

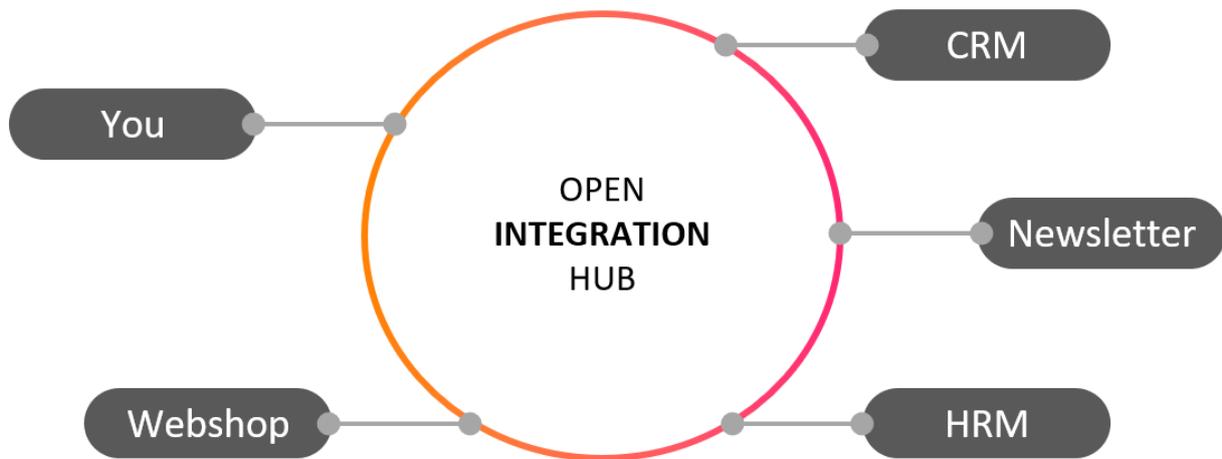


# Open Integration Hub

One connector for many integrations

„What concerns everyone  
can only be resolved by everyone.“

Friedrich Dürrenmatt (1921-1990), The Physicists.



This is the right White Paper for you **if you want to:**



- Know how Data Integration via Open Integration Hub can save you a lot of money
- Get rid of data silos and unnecessary complexity in your legacy IT system
- Build an innovative basis for further data integrations and exchanges

If you have been searching for a solution providing an **easy way to synchronize** data from all your isolated data storages and legacy IT systems, you have been **successful! Integration** is a crucial part to successful adoption of cloud software as it ensures smooth processes using **multiple best of breed solutions**. The Open Integration Hub revolutionizes and allows Data Integration and Exchange.

*“Do I want to integrate data of multiple applications easily?” - “Yes!”*



*“WHY do I need the Open Integration Hub?”*



**Today**, it is more important than ever before to be competitive, **cost and time efficient** and to find innovative ways to achieve digital transformation in cloud computing. In the following, you will find some of the current risks for any business turned into advantages!

#### Risks for companies **without** the Open Integration Hub:



- Missing possibilities of integrating applications via APIs
  - Many data silos and IT legacy systems that makes data exchange nearly impossible
  - Way too complicated Enterprise Application Integration(EAI) and Business Process Modelling (BPM) to reach for automated data integration
- ➔ The Open Integration Hub: The central solution for cross-application synchronization of company data - no more numerous peer-to-peer connections!



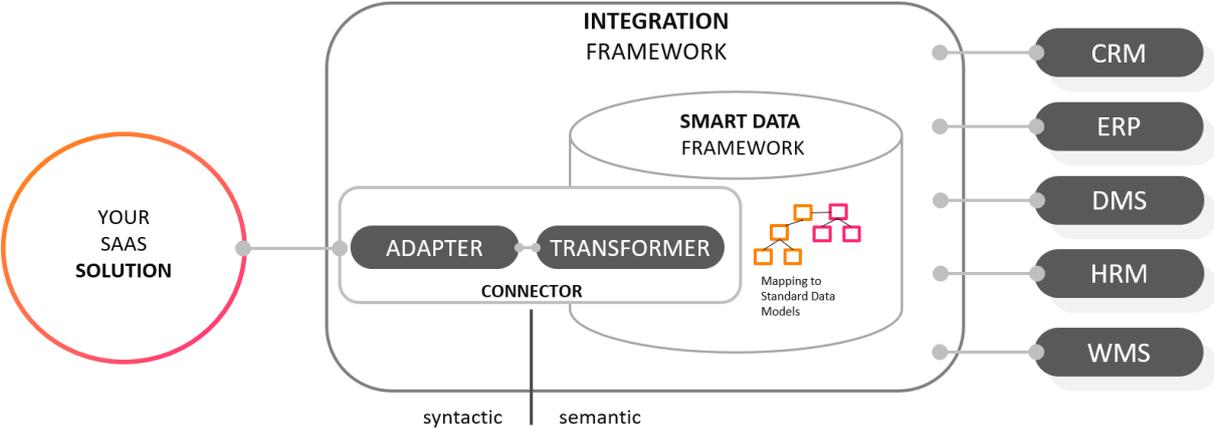
#### Advantages for companies **with** the Open Integration Hub:



- Integration guidelines and standard data models
  - Technical components enabling data synchronization
  - Ecosystem of connected solutions
  - Data privacy & security by design
  - Multiple platforms bringing integration to the customer
- ➔ The Open Integration Hub allows SMEs to focus on the company's goals instead of time- and person-expensive IT integrations

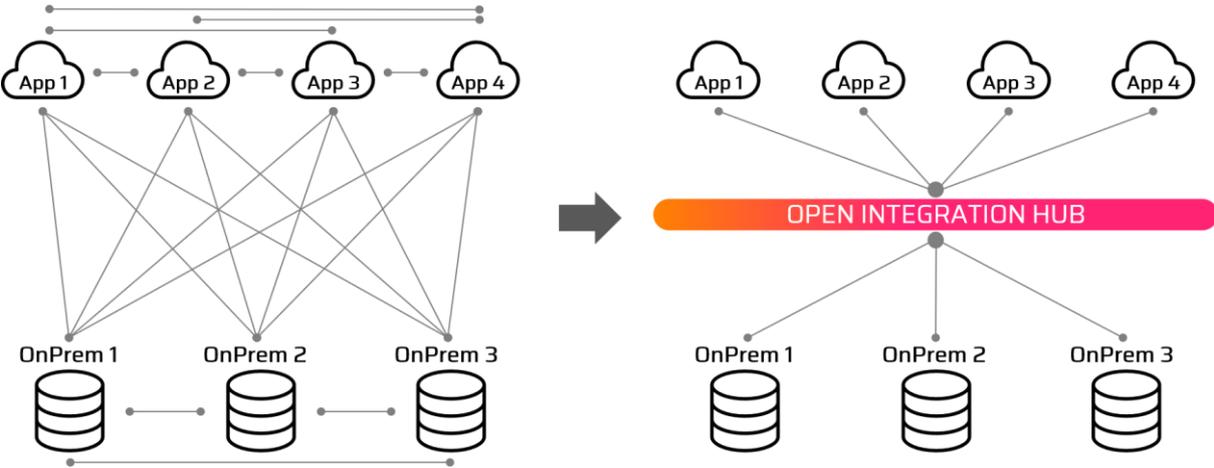
A **Connector** to the Open Integration Hub saves you resources on development and maintenance of your integrations. Build only one connector and be **linked to a whole ecosystem of solutions!**

Let's take a closer look at the functionalities, architectural build and the advantages of the Open Integration Hub resulting in revolutionary data integration! This explanation is a little more in detail and will teach you how the Open Integration Hub works and how you and your company will benefit from it:



*The Open Integration Hub - The central solution for cross-application synchronization of company data*

The Open Integration Hub consists of an Open Source framework providing **microservices, guidelines, standard data models** and an **ecosystem of connected solutions**. The basic idea is, that you want to share or integrate data from your application to another. To do so, it is necessary to **connect your solution(s) only once** to the Open Integration Hub instead of several peer-to-peer connections every time data exchange between two applications is needed.



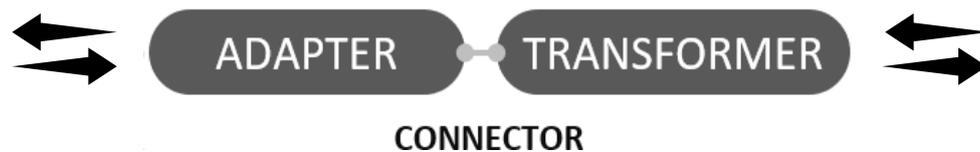
*Peer to Peer vs Open Integration Hub*

To explain the chances and benefits of the Open Integration Hub better, let us have a look at figure 2. On the left, there is the state of the art solution used by many companies, connecting each application and on-premise solution of the network n-times to each of the others. On the right,

there is the future of Data Integration: each node of the network will be connected just once towards the Open Integration Hub. This makes **automated Data Synchronization** and **Integration seamlessly**. The Open Integration Hub saves a lot of time and money integrating applications easily instead of expensive customized solutions for each connection.

## The Connector

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Let's have a look at the technical details and architecture of **the link towards the Open Integration Hub - the Connector!** In order to easily communicate and integrate all your applications data, the Connector consists of two distinct parts:

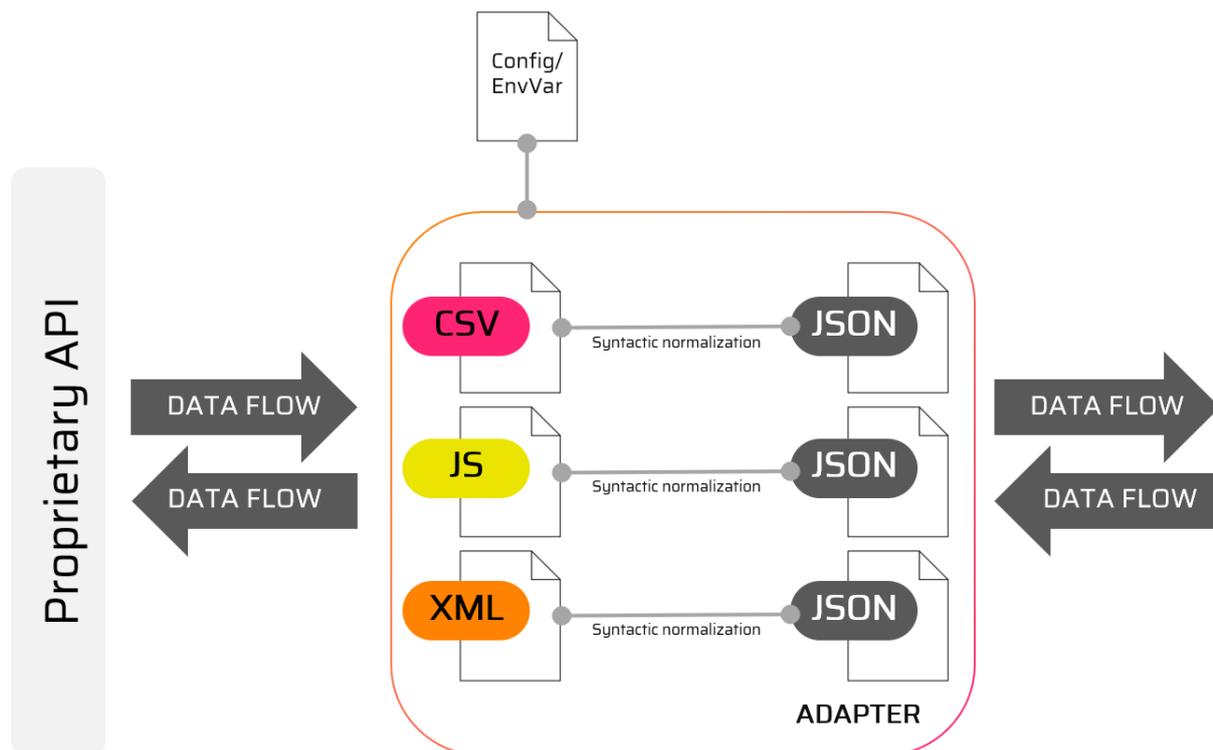


- The Adapter transforms incoming data syntactically, forming JSON objects
  - The Transformer re-allocates all attributes of the JSON objects to fit the Open Integration Hub master data model scheme of objects
- ➔ You **gain instant access on normalized and transformed data** by other applications by only connecting your solution once to the Open Integration Hub!

## The Adapter

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The Adapter is a **single, reusable piece of functionality** that stands between your solution's API and the Transformer. To enable communication between you and Open Integration Hub, the Adapter syntactically normalizes and transforms your applications data into a JSON object. For example, **transforming CSV-, JS-, XML-** files into JSON objects. The Adapter exposes the endpoint of your SaaS solution's API via pre-defined actions and triggers. Those make sure that the four basic operations of persistent storage are available, such as create, read, update and delete a file.



*The Adapter translates protocols and transforms data formats from your application into JSON objects*

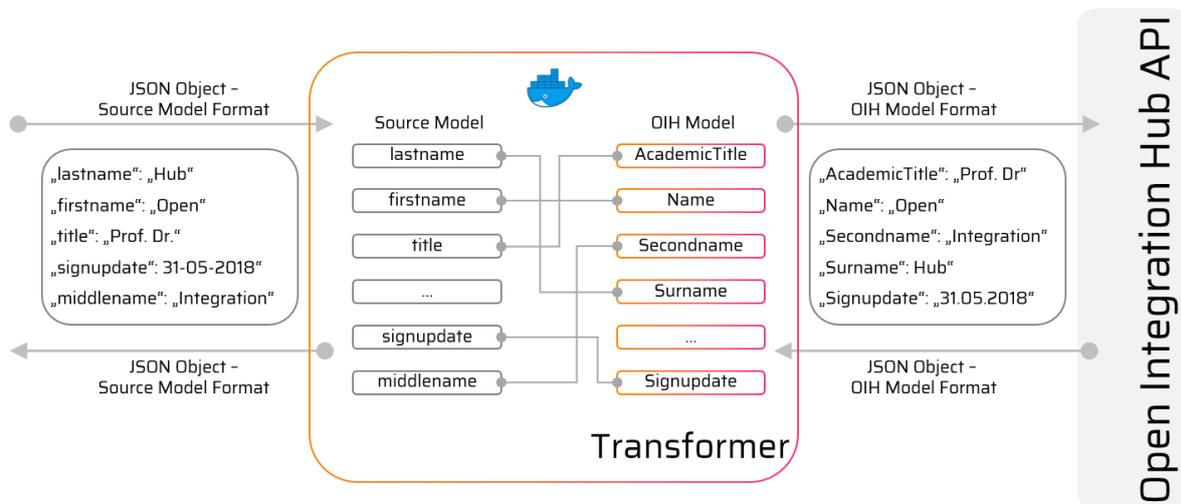
After the transformation of the incoming files into JSON objects, these objects need to have the same attribute-chronology, fitting the scheme of the Open Integration Hub master data model. To do so, the Transformer needs to map each attribute of your integrated solutions object onto the respective attribute from the master data model as we will learn in the next chapter!

## The Transformer

Before data of your solution can be integrated into the Open Integration Hub, there is still one last step: **the semantic transformation** of the attributes within each JSON object. That may sound a little tricky but the process is pretty easy. So that your data can be read by all other applications connected to the Open Integration Hub, the incoming JSON objects attributes need to be in the right chronology. This is also true for the other way around, when you receive data from other applications. Hence, the Transformer re-allocates all attributes into the necessary scheme, depending on the target master data model.

Figure 4 depicts the Transformer **transforming data flows in both directions**, coming from the source model towards the Open Integration Hub and vice versa.

The Transformer always expects a JSON object as an input. Depending on the direction of the transformation the input either represents the structure of your solution's data model (upper data flow direction in figure 4), or the structure of the Open Integration Hub master data model (lower data flow direction in figure 4). The Transformer converts the incoming JSON object into the desired JSON object e.g. via a transformation language for the transformation. We suggest JSONata because it is very easy to use. Depending on the direction, the Transformer's output is then send either to the Open Integration Hub and is validated against a deposited JSON schema or to the corresponding adapter as it can be seen in the following:



*Mapping two data models: The Transformer semantically converts incoming JSON objects into the required output*

The reason why we suggest you to use JSONata expressions for the transformation is that it is pretty easy to handle without any further understanding of transformation languages or even without any deeper programming skills, as you can see in figure 5. To do so, you only need to map the incoming single attributes to the required output-attributes like we did in the following:



Easy mapping with JSONata expression:

```

"AcademicTitle": title,
"Name": firstname,
"SecondName": middlename,
"Surname": lastname,
"Signupdate:" $replace(signupdate, "-", ".")

```

*The JSONata expression above shows the actual amount of code necessary for mapping attributes - pretty easy!*

As you can see, the left part of the first row: "AcademicTitle" of the incoming JSON object will be mapped onto the Open Integration Hubs data model "title" and that is all you must to do for the mapping. For example, if you want to change the format of dates, connect multiple attributes or sum up a list of phone numbers, JSONata supports a lot of expressions that will allow any SME to **specify and customize** its **solution** to the very best, fitting your companies goals!

## Next Steps

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If you want to build your own Connector for the Open Integration Hub, you can find our most **recent updates, documentation and even examples** of current adapters and transformers here:



[Adapters](#) - for any information about the adapter in general

[Example: Adapter](#) - working prototype of our contacts adapter

[Transformer](#) - for any information about the transformer in general

[Example: Transformer](#) - working prototype of our contacts transformer

Join the **community** of the Open Integration Hub and **contact us** for more information!

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