



# FEATURE LIST

**QXchange** is flexible, easy to use, data integration software. It can quickly and easily transfer data between many standard data formats and applications, including MS Access, Excel, Comma delimited flat file, MS SQL Server, My SQL, QuickBooks, Salesforce.com, SAP Business One and others. It allows simple and clear setup of extraction, transformation and loading instructions to exchange data between different formats. The instructions are stored and managed as profiles.

## Architecture

Feature	Description
Extraction	Extraction module allows the specification of various data sources.
Transformation	Transformation allows the conversion of various data items.
Loading	Loading module allows the creation or update of output data items.
Profiles	ETL instructions are coded and saved as profiles for re-execution.
Data Access Plug-ins	QXchange supports access to many different data formats. These data formats can be types of files (fixed length, comma delimited), type of database (Access, MySQL) or type of application (QuickBooks, SAP Business One). For every data format supported, there is a separate component called a Data Access Plug-in (DAP).
Scheduling	Profiles can be established to run at specified times. Scheduled processes can be recurring. Multiple schedules such as daily/weekly can be set up. Scheduling is integrated with Windows Scheduler.
Process Logging	Process execution is logged for review.
Error Logging	Errors during the ETL process are logged. At the end of the process, the errors can be reviewed.
System Variables	System variables such as \$Current_Date can make available system level values for the profiles. These values can be set by the user as well. These variables can be used as part of the transformation process and can affect target data items. These variables can be also used on source filter expressions.
Formula Expression	QXChange allows the creation of formula expressions using math, string and logical operators combined with data items, variables, constants and functions. Provides almost any kind of data manipulation.
Installation	This is an on-premises application and runs within the customer firewall.

## Functional Features

### Extraction

Feature	Description
Select Source Database	Select the proper source database easily for the given DAP. Specify file name, location and connection information such as user id and password.
Test Connection	Verify that a particular source dataset definition is a working connection.
Encryption Security	Critical information such as User and Password are encrypted with Blowfish 128 bit encryption.
Show full schema	Once source dataset is specified, then the schema of the recordset objects and data items are presented in the UI.
Select Dataset	Specific datasets can be selected and data can be mapped to export. Multiple datasets can be selected and data extracted in a single run.
Individual Data item Selection	Specific data items can be selected to be output.



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Extract from tables	Table objects from source can be extracted from.
Extract from Views/Queries	Views/Query objects from source can be extracted from.
Filter Input data	The source data can be limited further by applying filters to the data. The filters can be complex expressions using multiple data items in combination.
View Data	Any dataset object can be selected and the data from that can be immediately viewed in a datasheet view, without actually running the ETL process. The data can be copied and pasted into Excel.

## Transformation

Feature	Description
Data Item Mapping	Data items can be mapped from any source recordset to target recordset. While mapping the data item names do not have to be the same.
Data conversion	Data can be converted from one format to a different format, such as from text to number and vice versa.
Data combination	Data from multiple data items can be combined together.
Constant data	Constant data items can be assigned to target data items.
Lookup Value	Lookup data from additional dataset objects for specific record and data item values and use the resulting values in the target.
Formula Builder	Build a formula using math, string operations to create target data item. Use functions as part of these formulas.
Function	Use a complete set of data conversion functions, including string, data and financial functions to affect the target data item. Use multiple source data items in these expressions.

## Loading

Feature	Description
Create dataset	For some dataset formats such as Excel and Text files, create a brand new file. Replace the file if it exists, optionally. Create all the data items and complete schema necessary.
Data Item Mapping	Data items can be mapped from any source recordset to target recordset. While mapping the data item names do not have to be the same.
Check for errors	Log update and other errors as part of the loading process.

## Functions

Feature	Description
Standard functions	QXchange has a full complement of pre-built excel-like functions to apply against data items. This provides very sophisticated data manipulation activities. The following type of functions are included: -Mathematical and Trigonometric Functions -String Functions -Date & Time Functions -Logical and Conversion Functions



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	-Financial Functions -Statistical Functions -Conversion Functions
Formula Expression	QXChange allows the creation of formula expressions using math, string and logical operators combined with data items, variables, constants and functions. Provides almost any kind of data manipulation.
Constants	Constant values (values that are not available in the incoming data) or very standard values can be defined and used in data manipulation or just setting a target data item. E.g. String example: "USA" Logical example: False Math example: 50
Operators	A comprehensive set of operators are included to be used in Formula expressions: Unar plus (+) and minus (-) Percentage (%) Bitwise Not (~) Bitwise And (&) Bitwise Implication (^~), Equivalence (^&) and Exclusive Or (^ ) Bitwise Or ( ) Power (^) Multiplication (*), Division (/) and Safe Division (//) Addition (+) and Subtraction (-) Comparison Operators (<, <=, >, >=, =, <>) Logical Not (Not) Logical And (And) Logical Or (Or)
Variables	Temporary variables can be defined and used in the expressions. E.g. Comm_Percent_Var
Formula Builder	Build a formula using math, string operations to create target data item. Use functions as part of these formulas.
String Functions	There are many standard string functions. Here are a few samples: Left, Mid, Right: to extract portions of strings Len: to get length of a string Concatenate: to join strings Proper: to capitalize strings Search: to find strings within strings Value: to convert to a number
Date and Time Functions	There are many standard date and time functions. Here are a few samples: Datevalue: to convert a string to a date Day: to extract day value from a date Month: to extract month value from a date Year: to extract year value from a date Hour: to extract hour from a date time
Logical Functions	It is possible to setup an If clause to do conditional actions while manipulating data. IF



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## Data Access Plug-Ins

Feature	Description
Data Access Plug-ins	QXchange supports access to many different data formats. These data formats can be types of files (fixed length, comma delimited), type of database (Access, MySQL) or type of application (QuickBooks, SAP Business One). For every data format supported, there is a separate component called a Data Access Plug-in (DAP). This allows sophisticated data format specific operations to be done. The DAPs are also optimized for the underlying data structures. The DAPs also enforce the security required by the underlying data structure.
Text File	This DAP allows access to text files. Text files can be fixed length or delimited. Header labels can be used with these files.
Excel	This DAP allows access to Excel files. Individual worksheets within an Excel spreadsheet can be accessed. Header labels can be used.
MS Access	This DAP supports the Microsoft Access database. Tables and query objects can be accessed. New Tables can be created.
MySQL	This DAP supports the MySQL database format.
MS SQLServer	This DAP supports the MS SQLServer database format.
QuickBooks	This DAP supports the QuickBooks file format. It uses the vendor supplied QuickBooks SDK to do all the access and hence is compatible with all versions supported by the SDK. Secure access to the environment is maintained.
Salesforce.com	This DAP supports the Salesforce.com hosted environment. It uses the vendor supplied AppExchange SDK and API to do all the access and hence is compatible with all versions supported by the vendor. Secure access to the hosted environment is maintained. Standard and custom salesforce.com objects can be accessed.
SAP Business One	This DAP supports the SAP Business One file format. It uses the vendor supplied SAP B1 SDK to do all the access and hence is compatible with all versions supported by the SDK. Secure access to the environment is maintained.
ODBC	This DAP supports the use of ODBC connections. This will allow access to any data format supported by an ODBC driver.