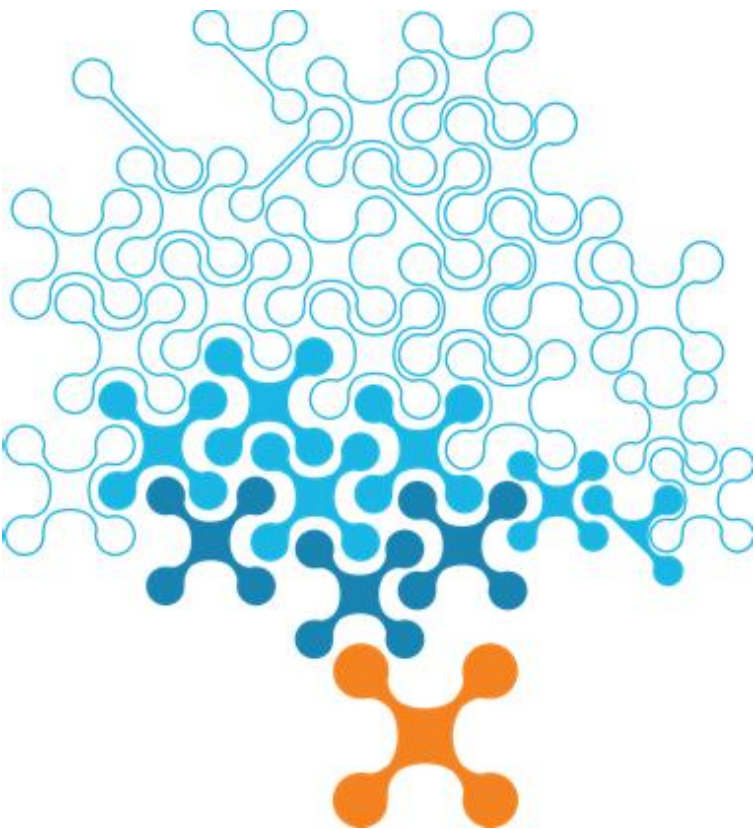




# Effector Whitepaper

Oriana International Ltd.

Effector V6.2 - 2019



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## 1. Introduction

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Effector is a fully customizable engine powered by a rich function-library, which allows you to build the application you need. Easy to connect to already established IT systems, and proven to work in numerous enterprise environments.

Effector comes with built-in predefined application templates. We use these templates to build general use-cases which you can customize, modify, or improve customise as needed.

It is much more cost effective than building software from scratch, but has the same potential in terms of flexibility. It means you can offer your services for a lower price, while working less.

The core component of the platform is an easy to understand UI framework which provides guidelines for UI building, making the process much faster than an “empty canvas” model.

For app development all you need is SQL skills the rest can be learned in three days. Take part in our 3 days training use your existing SQL knowledge and you are ready to build applications.

The platform provides application blocks for application building. Application blocks are high level components providing useable chunks of business ready functionality. All blocks are interoperable so building applications are super-fast with Effector Application Blocks.

## 2. Advantages

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Advantages of Effector:

- fast delivery (parameterization, application blocks)
- consistent operation (platform)
- integrable (multiple options),
- replaces more expensive, inflexible systems (e.g. SAP)
- workflow,
- client independence (PC, tablet, phone)
- support (error fixing, change request handling after delivery)
- system enhancement right (engine code is closed, but application parameterization is allowed)
- providing business logic information (source code) to customer
- no client-side installation is required
- upgradable platform
- recovery option (scheduled backup)

## 3. Effector Studio

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The Effector Studio is an integrated development environment that helps and makes faster the development of the Effector based applications. The development of the Effector based systems consists of the creation of the database structure and XML files that describe the views, behaviour and business logic. The creation of XML files and the manipulation of the database can be automatized, so a part of the development work can be done by using the development tool. The development tool itself has also been implemented along with the Effector technology, so it can be available from anywhere via the web.

Further information can be found here: <http://effectorworld.com/effector-studio-3-summary-forewords>

## 4. User interface

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Effector supports many display formats. Depending on the user's needs and the nature of the information package to be displayed, it is possible to display a spreadsheet, interactive chart format, calendar format, flowchart, image, ASP / PHP based web content, customized list and voucher. Displaying logically related data packets on data cards ensures ergonomic user interface design and transparency.

### 4.1. Loading main page

The user defined main page is loaded after clicking on Home icon.

#### 4.1.1. Logged in user

Username and profile picture are displayed on the surface.

#### 4.1.2. Changing theme

By clicking on the Effector logo, you can change the theme of the user interface.

### 4.2. Hyperlinks

Hyperlink handling is a built-in feature of the Effector Platform. Users can create hyperlinks for themselves. Hyperlinks is saved screens which can open with a single click.

### 4.3. Menu

Menu structure of the Effector Platform consists of (main) menus, submenus of the given menu, screen on submenus. Screens can contain multiple panels. The selected menu and submenu are indicated by different colours.

### 4.4. Panels

Panels provide an interface for displaying information and accessing functions within a single screen. Multiple panels can be placed within a single screen, therefore the information content can be optimized. Panels can contain tabs, which further expands the information display options on a screen.

#### 4.4.1. Functions on panels

- close (will drop unsaved changes)
- resize
- refresh
- change display mode (e.g. from card to table)
- number of displayed elements
- hide/show toolbar
- hide/show filter panel
- hide/show table header

### 4.5. Tabs

A panel can contain one or more tabs. You can switch tab by clicking on its title on the panel.

### 4.6. Table view

It is used to display reports or master data with limited formatting (e.g. font size, colour, alignment).

#### **4.6.1. Functions of table view**

- sort record based on a given column
- close/open column
- filter records
- hide/show column
- group by a given column
- fixing column
- enable multiple selection
- enable row numbering

#### **4.7. Card view**

In case of card view a single row of a table (record) is displaying on a card. On cards you can place text, icons, images, links, and custom formatting (in any HTML-CSS language).

##### **4.7.1. Functions of card view**

- group by a given column
- sort record based on a given data
- enable multiple selection

#### **4.8. Filter on table and card views**

You can place filter field above the spreadsheet and cards on table and card views. You can use filters to search and filter the data to be queried.

Filter can be of various types:

- drop-down list: user can choose from a list of all available items
- value picker: user can select one of the available items in a new window
- date: user can pick a given date
- date interval: user can set a period by entering the start and end date
- checkbox: can be used to filter the Yes / No value
- free text: filter for text and substring

#### **4.9. Sectional view**

Sectional view is similar to the card view, where the data can appear only in the order of sorting. Each data line is displayed on the screen without spacing, continuously. The sectional view is suitable for generating data as a HTML-like page.

#### **4.10. Tree view**

Tree view is a type of card view where data is displayed in a tree structure. Flowchart is an example for that.

#### **4.11. Embedded web-display view**

View for displaying HTML-based content. It is suitable for displaying emails or templates. It can also display files, images, but only those that the web browser can by default.

#### **4.12. Graphs, reports, dashboards**

Graphical representation of data stored in the application is possible in graphs. The Effector Platform uses a plugin (HighCharts: <https://www.highcharts.com/>) for that. Only one graph can be displayed on a single panel.

Available graph types:

- column
- stacked column
- lane
- line
- pie chart
- spider web
- radar chart
- area chart
- Gauge

#### **4.13. Calendar view**

The calendar view can manage the events or tasks in the application. It is possible to create a new event, move events and change their duration. You can also display daily, weekly, monthly periods on the screen.

#### **4.14. Timeline view**

On the timeline view an instance of a particular object type can be displayed in a row. It is used to compare the life cycle of the same objects. For example, projects can appear in line with their start and end dates.

#### **4.15. Integrated Excel-like component**

This is an external, purchased component (<http://spread.grapecity.com/spreadjs/>) with knit functionality that is much narrower than Excel's functionality. It is excellent to enter a large amount of data if you do not want to include data on forms one by one. You can also import external Excel files.

#### **4.16. Edit forms**

Various field types can be found when filling the forms. This chapter contains a brief list of these types.

- free text or numeric field: you can enter text and digits
- masked field: you can enter alphanumeric characters only in the predefined format
- drop-down list: you can choose from a list of all available items
- multiline free text field: you can enter longer text
- rich text editor: you can format text in this component
- value picker field: you can select one of the available items in a new window
- date field: you can enter date and time
- file upload field: you can browse and upload file
- checkbox: can be used to filter the Yes / No value
- obligatory field: indicated with orange border
- read only field: indicated with grey background



#### **4.17. Inner component**

You can place other Effector component on edit forms. You can place the same items as on tabs of a screen.

#### **4.18. Action buttons**

You can place action button on filter row, edit forms and cards.

You can perform the following actions with them:

- save
- cancel
- delete
- exporting file
- calling a stored procedure
- calling DLL

#### **4.19. Drag & drop**

You can use the drag & drop function in card view by drag a card onto another one. After that a store procedure is called.

#### **4.20. Tooltips**

Tooltips provide information on a given item e.g. on an edit form.

#### **4.21. Menu structure**

The menu structure is on two levels. There is no way to create a three-level menu, but you can set both horizontal and vertical placement by default.

#### **4.22. Responsiveness**

The full feature set is available from the phone and tablet, but the user interface is not optimized for mobile devices with different display sizes. User experience is may be limited since the amount of functions on a screen is usually optimized for desktop resolution.

#### **4.23. Web portal functions (display)**

In this case you can scroll the content which is displayed on a traditional web portal-style display of the Effector user interface. This function is not available in Effector Platform, front-end engine (HTML, CSS, JavaScript), of it can be modified for implementation.

#### **4.24. Offline mobile client**

It requires unique development. The main purpose is that you can work on the mobile device without an internet connection. When the user is connected again to the Internet, the changes can be automatically uploaded to the system.

## **5. Workflow management**

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Engine of the Effector Platform is used for the workflow management. A workflow is case which consists of tasks, events. Whenever a given task is marked as done by its assignee the next task is created. The task sequence runs like this.

You can also define subprocesses and use them in another workflows.

## 6. Permission management

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With an application running on an Effector Platform, you can manage permissions on multiple levels. On user interface you can create menu and screen level visibility rules for groups (whether the menu/screen is visible for the given group). Visibility of panels and tabs on a given screen can also be ruled.

More sophisticated permission management can only be achieved by parameterization.

### 6.1. Permission assignment to various entities

The permission can be based on group, hierarchy or connection.

Basic functions that can be linked to permission: create, modify, display, delete.

### 6.2. Permission management of table view

Visibility and modification rule for columns and restrictions on appearing lines can be parameterized.

It is also possible to manage permissions per cell, in which case the display of the cell contents is linked to a predefined rule.

### 6.3. Permission management of edit form

View, modify, create and delete rule can be parameterized for all objects.

### 6.4. Permissions of uploaded documents

View and download rule can be parameterized for the uploaded documents.

## 7. Document management

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### 7.1. Excel export

Currently the Effector Platform supports two types of Excel export functions: the built-in Excel export functionality and export based on Excel template.

### 7.2. Excel import

Importing bulk data from an Excel template is not a standard Effector feature, but there is a custom developed solution that can load data from an Excel template with predefined columns.

### 7.3. Managing uploaded documents

Managing uploaded documents means structured storage of document objects, uploading files with arbitrary data fields, retrieving documents and downloading and displaying on screen.

### 7.4. Generating document

Generating document means to fill a DOC or DOCX file with the values from the database. PPTX, XLSX generation is also possible with custom development.

## 8. Sending and receiving email

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### 8.1. Sending email

The widespread use of this function is sending an email notification to the assignee of the newly created task. You can use email template for sending emails.

### 8.2. Receiving email

Receiving and process emails (email content is available from the application) is not a standard functionality. An external plugin or a specially developed POP3 / IMAP reader can download the emails.

## 9. Authentication methods

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Authentication methods used in Effector:

- log in with an Effector username and password combination (default)
- Active Directory log in via LDAP protocol (when customer has AD service)
- GUEST: log in without authentication (for publicly available applications)

Cross-authentication between application instances running on the Effector Platform is not possible.

## 10. Integration options

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### 10.1. Integration with database-database connection

Effector Platform can cooperate with relation database management system (preferably with MS SQL). Based on the collaboration provided by relational database management systems, the Effector database can be linked to other databases by link database function.

### 10.2. File-based integration

With custom development an Effector Platform component can be implemented that the engine can handle. This component can process and create files.

### 10.3. Integration with webservice

Webservice-type integration can be achieved by creating a new component (Custom DLL) for the Effector engine, which is based on the definition of the publishing page.

### 10.4. Interface integration

Any system which has publicly available URL can be displayed in Effector Platform. Effector application can be displayed on a separated application.

### 10.5. AD synchronization

Users can be registered through a webserver. Their predefined properties can be used for access control or permission management.

You can query from AD which user belong to the which group. These groups can appear in the application and can be used by any other group.

## 11. Configuration

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### 11.1. Licence handling

The License Handler Server (LHS) enables centralized management of licenses and users in an enterprise environment.

### 11.2. Configuration options on the interface (LHC and LHS)

The privileges are managed as follows in Effector:

- license-based user access
- user group membership
- user authority to use instance instance(s)

#### 11.2.1. Managing user groups

The Effector platform allows users to be grouped into user groups, and then set user visibility per screen level for each user group.

#### 11.2.2. Creating user groups

You can add new user group by clicking on New group button.

#### 11.2.3. Deleting user groups

You can delete the selected user group by clicking on Delete group button.

#### 11.2.4. Adding, deleting user from user group

You can add existing user to user group by clicking on Add existing user button.

You can delete the selected user from the group by clicking on Remove user from group button.

#### 11.2.5. Managing all group memberships of users

You can manage the group memberships of each user on User screen of License handling (client) menu.

#### 11.2.6. Setting of visibility of menus and screens

You can set the visible menu items on Group screen of License handling (client) menu.

#### 11.2.7. Error log

Error log screen displays the potentially errors from the exception log. The screen has filters: date interval, reference number and message.

### 11.3. Configuration options on the interface (LHS)

#### 11.3.1. Application instance default settings

Because there may be more than one application instance for an LHS, there is a general part of the settings that applies to all application instances. It contains mostly login related settings.

### **11.3.2. Application instances**

Application instances screen displays the settings per application instances.

### **11.3.3. Users**

Users screen displays the settings related to users.

### **11.3.4. Groups**

Groups screen displays the settings related to groups.

### **11.3.5. Licenses**

Licenses screen displays the license types and their settings.

## **11.4. Configuration options in the database**

Almost every Effector setting is stored in database and displayed on the user interface. The other settings can be modified in the database.

## **11.5. Configuration options in IIS/web config**

IIS is needed for Effector. Options of IIS is available. File size and extension of uploaded and downloaded files can be limited in web config.

## **11.6. Password policy**

Password policies can be defined on Password policy screen by the customer.

# **12. Hardware/software requirements**

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These sections contain hardware/software requirements for the optimal operation of the Effector platform. This is the recommended configuration.

## **12.1. Main components of the system**

- Effector Platform (runs on IIS)
- XML files describing the operation
- MS SQL database
- user files (attached documents)

## **12.2. Number of servers (physical or virtual)**

Effector supports that all main components are served by a separate machine (physical or virtual). It is recommended to separate the system components (IIS, MS SQL and storage), depending on the load.

Five systems are required for system development, testing and production operation:

- Developer system
- Test system
- Educational system
- Quality assurance system
- Production system

### 12.3. Effector engine

- Operating system: Windows Server 2012 x64 or newer
- Web server: Internet Information Services (IIS, provided by the operating system)
- .Net framework: .Net 4.5 or newer
- URL Rewrite 2.0

### 12.4. Database

At least MS-SQL 2012 R2 (in Mixed authentication mode).

### 12.5. RAM

- For developer and test systems: 8 GB
- For educational, quality assurance and production systems: 16 GB

### 12.6. Processor

At least quad-core Xeon or similar.

### 12.7. Storage (In addition to the basic operation of Windows Server)

- Effector engine: 1 GB
- XML files: 0.5 GB
- Attachments, XLS export files: 50 GB (Files generated during Excel export are saved here and not archived automatically)
- Database: 20 GB (depending on the usage)
- Summary: 70-80 GB + installed Windows server and database
- In case of the developer system a separated storage for database backup: 100 GB recommended

### 12.8. Minimal bandwidth

- Minimal bandwidth of server: 100/10 Mbps
- Minimal bandwidth of clients: 10/1 Mbps

## 13. Logging

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### 13.1. Logging method

The logging module of Effector generates a well-traceable change log for all events related to the use of the application. According to the nature of the logged data, the logging module distinguishes security events, system events and transaction data, as well as normal or critical level classification.

### 13.2. Accountability

If a partner system accesses the data stored in the application (even with a change request), the log does not record the values before and after the modification, only the general data of the access (time, type, user / system, etc.).

### 13.3. Integrity

The logging module guarantees the integrity and immutability of the data stored in it. The content of the data stored in the log cannot be changed in any way, so it cannot be added or taken away from it).

### 13.4. Invariability

The logging module starts before the Effector system and runs continuously during the operation of the Effector system. Starting and stopping of the Effector system is a standalone logging event. The log file is not locked in an exclusive way, allowing access for other log systems at any time.

### 13.5. Logging options

- Authentication, login log
- User activity log
- Web service log
- Error log
- Logging configuration
- Displaying log event on the user interface
- All, system related event is stored.
- All activity related to files is logged.
- All requests for the LHS is logged.
- Automatically processes run by Server Tool Job is logged (e.g. scheduled email sending)
- Log protection (with table hash)

## 14. Encryption

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In case of some applications, sensitive data in the application's configuration files can be stored encrypted to protect the sensitive information used by the application. It can be implemented with an encryption program.

## 15. Data migration

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For example, if the new application is used to replace another, the data from the previous system may need to be migrated to the new one. This can lead to serious complications in every case (potentially data cleanup, data discrepancy, error handling due to mismatching of data, etc.). Therefore data migration requires serious preparation.