Chills™

Data → Information → Value

Low Code
Graphically Managed Backend

Technology Whitepaper

"Easy and secure management of integrations & automations"

Authors:
CTO - Bård Øvrebø
CEO - Fredrik de Vries

Links:
Graphically Managed Backend: Chills
Company: Dynamic Integrations

CONTENTS

1. SUMMARY CHILLS - TECHNOLOGY

Integrate and automate applications on a backend, built on new low code technology. This new technology simplifies application integration, making it a job requiring limited programming skills. To maintain flexibility, developers can still access the underlying hard code and change it, tailor-making the backend to customer needs. These data flows & business process integrations are managed on a single backend.

Low code technology
Chills is built on new low code technology. It is much more *business* friendly than hard coding. Chills is a low coded interface on top of hard coding. This enables people to integrate applications without programmers' help while still accessing the hard code when required. People understanding how data is reused in business processes can create these data flows using the low code interface.

Front- and backend
The technology frontend is an interface built on low code, where API access and data to be transferred or automations are defined. The backend technology uses NodeJS, MongoDB and Angular.

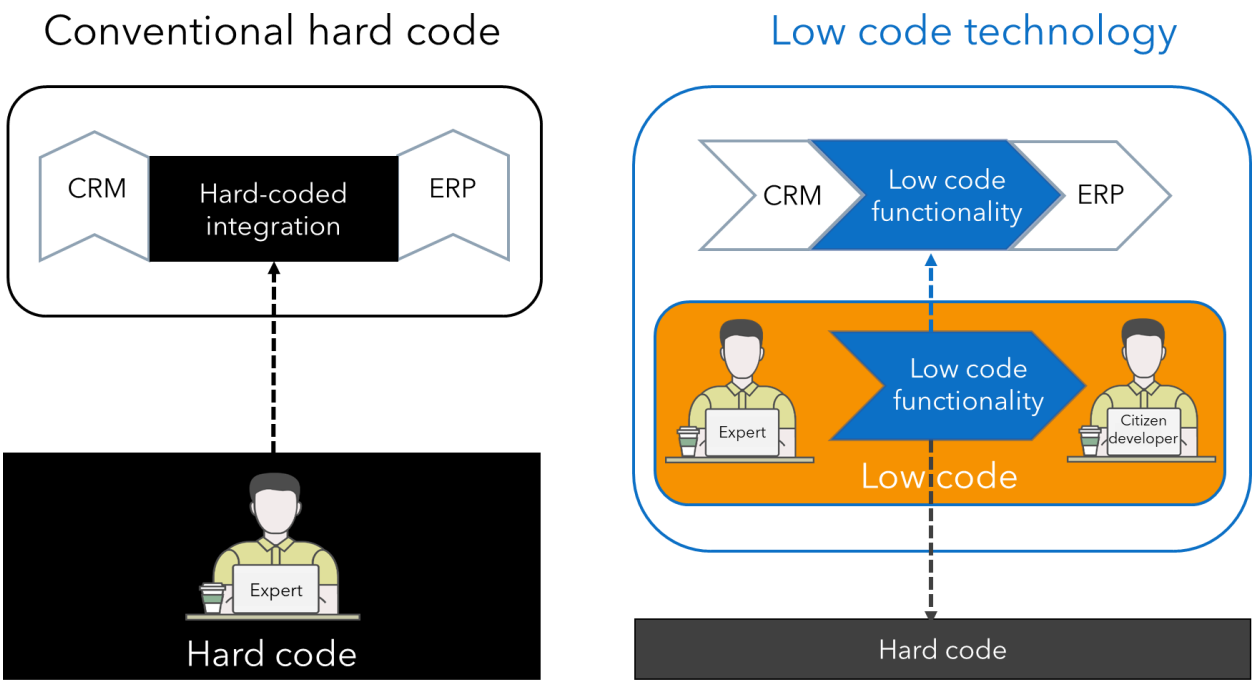
Education
This paper explains the backend in three levels; Backend access, Adapter management & Data Flow creation. The Chills education portal with video's and documents explains the Chills backend according to these three levels.

Open-Source community
Chills invites programmers to build integrations and related functionality based on low code technology. Any developer can design organisation specific integrations reflecting insights how data should flow effectively through an organisation.

Integration scenarios
Application integration and automation is created irrespective of their location; in one cloud, multiple clouds or On Prem, provided that firewalls and API's permit access. Chills integrations enable always a two-way data flow.

Reader guide
This whitepaper is a high-level technology description using Chills interface pictures, but it is not a user manual.

2. LOW CODE VERUS HARD CODE TECHNOLOGY



Hard code integrations

Today most application integrations are hard coded. A hard-coded integration is often a black box for customers and inflexible. When an application, database design or business requirements change, the integration must be reprogrammed.

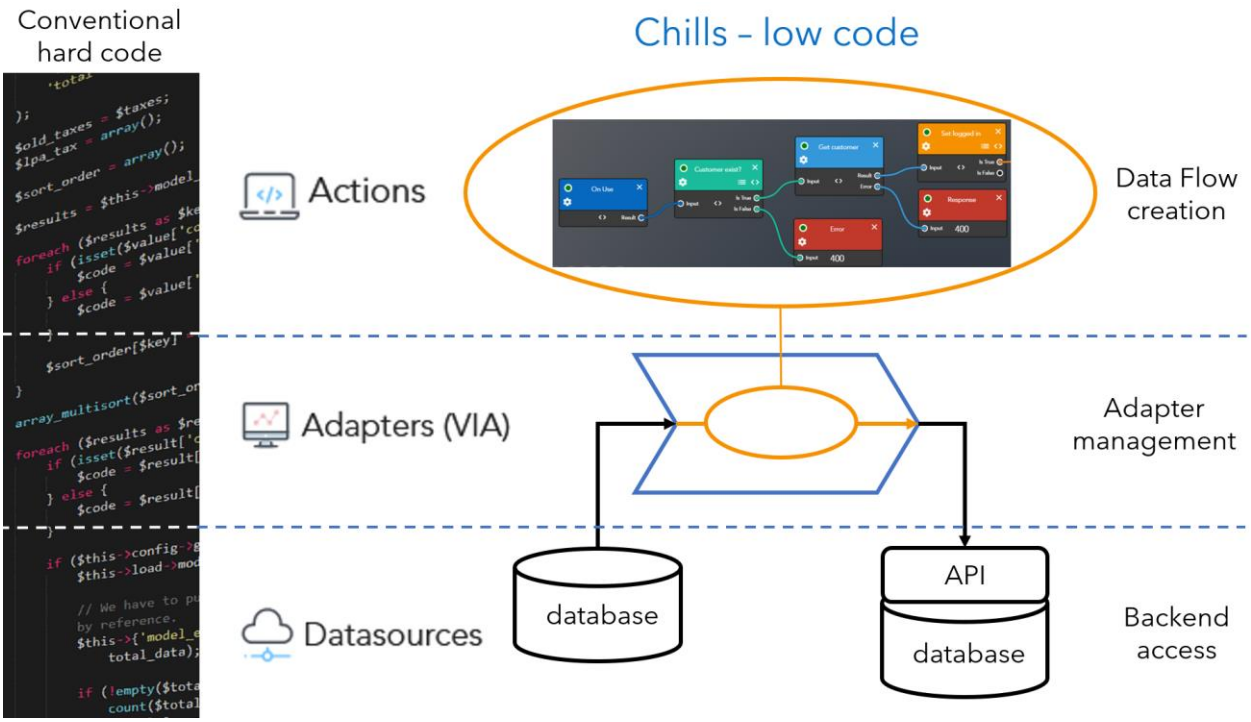
Connection low code & hard code

Low code is much more *business* friendly. It is an interface on top of hard code integrations while simultaneously allowing access to the hard code. An integration is managed in the low-coded frontend controlling the hard-coding. This low-coded integration or automation is created on the Chills backend. A low-coded integration or automation connects databases or automates a part of a business process. The parameters and credentials you write in a hard-coded integration are now the parameters you fill in the low-coded frontend.

Increased resource pool of programmers

Low code simplifies programming to the extent that many more "citizen" developers can contribute. They can quickly create the data flows while the experts do their expert work in the hard coding. This speeds up your digitalisation, and even at a lower cost.

3. THREE LEVELS OF LOW CODING REPLACING HARD CODING



Chills has divided hard code into three levels of low coding. In each level you create a part of the integration/automation while still having access to the hard coding.

Level 1 Backend access

At this level you create Datasources connections through their API's. Datasources contains all tables with data from your business process applications. All data is available *without* storing it on the Chills backend.

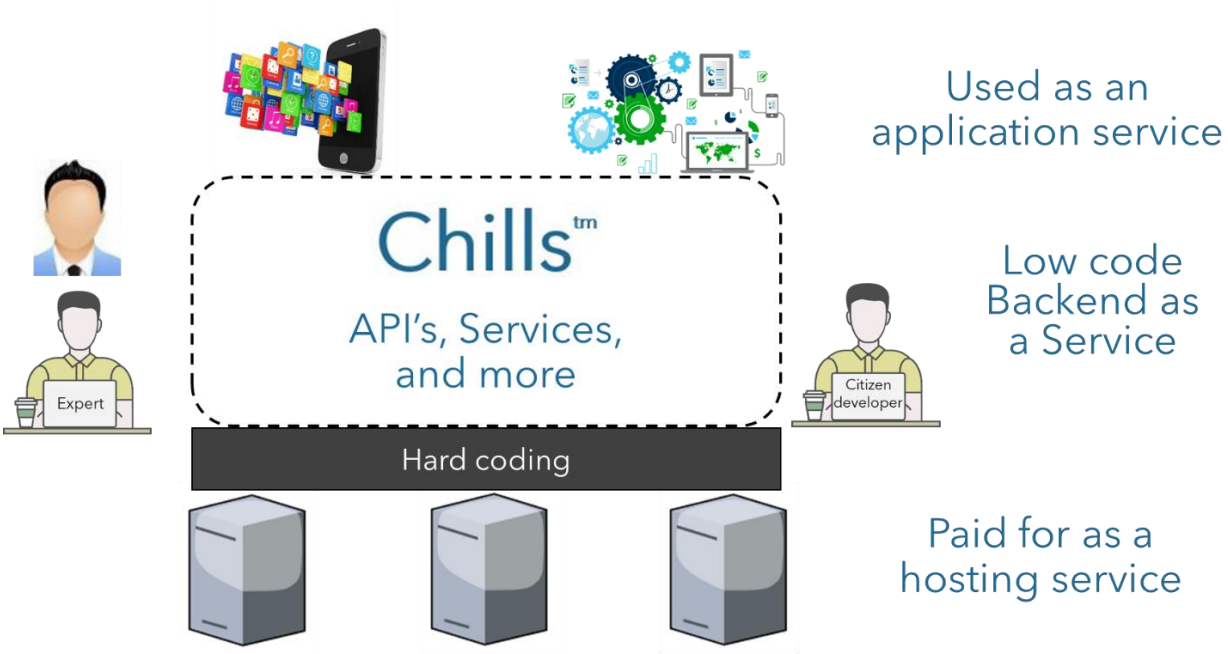
Level 2 Adapter management

Adapters makes the connection between Datasources. Different Adapter types are available, each fulfilling another purpose. The pipe Adapter creates data transfer using drag and drop functionality. This enables the definition of master data transferring the same data to all other Datasources, creating data quality throughout the entire business process.

Level 3 Data Flow creation

In an Adapter you process data using the graphically interface, connecting the steps in a visual flow schedule. In each step you manipulate data using both low code technology and hard coding. This data flow is tested and saved as a unique version. In case of errors a previous version can be reinstalled immediately.

4. WHAT IS A LOW CODE BACKEND?



A low code technology backend uses no hard coding when developing integrations and automations through a graphical user interface. Creating dataflows using a mix of pre-made low code functionality and self-developed tools like Actions. The traditional backend can gradually be phased out.

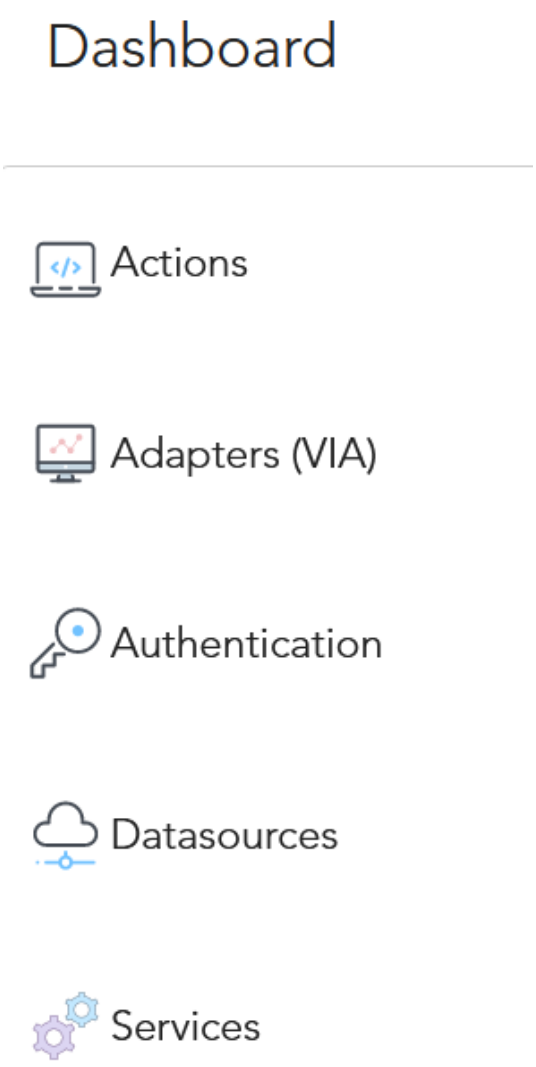
Low code technology can be summarised as: "The automation of hard coding".

A low code backend literally fills up the gap between business and IT. They design together new data flows, the business requires. The graphical user interface enables creation, storage, and updates of all low-coded data flows. A low code backend functions as a map visualising the business information highway.

A low coded backend sits on top of hard coding hosted by any service provider. This type of backend combines the best of both applications & server hosting. It is visual like an application, but the costs are usage dependent. The more data flows developed, the more processor capacity required to drive these data flows. The amount of data processed through each flow is also a cost driver.

5. DASHBOARD - MAIN MENU

Main Menu displays all low code functionality available; Users, Authentication, Datasources, Services, Adapters (VIA) and Actions.



Dashboard
Showing the Chills functions

Actions
Used in a Data Flow; transforming, checking, triggering or forwarding data.

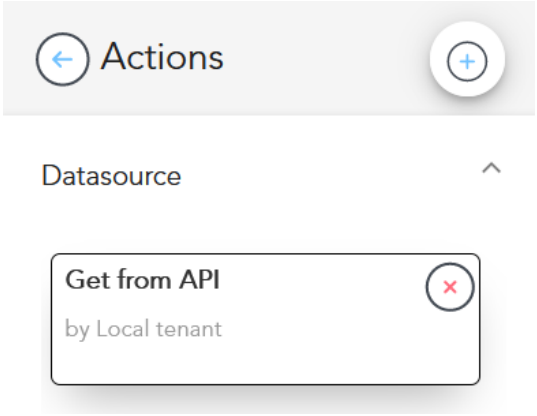
Adapters (VIA)
Connection of source and destination tables and Adapter management; testing, release, and versions management.

Authentication
Managing User and User group backend access.

Datasources
Access to an existing database and its tables

Services
Use of external service or tasks

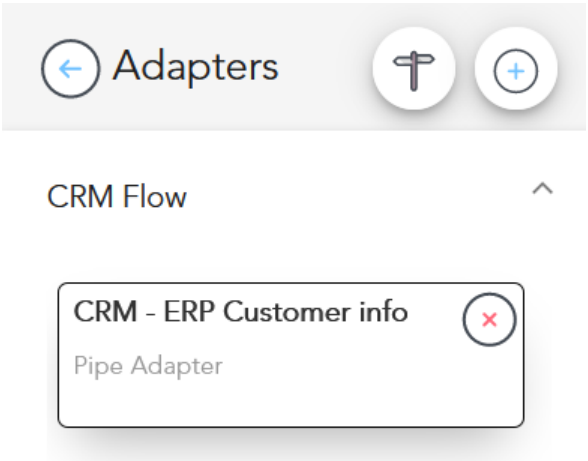
Actions
Actions are added in an Adapter data flow or to create automation.



Categories
Organise your Actions in different categories.

Unique Action
Each unique Action is listed under a category.

Adapters
An overview of all Adapters created.

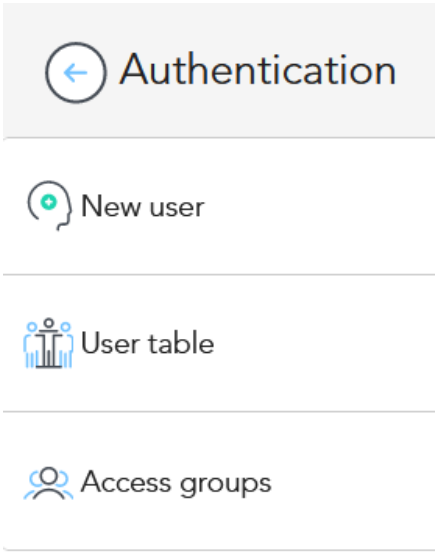


Categories
Organise your Adapters in different categories.

Unique Adapter name
An Adapter "**CRM – ERP Customer info**" is listed under the CRM Flow category.

Type of Adapter
The Adapter type: Pipe is visible under the Adapter name.

Authentication
Manage the backend user access.

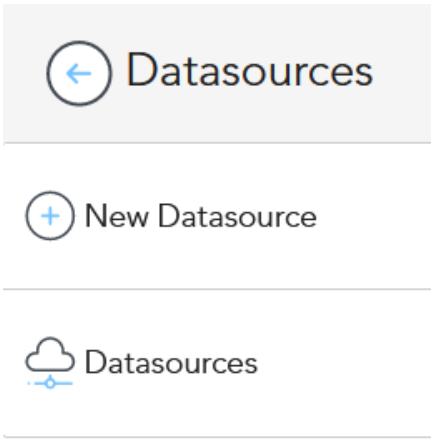


New user
Register a person's credentials and generate access tokens.

User table
Registered user overview.

Access groups
Groups of users with specified access.

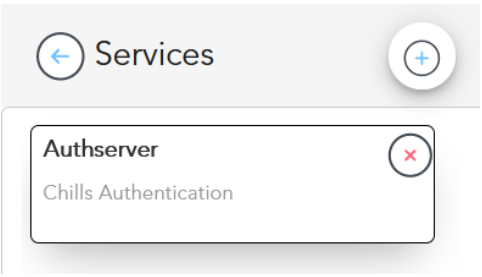
Datasources
Datasources are databases, delivering data to create data flow and automate business processes.



New Datasource
Add a new datasource to the Chills backend.

Datasources
Current Datasources connected to the Chills backend.

Services
Use of external services or tasks.



New Service +
Add a new Service to the Chills backend.

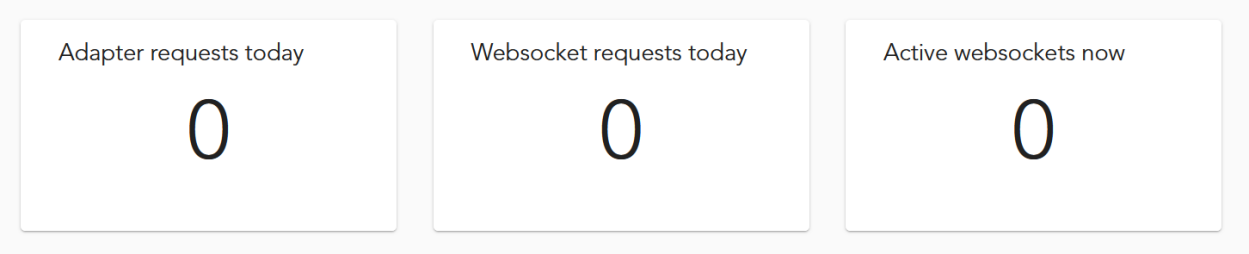
Service
Current Service "Azure AD integration" connected to the Chills backend.

Dashboard

The dashboard consists of two sections, Chills monitoring and maintenance.

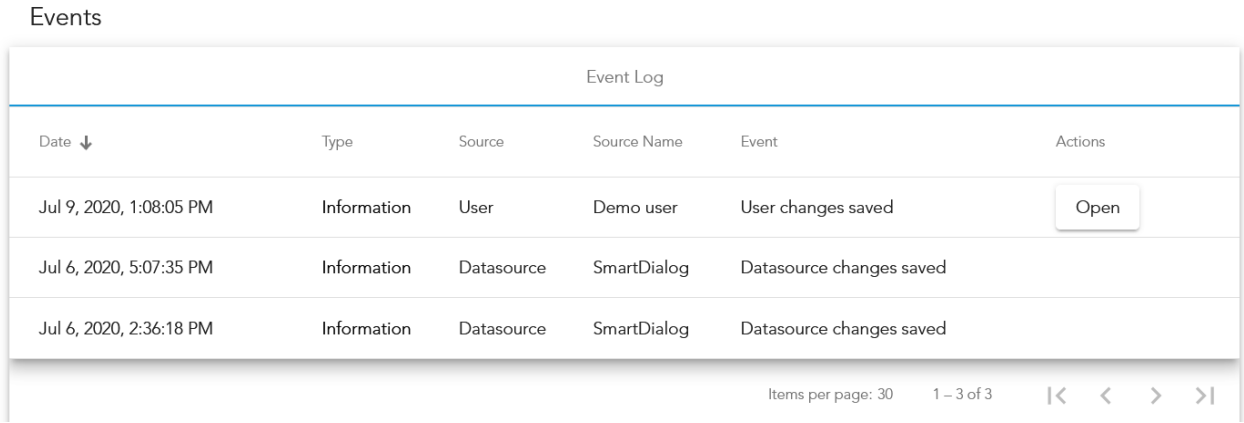
Monitoring

It shows the live use of CPU and Memory indicating the server hardware use.
The other data shows how often low code functionality is used and indicates business processes activity.



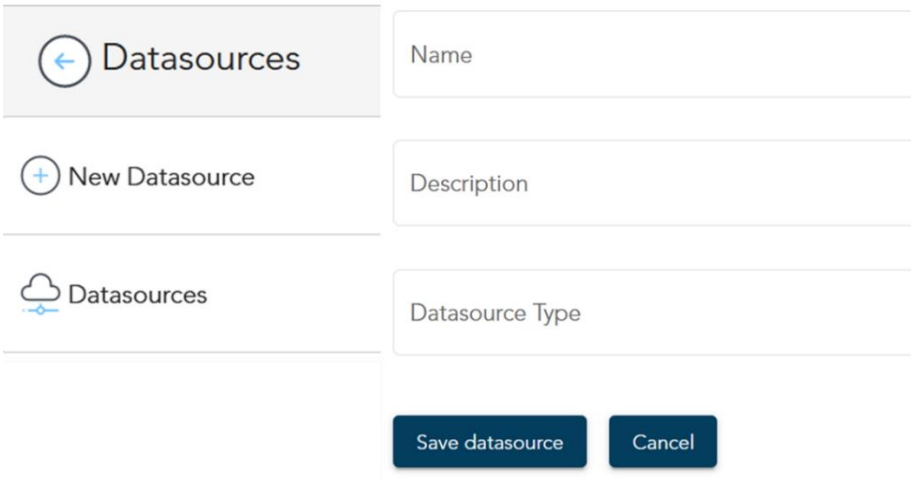
Maintenance

All activity on the backend and work on the actual low code functionality is registered. A failure on the backend will be displayed on the top of the list. The "Open" button allows you to immediately access the low code functionality (Datasource, Adapter or Data Flow) to investigate the problem's cause.
If changes occur in the API's Chills is connected to it also will show as a failure. Chills monitors therefore also API changes, potentially disturbing the Data Flow.



6. BACKEND ACCESS

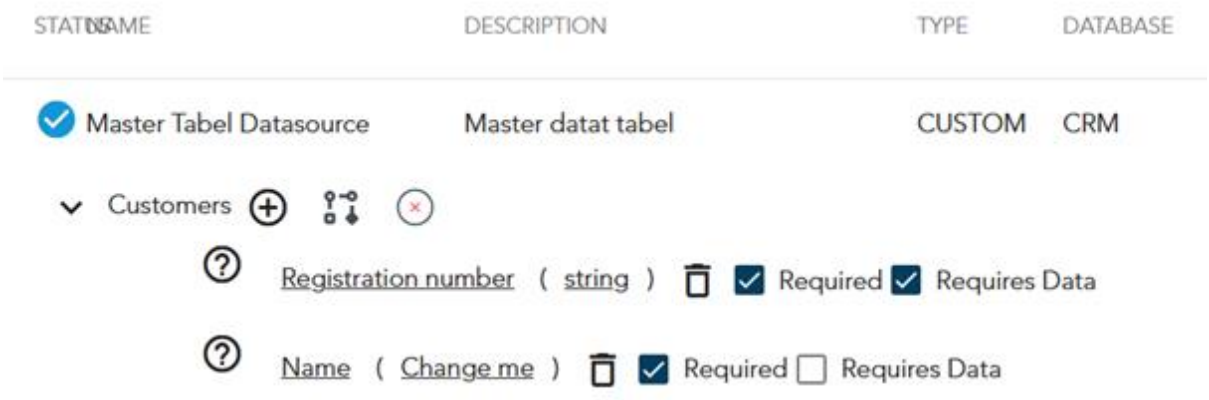
Datasources in the main menu give the Chills backend access to databases and tabels. Click on New Datasource to create any internal or external datasource on the backend, provided the availability of an API and its credentials.



Each data source created becomes available in the Datasource overview.

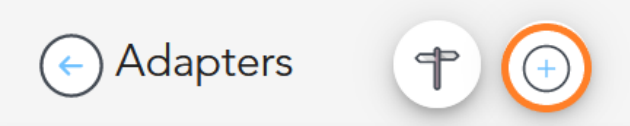
STATUSNAME	DESCRIPTION	TYPE
GMCC website	Apptivo CRM API	API
SmartDialog	SmartDialog API	API
SmartInsight	Data for analysis	CUSTOM
Test API Datasource	How does a Datasource function	API

Under each Datasource original tables are available or custom tables can be made.

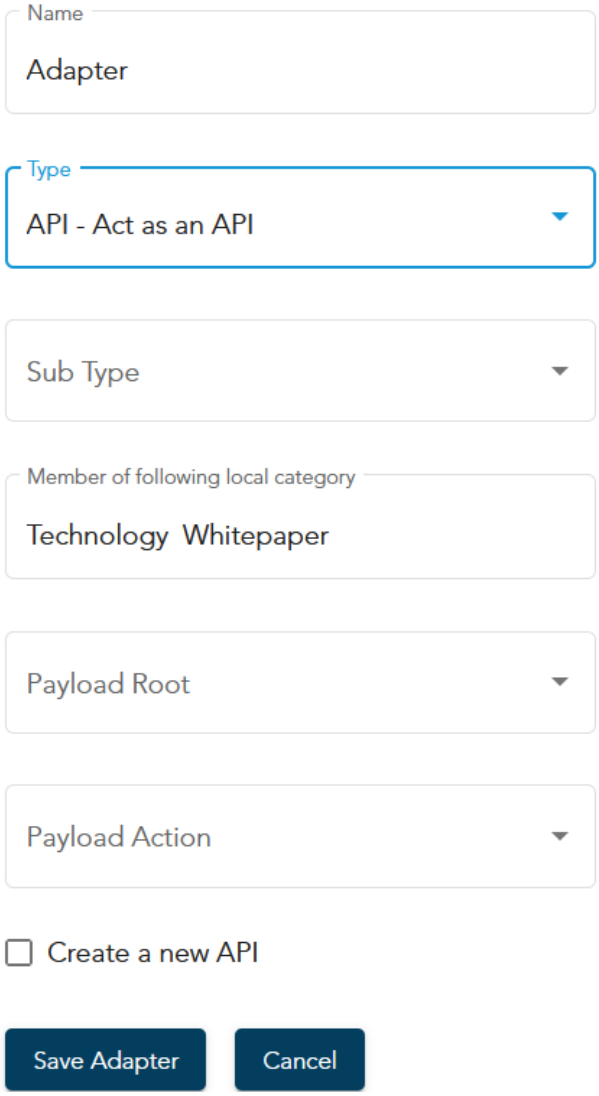


7. ADAPTER MANAGEMENT

Create a new Adapter.



Fill out the Adapter credentials.



Adapter name
A name reflecting the integration or business process.

Type
Select a predefined type; API, WebSocket, etc.

Sub Type
Select the Sub Type.

Category
Select a category to organise your Adapters.

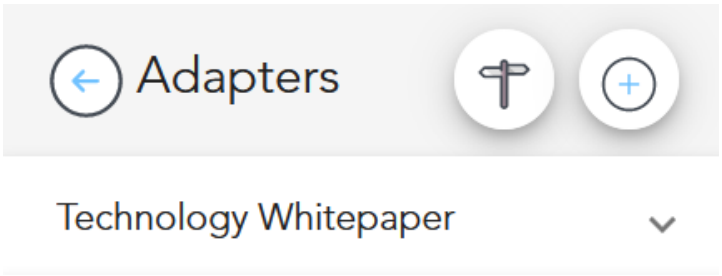
Payload Root
Select the correct payload.

Payload Action
Select the correct payload action.

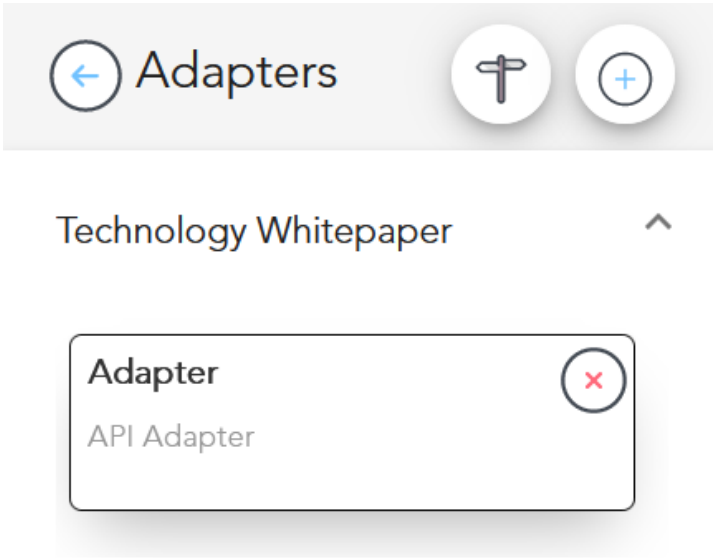
Create a new API
Select API if the Adapter must be accessible outside Chills.

Saving
Save the settings or Cancel.

The Adapter shows up in the newly created category, in alphabetical order.

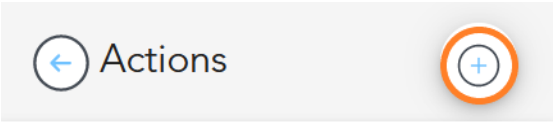


The Adapter in the Technology category can be deleted or selected to manage the data flow.

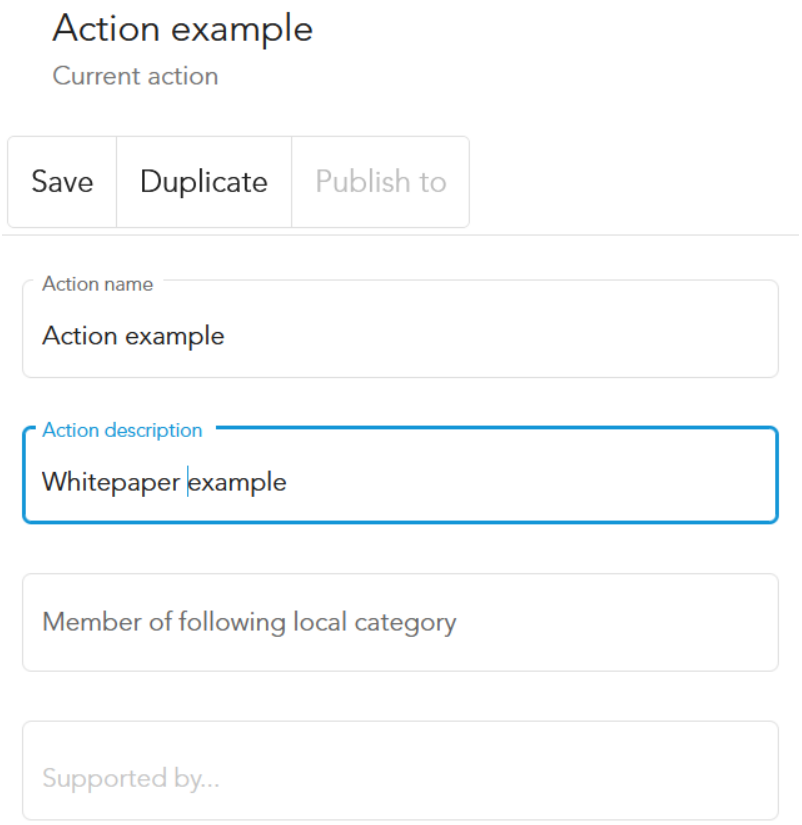


8. ACTIONS – ACCESS TO THE HARD CODING

Create a new Action. Actions will be accessible when creating a Data Flow.



Fill out the Action details. Tick "Publish to Marketplace" to make the action available for other Chills tenants.



Buttons
Use the Tabs to duplicate an Action or Save the Action.

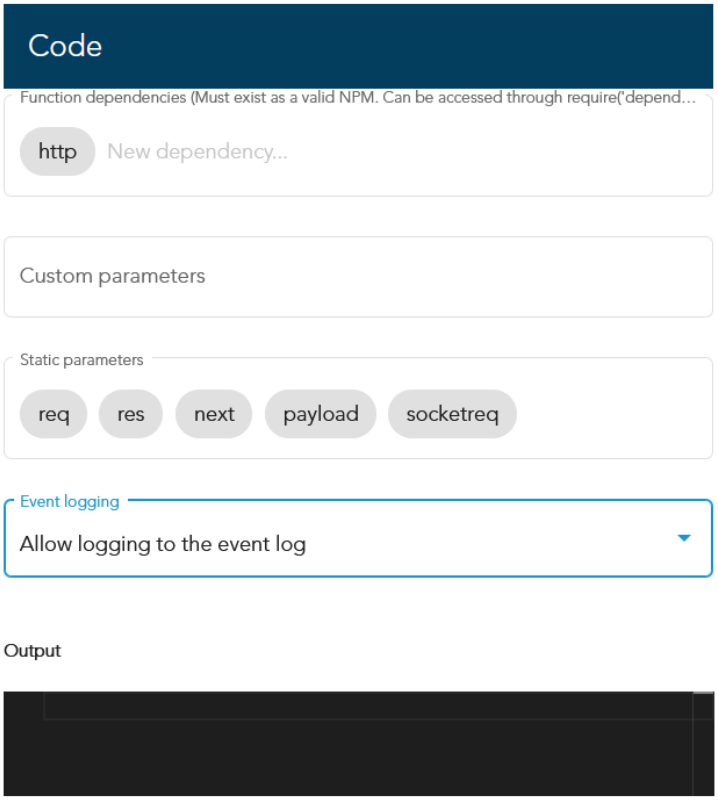
Action name
A recognisable name

Action description
Describe the function of the action.

Category
Select or create a category to organise your Adapters.

Supported by ….
Select which part of Chills the action can be used.

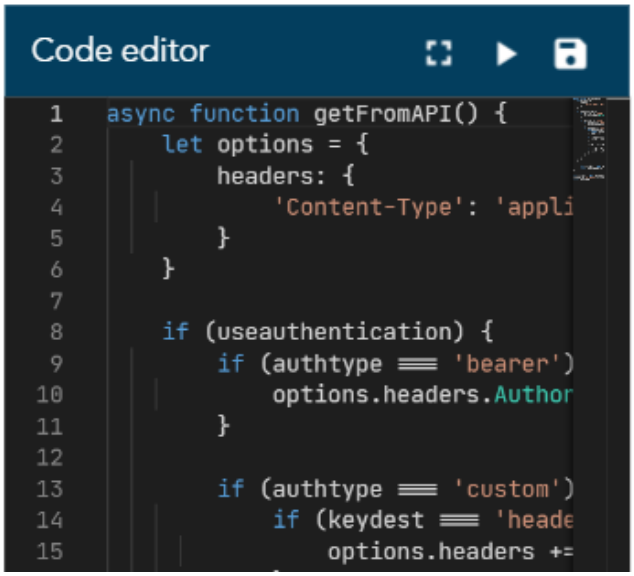
Add fields +, to obtain information to be used in the action code.



Event logging
Optional due to confidentiality reasons

Output
The test Result from running the Code editor.

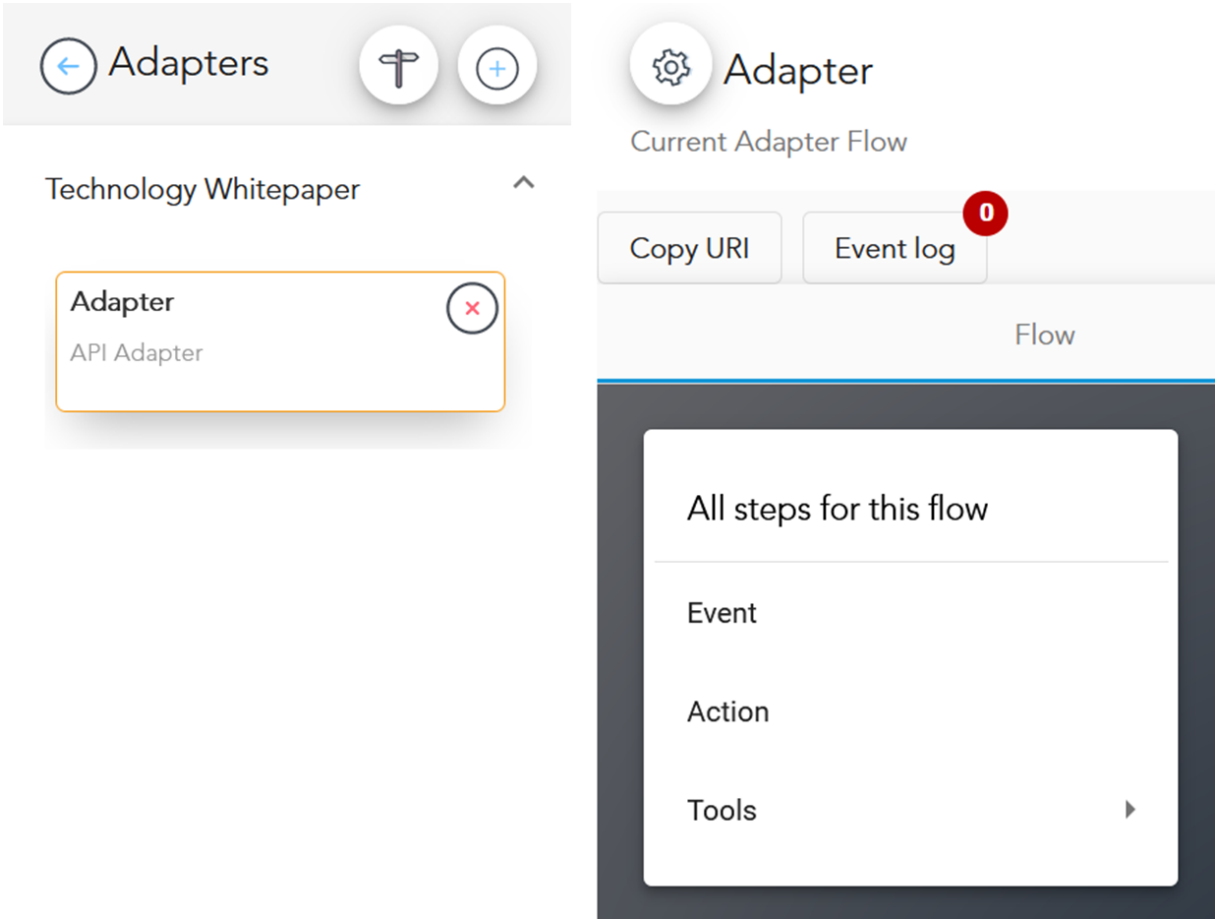
Code editor: optional to edit the hard code.



Enlarge - Run (test) - Save

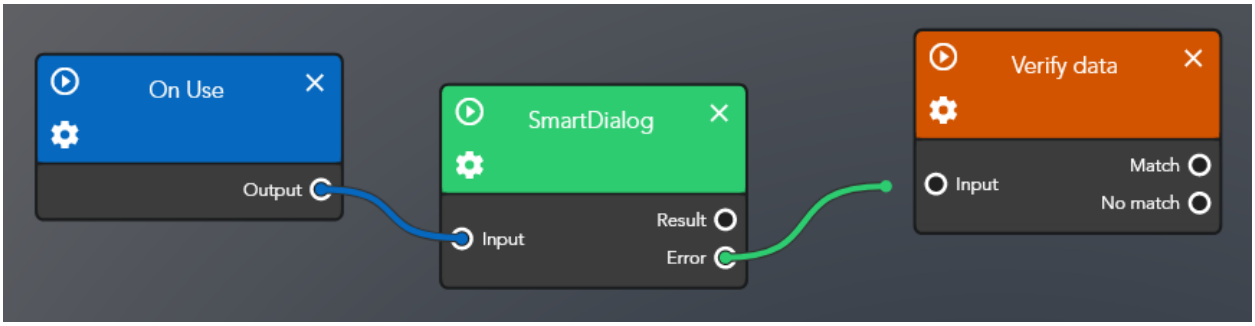
9. DATA FLOW / AUTOMATION CREATION

Selecting an Adapter shows a screen to create the data flow.
The Step menu in the Data Flow screen shows the options to add.



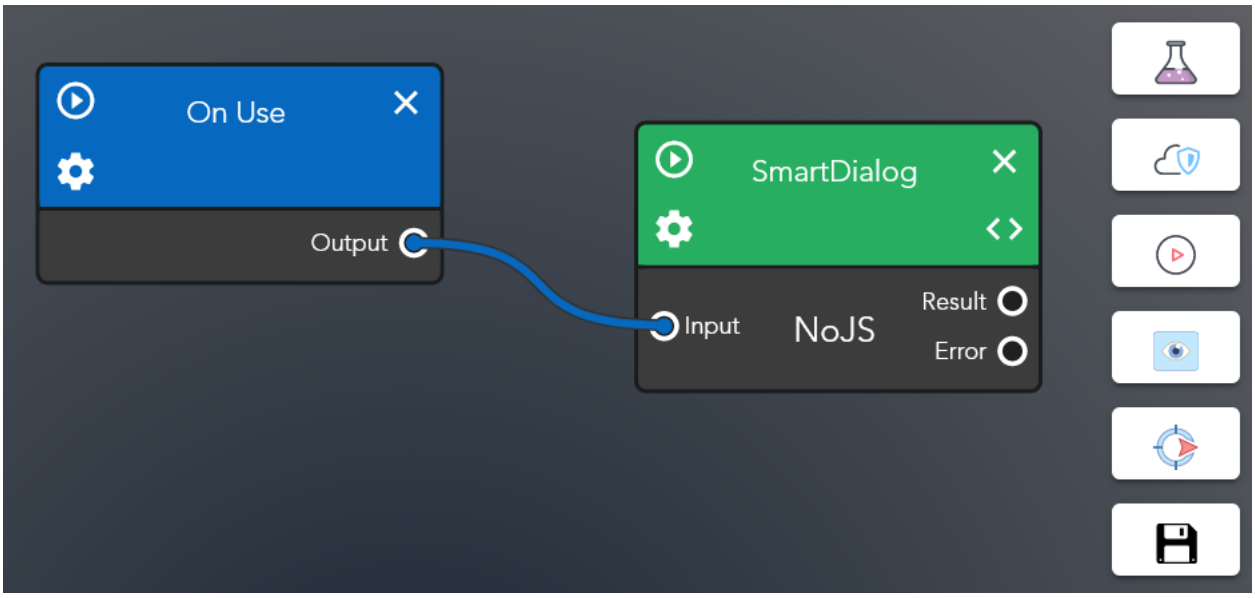
Add a Step: Event, Action or Tool

By selecting a Step menu, a step will appear visualising the low code functionality. The data flow is created without using any hard coding. By drawing lines, the steps will be connected creating the desired data flow or automation.

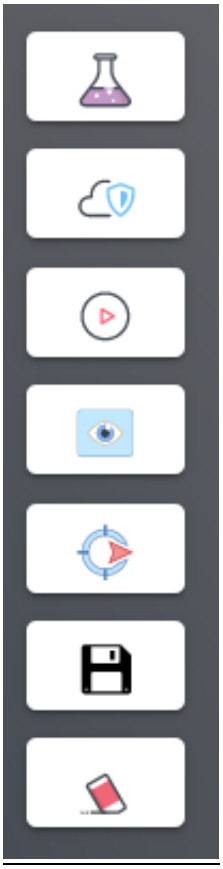


The Data Flow menu

The Flow menu displayed to the right manages the normal tasks of an integration.



Flow menu details



Activate the test environment parallel to the operational flow.

Enabling collaboration in the same screen with other users.

Select a specific payload to run through this flow. Only visible in an Adapter.

Live view shows current activity in the selected flow.

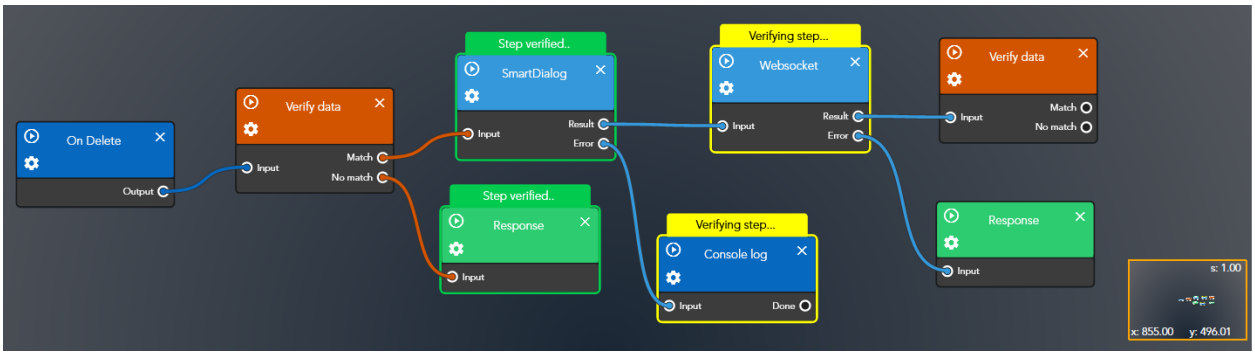
Restore the workspace to your centre position.

Save & activate the flow and changes.

Erase the flow. Deletes all steps and paths.

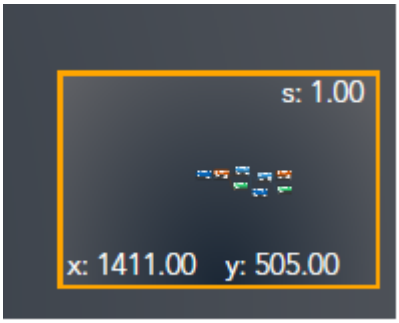
The life testing of a data flow

Each step is tested and highlights when an error occurs. This is made visible in red warning frame with text.



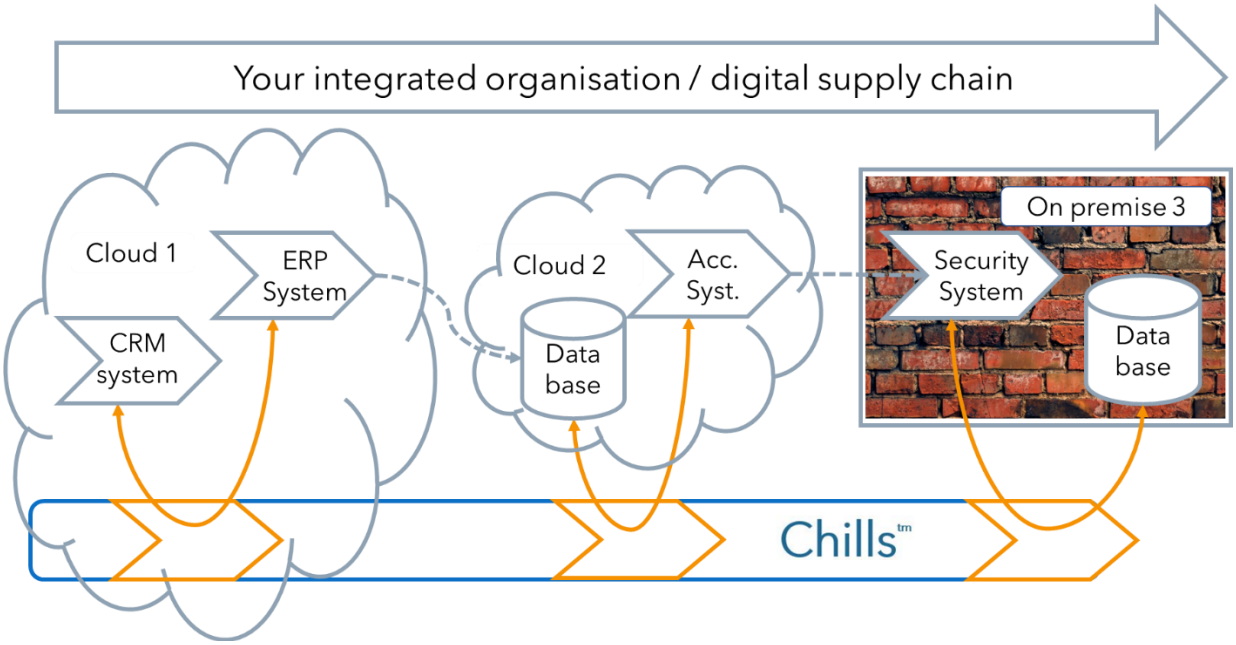
Flow navigator

In the bottom right corner is a Data Flow navigator visible. A chart navigator enables users to have an overview of the potential large and complex data flow creation. You navigate to the right location in the Flow by clicking in the navigator.



10. INTEGRATION SCENARIOS

Chills enables integrations for various hosting scenarios and supports always a two-way integration.



Cloud 1 scenario
A document and project management application in the Chills cloud. Chills easily integrates your current project management and document management system.

Cloud 2 scenario
A database and an application in the Cloud separate from Chills. Chills easily integrates the database and application, provided both have an open API.

On premise 3 scenario
An important application and database with sensitive information is hosted on local hardware servers (On prem). Chills easily integrates provided access through the firewall and open API at the application and database.