

A Technical Overview

Flow Software Limited

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Flow Software Capabilities

Flow is a middleware solution providing the conduit through which disparate systems in an organisation's IT infrastructure may communicate with each other and with external systems, including those of trading partners. Flow may simply move data from one system to another, or it may apply processes to transform, reformat or restructure the data as necessary for one system to communicate effectively with another. Flow describes and coordinates all aspects of the movement of data between these systems without requiring any changes to the systems themselves.

A graphical user interface is provided for creating and maintaining configurations that describe the data sources and any transformations involved in moving data between them. Processes may be executed manually via the graphical user interface or in unattended mode using Flow Service to execute processes either according to a defined schedule or in response to external stimuli such as files arriving in a specified location. Additional tools are provided for monitoring the state of processes running in Flow Service and for viewing the results and outputs of those processes.

Flow can be used by organisation of any size and in any industry. It is particularly relevant to businesses and other organizations with data management issues across multiple applications or databases, or seeking to minimize dependence on manual re-keying of data between systems.

System Requirements

Minimum Hardware

1 GHz 32-bit (x86) or 64-bit (x64) processor

1 GB RAM (32-bit) or 2 GB RAM (64-bit)

0.5 GB available hard disk space

Operating Systems

| Desktop Operating Systems | Server Operating Systems |
|---------------------------|--------------------------|
| Windows XP Pro | Windows Server 2003 |
| Windows Vista | Windows Server 2008 |
| Windows 7 | |

* Flow contains both 32-bit and 64-bit components. The 32-bit components of Flow are supported on 64-bit operating systems where 32-bit compatibility is enabled.

Application Components

Flow consists of the following components.

| Component | Description |
|---------------|--|
| Flow Designer | A Windows application for graphical configuration of workflows |
| Flow Service | A Windows service application for scheduled and event based execution of workflows |
| Flow Web | A web application for managing Flow and publishing web services |
| Flow API | A COM object for embedding Flow functionality into your own application |

Third Party Components

For your convenience a number of third party components are provided as part of the Flow Installation media.

| Component | | Description |
|---|----------|--|
| Microsoft SQL Server 2005 Express Edition | optional | Used by Flow to store its configuration (if desired). |
| Microsoft SQL Compact 3.5 | optional | Used by Flow to store its configuration (if desired). This is normally used with embedded installations. |
| Microsoft .Net Framework 3.5 | required | Flow requires Microsoft .Net Framework 3.5 to operate. |
| Microsoft XML 6.0 | required | Flow requires Microsoft XML 6.0 to operate. |
| Microsoft Excel | optional | Flow is able to output reports to Excel format files without needing Excel to be installed. To read data from Excel files it is required that Excel is installed on the workstation (for designing and testing the configuration) and the server (for executing the configuration). |
| Database Drivers | required | Drivers are provided for all database platforms supported by Flow. In most cases you will <i>also</i> require the client software for each supported database you wish to use, provided by the database vendor. |
| Application Support | required | Flow provides support for direct connection to a number of specific 3 rd party applications such as QuickBooks, SAP, Sage etc. This typically requires additional software, provided by the application vendor in each case. |

Installation

Flow may be installed on a server either On-Premise or Hosted, or it may be installed on an On-Premise workstation computer.

Components of Flow may be installed on different computers as required. For example Flow Service may be installed onto a server and Flow Designer on one (or more) workstation computers.

Flow requires a Microsoft SQL Server database in which to store configuration data. Flow will work with an existing SQL Server installation if desired, or you may install the provided Microsoft SQL Server Express or SQL Compact database engine for Flow to use if you wish.

Upgrades are performed by running the latest application installer over the top of your installation.

Licensing

Flow is licensed on the basis of Production Computer use.

A Production Computer is any computer that is running a copy of Flow Service for the purposes of executing a Flow configuration with live data.

With deployment of Flow on Production Computer, Flow Service may be installed on additional computers for the purposes of configuration development and commissioning and/or testing.

| License | Description |
|-----------|---|
| Annual | One Production Computer for one year |
| Monthly | One Production Computer for one month |
| Perpetual | One Production Computer with on-going Annual Maintenance (17.5% of initial license cost) |
| Lite | One Production Computer limited to two applications (MYOB, SAP etc), databases or trading partners with a maximum of 20 workflows Available on an Annual or Monthly basis only |

User Management

Configurations in Flow provide the ability to restrict access to specific modules within each configuration to specified users. Permissions that may be granted to users are Read, Write, Execute, and Full access.

Users identified within the Flow Configuration may be associated with a Windows user account for use with integrated Windows Authentication.

Data Access

SQL Database Systems

Flow can connect to the following SQL database systems. Note that client libraries from the database vendor may be required in each case.

| SQL Platforms | | |
|-----------------------------------|-----------------------------|--------------------------|
| Microsoft SQL Server 2000 & above | Microsoft Access 97 & above | MySQL 4.x & above |
| Oracle 8i & above | Interbase 5.6 & above | Firebird |
| Informix | DB2 | MYOB |
| QuickBooks (with QODBC) | Any ODBC compliant system | Any ADO compliant system |
| PostgreSQL | | |

Files

Flow can read or write data from various file formats.

| File Type | Description |
|-----------|---|
| Text | Text files containing fixed-length or delimited records. Such files may be "Flat" (identical record structure for each record) or "Hierarchical" (different record structures for master/detail records). |
| XML | Any XML file with an accompanying XML Schema definition (XSD), including GS1 |
| EDIFACT | Any EDIFACT format file and compliant derivatives such as EANCOM etc |
| ANSI X12 | Any ANSI X12 format file and compliant derivatives such as HIPAA etc |

Web Services

Flow can consume or publish web services conforming to the WSDL standards for RPC/Literal, RPC/Encoded, or Document/Literal. Flow publishes web services in Document/Literal form. Web Service Extensions (WSE) are supported.

In addition to SOAP based web services Flow is able to exploit RESTful web services via HTTP transport support.

Transports

Flow supports the following transport protocols.

| Protocol | Description |
|-------------------|--|
| Local file access | Simple file access on local storage |
| LAN | Shared Network Folder (UNC) (Windows and SAMBA) |
| FTP/S | List, Send, and Receive using File Transfer Protocol (SSL/SSH supported) |
| SFTP | List, Send, and Receive using Secure File Transfer Protocol |
| HTTP/S | Send and receive using HTTP (SSL supported) |
| SMTP/S | Send email using SMTP (SSL supported) |
| POP/S | Receive emails using POP (SSL supported) |
| ebMS | Send and receive data using third party ebMS Messenger |
| SOAP | Send and receive data using SOAP protocol (SSL supported) |
| MSMQ | Send or receive data using Microsoft Message Queue |
| IBM MQ | Send or receive data using IBM Message Queue |

Flow supports the latest communication protocols, many of which have security functionality as part of their specification. Flow supports this security implementation wherever it is part of a protocols specification (SSL or SSH).

Security

Flow stores sensitive configuration information such as passwords using secure RC4 encryption. Secure encryption and hashing algorithms are also provided for use within Workflows.

Specific Application Support

In addition to general purpose protocols, database and file format support Flow provides specific, tailored support for the following Applications.

| Specific Applications Support | | |
|-------------------------------|------|-------------|
| QuickBooks | MYOB | Sage AccPac |
| SAP B1 | | |

Mapping Engine

Flow incorporates an advanced mapping engine.

The mapping engine supports simple drag and drop mapping of data between different data sources. In addition, a powerful, integrated scripting engine allows more complex mapping including sophisticated transformations and restructuring of data in a map where required.

| Map Engine Features | Description |
|------------------------|--|
| Drag and Drop Mapping | Associate fields in input and output data sources by simply dragging one to the other. |
| Scripting Language | Easy to learn, easy to use fully featured object oriented scripting language. |
| Built-in Functions | 800+ functions for transforming and working with data in a map. |
| User defined functions | Create your own functions to make scripts more readable and reduce potential for errors in your configuration. |
| COM Support | Access any COM object from your map script. |
| Transaction Support | Explicitly control database transactions from your map script. |
| Logging | Output helpful information to the Flow log to assist in monitoring and diagnosis of maps during development and production monitoring. |
| Preview Map | Execute a map from within the designer to test the behaviour of your map and ensure correct outputs. |

Report Writer

Flow incorporates a powerful commercial report writer for the creation of custom notifications, form layouts and labels in addition to tabular reports. Reports may be delivered directly to a printer, the screen, output to a file or sent via email.

| Report Writer Features | Description |
|------------------------|--|
| Report Style | Banded reports (Title, Header, Detail, Footer, Summary Bands) |
| Sub-Reports Support | Reports may contain sections defined as entirely separate sub-reports |
| Report Controls | Complete set of data aware and standard controls including Label, Memo, Rich Text, Check Box, Charts, Images, Shapes, Lines, Barcodes, System Variables, Regions, Cross-Tab and more |
| 1D Barcode Formats | UPC-A, UPC-E, EAN-8, EAN-13, Code39, Code128, FIM, CodaBar, MSI, Interleaved |
| 2D Barcode Formats | Datamatrix, PDF417, Maxicode |
| Scripting Language | Easy to learn, easy to use fully featured object oriented scripting language |
| Output formats | PDF, HTML, XHTML, RTF, Excel, Text, JPEG |

Flow Report Writer may be used to create reports to be performed either as part of a business process automated by Flow e.g. label printing, or to provide notification of completion or failure in a business process.

Flow Action Manager: Workflows

Flow implements an Action Manager to coordinate sequences of actions in a configuration to provide workflows for the different business processes supported by that configuration.

Action steps are provided for Maps, Reports, Plug-ins, Shell Commands, Database Connections, File Transports, Web Services, SQL Commands, Custom Script actions and more.

Workflows include transactional support for you to either roll back individual steps or the complete workflow if required.

Logging

Flow captures detailed information about each execution of a Workflow within a Log. The log is stored in the configuration database with full text searching.

Plug-ins

Map or custom script can invoke COM object services implemented using any development tool or language able to produce COM objects.

In addition, Flow supports a plug-in architecture offering greater efficiency and closer integration with the Flow software. Currently these plug- are required to be implemented using Delphi.

Summary of Relevant Terminology

Below is a summary of terminology relevant to Flow.

| Relevant Technologies | | | | |
|-----------------------|-----------------|------------------|-------------------|---------------|
| Databases | | | | |
| ADO | ODBC | SQL89 | SQL92 | |
| Files | | | | |
| Flat | Hierarchal | XML | GS1 XML | XSD |
| XSLT | EDIFACT | ANSI X12 | EANCOM | |
| Web Services | | | | |
| WSDL | SOAP | XSD | RPC/Literal | RPC/Encoded |
| Document/Literal | WSE | REST | | |
| Transports | | | | |
| File | LAN | FTP/S | SFTP | HTTP/S |
| SMTP/S | SOAP | POP/S | ebMS | MSMQ |
| IBM MQ | Web Services | | | |
| Reporting | | | | |
| Banded | User Controls | Scripting | Object Oriented | Images |
| Barcodes | | | | |
| Mapping | | | | |
| Scripting | Object Oriented | Events | XSLT | Transactional |
| Functions | | | | |
| Workflows | | | | |
| SOA | ESB | ETL | Logical Decisions | Transactional |
| Business Process | | | | |
| Logging | | | | |
| BAM | Detailed | Database Storage | Full Search | |

Flow Software's main objective is to provide leading edge integration software that gives our customers a competitive advantage, by enabling faster, smarter business results. Flow is an innovative New Zealand software company that specialises in designing, developing, and supporting middleware integration and EDI technologies. Operating from offices in Auckland and Sydney, Flow is utilized to undertake EDI with dozens of national traders and integrates seamlessly with all the popular accounting packages.

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