

```
*****
*****
*****          Readme.txt          *****
*****
*****          This file contains the latest technical details of *****
*****          "Adabas Client for Java"          *****
*****
*****
```

```
=====
Adabas Client for Java          Version 2.2.1.0          October 2021
=====
```

Contents

- ```
=====
1. Supported Platforms
2. Prerequisites
3. Installation/Configuration
4. Documentation
5. Solved Problems
6. New Features
7. Adabas Client for Java on z/OS USS
8. Adabas Client for Java in z/OS CICS
9. Adabas Client for Java Data Designer plugin
10. Known Issues
11. Copyright Information
```

-----

1. Supported Platforms

```
=====
Please confer to the System Requirements of the installation
documentation "Installing Adabas Client for Java" for details about
the supported operating system platforms.
```

2. Prerequisites

```
=====
"Adabas Client for Java" requires Java Version 1.8 or above.

For remote database access Entire Network needs to be installed with
the most current ZAP updates or hotfixes, respectively.

To call remote databases, in this version the need of Entire Network
client is obsolete.
```

3. Installation/Configuration

```
=====
The "Adabas Client for Java" is installed with the
Software AG Installer.
The package consists of

o The Adabas Client for Java API including examples, javadoc and
 jar-files
o The Adabas Data Designer - a data browser and configuration tool
```

The Adabas Data Designer is supported on Linux and Windows platforms only

The Adabas REST Interface based on Jetty providing JSON and XML based REST access on Adabas is moved into the Adabas RESTful administration server.

To get full local database access on z/OS, an additional product Adabas Client for z/OS is needed. To use Adabas Client for Java on z/OS, please contact Software AG.

#### 4. Documentation

=====

You can get the documentation for "Adabas Client for Java" at the Software AG Documentation Web site at <https://documentation.softwareag.com>.

There you will always find the latest documentation available.

The documentation is available as HTML and PDF documents.

The installation contains the HTML-based Javadoc of the "Adabas Client for Java" API.

#### 5. New Features

=====

##### v2.2.1:

Adabas Client for Java Version 2.2.1 works with Java 11 runtime.

##### v2.2.0:

Adabas Client for Java Version 2.2.0 fixes some major problems found in a test cycle with Adabas on Mainframe.

##### v2.1.0:

Adabas RESTful server is migrated to the Adabas RESTful administration server installed with Adabas.

- o Enhance floating point parser
- o Support redefinition of Adabas fields with a list of subfields
- o Support creation of Adabas Maps out of Predict definitions

##### v2.0.0:

Adabas Client for Java Version 2.0.0 does include some refactoring new functionality. The overall aim is to provide more Natural-like search methods. Due to the refactoring of Adabas Client for Java API, it may be necessary to recompile the code.

- o Old obsolete methods are removed and multiple methods merged to to one method or are set to be deprecated.
- o Super descriptors search could be defined using complete one String query. It's similar to Natural's usage of Super Descriptors.
- o Adabas Data Designer is provided as an Eclipse plugin for the Eclipse SDK. See point 7.

- o Adabas Id on zOS is generated correctly
- o Rest server handles binary Lob read and store data into Adabas
- o Several internal bugs and errors are fixed
- o Fixed several problems in search tasks
- o Add correct CORS handling in Adabas Client for Java Rest server
- o Add support for zOS CICS environment (additional CICS component is needed)
- o Deliver log4j2 instead of logback. Nevertheless, logback can still be used with Adabas Client for Java
- o close() calls will not do an implicit End of Transaction. Instead, if Transactions are still active, the Backout Transaction will be called.  
In case of an error or without an End of Transaction call, all transactions will be reverted.

#### v2.0.0.1:

In addition to the list of problems listed below, various Adabas Client for Java Mainframe-specific problems were fixed. Adabas Client for Java Map definitions work with fractional shifts in Packed and Unpacked numeric fields. Empty Unicode fields caused errors that are now fixed. Fix handling of charset definition in Adabas Client for Java Maps. Packed NATTIME calculation was fixed. The CL call usage inside Adabas Client for Java is reduced.

Adabas Client for Java Data Designer stability is improved. Especially Map handling on Mainframe databases is stable now. Validation checks for new Adabas FDT files and Adabas Map definitions are enhanced. Field filter in Map Definition and Data view is working with all tree levels. It is possible to define a refresh time to refresh the Map Definition and Data data content periodically. The version v2.0.0.1 of Data Designer works with Eclipse Oxygen.

Adabas RESTfull server example pages show metadata access. In this update, a template Docker configuration is being included. With Docker using Linux amd64 platforms the Adabas Client for Java RESTfull server can be started inside a Docker container.

Various enhancements are implemented in the Mapping tool.

#### v2.0.1.0:

This version contains various performance optimizations and bug fixes.

#### v2.0.1.1:

In case of an error response from the Adabas database a transaction might be ended instead of doing a backout transaction. In this version, this behavior is fixed.

#### v2.0.1.2:

If Adabas Maps are created with Adabas Client for Java version 1.x it may happen, that Adabas Client for Java v2.x does not read it

because of duplicated field entries.

In Adabas Client for Java v2.x, a strict check for duplicated fields is added.

In version 2.0.1.2 you can

- In Adabas Client for Java code use the  
    `AdabasMapper.setEnableDuplicateCheck(false);`  
    to disable duplication check
- In Adabas Data Designer there exist a flag in the preferences  
    that  
    disable duplication check

In this version, it is possible to edit invalid Maps in Adabas Data Designer.

The Mapping Tool contains the possibility to export or import Adabas Maps. Similar functionality is available inside the Eclipse plugin of Adabas Data Designer.

To change Adabas Map parameters without validation, you can use the `change()` method to adapt parameters. To change the Adabas data reference, you can call

```
AdabasMapper.change(map, AdabasMapper.Field.DataUrl,
"172(adatcp://testhost:1234)");
```

v2.0.1.2:

Storing Fix-Point data can cause wrong values if the value is negative.

The byte array field types have caused Exceptions in some circumstances.

In general, advanced FDT field type tests are worked out to and are fixed in this hotfix.

By using different Adabas databases for Map repository and data, the end of transaction call (`endTransaction()`) worked not correctly.

## 6. Solved Problems

=====

Version 2.2.1.0

ACJ-164: ISN buffer not handled correctly using ACB

Version 2.2.0.0

ACJ-147: Response code 41 when accessing a group field within a periodic group

ACJ-140: Exception not passed from method to Java program

ACJ-139: Problems with numeric field with fractional part

Version 2.1.0.0

ACJ-141: problem with alphanumeric fields with lengths  $\geq 100$

ACJ-144: ACJ201 Fix 4 Readme: Script "afterHotfixInstallAsRoot.sh" does not exist

ACJ-146: Floating point fields are truncated

ADAOS-5603: ADAREST returns incorrect FDT

ACJ-150: Mapping Tool and Wildcarding  
ACJ-151: Data Designer eclipse plugin not in package

Version 2.0.1.3

ACJ-125: Problems with endTransaction method  
ACJ-133: Negative Fixpoint values are stored incorrectly  
ACJ-135: Importing JSON data cause Exception

Version 2.0.1.2

ACJ-123: REST: Data handler response bad request  
ACJ-130: Essential questions about ACJ  
ACJ-131: Edit of Adabas Map impossible if reference information wrong

Version 2.0.1.1

ACJ-124: ACJ00024 and ACJ00000  
ACJ-125: Problems with endTransaction method  
ACJ-127: REST: Data handler response bad request

Version 2.0.1.0

ACJ-113: vulnerable third party tool log4j  
ACJ-117: Creation of a new Adabas file with Adabas Data Designer not possible  
ACJ-118: Import fail if no Adabas MAP definition file is available  
ACJ-119: Wrong FormatBuffer generated  
ACJ-120: Read data: field missing

Version 2.0.0.1

ACJ-54: DataDesigner: deselect all fields ignores subfields of sub- and super-descriptors  
ACJ-72: DataDesigner: Filter Fields in DataView2() selcts only level 1 fields.  
ACJ-83: DataDesigner -> Create New File Dialog: creation of the meta data file fails  
ACJ-102: close() caused by Exception stores records  
ACJ-103: Memory leak storing records  
ACJ-104: Too many closes breaks Transaction  
ACJ-105: Eclipse Oxygen failed to work  
ACJ-106: Data Designer menu entries not working

Version 2.0.0

ACJ-102: close() caused by Exception stores records  
ACJ-101: Search criteria using Packed cause Exception  
ACJ-100: End of Transaction ISN array < number of transaction  
ACJ-98: vulnerable 3rd party logback used  
ACJ-93: Rest Server access with huge result lists using JSON gets MemoryException

Version 1.1.2

ACJ-95: DataDesigner: not possible to create map file using existing adabas demo fdt file  
ACJ-94: ReadRequest#resetFieldDefinition() also deletes mapping information  
ACJ-84: Enhancement: Provide the example database as backup or

adaord file  
ACJ-80: DataDesigner: Adabas exception if the map file already exists

#### Version 1.1.1

ACJ-63: Mainframe descriptor-sorted read with offset return no record  
ACJ-85: SQL null field cause error in binary field  
ACJ-87: Descending descriptor read return ascending data  
ACJ-88: Super descriptor search with GE returns incorrect data  
ACJ-89: Not possible to reset result in ReadRequest  
ACJ-90: Error when opening file in Adabas Data Designer

#### Version 1.1

ACJ-5: LA fields don't support partial lob format buffer on Mainframe  
ACJ-39: DataDesigner: Type for sub-field of PE group not shown  
ACJ-40: Creating wrong file number for new Adabas Data Designer file  
ACJ-41: Validation of Javadoc jar failed  
ACJ-42: Alpha field types changed to LOB in Adabas Data Designer  
ACJ-45: Long names with white spaces  
ACJ-47: DataDesigner: subfields of Super- and Sub-Descriptor fields are now duplicated  
ACJ-49: DataDesigner: modify fields using doubleclick seems to be ignored  
ACJ-50: DataDesigner: null pointer exception using edit map  
ACJ-52: DataDesigner: select two subfields of a period group displays data of both fields in one column (duplicated)  
ACJ-53: DataDesigner: missing explanation for NB option of LOB-field (same as classic view)  
ACJ-55: DataDesigner: rename file seems to be ignored  
ACJ-56: DataDesigner: rename of database - cancel required using task manager (windows)  
ACJ-59: DataDesigner: create file/map returns Adabas response 40 using Finish button  
ACJ-60: DataDesigner: short names not unique

#### Version 1.0.1

ACJ-2: NC Null value indicator cause rsp 55  
ACJ-3: ACJ Map hierarchy not valid  
ACJ-4: Deep PE groups cause problems during parser  
ACJ-6: Field level information lost using maps  
ACJ-9: Online calls to Net-Work 7.6 cause sporadic disconnects  
ACJ-10: QUERY: PopUp Window cannot be closed anymore - need to kill Data Designer using Taskmanager  
ACJ-11: QUERY: mapfile without any fields generated  
ACJ-12: REST : start server failed on Linux - misleading error message  
ACJ-15: REST : error for input string returned using "Free Form"  
ACJ-17: QUERY : Data Designer fails to start on Linux  
ACJ-19: QUERY : any changes in field editor seems to be ignored  
ACJ-29: DataDesigner: it's not possible to use mis.fdt to create

mapping for an existing Adabas Demo File  
ACJ-36: DDM are exported by SYSOBJH not SYSTRANS

#### 7. Adabas Client for Java on z/OS USS

=====

To use Adabas Client for Java on z/OS USS, the prerequisite Adabas Client for z/OS is needed. In addition, the ACJ package for z/OS USS contains libraries needed to call local Adabas databases on z/OS host.

Refer to the Adabas Client for z/OS Readme to read installation steps. Please source sagenv.new, which should be located on top of both Adabas Client and Adabas Client for Java extracted packages.

Adabas Client for Java supports both Java on z/OS versions, 32-Bit and 64-Bit. By default the 64-Bit libraries are used. To use Java 32-Bit versions you need to set the ACL32 environment variable to any value. Example:  
export ACL32=on  
Source sagenv.new after that.

The Adabas Client for Java delivers two JCL script examples in the "examples" directory.  
Please ask Software AG support to get the corresponding prerequisite.

#### 8. Adabas Client for Java in z/OS CICS

=====

Adabas Client for Java can be used inside a CICS java program accessing Adabas using the Adabas CICS Link Routine. To enable you need to install the Adabas Client for Java archive called CORIC for Adabas Client for Java.  
Please ask Software AG support to get the corresponding prerequisite.

#### 9. Adabas Client for Java Data Designer plugin

=====

A Data Designer Eclipse plugin is part of the Adabas Client for Java installation. Up to now, the Software AG Designer integration is not done. To install the Eclipse plugin, add the update-site directory inside the AdabasDataDesigner to the Eclipse installation:  
Help -> Install new Software ... -> Add.. -> Local..  
Browse to the update-site directory inside the Adabas Client for Java Data Designer installation. Currently, the Data Designer plugin is not encrypted.  
After the installation, a new Adabas perspective is available inside Eclipse.

#### 10. Known Issues

- =====
- o After uninstalling "Adabas Client for Java" the Adabas Data Designer directory needs to be removed manually.
  - o Adabas Client for Java API uses SLF4j (<http://www.slf4j.org>) for logging and tracing facilities. SLF4J can be used with various log

systems underneath, Adabas Client for Java uses Log4j per default. A configuration template "log4j.properties" is part of the distribution. If this property file is not part of the classpath, the following warning will appear:

```
log4j:WARN No appenders could be found for logger
(com.softwareag.adabas...).
log4j:WARN Please initialize the log4j system properly.
log4j:WARN See
http://logging.apache.org/log4j/1.2/faq.html#noconfig
for more info.
```

However, if the slf4j Java archives are not part of the classpath, following message will appear:

```
SLF4J: Failed to load class "org.slf4j.impl.StaticLoggerBinder".
SLF4J: Defaulting to no-operation (NOP) logger implementation
SLF4J: See http://www.slf4j.org/codes.html#StaticLoggerBinder for
further details.
```

- o On NUMA-Machines with SUSE Enterprise Linux the Adabas Client for Java API might show bad performance. This depends on the machine. If such bad performance is observed, set the environment variable `ACL_NOTIFY_DISABLE=1`.
- o Adabas Client for Java API contains platform-specific libraries needed to use Adabas Client libraries. The platform library will be extracted to the `java.io.tmpdir` defined by Java. The filesystem of the directory needs to be enabled for code execution (e.g. not mount option `noexec`)

---

## 11. Copyright Information

---

Copyright (c) 2015-2021 Software AG, Darmstadt, Germany and/or Software AG USA Inc., Reston, VA, USA, and/or its subsidiaries and/or its affiliates and/or their licensors.

The name Software AG and all Software AG product names are either trademarks or registered trademarks of Software AG and/or Software AG USA Inc. and/or its subsidiaries and/or its affiliates and/or their licensors.

Other company and product names mentioned herein may be trademarks of their respective owners.

Detailed information on trademarks and patents owned by Software AG and/or its subsidiaries is located at <https://softwareag.com/licenses>

This software may include portions of third-party products. For third-party copyright notices, license terms, additional rights or restrictions, please refer to "License Texts, Copyright Notices and Disclaimers of Third Party Products". For certain specific third-party license restrictions, please refer to section E of the Legal Notices available under "License Terms and Conditions for Use of Software AG Products/Copyright



and Trademark Notices of Software AG Products".  
These documents are part of the product documentation, located at  
<https://softwareag.com/licenses>  
and/or in the root installation directory of the licensed product(s).