in case of an error, the applications should as a rule run with  
/MODIFY-TEST-OPTIONS DUMP = \*YES  
and the DBH session should be logged in a file.
- With most errors, a current BPSIA/BPSQLSIA log of the schema and of the subschema used is required as additional error documentation together with the dump.

Errors with high priority can also be diagnosed remotely, provided the technical equipment is available.

## **4 Hardware requirements**

This section is not relevant for UDS/SQL.

## **5 Firmware levels**

This section is not relevant for UDS/SQL.