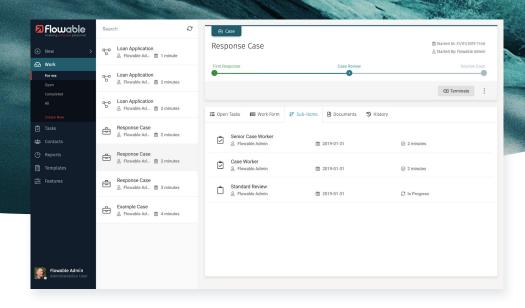**flowable**

Flowable Work

LOW-CODE INTELLIGENT AUTOMATION

Use low-code to build and deploy business applications that enhance productivity, drive operational excellence and transform customer experience. Flowable is the leading provider of open source Intelligent Business Automation solutions that combine the power of Case, Process and Decision support into a single platform.
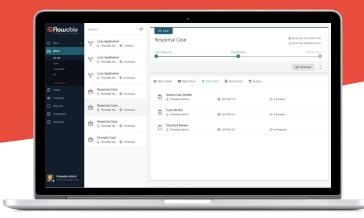

Flowable. Intelligent Business Automation

content:

Flowable Work is a powerful low-code platform designed to help you build and deploy business applications faster. With our low-code development approach, you can rapidly model advanced workflows with greater efficiency, saving time and resources while unlocking business value. Automate every aspect of your business, from simple repetitive tasks to complex and dynamic scenarios.

Case and Process Management

Case Management excels at complex and long-running business processes that require a mix of human and digital actions. Common use cases include incident management, customer and employee on-boarding, or handling incoming applications, claims, complaints or incident management in general. Case Management is useful as a notation for describing high-level business scenarios that are generic and flexible. More structured aspects are best defined using business processes and are often used from within a case model.

Work inbox, combining tasks, cases and processes

The Work inbox provides a consolidated view of all work assigned to a user or activities initiated by the user. New activities can be started by the user, either cases or processes, as permissions allow.

Case stage indicator

While working on a case, a high level visual progress indicator is available to provide quick context for the user.

Case and process status diagrams

When working on a specific case, it is possible to see its current state based on the case diagram, with visual indications of completed or active tasks and processes.

Case and process history

A history view allows the user to get a quick overview of the progress of the case or process to date.

Case and process audit

The audit view provides a full audit trail of the actions taken within the case or process. This includes timestamps and user details. The data available in this view can also be published to external systems as the events occur, ensuring effective integration with external auditing services.

Cancel process or case

At anytime a case or process can be canceled if it no longer needs to run to completion. This is not a common action but can be useful when some event outside control of the case and process application means some other action is needed.

Configurable actions

Define custom behavior and associate it with different contexts and scopes within the user interface or services. Actionable independent of interface or device to ensure consistent custom behavior however activated.

Case and Process Management

Configurable start and work forms

Collect data to initiate a process or case through a custom form, then once started, show case or process data with a potentially different form. Combined with dynamic form behavior, different views of the data can be presented in different contexts or for different users.

Attach documents to cases and processes

Attach reference files and documents to the overall case or process instance.

Decision rules evaluation view

Review the evaluation of decision rules in a clear visual way to allow users to understand what rules were evaluated and what the results were.

Content template service

Manage and use content templates that have embedded variables to create standard responses to emails, messages and other textual information. These can have different language variants and are versioned.

Permission controlled access

Access to cases and processes can be controlled at the API level to individuals or groups.

Dynamic process injection

Unique to Flowable, additional process fragments can be inserted into a running process instance to handle scenarios not anticipated in the original process model. For example, finding late in a specific instance that a credit or security check is needed for exceptional reasons.
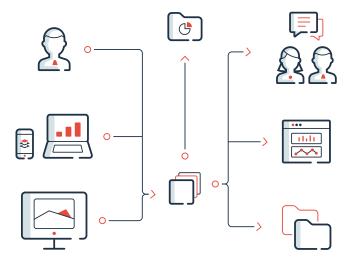
Chat based collaboration

Users can use realtime chat to collaborate on a case or process. This ensures work is completed as quickly as possible, while still keeping all communication audited and avoiding external communication systems.
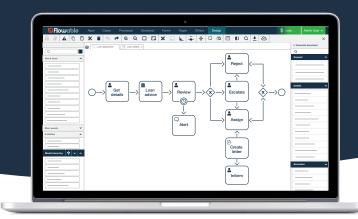
Reactivate closed cases

Define reactivation steps as part of the case model, ensuring consistent logic to bring a completed case back to an active state.

Intelligent Business Automation

Low-Code Applications

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Developing and deploying new business applications as quickly as possible is what is expected of organizations in today´s market. All the time needing to be sure that quality, security and compliance standards are met. Also, that updates to the applications can be delivered even more rapidly. Low-code application platforms provide that agility without compromising any of these needs or the flexibility to extend and customize a solution.

Model-driven applications

A rich set of business models are available in addition to the case and process ones. These models can be combined to create applications that can be readily deployed, shared and modified.

Drag and drop
custom application user interfaces

Create completely custom user interfaces for displaying and interacting with case and process details. Context-sensitive views based on a user's role and application state can be defined using libraries of existing components or completely custom layouts.

Service Registry
for easy access to external services

Define external services so that they can be easily reused and accessed from processes, cases and forms. Map queries with complex response data structures onto process variables.

Define custom searches

Add new searches without having to restart Flowable, allowing you to create searches for custom and pre-defined variables, all without interruption to your running applications.

Content models for metadata

Create and manage content with associated properties as simply as defining a form. Use this metadata to automate content through cases and processes.

Action definitions
for context sensitive behavior

Define behavior that should be executed when a user selects an action. Flowable and custom applications can display reusable actions available to a user that are dependent on the current context.
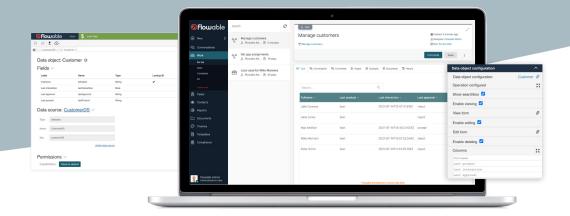
User capabilities and security policies

Define user models and security policies that allow complete control and flexibility about who can access what data and how.

Reference external database tables

Map data in and out of processes and cases in a way that is transparent to the user, retrieving and persisting data in external database tables.

Data Objects

Data is the fuel for every application. It is important to connect data, across multiple different systems, to make better business-related decisions and improve the range and possibilities of your business automation. With Flowable Work's Data Objects, you gain complete control of your data by defining data models, mapping external data sources, such as databases and REST services, into low-code and no-code automation models. These custom Data Objects can be used across cases, processes, and apps.

No-code database table management

A no-code design experience allows you to automatically create database tables mapped to Data Objects according to your business model. You can use structured data to represent customers, their journeys and entities they relate to. Of course, if you need custom database management, there are multiple extension points to use.

No-code UI

Connect form fields to Data Objects with full view, search and edit capabilities using data tables. Use additional Data Object tasks to execute data queries and updates, or use automatic update of data through form completion. As always, Data Objects can be extended with low-code and pro-code custom development.

Configurable data operations

Standard operations are provided for query, retrieval and update, meaning automatic data operations in many circumstances. However, for business-specific use cases, it's important to have the ability to define custom operations without resorting to custom coding.

Automatic data retrieval and storage

When a data object is retrieved as part of a process or case, you can specify if it should perform live updates or only retrieve and submit updates when explicitly defined.With live updates, changes to made to data through processes and cases are automatically updated in the data source, while changes to the data source outside of Flowable are automatically retrieved as the process or case proceeds.
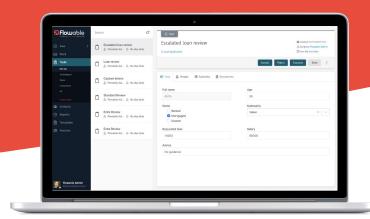
Automation change by business users

Data Objects can be used to collect automation configuration criteria from business users. Modify decision rules, task assignments, routing without the need to involve modelers or administrators.

Easily integrate with REST web services

The same no-code design experience is also available for creating Data Objects backed by REST web services. With options to handle authorization and data-mapping of rich payloads, integration to other services becomes a breeze.

Task Management

Tasks can be created for users by processes running or cases being managed. Flowable allows users to access all their tasks from a single location regardless of what process or cases created them. Tasks can also be created manually if needed.

Task inbox

A list of tasks for the user with filters to select tasks specifically assigned to the user, or available from a team queue. Completed tasks can also be viewed for reference.

Task collaboration

An assigned user is responsible for completion of a task, but that may involve other users in working on a task, such as filling part of a form or providing advice through comments.

Attach documents to tasks

Documents and files can be uploaded and attached to tasks as supporting material for a task, independent of what a task form might require. This supports collaborative task work where one user can provide helpful or reference material for another user working on the task.

Assignment, priorities and due dates

All tasks can be assigned to individual users, or to a specific list of users, or to any number of groups. Due dates and priorities can also be defined.
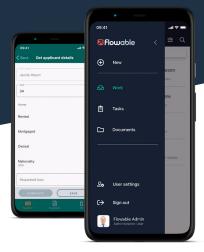
Subtasks

Any task can also have ad hoc subtasks added by the assigned or collaborating users. These subtasks have all the capabilities of a normal task, including being assigned to other users with due dates. These subtasks themselves can be collaborated around and have their own subtasks. This allows dynamic Task Management to happen without having to anticipate all possible use cases as part of a case or process.

Ad hoc tasks

Usually tasks are created by a running case or process, but a user can create ad hoc tasks that can have all the collaborative capabilities of standard tasks. These ad hoc tasks can be used as a user's personal to-do list, or to create ad hoc tasks to be assigned to other users.

Flowable Mobile

Flowable Work Mobile brings an omnichannel approach to your customers and employees. You can have the functionality of our Flowable Work desktop app in the palm of your hand and stay on top of projects with real-time updates to keep your Intelligent Business Automation running smoothly. Flowable Work Mobile app allows you to work with cases, processes and tasks from anywhere, at any time. The mobile app supports a wide range of functionality provided in the desktop version.

Task management on the move

View all your tasks on your phone, with search and filtering to handle your work efficiently. Complete your tasks, with all the outcomes and dynamic actions that you'd find on the Flowable desktop. Also while on the move, initiate new work, creating tasks, processes and cases for you or others to work on. Ideal for off-site tasks, such as inspections and incident management.

Dynamic theming

Use the same No-code theme creation as the desktop browser to bring a familiar user experience to your mobile device. Custom logos and easy configuration of colors and font styles across the Flowable Work Mobile interface.
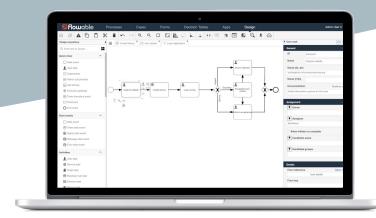
Forms

Use the same forms as on the desktop, but adjusted to display on your phone or other mobile device. Collect, verify and review information on the move, with rich interactive form fields. Access dynamic actions and outcomes, all driven by the same form services.

Access the camera and microphone

While you are on the move, you can easily take photos, videos, record audio and attach them as part of a task, case or process. Ideal for collecting information and evidence on location, for identity proof, incident reporting and event validation.

Visual Model Design

Flowable enables you to create and run Business Automation models defined using industry open standards. As well as the Business Process (BPMN 2.0), Case Management (CMMN 1.1) and decision management (DMN 1.2) standard models, Flowable also manages models for forms and other components of the Flowable products. All these models are managed in a reusable library.

Visual model editing

Visual modeling of process and cases diagrams makes it easy to create complex models with simple drag and drop actions. Drawing tools allow diagrams and model attributes to be modified simply, with drilldown editing of referenced forms, subprocesses or subcases.

Model validation

Validation rules help ensure all required model details are provided and that the model meets the necessary criteria for being deployed.

Model data dictionary

At any time, a list of all the model data variables can be viewed, to assist in designing or reviewing models. An option to export these allows the audit of all process variables in a model.

Versioned model repository

All models are managed in a database repository that records creation and modification times along with the user who made the changes. Updated models can be stored as new versions, providing the possibility to revert to a previous model if needed.

Import /export of models

Models can be exported in their open standard XML format, as well as complete case application bundles.

Clone models

Models can be duplicated, cloning all aspects of their attributes and layout, allowing rapid creation of new models based on variations of existing models.

Model comments

Comments can be added to individual elements in a model to allow design or business context and collaborative design to be achieved.

Model version comparison

Any model version can be compared with an earlier or later version, with highlighting of the changes. This helps in the identification of changes in the behavior of models, as well as version auditing.

Model property search

Search models for specific properties to quickly find attribute settings.

Visual Model Design

Multilanguage models

All labels that can appear in user interfaces can be defined in multiple languages. Also, models elements can be defined in multiple languages, allowing different language users to understand the model.

Case and process applications

Related case, process, form and rule models can be combined into application bundles, allowing them to be managed and deployed as a single unit. Access control to deployed applications can also be defined to make process and cases information only available to a limited set of users.

Hot deployment of models

Models can be deployed directly from the model repository to the runtime service, allowing live update of case and process definitions. Runtime deployments are also versioned to allow existing instances to continue as originally defined if required.

Visual expression builder

Create complex condition expressions through point and click expression building. Quickly create case entry criteria or process flow conditions. Confidently define rich conditional interactions between form components. Smart variable auto-completion and prompting prevents simple typing errors, including variables from parent models.

Custom control palette

The model editing attributes and diagram elements can be customized, to either simplify the design elements available or to add customer specific elements, such as custom services and tasks.

Reusable model library

Any individual model can be referenced by other models, for example, reusing a standard form or subprocess in multiple other models. This allows a library of standard subcases, subprocesses and subforms to be created and then used in new models.

Locking for team models

Support team development of applications with the ability to lock individual models within a Flowable app. Other team members can still explore all aspects of the model but read-only. Force unlock is possible if needed.

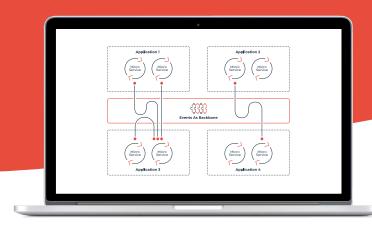KEEP IT SMART WITH

Flowable Design

is a **web based application** that can be used independently of the Flowable runtime database. This is common for production use. For development and testing, it is usually used tightly coupled with the runtime.

www.flowable.com/product/work

Event-driven Automation

Modern software infrastructures use event-driven frameworks to communicate between services and systems. Flowable plugs into these frameworks out of the box, providing models that define how low-level events can be mapped into higher-level business events. These business events can then be used throughout the case and process models, so even if the low-level details need to change, the Business Automation models remain consistent.

Integrated with event frameworks
Out of the box integration with Kafka, AWS SQS, Rabbit MQ, Apache ActiveMQ/JMS. Simply plug and go to start sending and receiving events.

Event and channel models
Abstract away the underlying implementation of the events and define the pipeline for unwrapping and wrapping events, mapping their payload to case and process variables. Provide high-level business events from low-level implementations.

Case **CMMN** models in Flowable provide a natural and powerful way to manage the flow of events to and from a Flowable application. Using case "Stages", define what events are relevant in different situations, even reacting differently to the same events in different contexts.

Flowable **BPMN** processes can be started by events, and in turn can send out events to other systems, waiting for any response if needed. Combine case and process models together to create an event-driven application or service that has all the benefits of low-code.

Send and receive events
Tasks and activities are provided to send and receive events on channels, also event listeners to trigger new processes or behavior in cases. Special combined send/receive activities ensure safe event handling, ideal for communicating with microservices.
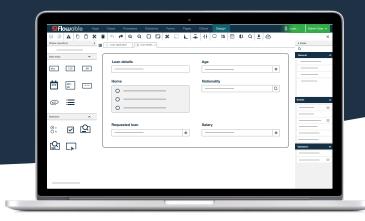
Efficient and scalable correlation
Key to event handling is knowing which process or case instance should react to a given event. Uniquely matching an event to an instance is known as correlation. Multiple event fields can be used to create event correlations and Flowable's highly efficient correlation algorithm quickly matches events to instances at scale.

Support for high volume event workloads
When you need automation that can scale to handling of millions of events a day, the options for configuring Flowable mean that the workload can be as high as your event framework can support.

Forms Service

Enhanced forms design and runtime display are provided by the Flowable products, with sophisticated layout and complex form components. The forms service is extensible, allowing businesses to add their own custom form controls.

Form models

Form models can be defined and managed in a form library in the same model repository as cases and processes. The models are available in JSON format to allow their ready use in custom frontends and devices.

Complex layout

Multicolumn layouts, with spanning and choice of label positioning provides a way to define complex forms in an effective layout for users.

Dynamic component interaction

Form components can dynamically affect other components, such as making them visible, enabled, required or prefilling with data dependent on previous data added to the form. Conditional expressions allow highly complex form behavior to be modeled.

Rich controls – wizard, accordion subforms

In addition to standard form controls, there are more richer components, such as tabs, wizards and accordions that allow easy collection and presentation of complex data.

Autosave and secure form data

Configurable autosave allows you to ensure no data or time is lost by having to refill forms, along with full control of what data is passed to a form.

Content and document components

Components are provided for uploading document and media files and then making that content available to the user in a variety of layouts. Thumbnails and previews of single files as well as galleries is possible.

Nested subforms

In the same way that case and process models can be reused, existing forms can be included into a new form. This allows new forms to be raprridly created from a standard library of subforms.

Repeating subforms

Subforms can be repeating, allowing collection of multiple instances of data from a subform. For example, capturing multiple addresses from a user.
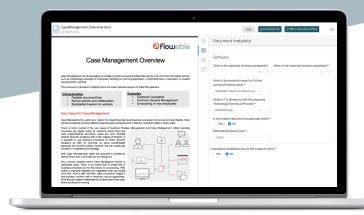
Dynamic form debugging

Within form preview, debug capabilities allow the designer to test dynamic elements of the form for validating the complex dependencies that may exist between form components, such as visibility or allowed values.

Data source driven controls

Form components that present lists of values for selection can be populated from data sources, such as from REST calls to other systems or databases.

Content Management

Many Case and Process Management solutions involve working with documents or files. This might be to provide review and approval workflows, or to capture photos and media files as part of incident management or problem resolution. Solutions for on-boarding clients or employees, or claims-processing, will often need the collection and management of documents followed by some document or content generation.

Content library

Organize content into hierarchical folders for easier management. Associate content libraries with cases, processes or tasks.

Content metadata

Add custom properties to content that can be used to give additional business data about it. This might be for classification or other purposes.

PDF renditions of Office documents

Convert Office documents into web readable PDF files.

Document thumbnail images

Generate thumbnail images of initial page of a document to provide visual cues to contents of a document in the user interface.

Document generation from templates

Generate Microsoft Word and PDF documents from standard templates with dynamically created contents and variable substitutions.

PDF document merging

Combine PDF documents to create a single PDF file. Useful for creating a bespoke document based on different pages from a library of standard component PDFs. Powerful when combined with PDFs generated from templates.

PDF watermarks

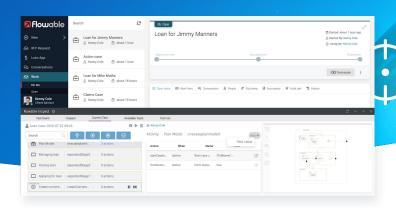Apply watermarks to PDF files.

Document template management

Manage a library of document templates used for generating Microsoft Word or PDF documents.

Edit Microsoft Office documents directly

Microsoft Office apps think they're talking to a SharePoint server, when it's actually Word, Excel or Powerpoint documents in the Flowable content library or documents attached to cases and processes. No need for downloading and uploading documents to edit them.

Application Inspect

Process and case models are not always easy to test and debug. It's very easy to get stuck in a cycle of designing a model, deploying it, finding it not work and try to work out why – usually by changing the model and putting additional steps to try and track. With Flowable Inspect, the tools are there to allow you to step through the execution, jumping to breakpoints, changing variable values, triggering events and more. Test definitions can be recorded and replayed at any time to validate changes to process or case models.

Inspect running cases and processes

At any point in the execution of a case or process, open an Inspect panel to navigate the execution tree, check or change variable values, or trigger timers and other events.

Record test suites of different execution paths

Run a process or case and follow the path through its execution. Fill in forms for user tasks, click action buttons to trigger manual events, and all are recorded as part of a test definition that can be replayed on demand.

Step and breakpoint debugging

Add breakpoints while stepping through an execution, allowing you to jump over the execution until the next breakpoint is reached. Alternatively, just step through the execution of a case or process, inspecting or triggering actions as you go.

Validate execution with tests

Add test actions as part of a test definition, including testing variable values or running a complex condition expression. When a test definition is replayed, any test actions that fail are reported as part of the test run.

Mock out service tasks

Combining the test action that skips an activity with the ability to set variables, mock out service tasks so the test definition doesn't have to make every service call. Skip the service task, set the variable values you would expect to get back, and continue recording your test definition.

Form inspector and debugger

Inspect the structure of a user form, see the components that make it up, including any nested subforms. Adjust attributes and values of individual components to see how they look and behave. Test out dynamic interactions between components in the form.
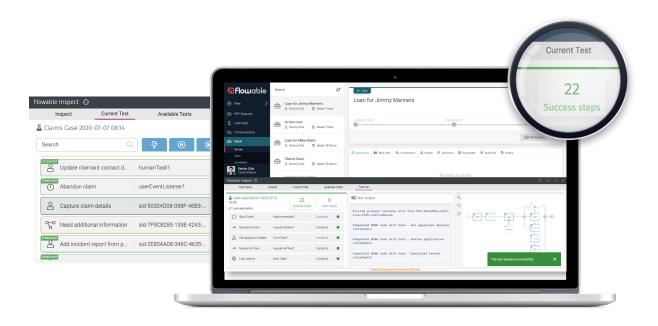
Application Inspect

Server-based test runs

Even if your test definition includes user input forms and user actions that triggered events and behaviors, replaying a test does not need a UI. Execute tests via API and the test definition behaves as if the user had entered data and clicked on other actions.

Full error exceptions available
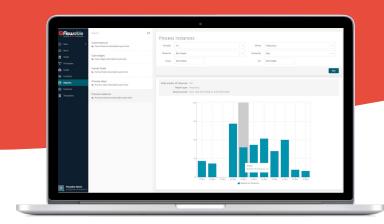
If an error is encountered while a test run is being executed, you can get immediate access to the exception trace to see what was the cause. No need to dig around in log files.

Debug event-driven apps

Testing Flowable apps that are event-driven can be achieved without firing a single event. Trigger event instances by hand or as part of a test run to simulate the same event instances as if they'd been generated by Kafka or another framework.

Reporting and Analytics

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Continuous process improvement is part of every use of Business Process and Case Management Automation. Flowable indexes all historical data allowing rich reporting of process and case performance. Such analytical information can help identify optimal processes or areas where performance can be improved.

Standard reports of process and case analytics

A wide range of chart reports can be generated from the data of completed processes, including frequency and duration graphs in pie, bar, area and line charts.

Process Heatmaps of frequency and duration

Visual heatmaps of aggregated data from completed processes to highlight hotspots in processes, based on frequency or duration.

Graph components for Forms, including pie, bar, area and line charts

Build custom analytics dashboards or include analytics graphs into forms. Present analytics of active and completed cases and processes.

Customizable analytics queries

Build new custom analytic charts by defining the aggregation query with required inputs as parameters.

Customizable analytics parameter views

Define the form for capturing the parameters needed for a custom analytics query.

Graph drilldown

Select an area of a chart and drilldown to explore the analytics scoped by the selected parameter.

Near realtime analytics

The analytics engine exploits the asynchronous history publishing of event data to provide active analytics. No data polling or other indirect data retrieval to limit almost realtime access to analytic queries.

Instant data inspection

Hover on different points in a chart to inspect the data value at that point in the chart.

Housekeeping control of historic data

As your use of Flowable grows, so does the volume of historical data, which can lead to large data space requirements. Housekeeping models allow you to define at a fine-grain level what data should be retained and what data can be cleaned out.

Application Monitoring

Even with the best defined cases and processes it is possible for things to go wrong or need change that wasn't originally anticipated. Flowable provides in-depth inspection of the state of the process and case engines for monitoring system health, as well as features to modify specific data or states to enable smooth running of the business.

Inspect active and completed items

Searchable lists of instances of processes, cases, forms, decisions, jobs and events.

Inspect failed jobs and restart

List failed operations and restart if needed.

Edit form and process variables

Drill down into a completed form to view all variables values collected and modify if needed.

Change process state

Change the current state of a process by jumping forward or back. Useful when a wrong path has been taken and it's necessary to jump back and run the process forward again. Unique to Flowable, this can be done whatever complexity of process.

Cancel process or case

Delete an active or completed case or process.

Correct task problems

Resolve unplanned or unexpected issues encountered with tasks. Change assignment, requeue or even complet tasks as needed.

Migrate process instances

Map active instances to updated versions of their model. Visually define mappings from existing to new states. Highly flexible mapping command notation allows complex migrations to be defined and executed.

Detailed instance data

Drill down into a case, process, task, or other elements to explore all aspects of the item, including timestamps, states and properties.
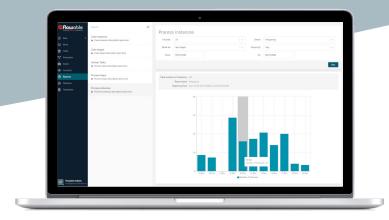
Manage multiple Flowable servers

Switch between Flowable servers to configure or inspect and modify their state.

Realtime engine monitoring

See realtime charts on the internal health of the engines. Detailed metrics are provided on a range of components, including CPU and memory usage, database connections, jobs executed, jobs failed, operations executed, events received and active users.

Performance and Scalability

With Flowable you can scale the use of automation to meet your current and future needs. Flowable's engines are compact enough to operate in small virtual CPUs to provide embedded automation in every microservice. Flowable can also scale horizontally to provide throughput of thousands of process instances a second. Speed and performance are fundamentals in the architecture underpinning Flowable. With over a decade of evolution, the current generation of Flowable technology brings unprecedented capabilities coupled with enhanced performance.

Fully indexed case and process data for fast search and aggregated responses

As the volume of users and case data grows, performance can scale as needed with the benefit of efficient retrieval of data through single aggregated interfaces.

Stateless horizontal scaling

The Flowable engines keep all case and process state transactionally in the database, so any number of compute nodes can be added to scale out case and process execution. Any node in the compute farm can take the next step in a process or case, making it ideal for elastic cloud based deployment.

Asynchronous historical data management

All historic data from executing processes can be kept in the database, but this has performance impact on throughput. This capability means all historic data can be published to external data stores, such as analytics engines or NoSQL databases.

Optimized data model

The data model is optimized for fast response time for users and during workflow execution. Completed and archived cases and processes are stored in separate database tables to improve access time to active case and process data.

Multi-Tenant support

Users and data can be isolated from each other in multiple tenants, where each tenant appears to be a separate Flowable installation although running on the same infrastructure. Cross tenant models are also supported.

Open Source and Open Standards

 Driving the heart of Flowable are open source engines that efficiently execute case, process and decision models defined by open standards. This avoids vendor lock-in for Business Automation models and transparency of execution code. The Flowable open source project has a vibrant community providing feedback and contributions. All code that goes into Flowable open source is managed by the Flowable engineers. which ensures product quality and security.

BPMN process models

Open standards based Business Process models ensure processes can be designed in a non-proprietary notation. Wide adoption of this standard in the industry ensures that people, tools and training are readily available for developing and exchanging process models.

CMMN case models

Open standards based Case Management models ensure case models can be defined and exchanged in a non-proprietary notation.

DMN business rules models

Open standards based business rule models, defined as Decision Tables, ensure that rules are easily readable by business users as well as being non-proprietary and easily exchanged with other tools.

Open Source

Flowable Engines are open source, ensuring no vendor lock-in and validation from a wide community of users. Also, additional functionality and improvements are provided by community contributors. Flowable engineers incorporate contributions into the codebase after reviewing and testing.

Core Public REST API

Public REST API to easily integrate workflow automation, Case and Process Management into 3rd-party systems. The API provides access to the core Flowable engines.

Machine Learning ready

Built ready to integrate into popular ML services.

Support

We can help you get the most out of your Flowable solution by assisting you at every step towards success, with administration tools and support. Customer satisfaction is essential for us, as our subscription model means we need to earn your business every year. We provide a range of support services to meet the demands of your business.

Right from the early stages of development all the way through to production, we're here to make sure you succeed. We understand that projects can start small and then grow significantly when they go live. Have confidence in being able to access all the product, knowledge and experience we can offer from the very beginning of your relationship with Flowable.

Customizable authentication
Pluggable security and authentication using popular frameworks.

LDAP synchronization
Synchronize data for users and groups from LDAP or Active Directory.

Rich Identity Management
Support for user definitions and custom properties for user models.

Server health reporting
Rich set of server node status monitoring provided for popular frameworks.

Bug fix only releases
Service pack releases of Flowable that contain only bug fixes.

Production support
Provide assistance in a timely manner for problems when Flowable is running in production.

Development guidance
Get assistance in how best to use the Flowable capabilities with guaranteed response times from the Flowable development team.

Informal assistance
Gain help from the Flowable Community through the open source forums.

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