23.0

SWIFT MT940 Data Model

for use with Invantive SQL

invantive
the SQL company

Auteursrecht

Deze handleiding is een naslagwerk bedoeld om het gebruik te verduidelijken. Indien gegevens in de voorbeeldafbeeldingen overeenkomen met gegevens in uw systeem, dan is de overeenkomst toevallig.

Belangrijke Informatie over Veiligheid en Gebruik

Beoogd gebruik en beperkingen: Deze software, ontwikkeld door Invantive, is ontworpen om een verscheidenheid aan zakelijke en informatietechnologische gegevensverwerkingsfuncties te ondersteunen, zoals boekhouding, financiÃ«le rapportage en verkooprapportage. Het is belangrijk om op te merken dat deze software niet is ontworpen, getest of goedgekeurd voor gebruik in omgevingen waar een storing of defect kan leiden tot levensbedreigende situaties, ernstige fysieke schade of milieuschade. Dit omvat, maar is niet beperkt tot:

- Nucleaire faciliteiten: de software mag niet worden gebruikt voor operaties of functies die verband houden met de controle, het onderhoud of de werking van nucleaire faciliteiten.
- Defensie en militaire toepassingen: deze software is niet geschikt voor gebruik in defensiegerelateerde toepassingen, inclusief maar niet beperkt tot wapenbeheer, militaire strategieplanning of andere aspecten van nationale defensie.
- Luchtvaart: de software is niet bedoeld voor gebruik in de bediening, navigatie of communicatiesystemen van vliegtuigen of luchtverkeersleidingomgevingen.
- Gezondheidszorg en medicijnproductie: deze software mag niet worden gebruikt voor de werking van medische apparaten, de analyse van patiÃ«ntgegevens voor kritieke gezondheidsbeslissingen, farmaceutische productie of medisch onderzoek waarbij een storing of defect de gezondheid van de patiÃ«nt kan beÃ¯nvloeden.
- Verwerking van chemische en/of gevaarlijke stoffen: deze software is niet bedoeld voor het beheer, de controle of de operationele aspecten van chemische fabrieken of faciliteiten voor de verwerking van chemische en/of gevaarlijke stoffen. Elke storing in de software die in deze omgevingen wordt gebruikt kan leiden tot gevaarlijke chemische lozingen, explosies of milieurampen.
- Transport- en verkeerscontrolesystemen: de software mag niet worden gebruikt voor de besturing, bediening of het beheer van transportsystemen, waaronder de besturing van spoorwegsignalen, metrosystemen of verkeerslichten. Storingen in dergelijke kritieke systemen kunnen tot ernstige ongelukken leiden en de openbare veiligheid in gevaar brengen.
- Energienetwerk- en nutsbesturingssystemen: deze software is niet ontworpen voor de besturing of bediening van energienetwerksystemen, waaronder elektrische onderstations, besturingssystemen voor hernieuwbare energie of besturingssystemen van waternutsbedrijven. Het falen van software op deze gebieden kan leiden tot aanzienlijke stroomonderbrekingen, onderbrekingen in de watervoorziening of andere storingen in openbare voorzieningen, waardoor gemeenschappen in gevaar kunnen komen en grote schade kan worden aangericht.
- Andere omgevingen met een hoog risico: alle andere kritieke infrastructuren en omgevingen waar een storing in de software kan leiden tot aanzienlijke schade aan personen of het milieu.

Gebruikersverantwoordelijkheid: gebruikers moeten ervoor zorgen dat ze het beoogde gebruik van de software begrijpen en de software niet gebruiken in een omgeving die buiten het beoogde doel valt. Het is de verantwoordelijkheid van de gebruiker om de geschiktheid van de software voor de beoogde toepassing te beoordelen, vooral in scenario's die een risico kunnen vormen voor leven, gezondheid en/of milieu.
Afwijzing van aansprakelijkheid: Invantive wijst elke verantwoordelijkheid af voor schade, letsel of wettelijke gevolgen die voortvloeien uit het gebruik of misbruik van deze software in verboden en/of onbedoelde toepassingen.

Inhoud

1 SQL Driver for SWIFT MT940 Rabobank

Invantive SQL is the fastest, easiest and most reliable way to exchange data with SWIFT MT940 Rabobank.

Use the "Search" option in the left menu to search for a specific term such as the table or column description. When you already know the term, please use the "Index" option. When you can't find the information needed, please click on the Chat button at the bottom or place your question in the user community. Other users or Invantive Support will try to help you to our best.

Bank statement exchange format.

The SWIFT MT940 Rabobank driver covers 2 tables and 87 columns.

SWIFT MT940 Rabobank Clients

Invantive SQL is available on many user interfaces ("clients" in traditional server-client paradigma). All Invantive SQL statements can be exchanged with a close to 100% compatibility across all clients and operating systems (Windows, MacOS, Linux, iOS, Android).

The clients include Microsoft Excel, Microsoft Power BI, Microsoft Power Query, Microsoft Word and Microsoft Outlook. Web-based clients include Invantive Cloud, Invantive Bridge Online as OData proxy, Invantive App Online for interactive apps, Online SQL Editor for query execution and Invantive Data Access Point as extended proxy.

For technical users there are command-line editions of Invantive Data Hub running on iOS, Android, Windows, MacOS and Linux. Invantive Data Hub is also often used for enterprise server applications such as ETL. High-volume replication of data taken from SWIFT MT940 Rabobank into traditional databases such as SQL Server (on-premise and Azure), MySQL, PostgreSQL and Oracle is possible using Invantive Data Replicator. Invantive Data Replicator automatically creates and maintains SWIFT MT940 Rabobank datawarehouses, possibly in combination with data from over 70 other (cloud) platforms. Data Replicator supports data volumes up to over 1 TB and over 5.000 companies. The on-premise edition of Invantive Bridge offers an SWIFT MT940 Rabobank ADO.net provider.

Specifications

The SQL driver for SWIFT MT940 Rabobank does not support partitioning. Define one data container in a database for each company in SWIFT MT940 Rabobank to enable parallel access for data from multiple companies.

An introduction into the concepts of Invantive SQL such as databases, data containers and partitioning can be found in the Invantive SQL grammar.

The configuration can be changed using various attributes during log on and use. A full list of configuration options is listed in the driver attributes 2.

The catalog name is used to compose the full qualified name of an object like a table or view. The schema name is used to compose the full qualified name of an object like a table or view. On SWIFT MT940 Rabobank the comparison of two texts is case sensitive by default.

Changes and bug fixes on the SWIFT MT940 Rabobank SQL driver can be found in the release notes. There is currently no specific section on the Invantive forums for SWIFT MT940 Rabobank. Please reach out to other users of SWIFT MT940 Rabobank by leaving a question or contact request.

Driver code for use in settings.xml: `SwiftMt940Rabo`

Alias: `mt940rabo`

Recommended alias: `mto`

Status: Non-production

Partition Label: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

General documentation on SWIFT MT940 Rabobank is available at http://www.sepaforcorporates.com/swift-for-corporates/account-statement-mt940-file-format-overview/

Updated: 15-06-2022 21:33 using Invantive SQL version 22.0.232-PROD+3445.

2 SQL Driver Attributes for SWIFT MT940 Rabobank

The SQL driver for SWIFT MT940 Rabobank has many attributes that can be finetuned to improve handling in scenarios with unreliable network connections to the SWIFT MT940 Rabobank server or high-volumes of data. Also, many drivers have driver-specific attributes to finetune actual behaviour or handle data not matching specifications.

The SWIFT MT940 Rabobank driver attributes are assigned a default value which seldom requires change. However, changes can be applied when needed on four levels, which are reflected in the table below by separate checkmarks:

- Connection string: the connection string from the settings*.xml file and applied during log on.
- Set SQL statement: a set SQL-statement to be executed once connection has been established.
- Drivers file: the providers.xml file (obsolete starting release 17.32).
- Log on: value to be specified interactively by user during log on in a user interface.

The connection string for SWIFT MT940 Rabobank can be found in the settings*.xml file used for the database. Settings*.xml files are typically located in the `%USERPROFILE%\invantive` folder in most deployment scenarios. The reference manuals contain instructions how to relocate the settings*.xml files. Each data container of a database in the connection string can have a `connectionString` element specifying the name and values of attributes. Both name and value must be properly escaped according to XML-semantics. Actual application of the value is solely done during log on. A new connection must be established to change the value of a driver attribute using a connection string.

The set SQL statement can be executed after log on. The syntax is: `set NAME VALUE`, or for a distributed database: `set NAME@ALIAS VALUE`. In some scenarios you may need to enclose the driver attribute name in square brackets to escape it from parsing, for instance when a reserved SQL keyword is part of the name. The new value takes effect straight after execution of the set-statement. The set-statement can be executed as often as needed during a session.

Driver attributes that can be interactively set to a value are typically presented in the log on window. Depending on the platform and design decisions of the user interface designer, some or all of the available driver attributes can have been made available.

The SWIFT MT940 Rabobank driver can be configured using the following attributes:

Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers File	Set from Log On
analysis-enforce-row-uniqueness	Use for analysis only! Enforce rows to be unique.	Shared	False	✓	✓	✓	
bulk-delete-page-size-rows	Number of rows to delete per batch when bulk deleting	Shared	10000	✓	✓	✓	
bulk-insert-page-size-bytes	Approximate maximum size in bytes of batch when bulk inserting	Shared	10000000	✓	✓	✓	
bulk-insert-page-size-rows	Number of rows to insert per batch when bulk inserting	Shared	10000	✓	✓	✓	
directories	{res:itgen_provider_attribute_directories_description}		c:\temp	✓	✓	✓	✓
extension	{res:itgen_provider_attribute_extension_description}		*.swi	✓	✓	✓	✓
force-case-sensitive-identifiers	Consider identifiers as case-sensitive independent of the platform capabilities.	Shared	False	✓	✓	✓	
forced-casing-identifiers	Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.	Shared		✓	✓	✓	
invantive-sql-compress-sparse-arrays	Whether to compress sparse arrays in result sets during compression.	SQL Engine V1	True	✓	✓	✓	
invantive-sql-correct-invalid-date	Whether to correct dates considered invalid since they are before 01-01-1753. When nullable, they are removed. Otherwise they are replaced by 01-01-1753.	SQL Engine V1	False	✓	✓	✓	
invantive-sql-forward-filters-to-data-containers	Whether to forward filters to data containers.	SQL Engine V1	True	✓	✓	✓	
invantive-sql-share-byte-arrays	Whether to share the memory used by identical byte arrays in result sets during compression.	SQL Engine V1	True	✓	✓	✓	
invantive-sql-share-strings	Whether to share the memory used by identical strings in result sets during compression.	SQL Engine V1	True	✓	✓	✓	
invantive-sql-shuffle-fetch-results-data-containers	Whether to shuffle results fetched from data containers.	SQL Engine V1	False	✓	✓	✓	
invantive-use-cache	Whether to cache the results of a query.	SQL Engine V1	True	✓	✓	✓	
log-directory	Directory where the text messages are stored		c:\temp	✓	✓	✓	
log-native-calls-to-disk-max-events	Maximum number of events to register from last activation.	Shared		✓	✓	✓	
log-native-calls-to-disk-max-seconds	Maximum number of seconds to register from last activation.	Shared		✓	✓	✓	

Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers File	Set from Log On
log-native-calls-to-disk-on-error	Registers native calls to data container backend as disk files when an error occurred.	Shared	False	✓	✓	✓	
log-native-calls-to-disk-on-success	Registers native calls to data container backend as disk files when successful.	Shared	False	✓	✓	✓	
log-native-calls-to-trace	Log native calls to data container backend on the trace.	Shared	False	✓	✓	✓	
log-text	Whether to log the text messages exchanged to disk		False	✓	✓	✓	
max-erroneous-files	{res:itgen_max_erronerous_files_description}		0	✓	✓	✓	✓
maximum-length-identifiers	Non-default maximum length in characters of identifier names.	Shared		✓	✓	✓	
max-url-length-accepted	The maximum accepted URL length before raising an error.	Shared	8000	✓	✓	✓	
max-url-length-desired	The maximum desired URL length.	Shared	8000	✓	✓	✓	
partition-slot-based-rate-limit-length-ms	Total length in ms across all slots of a partition-based rate limit.	Shared	60000	✓		✓	
partition-slot-based-rate-limit-slots	Number of slots per partition-based rate limit. Null means no slot-based rate limit	Shared		✓		✓	
pre-request-delay-ms	Pre-request delay in milliseconds per request.	Shared	0	✓	✓	✓	
requested-page-size	Preferred number of rows to exchange per round trip; only effective on limited platforms such as AFAS Online	Shared		✓	✓	✓	
requests-parallel-max	Maximum number of parallel data requests from individual partitions on the data container.	Shared	32	✓	✓	✓	
slot-based-rate-limit-length-ms	Total length in ms across all slots of a slot-based rate limit.	Shared	60000	✓		✓	
slot-based-rate-limit-slots	Number of slots of a slot-based rate limit. Null means no slot-based rate limit	Shared		✓		✓	
standardize-identifiers	Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.	Shared	True	✓	✓	✓	
standardize-identifiers-casing	Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.	Shared	True	✓	✓	✓	

3 BankStatementLines: SWIFT MT940 Rabobank Bank Statement Lines

Catalog: Swift

Schema: Swift

Label: Bank Statement Lines

This is a read-only table. The SWIFT MT940 Rabobank API may not support changing the data or the Invantive SQL driver for SWIFT MT940 Rabobank does not cover it. In the latter case, please use the table `NativePlatformScalarRequests` to upload data to the SWIFT MT940 Rabobank API.

Table Columns

The columns of the table `BankStatementLines` are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
AccountNumberCounterPary	string		☐	
AccountServicingInstitutionsReference	string		☐	
Amount	decimal		☐	
BatchReference	string		☐	
CapitalCode	string		☐	
Charges	string		☐	
ClientOrderedRef	string		☐	
CompensationAmount	string		☐	
CounterPartyBeneficiaryAddress	string		☐	
CounterPartyBeneficiaryId	string		☐	
CounterPartyBeneficiaryName	string		☐	
CounterPartyIdAccountNumber	string		☐	
CounterPartyIdBicCode	string		☐	
CounterPartyIdCity	string		☐	
CounterPartyIdName	string		☐	
CounterPartyOriginatorAddress	string		☐	
CounterPartyOriginatorId	string		☐	
CounterPartyOriginatorName	string		☐	
CreditorId	string		☐	
DebitCredit	string		☐	
DebtorId	string		☐	
EndToEndReference	string		☐	
EntryDateMmDd	int32		☐	
ExchangeRate	string		☐	
FileLineNumber	int32		☐	
FileName	string		☑	
InformationToAccountOwner	string		☐	

Name	Data Type	Label	Required	Documentation
InterbankSettlementDate	string		☐	
IntermediaryBank	string		☐	
MandateId	string		☐	
MandateReference	string		☐	
OriginalAmount	string		☐	
PurposeCode	string		☐	
ReferenceAccountOw ner	string		☐	
RemittanceInformation	string		☐	
ReturnCode	string		☐	
ReverseDebitCredit	boolean		☐	
StatementAccountCurrency	string		☐	
StatementAccountIdentification	string		☐	
StatementClosingAvailableBalance Amount	decimal		☐	
StatementClosingAvailableBalance DebitCredit	string		☐	
StatementClosingAvailableBalance EntryDate	datetime		☐	
StatementClosingBalanceAmount	decimal		☐	
StatementClosingBalanceDebitCred it	string		☐	
StatementClosingBalanceEntryDate	datetime		☐	
StatementCurrencyCode	string		☐	
StatementForw ardValueBalanceA mount	decimal		☐	
StatementForw ardValueBalanceDe bitCredit	string		☐	
StatementForw ardValueBalanceEn tryDate	datetime		☐	
StatementLineNumber	int32		☐	
StatementOpeningBalanceAmount	decimal		☐	
StatementOpeningBalanceDebitCre dit	string		☐	
StatementOpeningBalanceEntryDat e	datetime		☐	
StatementSequenceNumber	int32		☐	
StatementStatementNumber	int32		☐	
StatementTransactionReferenceNu mber	string		☑	
StatementTransactionReferenceNu mberEntryDate	datetime		☐	
SupplementaryDetails	string		☐	
TransactionType	string		☐	
UltimateCounterpartyCreditorId	string		☐	
UltimateCounterpartyCreditorName	string		☐	

Name	Data Type	Label	Required	Documentation
UltimateCounterpartyDebtorId	string		☐	
UltimateCounterpartyDebtorName	string		☐	
UltimateCounterpartyOnBehalfId	string		☐	
UltimateCounterpartyOnBehalfName	string		☐	
Unparseable	string		☐	
ValueDate	datetime		☐	

4 BankStatements: SWIFT MT940 Rabobank Bank Statements

Catalog: Swift

Schema: Swift

Label: Bank Statements

This is a read-only table. The SWIFT MT940 Rabobank API may not support changing the data or the Invantive SQL driver for SWIFT MT940 Rabobank does not cover it. In the latter case, please use the table `NativePlatformScalarRequests` to upload data to the SWIFT MT940 Rabobank API.

Table Columns

The columns of the table `BankStatements` are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
AccountCurrency	string		☐	
AccountIdentification	string		☐	
ClosingAvailableBalanceAmount	decimal		☐	
ClosingAvailableBalanceDebitCredit	string		☐	
ClosingAvailableBalanceEntryDate	datetime		☐	
ClosingBalanceAmount	decimal		☐	
ClosingBalanceDebitCredit	string		☐	
ClosingBalanceEntryDate	datetime		☐	
CurrencyCode	string		☐	
FileName	string		☑	
ForwardValueBalanceAmount	decimal		☐	
ForwardValueBalanceDebitCredit	string		☐	
ForwardValueBalanceEntryDate	datetime		☐	
OpeningBalanceAmount	decimal		☐	
OpeningBalanceDebitCredit	string		☐	
OpeningBalanceEntryDate	datetime		☐	
SequenceNumber	int32		☐	
StatementNumber	int32		☐	

Name	Data Type	Label	Required	Documentation
TransactionReferenceNumber	string		☑	
TransactionReferenceNumberEntryDate	datetime		☐	

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