xDI DEV

A Introduce xDI

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A1 - Key concepts, technical overview & architecture

Generalities

xDI Customers use cases

› Traditional BI	› Advanced usages and analysis	› Data exchange between applications › MDM	› Compliance	› API › E-commerce › Digitalization › Open Data	› Switch to the Cloud › Migration of DI assets
Business Intelligence	**Big Data No SQL New Analytics**	**Datahub ESB / EAI**	**GDPR Anonymization**	**API Web Services**	**Cloud Projects**
Telefónica Crédit Mutuel CIC Stäubli	AG2R La Mondiale adeo Leroy Merlin	OVHcloud Clairefontaine Loxam Saint Maclou	GRUPOEFE pacifico seguros	Générale de téléphone La Plateforme du Batiment W Smile EXIM Thailand	Match cora oney Rent a Car

200+ xDI Customers

The 3 xDI Benefits

A Unified Solution

Federate **any type of DI** (Big Data, API, BI, Streaming, Data Hub…) with a **unique and complete solution**.

Migrate, aggregate, publish data with the xDI **« universal » mapping**.

An Evolving technology

Accelerate your designs with a **flexible and scalable** technology. Both **Agile and Industrial** approach.

xDI natively and quickly adapt itself to the evolutions of your information system

A Mastered trajectory

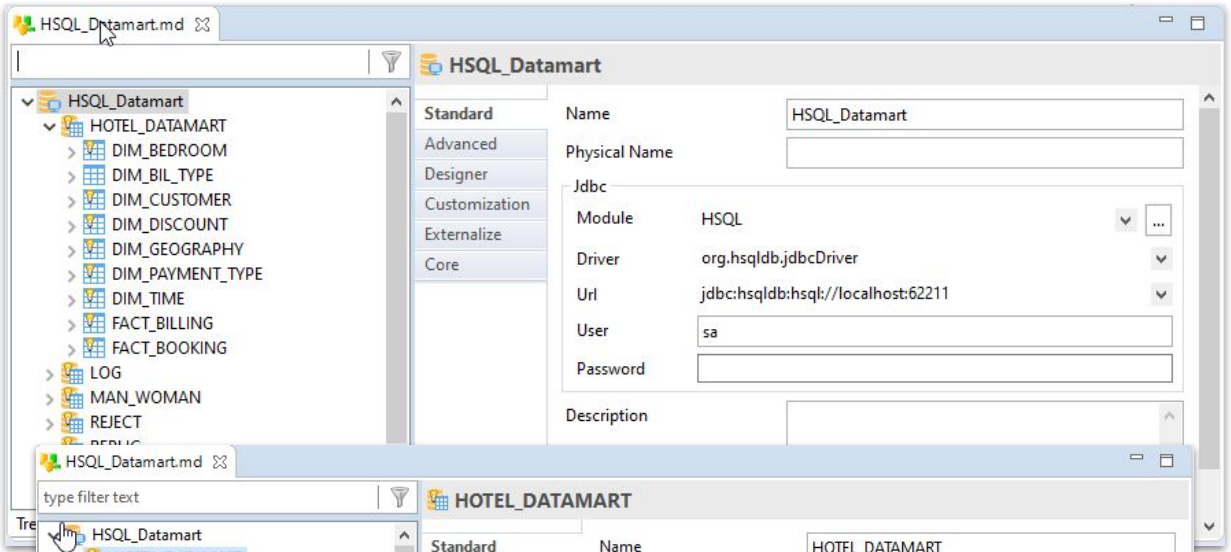
Free up time for IT services while de-compartmentalizing your Information System.

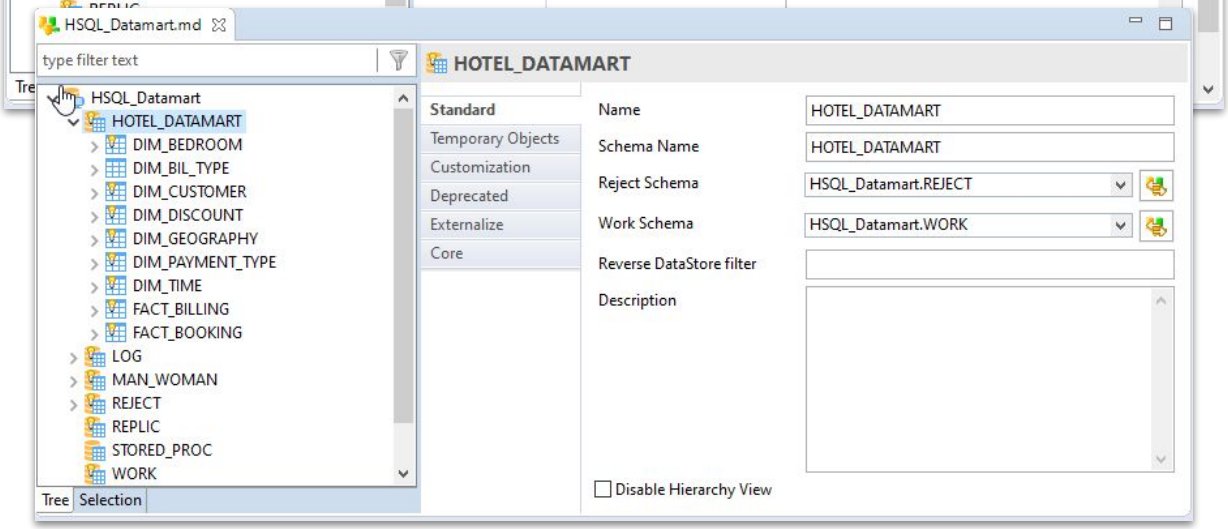
Give legacy visibility to your business teams: xDI **reduces your infrastructure costs and maximizes performance**.

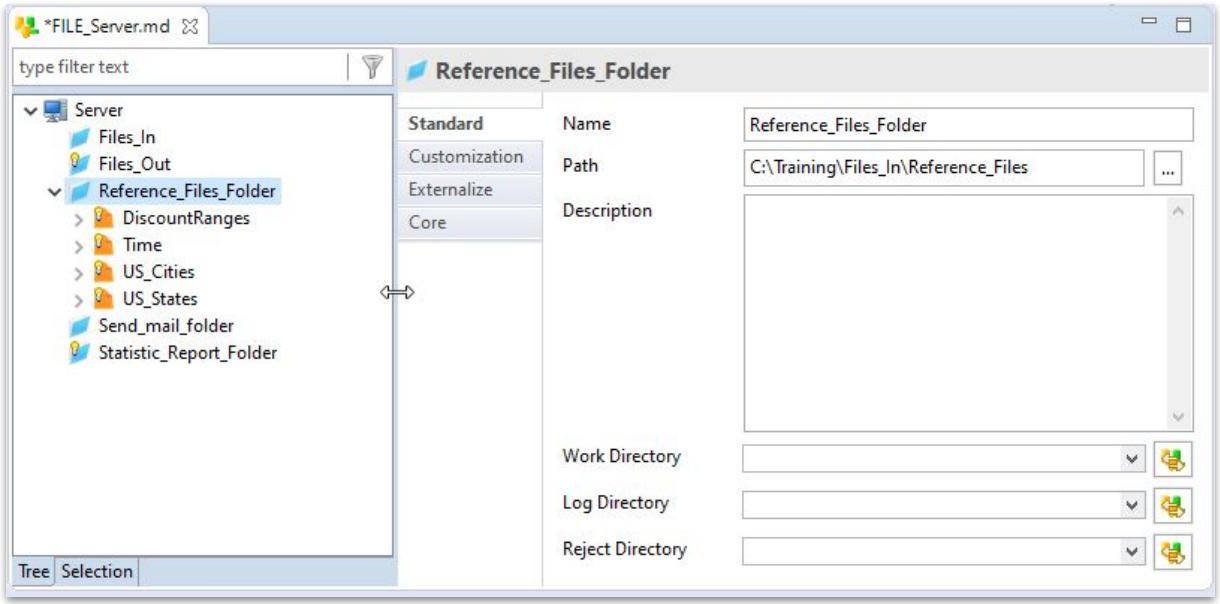
Only 3 types of objects manipulated in xDI

- The **Metadatas** represent the structure of your Information System
- The **Mappings** use the Metadatas to transmit information from one location to another, with potential transformations
- The **Processes** allow to organize the execution of your different Mappings

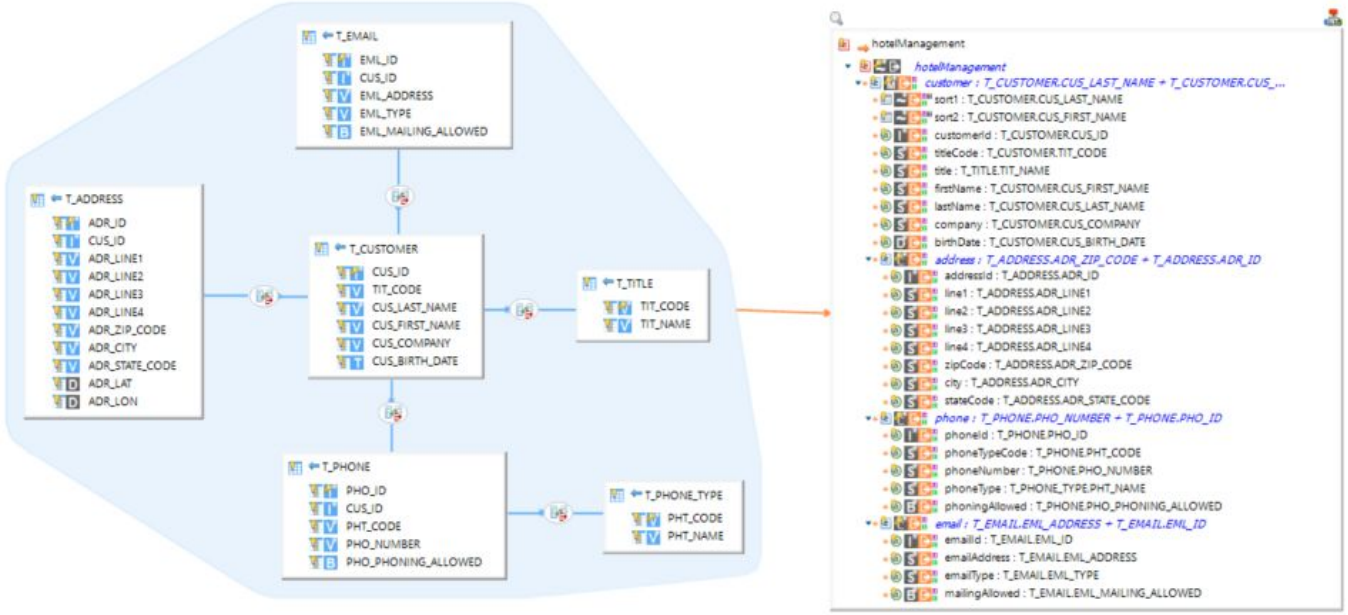
The Metadatas represent the structure of your Information System







Mapping : xDI top-down approach to simplify the DI projects



Universal Data Mapper

TOP / DOWN Approach

Generation of

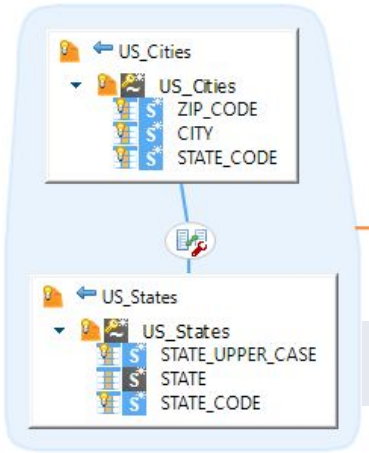
Generation of

Traditional Low Level Data Integration

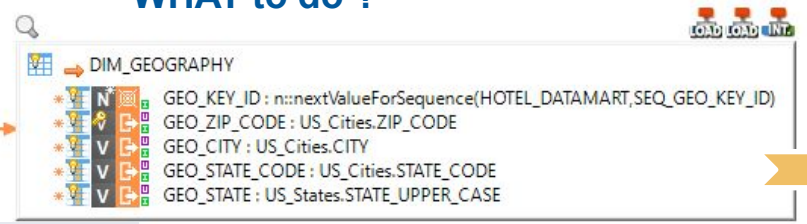
Event **DataHub** Processes **ETL** **API**

The Templates allow to generate a process from a mapping

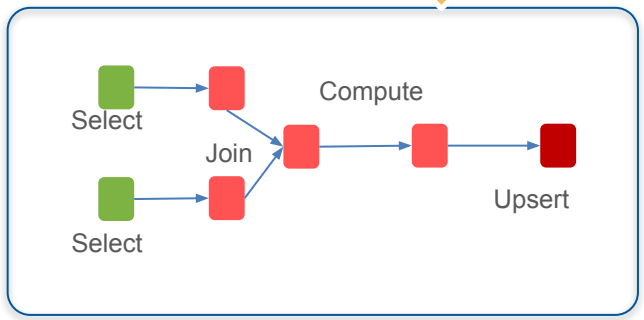
The user focuses on the business rules
WHAT to do ?



Mapping

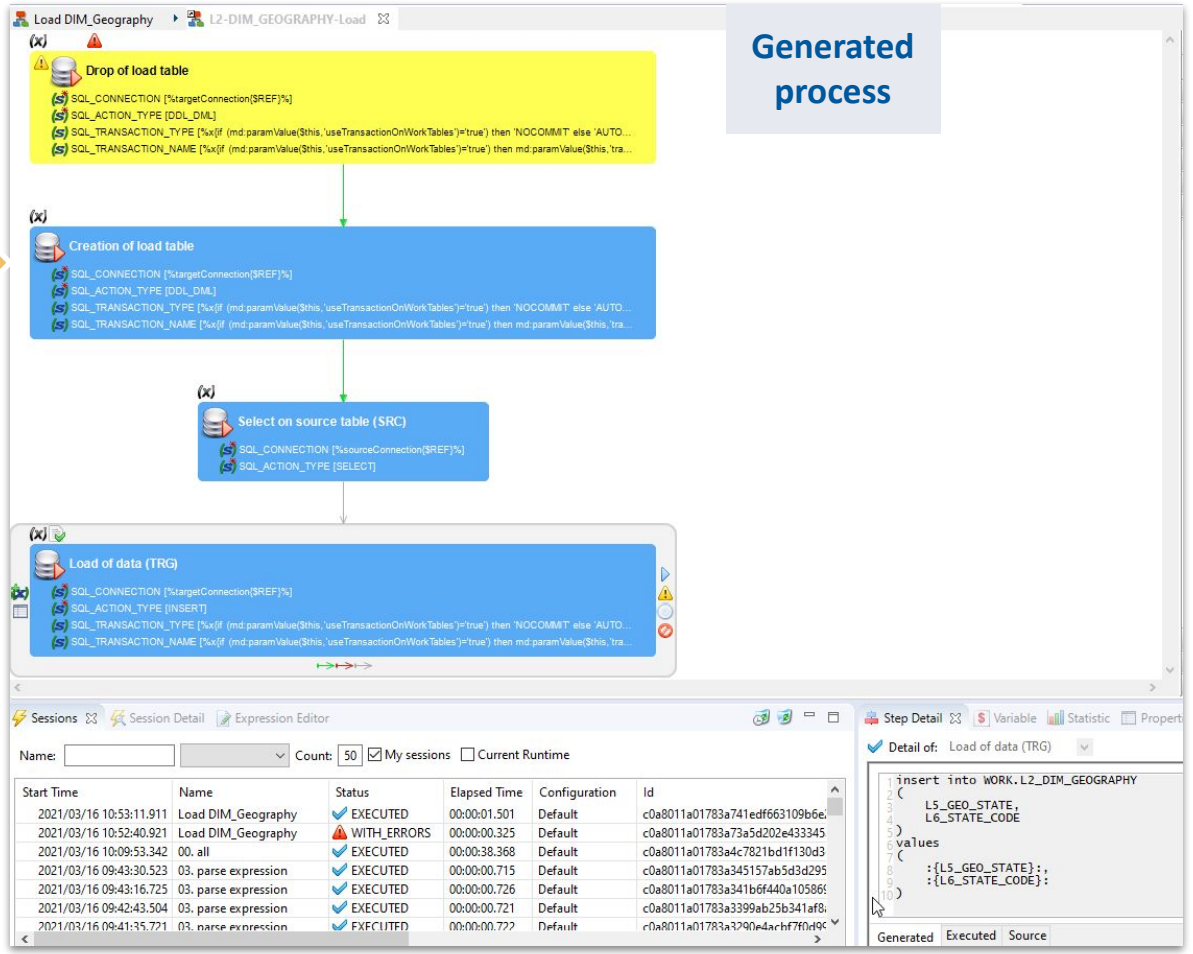


Templates



xDI automatically generates the technical process
HOW to do ?

Generated process



The Templates are used in multiple cases

Predefined and **reusable** technical process models

1-How to detect changes ?

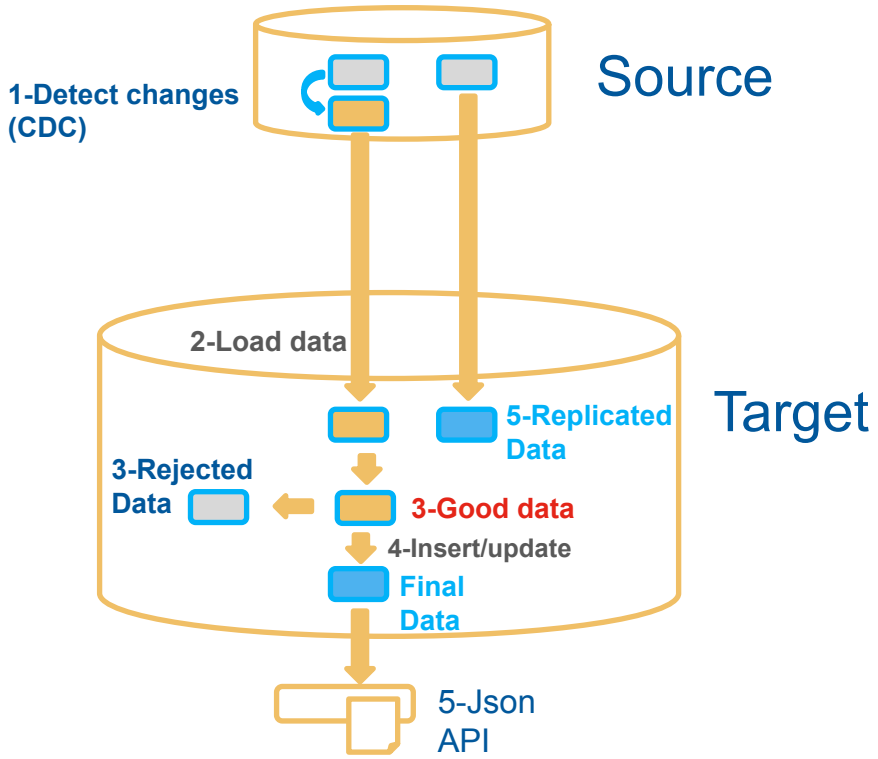
2-How to load data ?

3-How to manage quality ?

4-How to integrate ?

5-How to publish ?

6-How to replicate ?



Benefits of templates

- Separates business rules from technical models
  - ✔ Makes the Design **simpler**
  - ✔ Improves the maintenance phases
- Allows specific **optimizations** for each technology
- **Modifiable and open: No black box** effect
- **Industrializes** any technical need
- **Quality** and Standardization of the DI processes

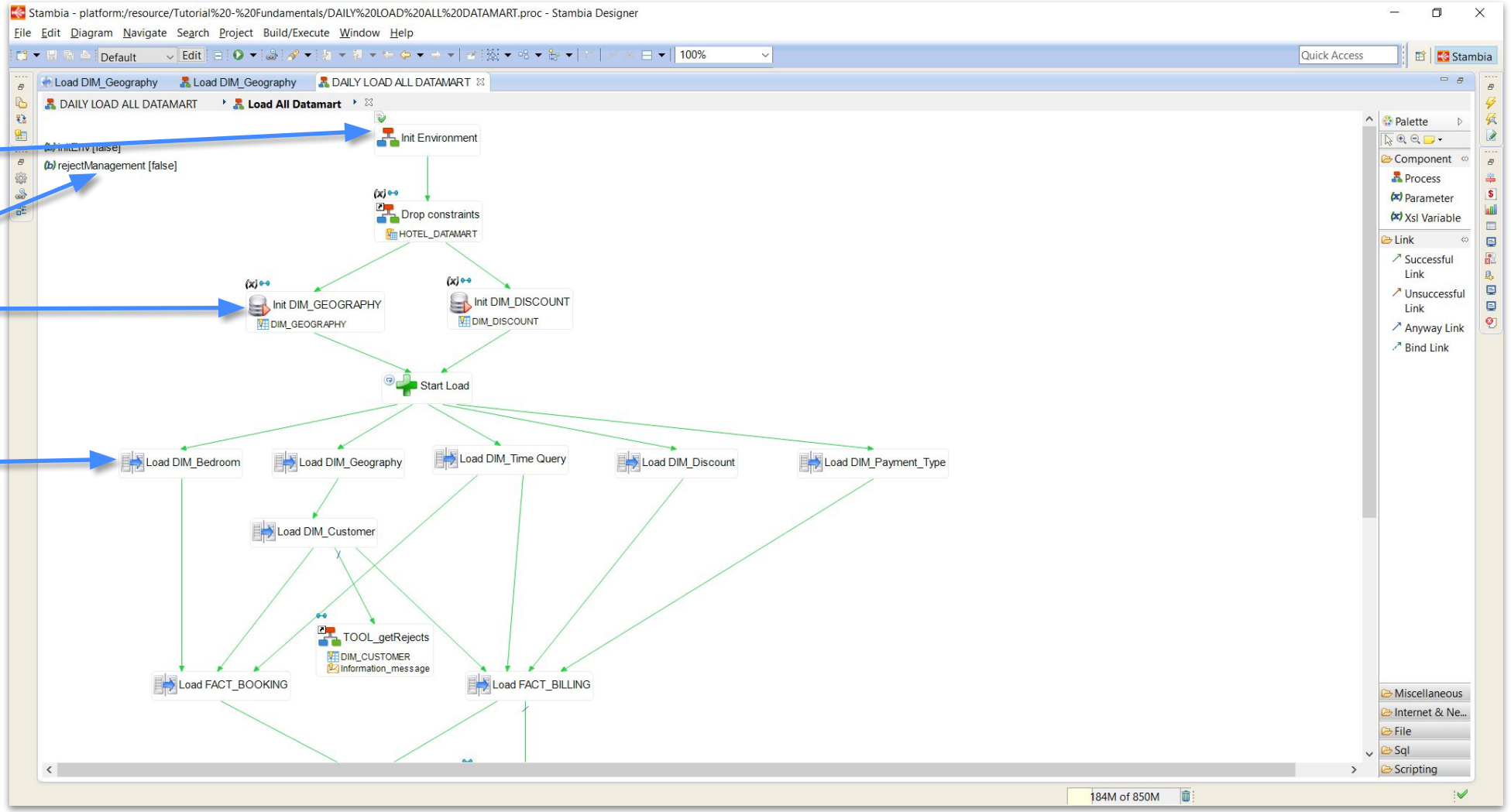
Use a process to orchestrate integration flows

Sub process

Parameters

Actions

Mappings

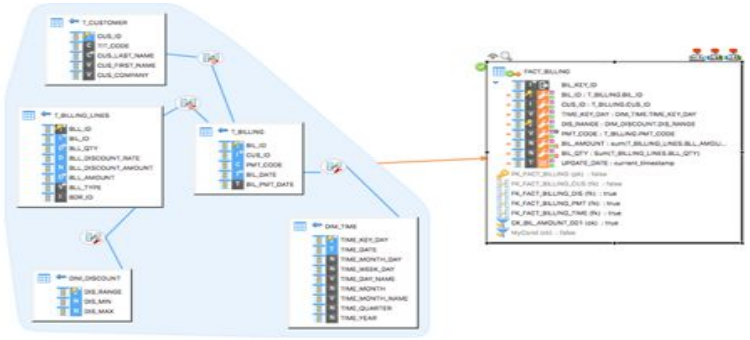


ELT & ETL - Delegation of transformations

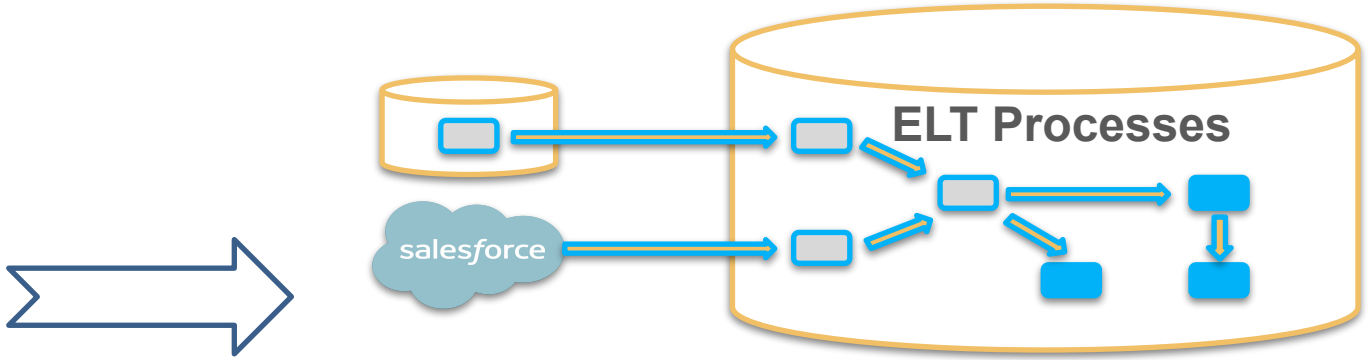
1 The user focuses on business rules

-

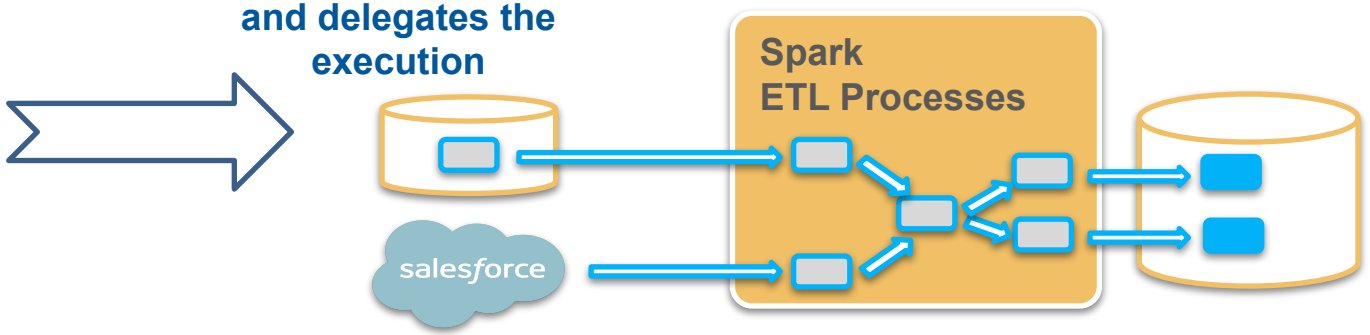
WHAT to do



2 Semarchy xDI generates ELT or ETL processes **and delegates the execution**



No proprietary engine



Delegation of transformations - Benefits

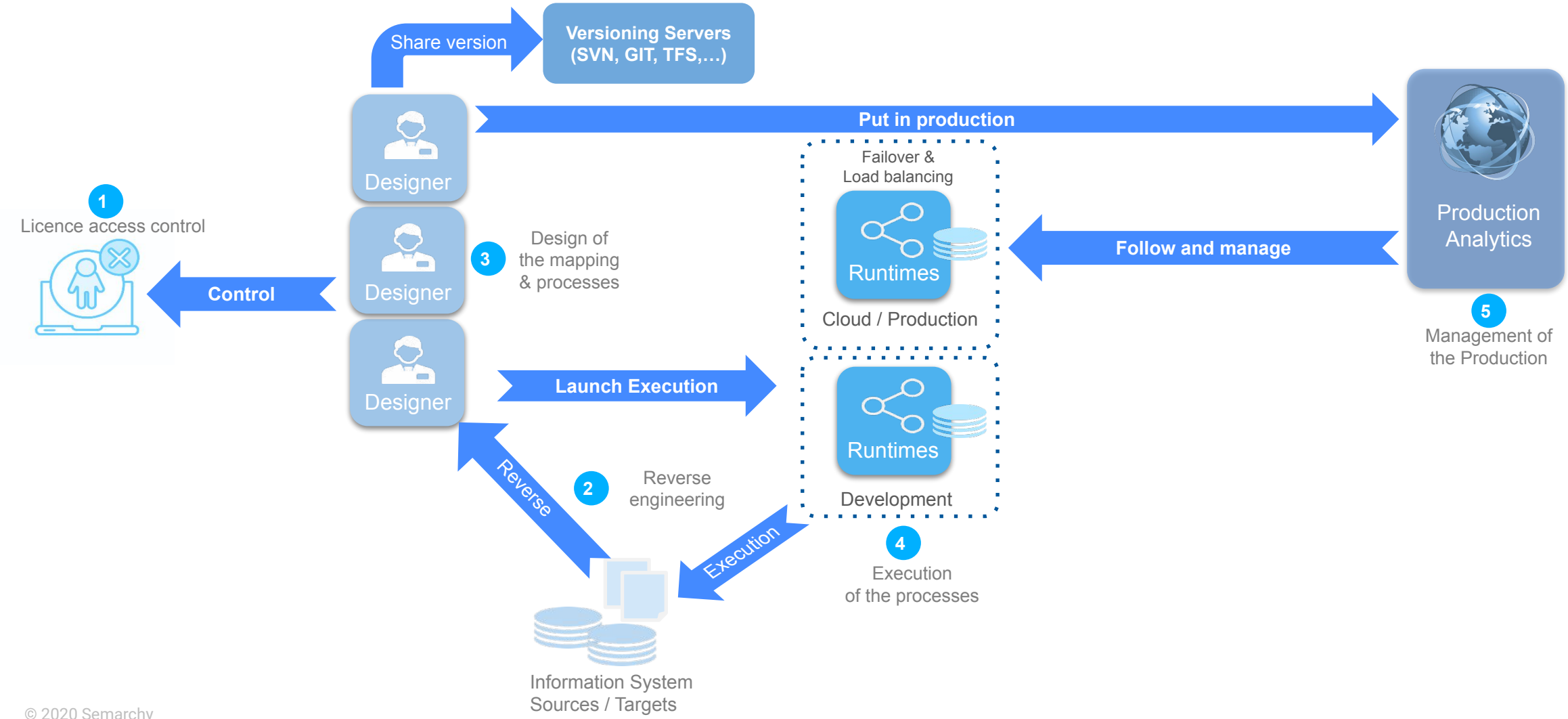
- Optimizes the **performances**
- No proprietary engine

  ✔ **No black box** effect
  ✔ Cost mastering

- **Hybrid** cloud / on premise **deployment**
- **Hybrid** ELT (RDBMS) & ETL (Big Data)
- **Simple and light** architecture

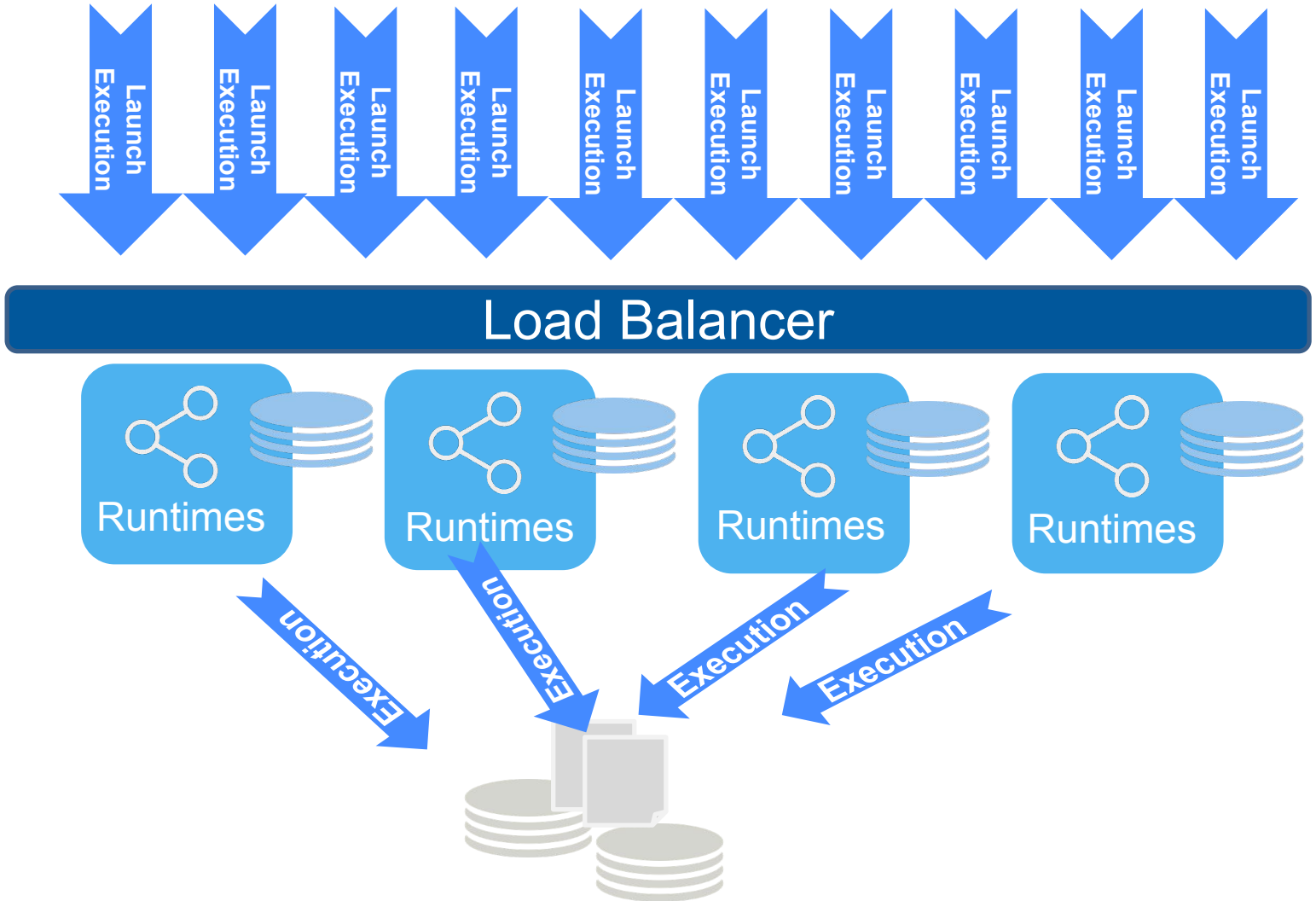
xDI architecture

xDI Architecture



A-Introduce xDI

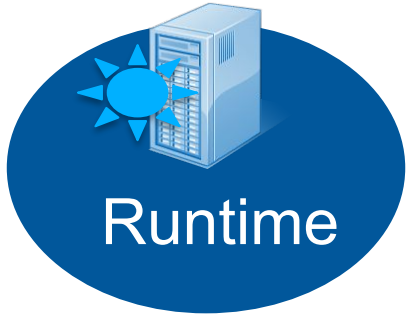
Load Balanced Architecture



The Designer

- Based on Eclipse
- Stores its metadata in XML format
- Allows sharing, archiving and versioning through the common Versioning Systems Servers (CVS, SVN, GIT, TFS…)

The Runtime



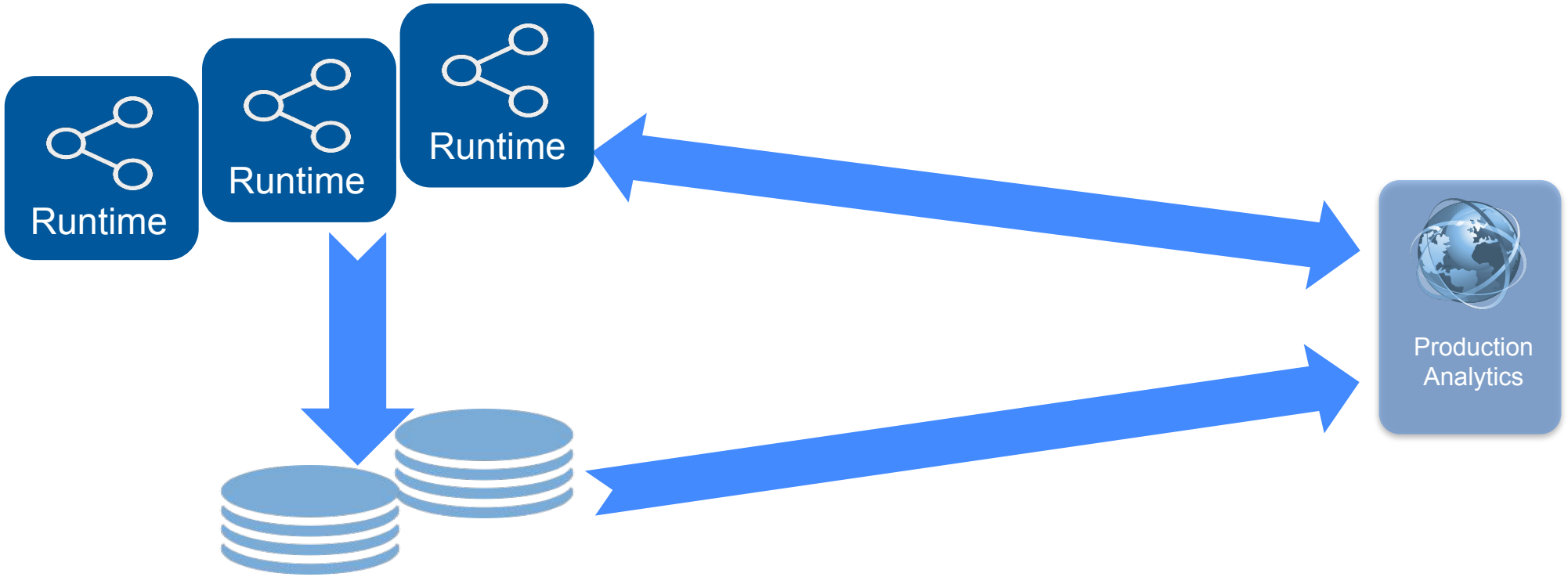
- Java
- Manages its logs in a database
- Has different purposes :
  - Execution
  - Report
  - Scheduling
  - Web Services hosting

xDI Analytics

- Web Component
- Dedicated to operation teams
- Functionalities
  - Import and configuration of packages
  - Deliverable generation and publication
  - Deliverable Scheduling
  - Session monitoring
  - Runtime monitoring

Focus on Analytics architecture

- One analytic can address several runtimes



To go further

Document Type	Link
French Video xDI Technical overview	https://www.youtube.com/watch?v=Ldu7V4ae958
French Video Model approach	https://www.youtube.com/watch?v=A0zPbTP3wyY

xDI DEV

A Introduce xDI

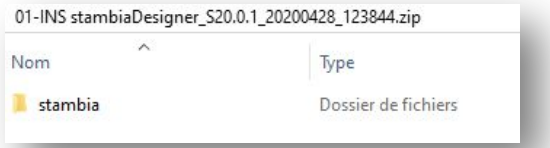
A2 - Installation, demonstration & practical part

xDI Designer installation

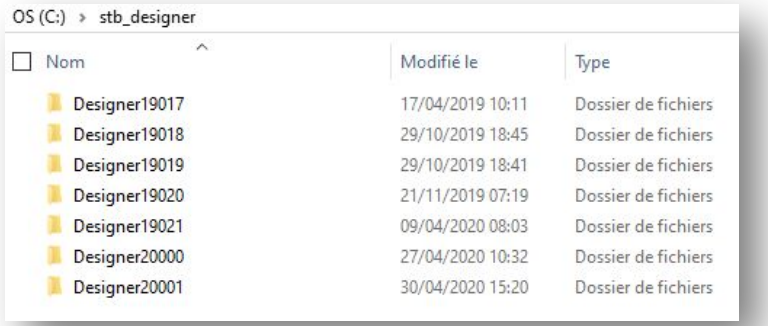
- Consult the reference documentation for installation

https://stambia.org/doc/52-stambia-di-software/designer/installation-and-upgrade/786-installing-the-designer

- Uncompress the downloaded zip file



- Rename the uncompress folder with the version number could be a good way to use the correct release :



Demo

xDI Designer GUI

Semarchy

Together Everyone Achieves More

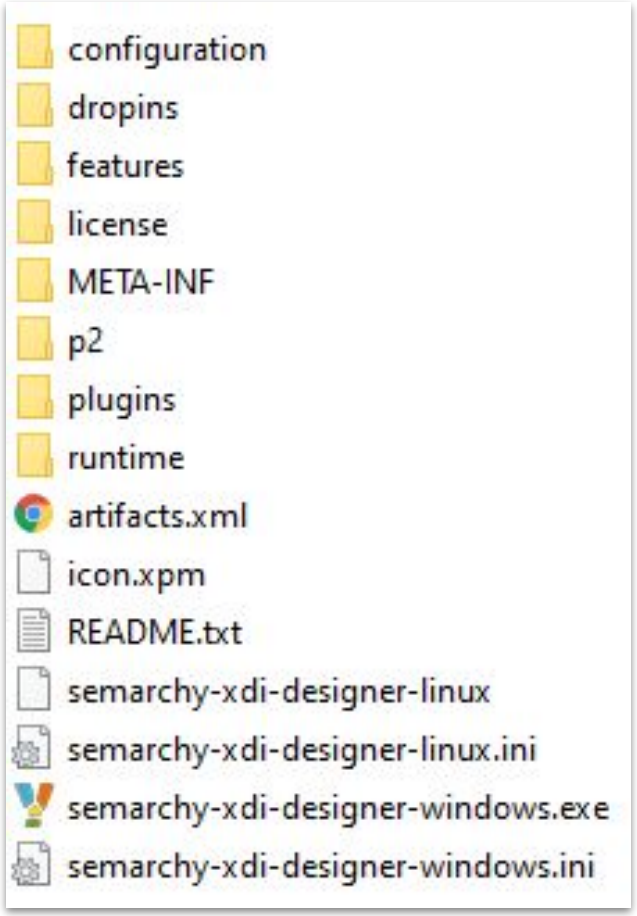
Practice exercise

Reverse the first HSQL metadata (HOTEL_DATAMART)
Reverse the first flat file (discountRange.csv)
Create a project (Tutorial - Fundamentals)
Create a first mapping (Load DIM_Discount)

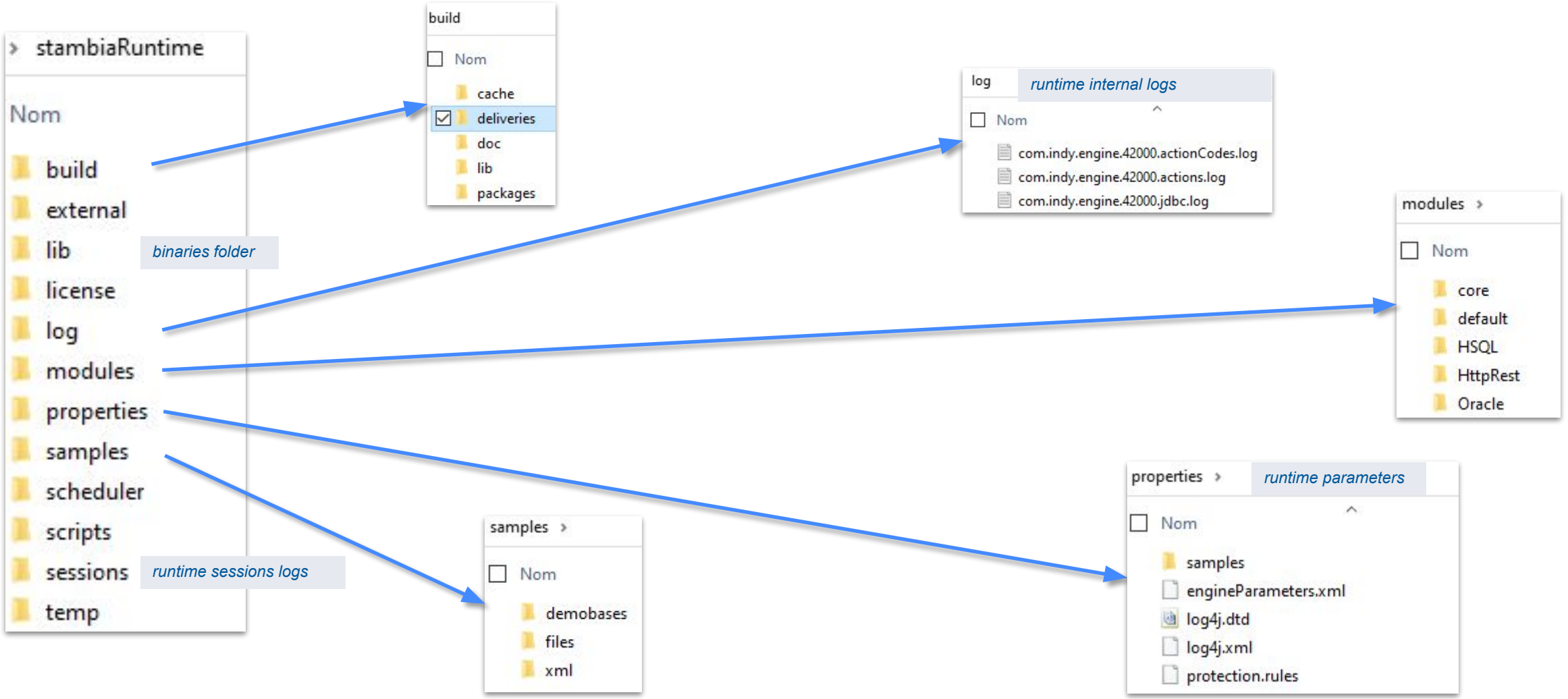
Designer Folders

The “Runtime” directory contains the local runtime installed with xDI Designer

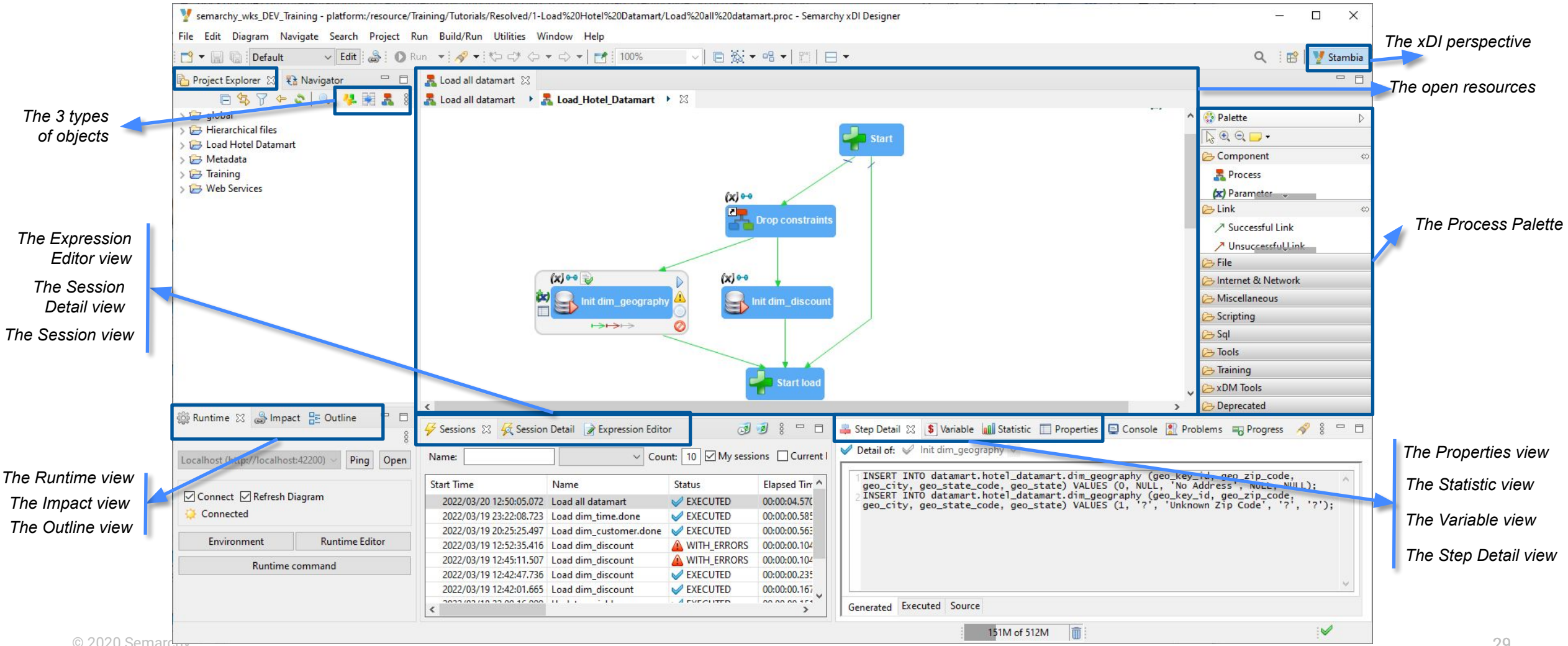
The “plugins” directory should be known as xDI patches could be added in this location



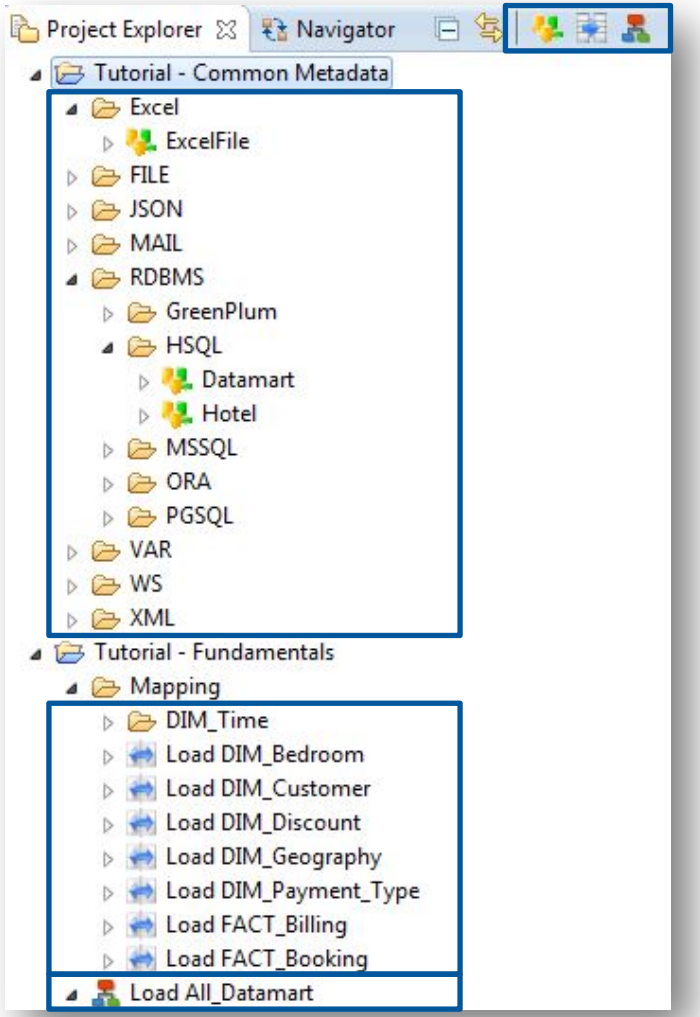
Runtime Folders



xDI Designer GUI



The three types of objects



xDI manages 3 types of objects

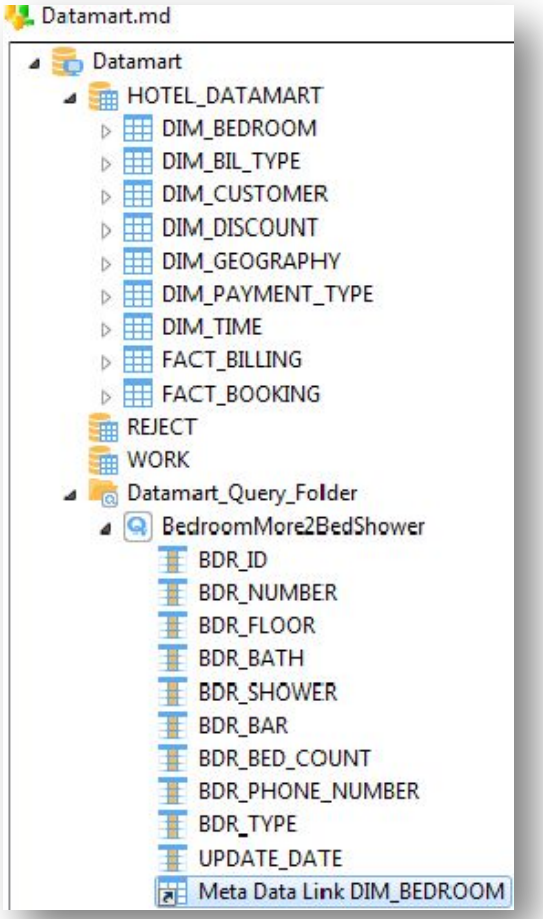
- The metadata
- The mappings
- The processes

The Metadata

They are the basis of all developments

They can be used :

- In the mappings
- In the processes
- In the templates
  (models of processes)
- Between themselves !

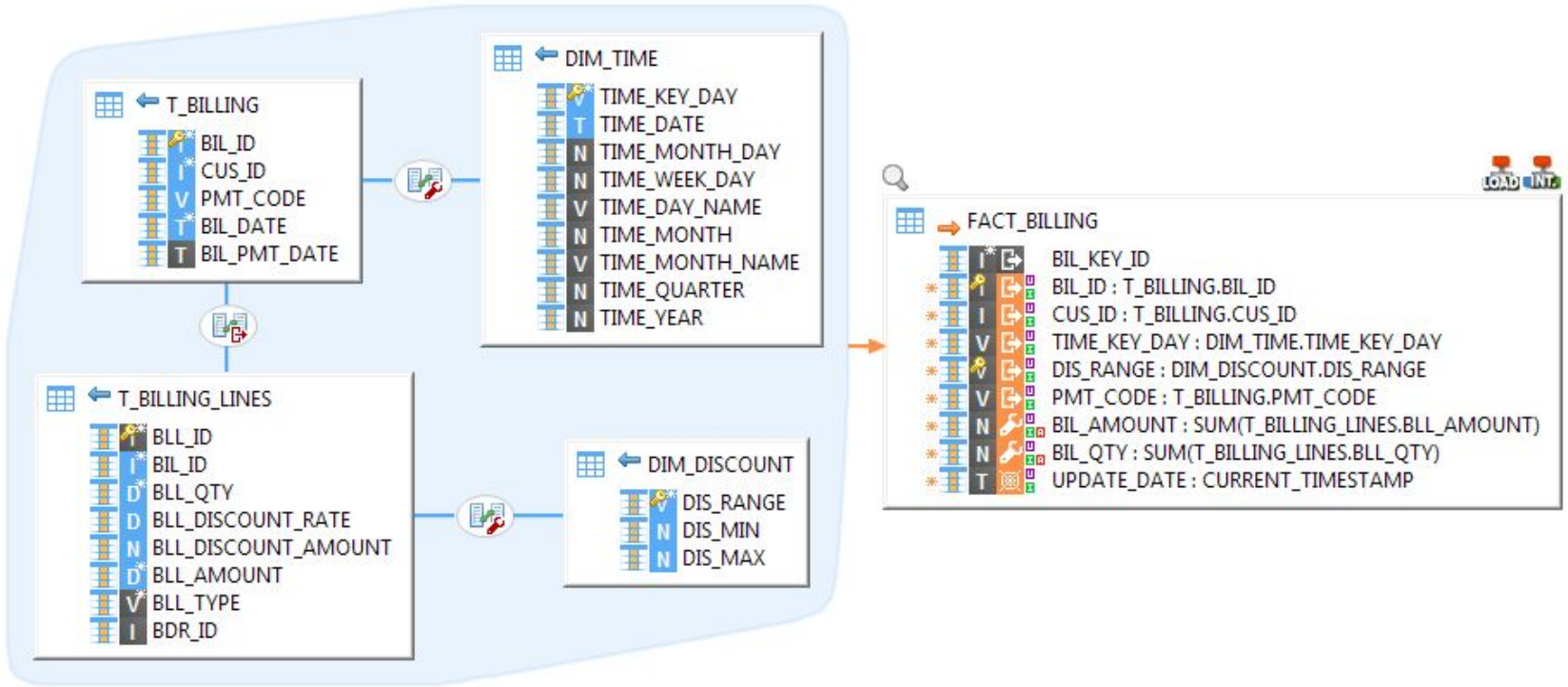


The metadata, samples of types

- Description of database : schemas, tables, columns, primary keys, index, etc.
- Description of directories, flat & hierarchical files
- Description of XML & JSON files, web services
- E-mail servers with mailing lists & messages
- FTP servers, SSH servers
- …

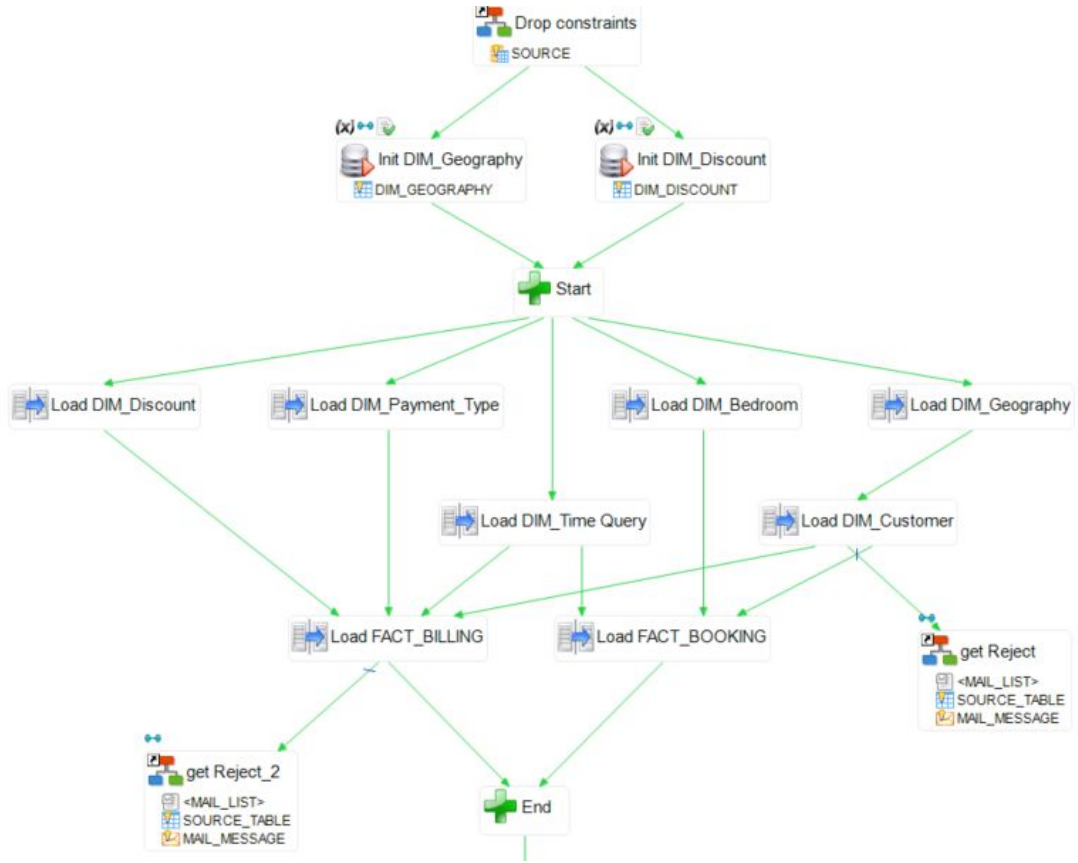
The Mappings

- Main element for the development
- They generate a process based on the functional relationships between metadata



The processes

- Generated by :
  - The mappings
  - The user
  - The templates
- Contain steps
  - Actions
  - Processes
- Unlimited depth
- Native parallelism



Presentation of the practical Part

Objectives

- Loading of a Hotel datamart
- Managing XML files (reading and writing)
- Managing Web Services (using and publishing)

A succession of exercises, with a few theoretical parts

To go further

Document Type	Link
English Video xDI Simple Demonstration	https://www.youtube.com/watch?v=1QMgT8AE6Kc


Semarchy
Questions?