

# Etlworks Integrator – cloud data integration platform

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## Overview

Etlworks Integrator is an all-in-one cloud platform for all your data integration projects, regardless of data location, format and volume. It is a completely online solution and does not require installation of any local software, except for a web browser.

## Connectors

You can access data in relational databases, files, web services, and social media web sites.

Databases	Data Exchange Formats	File Storage	Web Services	Other
MS SQL Server	CSV	Local files	REST	HTTP
Oracle	Fixed length	FTP	SOAP	SMTP
MySQL	XML	SFTP	Marketo	IMAP
PostgreSQL	JSON	Amazon S3	Google Analytics	POP3
DB2	HL7 2.x	Google Cloud		Redis
Informix	HL7 3.x			MLLP
Sybase	Excel			
Snowflake	PDF			
Any JDBC	HTML			

If the connector you are looking for is not on the list, we can build it for you in no time.

## Features

### Cloud-based solution

Integrator is a completely online solution with cloud-based servers, allowing end-users to access it from any web browsers. Integrator does not require installation of any local software, except for a web browser.

## Integrating heterogeneous data sources

In Integrator, all data sources are treated equally. You can easily connect databases to files and web services, and vice versa. At the same time, Integrator supports all format-specific features. For example, it automatically generates PL/SQL code if the destination is an Oracle database or uses PostgreSQL specific syntax for MERGE (UPSERT).

## On-demand, real-time and scheduled execution

Flows created in Integrator can be scheduled or executed manually. Scheduled flows can be executed as often as every 30 seconds or triggered by an external event.

## Automatic and manual mapping

Integrator supports automatic and manual per-field mapping for all data sources, regardless of the format and location.

When automatic mapping is engaged (by default), it is assumed that the destination field names are the same as the source field names. It is also assumed that some of the source fields do not exist in the destination, and vice versa.

Manual per-field mapping is performed using graphical drag & drop interface. Integrator can suggest default mapping, the user accept it or rename fields, disable fields, add fields, define rules to calculate field values, and much more.

## Change replication

Integrator supports change replication between all data sources using the high watermark concept. High watermark is the highest level of field value that can be used for change replication.

Examples:

- Change replication between two databases: the flow pulls changed records from the source database and updates the destination database.
- Incremental database backup: the flow pulls changed records from the source database and packages them into the "update" files.
- Get recently changed records from the API and load them into any supported destination: the flow pulls changed records from the supported API or web service and loads them into any supported destination, for example a data warehouse.

Change replication can be performed in [quasi] real time (as often as every 30 seconds) or on-demand, when the flow is triggered by a call to the Integrator's end-point.

Integrator natively supports MERGE (upsert) operations for the following databases: MS SQL Server, Oracle, DB2, PostgreSQL, MySQL, Informix, and Sybase.

## Web services

Integrator supports practically any REST or SOAP based web services using a generic HTTP connector. The following authentication methods are supported:

- Basic (user name and password)
- One-step OAUTH1

- Two-step OAUTH2
- API token
- Any combination of the aforementioned methods

In addition to the generic HTTP connector, Integrator includes a growing list of connectors to the third-party APIs:

- Marketo
- Google Analytics
- Journey

In many cases, it is possible to develop a connector to the third-party API not currently on the list or to a service, which does not have a public API at all. For example, one of our clients developed a connector to Google Trends (which does not have a public API) using a combination of generic HTTP connectors and complex multi stage flows. The connector takes an input from the database, creates a quasi JSON payload, and makes a request to the Google Trends backend. It then scrubs the response and creates well-formatted JSON. All without writing a single line of code!

### Enterprise Service Bus

Integrator includes a full-blown enterprise service bus (ESB). The following scenarios are supported:

- Building external APIs, which can be used to query data behind the firewall and create data feeds.
- Building CRUD APIs.
- Executing flows on demand.

### HL7

HL7 is a combination of the data exchange formats and communication protocols used to connect to health care applications.

Integrator fully supports all existing HL7 formats and protocols, and is one of the best available HL7 interface engines.

In Integrator, the HL7 messages can be sent and received using one of the following connectors:

- HTTP connection - send and receive.
- HTTP Listener - receive.
- Cloud or file-based storage - send and receive.
- HL7 MLLP Sender - send
- HL7 HTTP Sender - send
- HL7 MLLP listener - receive

Supported HL7 formats:

- HL7 2.x
- HL7 FIHR

### Support for online data warehouses

Integrator includes several pre-built flows, optimized for the online data warehouse Snowflake:

- Change replication from any of the supported databases to Snowflake
- Direct file upload into Snowflake
- Upload data from the Web services and APIs into Snowflake

### Automating complex workflow

In Integrator, it is possible to build very complex data integration and automations flows using our drag and drop interface, as well as scripting languages, such as JavaScript.

#### Some of the supported scenarios:

- Pipelines – flows conditionally executed in order
- Loops – flows executed in a loop, for example: until there are files in the folder, for all records in the table, etc.
- On-demand execution – flows executed when certain events happen
- Parallel execution – multiple flows executed in parallel
- Validation and verification
- Using JavaScript to perform very complex logic and calculations

### High level transformations

Integrator supports very high-level transformations, without writing a single line of code:

- Filters
- Sorting
- De-duplication
- Extracting dimensions from the complex nested data objects
- Partitioning
- Merging
- JavaScript transformations
- XSLT transformations

### Executing SQL on any data source

In addition to running any SQL with any of the supported databases, Integrator supports running SQL on any of the supported data sources, including files and web services. The built-in SQL engine supports filters (where clause), grouping and aggregated functions (sum, max, min, avg, etc.), unions and other set operations, and sorting (order by).

### Data integrity

In Integrator, it is possible to build complex validation logic using JavaScript. The validators can be used to:

- Reject entire datasets
- Reject single rows
- Generate exceptions so that the flow execution halts completely

### Business Intelligence (BI) and data visualization

Integrator is a powerful BI tool. It is possible to visualize and query data in any of the supported formats:

- Databases
- Files
- Web services
- Key-value storage

**Supported functionality:**

- Browse database metadata: databases, schemas, tables, views, columns
- Browse files: folders, files, columns
- Browse web services: endpoints, columns
- View data in a grid
- Execute any SQL on any supported data source
- Execute multiple SQL statements at the same time
- Execute DDL and DML SQL statements
- History of the executed SQL statements
- View data in the raw format (JSON, XML, etc.)
- Export any data set into any of the supported formats and download the file on your local machine

## Benefits

### Connected

You can connect to all your APIs and data sources, even if they are behind the firewall. Build data integration APIs. View and explore data and metadata right in the browser.

### Easy to use

Select from multiple of built-in common data integration scenarios such as export, import, data replication, backup and many others. No need to deploy anything or learn a new programming language.

### Cost effective

Let us host and manage a solution for you or install it on your own hardware and have full control.

### Simple, yet powerful

Manage your own data integration workflow using a simple drag and drop interface or let us create it for you. Automate very complex data integration tasks with just a few clicks of the mouse.

## Performance

Integrator is built with performance in mind. If needed, the back-end can be deployed to the multiple servers behind the load balancer so it can scale to permit billions of concurrent operations to run at the same time. Performance monitoring is also built-in so we can easily spot and fix bottlenecks.

To improve performance of the ETL operations, we created a unique streaming engine, which allows Integrator to transform practically unlimited datasets from the source to destination, while maintaining a very small memory footprint.

## Security

We take security of our customers' data very seriously. We have implemented seven stringent safeguards to ensure the security of your data.

### Perimeter protection

We install and configure the following elements of the perimeter protection infrastructure:

- system firewall
- reverse proxy server
- load balancer

### Encryption during data transmission

We encrypt all sensitive information transmitted to and stored on our servers.

### Encryption of credentials

In Integrator, all passwords, access keys, and other credentials are encrypted using a strong encryption algorithm with a 512-bit private key.

### Encryption of files

In Integrator, you can configure flows to store all files in the encrypted archive. This policy is not enforced.

### Encryption of the JWT tokens

In Integrator, JWT tokens are hashed using strong encryption algorithm with 512-bit private key.

### Protection for the API endpoints

All API endpoints in Integrator, including those that are private and protected by the short-lived JWT tokens.

### Application Data and Credentials

Our data protection policy is very simple – typically, we don't have access to your data at all unless you opt-in to store it on our servers.

#### Exceptions:

- passwords and other secure credentials - we always encrypt them.
- data files which you decide to store on our servers - you have an option to store data in our password protected archive files.

#### Policies:

- we never send passwords and other secure credentials to the web browser, so there is no way to see them anywhere in the Integrator.
- we monitor and regularly install security patches for all elements of the infrastructure, including the core operating system.

## Monitoring

Our monitoring suite is a combination of third-party services and home-grown solutions, based on industry standard elk stack. It includes the following elements:

- uptime monitoring using uptimerobot.com
- health dashboard
- log collection.

In case of downtime or any critical problem in the infrastructure elements, we are notified within a few minutes. Our support team is able to jump right on the problem and fix it without disturbing the customer's operations.

## Disaster Recovery and high availability

Our disaster recovery plan includes the following elements:

- daily database backups are transferred to the encrypted Amazon S3 bucket.
- High Availability (HA), zero downtime deployment option is available.

## Deployment

Integrator can be deployed to one or multiple servers behind the load balancer on the cloud. We typically use Amazon Web Services (AWS) or Microsoft Azure as our cloud providers. If needed Integrator can also be deployed on-premise.

We use deployment and provisioning automation to simplify upgrades to new versions. If needed, zero downtime deployment process can be implemented.

## Technology stack

**Back-end:** Java, Tomcat

**Front-end:** EmberJS, Bootstrap CSS

**Database:** PostgreSQL

**Key-value storage:** Redis

## Clients

Here is a selected list of our customers:

- Data Systems Integration Group
- Transform Digital
- Cargoclic
- transport.nsw.gov.au
- Savino Del Bene
- Artis
- Sage



- Cerebral Palsy Alliance
- Bank of New Zealand
- Marketo
- Acer USA

## Why Integrator?

Integrator is THE most powerful, yet cost effective, cloud data integration tool on the market. We work directly with a customer, without layers of bureaucracy, to ensure that our system meets your needs. We implement features requested by the customers in a matter of weeks, if not days. Our support is a best in class. Connect to everything with us!