Dynamics 365 F&O Prototype

Technical documentation

30.08.2023 | Jedox

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1. Introduction

This document describes the solution “SuperCarbonPlanning” covering the connection to Rydoo and Climatiq. The SuperCarbonPlanning is a solution with predefined content as a model to plan and report people utilization data easily. This model provides users the possibility of unified planning, seamless data integration and simplified planning, reporting, and data analysis.

Rydoo is a company that offers expense management and travel solutions for businesses. Their platform provides tools for managing employee expenses, automating expense reporting, and simplifying travel booking and reimbursement processes. Rydoo's aim is to streamline expense and travel management, enhance visibility into spending, and improve overall efficiency for businesses of various sizes.

https://www.rydoo.com/

Climatiq provides an embedded carbon intelligence software that enables developers to automate GHG emission calculations based on verified scientific models. Its suite of products includes an open dataset of emission factors, and intelligent APIs that integrate with any existing software for real time monitoring of greenhouse gas emissions.

https://www.climatiq.io/

The document gives an overview of the Jedox application, describing the installation and configuration of the SuperCarbonPlanning model, reports, database, and integrator projects. In addition, it gives implementation hints on Jedox functioning, helping to understand, for example, how a report was built (pointing to which cube or dimension and attribute).

1.1 Document key – Read me

This document includes some tricks to provide a faster understanding of the solution:

1. This document is like a library. You do not need to start at the beginning and work your way through to the end. Feel free to do so or scan the table of contents and read what interests you most.

2. Some implementation tips are giving on how a report or logic is built in the backend/background (Database, Integrator). Those tips are marked with “Implementation hint:” and are only relevant for implementation experts and power users which are interested in or would like to adjust the application.

1.2 Basic information about Jedox Suite

In this chapter the current Jedox version, access to information regarding Jedox functionality and the system requirements of the Jedox Suite are briefly described. The SuperCarbonPlanning model can be used with versions beginning from Jedox Suite 2023.2.
The target group of the following chapters are power users and interested end users.

Information, manuals, and tips & tricks can be found on the Jedox "Knowledge Base". The Knowledge Base is a comprehensive source of knowledge for all Jedox topics.
Link to the Ideas Portal, Support Manual, Jedox downloads (older and current Jedox versions) can be found within the Customer Portal.

Knowledgebase:

http://knowledgebase.jedox.com/

Customer Portal:

https://my.jedox.com/

Jedox and therefore the SuperCarbonPlanning model can be used on different browsers. A full list is found here: Technical specifications

1.3 Architecture of Jedox components

The target group of this chapter are power users and interested end users.
Jedox optimizes planning, analytics, dashboards, and reporting with one unified solution for Business Intelligence (BI) and Corporate Performance Management (CPM). The solution combines the highly scalable Jedox analytics engine with a consistent experience across all devices that is designed to empower business users.

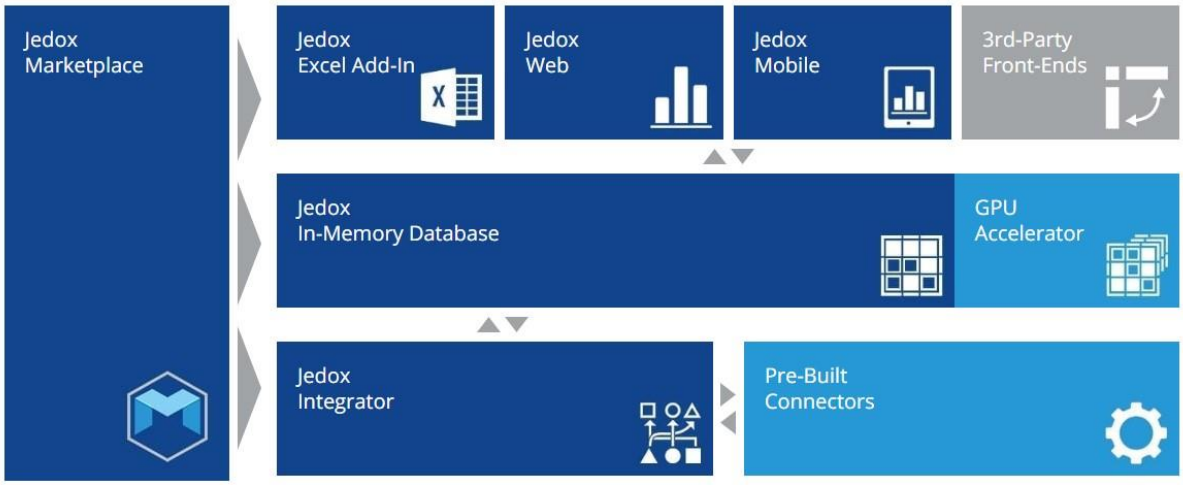


Figure 1: Jedox Architecture

The components used for the Jedox application are briefly described below.

Jedox In-Memory Server (OLAP – Online Analytical Processing)
The Jedox In-Memory server provides you with a highly scalable analytical appliance that delivers real-time performance over volatile enterprise data. The engine enables complex planning and forecasting with in-memory rules modelling, predictive analytics with powerful statistical heuristics and instant consolidations and reporting over large multi-dimensional datasets. All changes are logged for audit and compliance. The data stored in the cubes are displayed using PALO.DATA(C) formulas within the web reports.

Jedox Web
Jedox Web connects all Jedox components in a uniform web interface. Depending on the user's authorization, all functions of the Jedox Suite are available. This allows web-based reports to be generated centrally, via a browser, the OLAP database to be modeled and ETL processes to be monitored. In addition, end users can call up analyzer reports.

Jedox Integrator (ETL)
Jedox Integrator is used to create, modify, monitor, and execute all data integration projects. Various data sources can be integrated into the Jedox database, by building the connections to various data sources, in order to extract, transform and import master data and transaction data.

Jedox Marketplace
Jedox Marketplace is a web-based showroom featuring integrated planning and enterprise performance management applications for finance, sales, human resources, and other departments built by different Jedox Experts from Jedox Partners to the software vendor. Jedox Marketplace gives access to all those applications which incorporate best practices from around the world. The admin tool does not use the Jedox Marketplace as it is a customized built-in application.

Jedox Excel Add-in
Jedox Excel Add-in gives a user Business Intelligence and Enterprise Performance Management capabilities from flexible data modeling to ad hoc analytics, collaborative planning right in Excel. The admin tool does not use the Jedox Excel Add-in.

Jedox Mobile
Jedox Mobile empowers users to check real-time business intelligence dashboards, view canned reports, analyze data ad hoc, or submit planning figures with ease and security by mobile devices. The admin tool does not use the Jedox Mobile.

1.4 Description of Jedox Web components

The target group of the following chapter are power users and interested experts.
The web interface of the Jedox Suite, in which the application is developed, is shown in the following image.

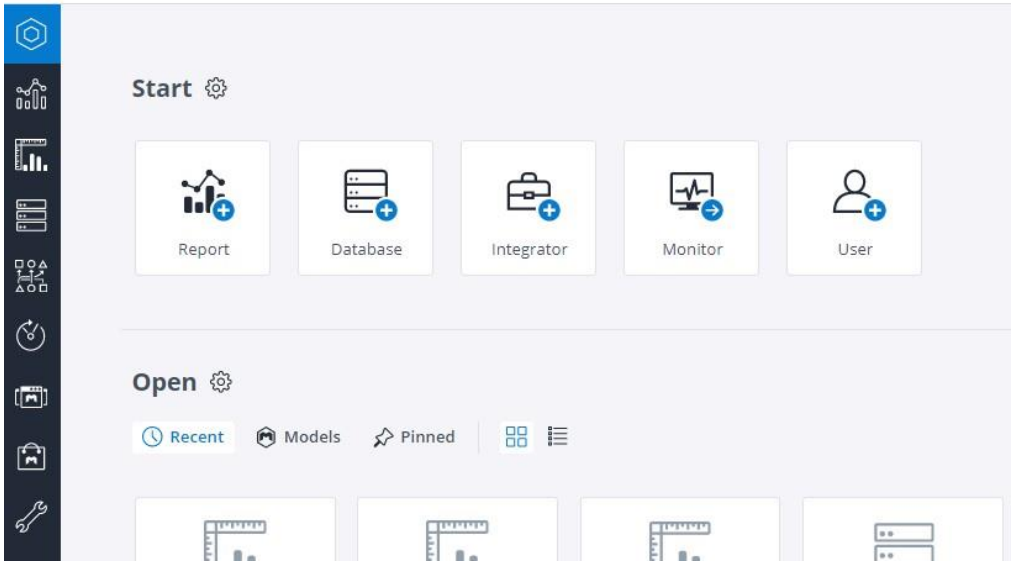


Figure 2: Overview Jedox Web

Jedox Web interface (Jedox Suite) consists of different components, which are briefly described below:

Homepage

The homepage gives users access with one click to the most used features, like creating a new report, database, Integrator project, or new user. It shows the recent opened reports, which can be accessed by one click and provides some useful links to the Knowledge Base, trainings, what's new, etc.

Reports

The Jedox Reports publish all reports created in Report Designer in Jedox Web and provide a navigation interface. Business users usually have access only to this component, in which they can navigate between reports for planning, reporting and analyzing data.

Designer

The Report Designer allows business users to manage and organize spreadsheets and other related content in a secure, user-based administrative environment. Jedox Designer provides individual data storage areas for each Jedox application and user, allowing the source files and related information, such as PDF, text, or images, to be integrated quickly and easily into a Jedox application.

Modeler

The Jedox Modeler allows the creation and modification of Jedox In-Memory / OLAP databases. The modeling environment makes it possible to create dimensions, elements, and store and combine them into Jedox OLAP data cubes. Alternatively, it is also possible to create dimensions and cubes using the Integrator.

Integrator

Jedox Integrator is used to create, modify, monitor and execute all data integration projects. Various data sources can be integrated into the Jedox database, by building the connections to various data sources, in order to extract, transform and import master data and transaction data.

Scheduler

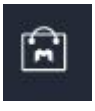
In the Jedox Scheduler, work orders can be created and administrated for the execution of ETL processes. It means Integrator jobs will be scheduled to be executed at a specific time, like nightly jobs.

My Models

The "My Models" panel provides an overview of all models that were created, or installed, on the Jedox Web server. Models can be installed through the Marketplace. In a new installation, the "My Models" panel will most likely be empty. When models are installed, they are listed in a hierarchical structure on the left side, with a detailed list in the main window. The user can navigate to the reports of a specific model from "My Models" by clicking the arrow icon. Reports are also accessible by navigating directly to the Reports section of Jedox Web. The list in "My Models" shows if an update is available in the Marketplace for one or more of the installed models.

Marketplace

The "Marketplace" panel shows all published models. The content here comes from a centralized server which is accessed over the Internet. If the Jedox server has no access to the Internet, the Marketplace may be shown on the client's web browser, but the actual installation of models will not be possible.



Administration

In administration, different configurations can be set, for example global connections, user rights and licenses. All users and groups that can access individual components and databases within the Jedox Suite are created and maintained there.

The primarily used components are implementation of a new project or designer for development of web reports, as well as for the Modeler and Integrator for creating and importing master data and transaction data.

1.5 User rights in Jedox

This chapter describes user, user group and role rights in Jedox. The target group of the following chapter are power users.

User
A user is a user who is assigned to one or more user group(s). Multiple users can be in one user group. One user can have multiple user groups. In this case the user gets the rights of the most powerful user group.

User group
Application rights are set by the user group. Rights can be set to only have access to specific databases, elements, report and folder groups, etc. If all users have different access rights one user group must be created per user. A user group is assigned to a role, that is, a user group can have access only to one database or a user group sees in one dimension only the relevant regions which they should see.

Role
System relevant accesses are set by role. The role gives access to sections like Designer (for editing reports); see the Modeler and the Administration section.
The existing roles can be used in most projects. For example, the role Viewer is for business users which should only see reports; therefore, they get no access to the Designer, Modeler or Administration.

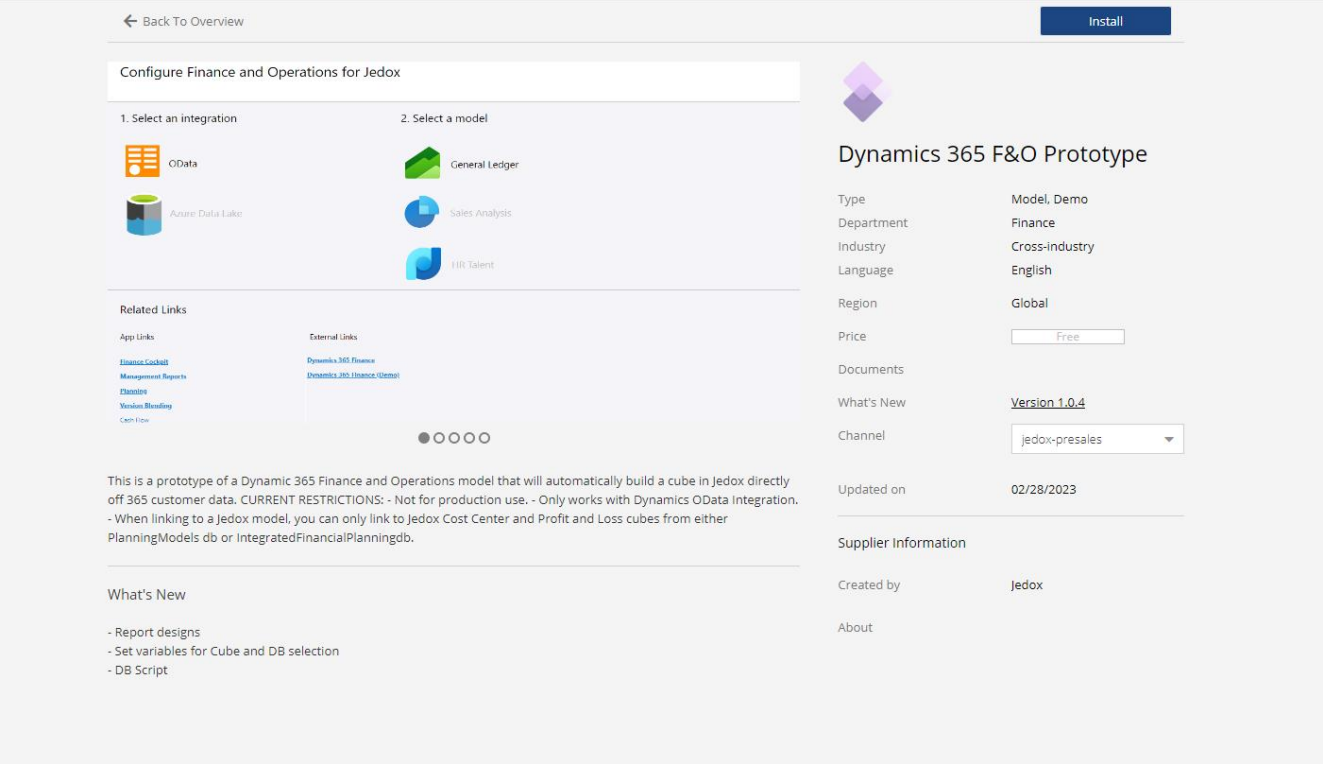
Find more information about user, user groups and roles in the Knowledge Base. https://knowledgebase.jedox.com/knowledgebase/administration-user-rights/

2. Installation & configuration

This chapter describes how to install and configure the Dynamics 365 F&O Prototype. That means, what are the first tasks to do after the installation?
The target group of the following chapters are implementation experts and interested power users.

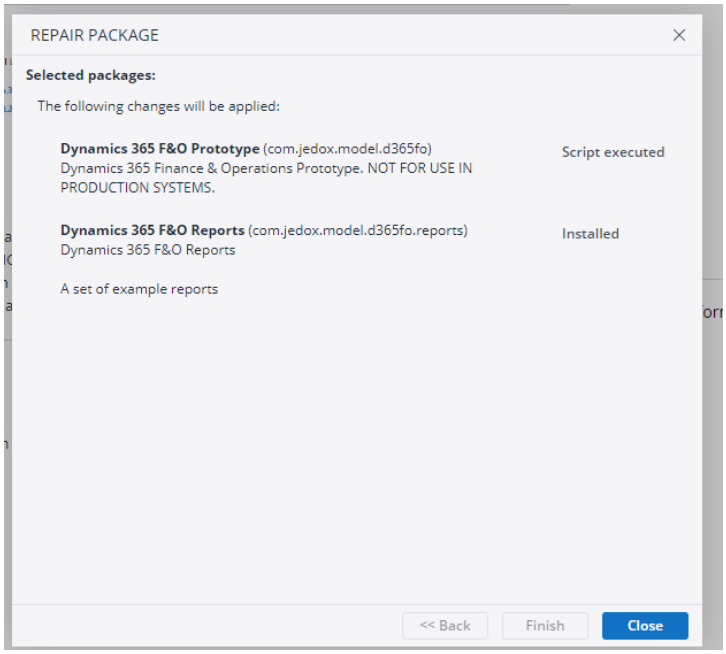
2.1 Installation

To install the Dynamics 365 F&O Prototype starts with the marketplace section. In search bar type the Dynamics 365 and prototype will appear. Bear in mind that this prototype is only available on presales and beta channels.



2.2 Configuration

The Dynamics 365 F&O Prototype has 2 features included and with the configuration you can choose one of the solutions. Therefore, unnecessary features can be activate/deactivated. You can check for ETL part and the Reports. Check them both.



The target group of the following chapters are implementation experts and interested power users.

2.3 Web reports

This chapter gives an overview of the reports and describes the process of setting up the environment, like uploading dimensions, uploading data, etc.

2.4 Report overview

The The Dynamics 365 F&O Prototype provides users with the possibility to access the dynamics environment and pull the data to reports. There are 3 main sections:

1. Integration choice
2. Wizzard choice
3. Report section

2.5 Data preparation

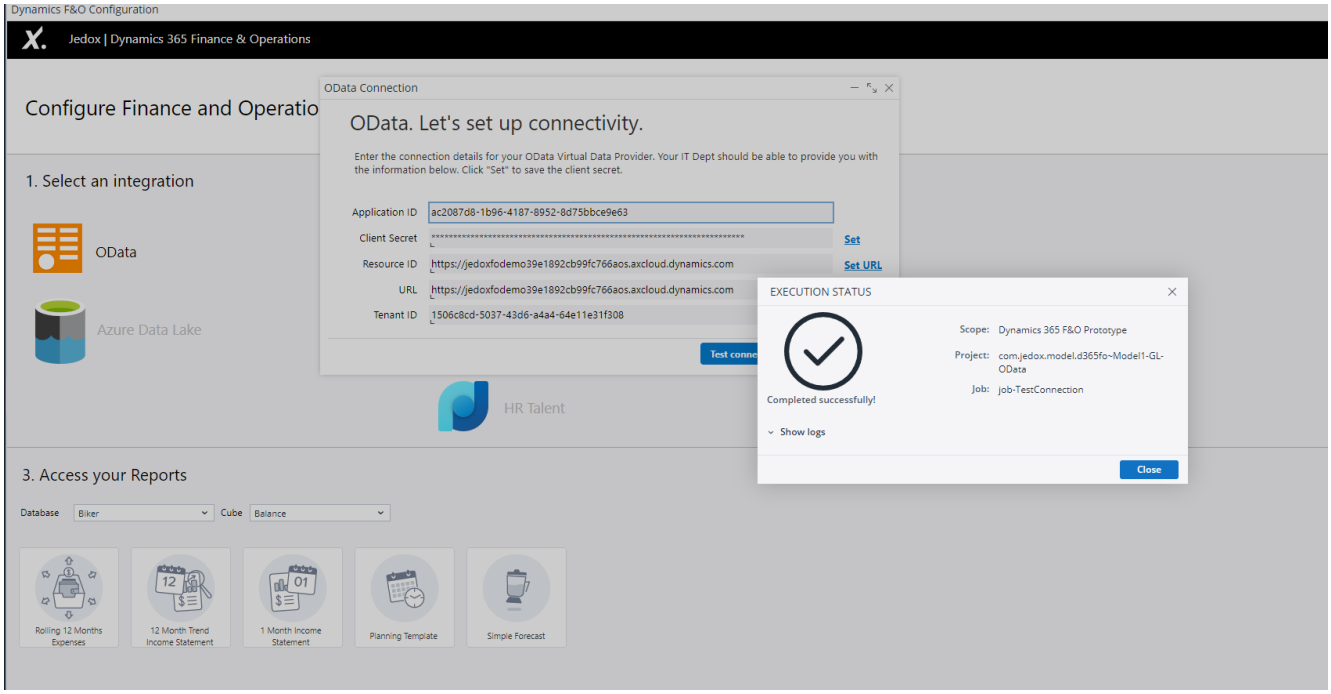
In this chapter all reports regarding data preparation are described.

2.5.1 Setup dimension structure

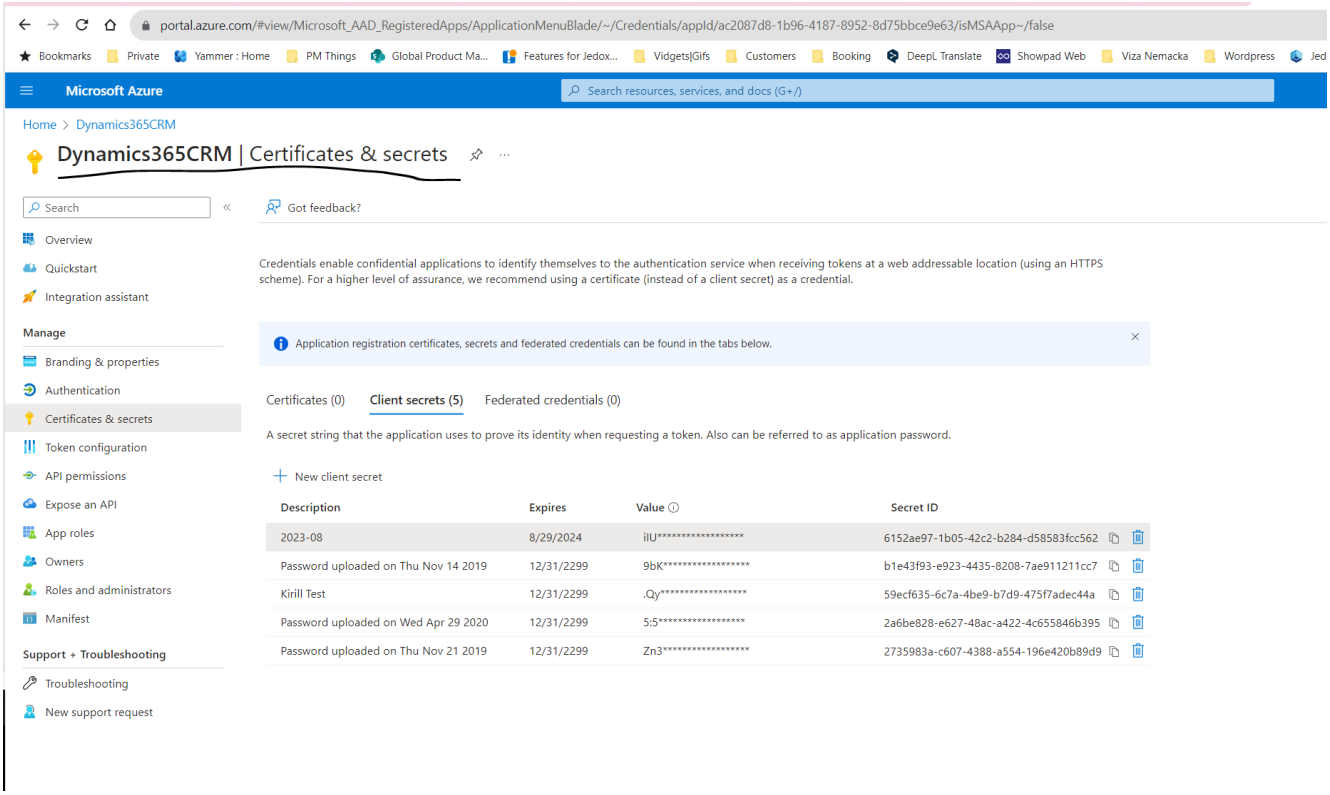
The dimension and cube data can be uploaded to the system from direct access to Dynamics 365 F&O.

- There are many tables to be accessesed and we will go step by step.

First, we will choose oData type of integration. In future, we should be also able to connect via Data Lake.



Credentials need to be added and Client Secret is:
In case this does not work, contact IT support (not cloud support). You can generate your own on azure portal.



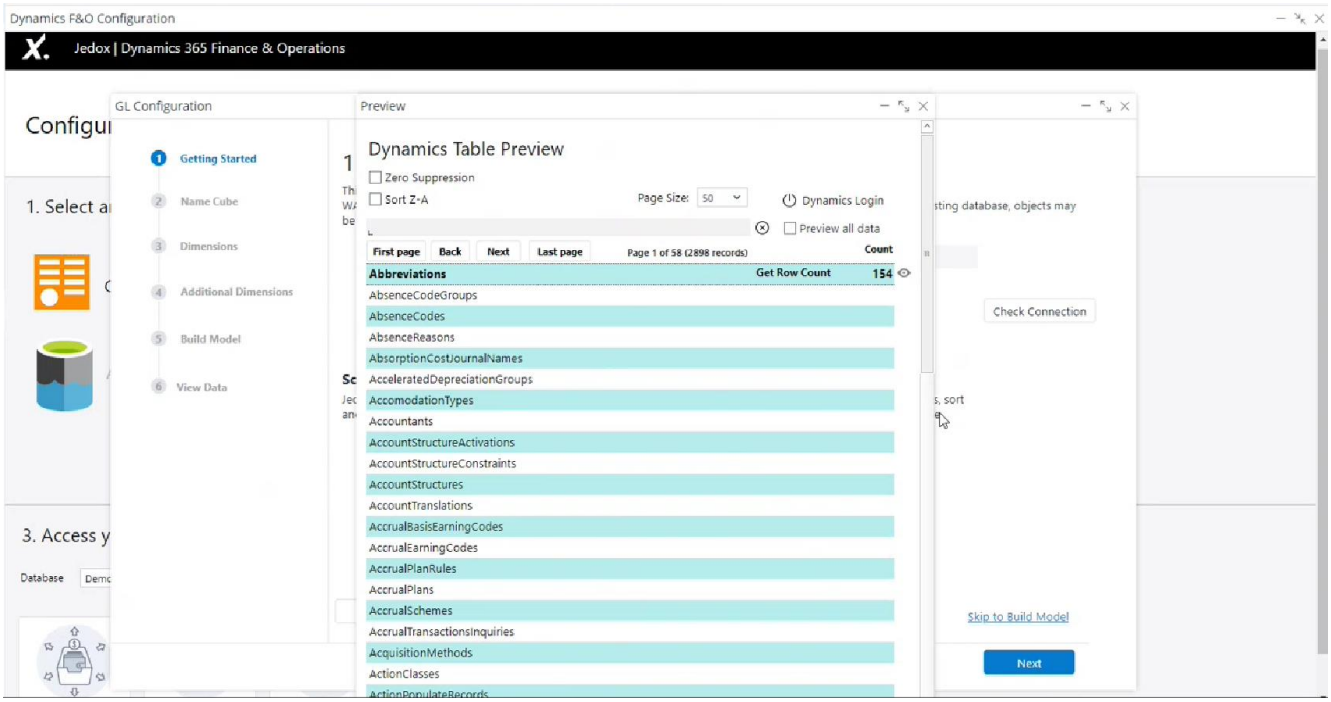
Once the connection is set and tested successfully we will move to *General Ledger* Wizard. In future there should be Sales Analysis and HR Talent examples as well.

2.5.2 Getting Started

This guide will systematically walk you through the process of extracting Dynamics Finance GL Data and integrating it into Jedox.

IMPORTANT: We strongly recommend either utilizing the default database setting or establishing a new one. Opting for an existing database might result in object overwrites.

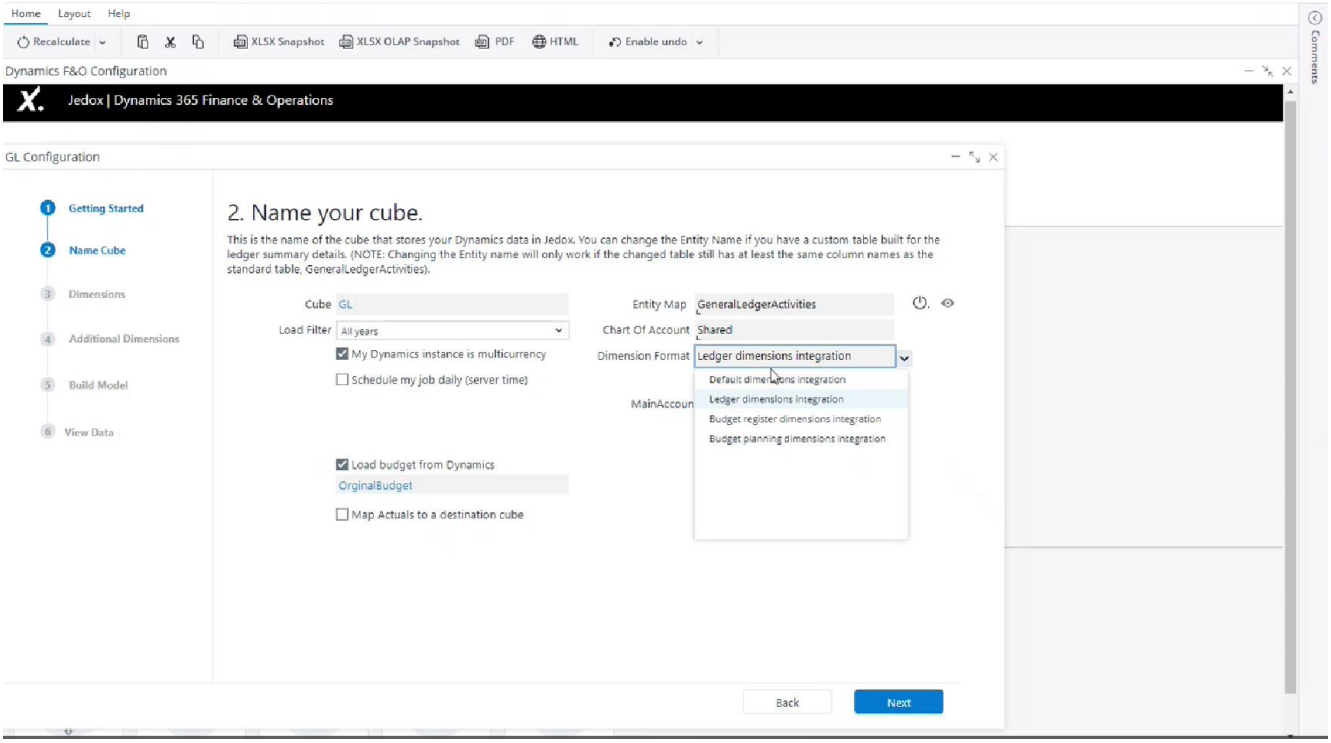
Moreover, there's an option to comprehensively scan all the existing tables within the system and preview their contents.



2.5.3 Name Cube

This designates the cube's name where your Dynamics data is stored within Jedox. If necessary, you have the flexibility to modify the Entity Name, particularly if you've established a custom table for ledger summary particulars. (Please be aware: Altering the Entity name will be effective only if the modified table retains, at minimum, the same column names as the default table, GeneralLedgerActivities.)

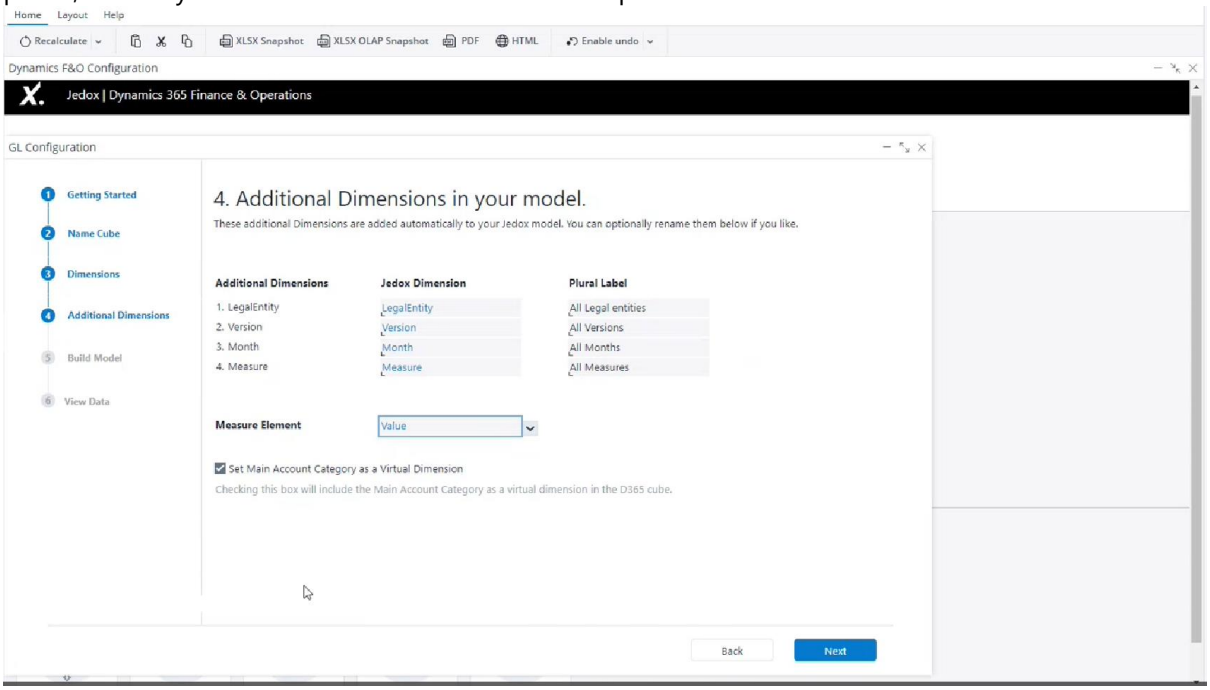
You're presented with the choice to load the data on a yearly basis (which is advisable) or all at once. Furthermore, there are additional options available, including EntityMap, Chart of Accounts, and Dimension format, which can also be configured to suit your requirements.



2.5.4 Dimensions and Additional Dimensions

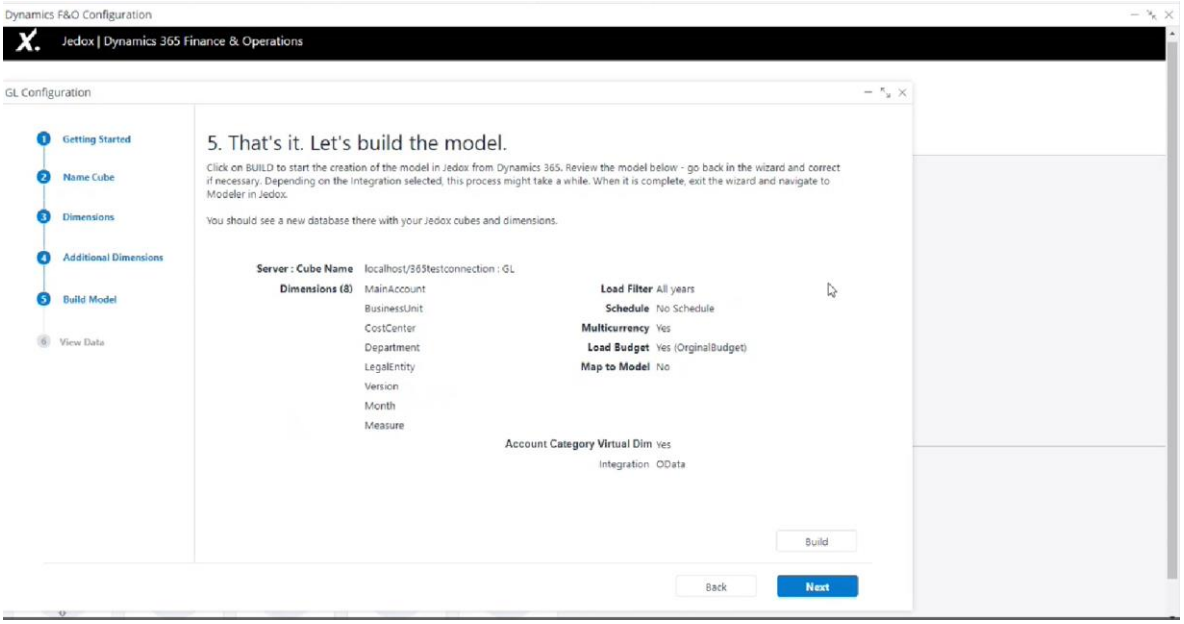
The scanning process has populated the Dimensions Column. The 'Plural Label' represents the element that will serve as the total element within the dimension. It's important to note that data validation will only contain values when mapping to another cube.

Furthermore, any supplementary Dimensions are seamlessly incorporated into your Jedox model. Should you prefer, you have the option to rename them below.



2.5.5 Build Model

In this segment, we're nearing the completion of the model creation process. The final stage involves clicking on BUILD to initiate the model's creation within Jedox from Dynamics 365. The duration of this step could vary depending on the chosen integration, potentially requiring some time. Once the process concludes, simply exit the wizard and proceed to the Modeler section in Jedox.
You'll find a fresh database present there, complete with your Jedox cubes and dimensions.



2.6 Reports

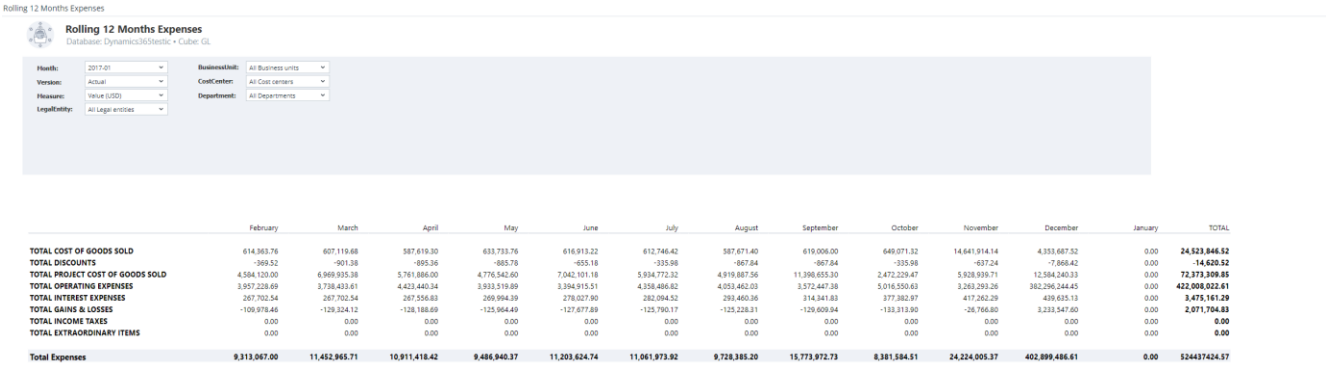
This chapter describes all reports.

For this demo we developed 5report examples.

1. Rolling 12 Months Expenses
2. 12 Month Trend Income Statement
3. 1 Month Income Statement
4. Planning Template
5. Simple Forecast

2.6.1 Rolling 12 Months Expenses

This report shows the data from our GL cube for a different month including rolling logic. Every time when the date is changed, months are updated automatically.


Rolling 12 Months Expenses

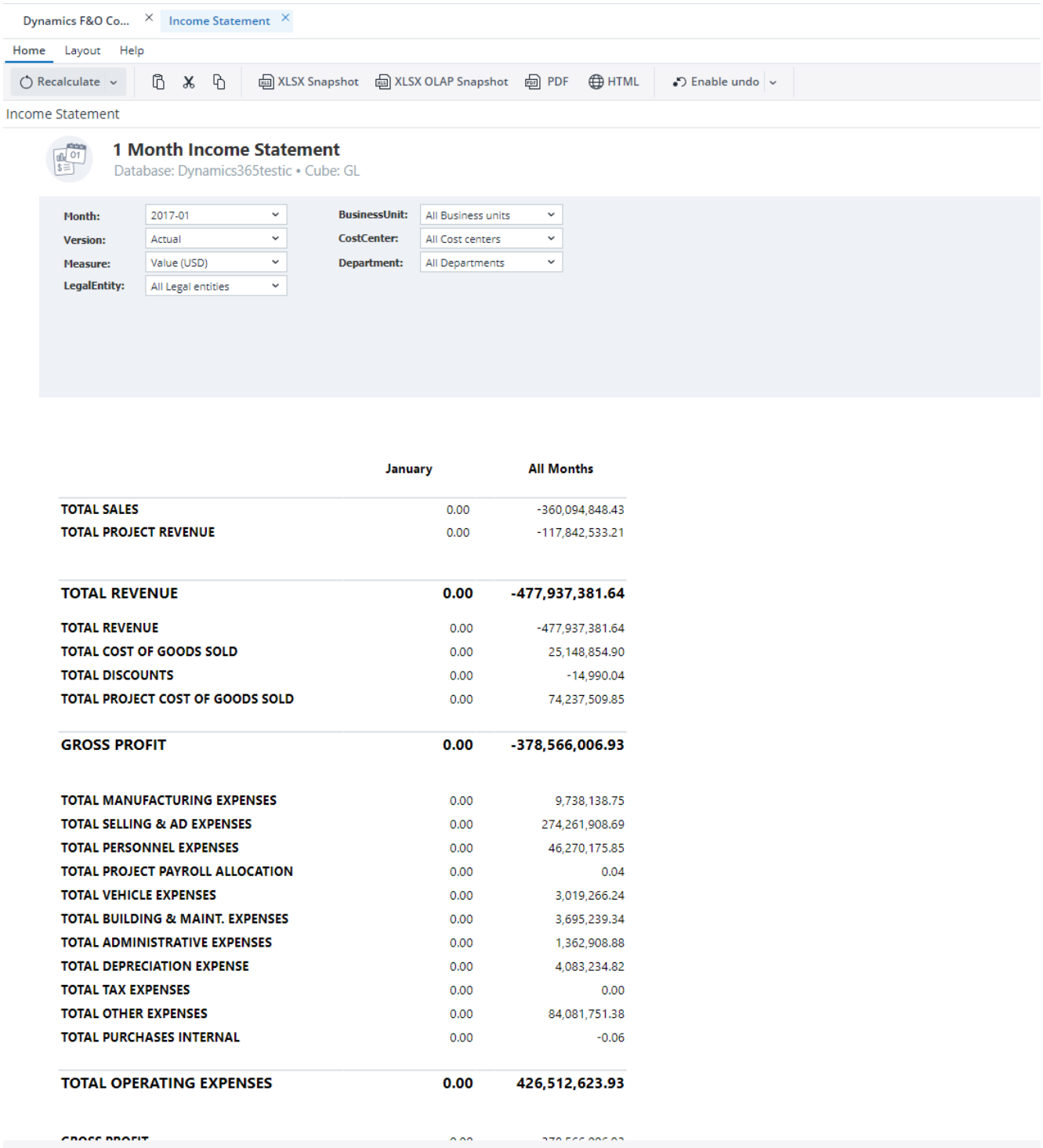
Rolling 12 Months Expenses
Database: Dynamics365testic • Cube: GL

Month: 2017-01
Version: Actual
Measure: Value (USD)
LegalEntity: All Legal entities
BusinessUnit: All Business units
CostCenter: All Cost centers
Department: All Departments

	February	March	April	May	June	July	August	September	October	November	December	January	TOTAL
TOTAL COST OF GOODS SOLD	614,363.76	607,119.68	587,619.30	633,733.76	616,913.22	612,746.42	587,671.40	619,006.00	649,071.32	14,641,914.14	4,353,687.52	0.00	**24,523,846.52**
TOTAL DISCOUNTS	-369.52	-901.38	-895.36	-885.78	-655.18	-335.98	-867.84	-867.84	-335.98	-637.24	-7,868.42	0.00	**-14,620.52**
TOTAL PROJECT COST OF GOODS SOLD	4,584,120.00	6,969,935.38	5,761,886.00	4,776,542.60	7,042,101.18	5,934,772.32	4,918,887.56	11,398,655.30	2,472,229.47	5,928,939.71	12,584,240.33	0.00	**72,373,309.85**
TOTAL OPERATING EXPENSES	3,957,228.69	3,738,433.61	4,423,440.34	3,933,519.89	3,394,915.51	4,358,486.82	4,053,462.03	3,572,447.38	5,016,550.63	3,263,293.26	382,296,244.45	0.00	**422,008,022.61**
TOTAL INTEREST EXPENSES	267,702.54	267,702.54	267,556.83	269,994.39	278,027.90	282,094.52	293,460.36	314,341.83	377,382.97	417,262.29	439,635.13	0.00	**3,475,161.29**
TOTAL GAINS & LOSSES	-109,978.46	-129,324.12	-128,188.69	-125,964.49	-127,677.89	-125,790.17	-125,228.31	-129,609.94	-133,313.90	-26,766.80	3,233,547.60	0.00	**2,071,704.83**
TOTAL INCOME TAXES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
TOTAL EXTRAORDINARY ITEMS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total Expenses	**9,313,067.00**	**11,452,965.71**	**10,911,418.42**	**9,486,940.37**	**11,203,624.74**	**11,061,973.92**	**9,728,385.20**	**15,773,972.73**	**8,381,584.51**	**24,224,005.37**	**402,899,486.61**	**0.00**	**524437424.57**

2.6.2 1 Month Income Statement

Nice looking comparison of one month vs whole year accounts data split.

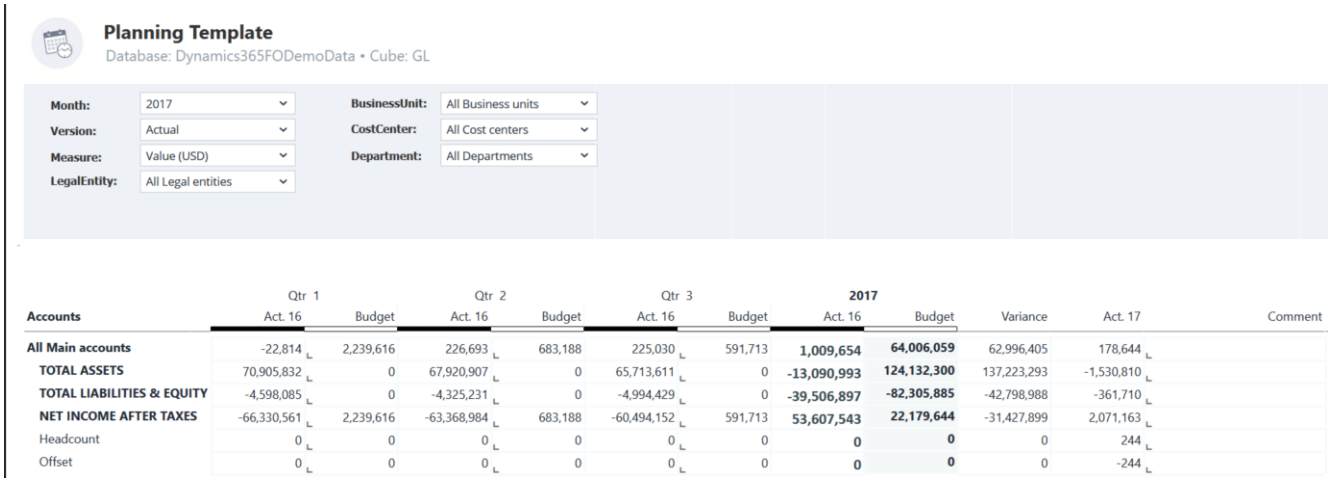


	January	All Months
TOTAL SALES	0.00	-360,094,848.43
TOTAL PROJECT REVENUE	0.00	-117,842,533.21
TOTAL REVENUE	**0.00**	**-477,937,381.64**
TOTAL REVENUE	0.00	-477,937,381.64
TOTAL COST OF GOODS SOLD	0.00	25,148,854.90
TOTAL DISCOUNTS	0.00	-14,990.04
TOTAL PROJECT COST OF GOODS SOLD	0.00	74,237,509.85
GROSS PROFIT	**0.00**	**-378,566,006.93**
TOTAL MANUFACTURING EXPENSES	0.00	9,738,138.75
TOTAL SELLING & AD EXPENSES	0.00	274,261,908.69
TOTAL PERSONNEL EXPENSES	0.00	46,270,175.85
TOTAL PROJECT PAYROLL ALLOCATION	0.00	0.04
TOTAL VEHICLE EXPENSES	0.00	3,019,266.24
TOTAL BUILDING & MAINT. EXPENSES	0.00	3,695,239.34
TOTAL ADMINISTRATIVE EXPENSES	0.00	1,362,908.88
TOTAL DEPRECIATION EXPENSE	0.00	4,083,234.82
TOTAL TAX EXPENSES	0.00	0.00
TOTAL OTHER EXPENSES	0.00	84,081,751.38
TOTAL PURCHASES INTERNAL	0.00	-0.06
TOTAL OPERATING EXPENSES	**0.00**	**426,512,623.93**

2.6.3 12 Month Trend Income Statement

2.6.4 Planning Template

In this report users can use Jedox planning capabilities to enter data for different versions/years and accounts.



Accounts	Qtr 1 Act. 16	Qtr 1 Budget	Qtr 2 Act. 16	Qtr 2 Budget	Qtr 3 Act. 16	Qtr 3 Budget	2017 Act. 16	2017 Budget	Variance	Act. 17	Comment
All Main accounts	-22,814	2,239,616	226,693	683,188	225,030	591,713	1,009,654	64,006,059	62,996,405	178,644	
TOTAL ASSETS	70,905,832	0	67,920,907	0	65,713,611	0	-13,090,993	124,132,300	137,223,293	-1,530,810	
TOTAL LIABILITIES & EQUITY	-4,598,085	0	-4,325,231	0	-4,994,429	0	-39,506,897	-82,305,885	-42,798,988	-361,710	
NET INCOME AFTER TAXES	-66,330,561	2,239,616	-63,368,984	683,188	-60,494,152	591,713	53,607,543	22,179,644	-31,427,899	2,071,163	
Headcount	0	0	0	0	0	0	0	0	0	244	
Offset	0	0	0	0	0	0	0	0	0	-244	

2.6.5 Simple Forecast

In this report, version blending capability is presented. That means that actual data will be written in all forecast versions which contain actual parts like 3+9,6+6,9+3 etc.

3. Data model (database)

In the following chapter the existing dimensions and cubes are described.
The target group of the following chapters are implementation experts and power users with Data Modelling knowledge.

3.1 Dimensions

Within the database model, dimensions have been created to store the data on elements within these dimensions. In addition to dimensions (or elements) for master data, further control dimensions exist, which are used to control report content.

Type	Dimension	Root	Used for	Comment
↖	_dimensions	No root element	Data cube	Contains the elements which are appearing in the wizard.
↖	_properties	No root element	Data cube	Contains the elements which are appearing in the wizard.
↖	_servicedoc	No root element	Data cube	Contains the dimension which are read from the Dynamics System

↖	BusinessUnit	→ All Business units	Data cube	Different business units in the company
↖	CostCenter	→ All Cost centers	Data cube	Contains Cost centers of the company.
↖	Department	→ All Departments	Data cube	Different departments from the company
↖	LegalEntity	→ All Legal entities	Data cube	Different Legal entities
↖	Month	→ All Months	Data cube	Time dimension, capturing elements until month level.
↖	Main Account	→ All Main accounts	Data cube	Contains CoA
↖	Version	No root element	Data cube	Contains versions like Actual, Plan etc
↖	Measure	→All Measures	Data cube	Values in the cubes in USD and LC

Legend

Type	Name
↖	Dimension
→	Root of Top-Element
↳	Root of Parallel-Hierarchy

3.2 Cube structure and construction

This chapter describes the cube structure. It helps to decide if the Accelerator should be implemented.

3.2.1 Overview of existing cubes

The following table describes all existing cubes to store transaction data and controlling cubes:

Name	Type	Comment

GL	Transaction data	General Ledger data from Dynamics F&O system

4. Business logics (Rules)

This chapter describes business logics (rules) in the model.
The target group of this chapter are implementation experts and power users with rules knowledge.

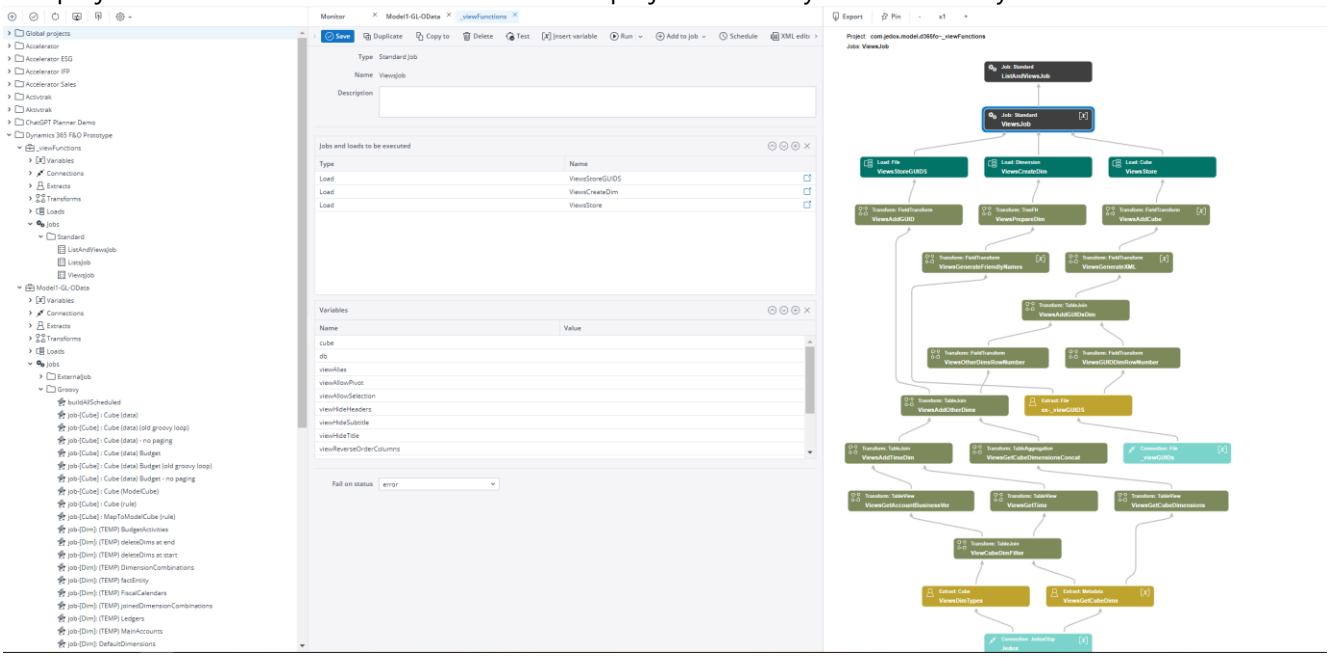
There are no rules in this prototype.

5. Integrator projects

This chapter describes all Integrator projects (bundle of automated processes).
The target group of the following chapters are implementation experts or power users with Integrator knowledge.
Integrator projects, which are already explained within the foundation documentation are not listed here.

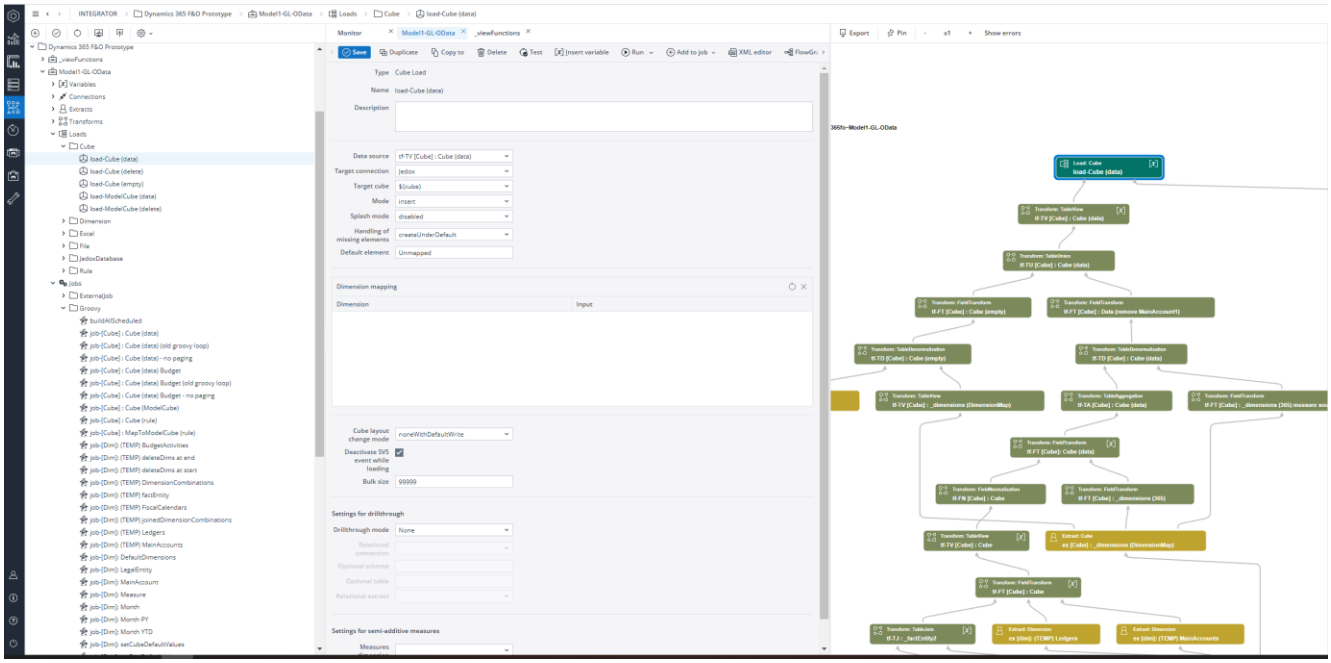
5.1 Project “viewFunctions”

This project contains functions to create views. This project is used by the Jedox Ecosystem models.



5.2 Integrator project “Model1-GL-OData”

OData connection project for Dynamics 365. Here we are pulling the data from the system and write it to our GL cube.



Glossary
This chapter describes abbreviations and wording.

Term	Description
BI	Business Intelligence
CPM	Corporate Performance Management
EA	Element attribute structure – a logic to create a dimension structure. Example: Element (Product ID: 10475), Name (Product Name: Bike)
End user	A professional expert on customer side who uses the Jedox software. This person plans data and might not have been part of the implementation process of Jedox.
EPM	Enterprise Performance Management
ETL	Extract, Transform, Load. Often used as a synonym for Integrator.
FH	Full hierarchy: it is a logic to upload elements, hierarchies, and attributes to a dimension. Example: Level1 (All products), level2 (Product group), level3 (Product) Alternative: check out PC and EA.
Implementation expert	A person to build/setup/adjust/implement/configure the Accelerator. A Jedox expert with knowledge about data modelling (setup databases), Integrator (automated processes), business logics (rules) and reporting.
Measure	A measure is a KPI and usually stored within a measure dimension like Profit and Loss_measure.
Model	A model is a solution with prebuilt content like reports, database, and automated processes (Integrator process) with Jedox. It can be installed either through the Marketplace by clicking on one of the solutions or by using a .jdxp file (which is a model as well).
OLAP	Online Analytical Processing is the technology in Business Intelligence to store data in multidimensional analytical format. This enables flexible and high-performance business reporting, planning, and analyzing data.

PC	Parent Child: It is a logic to upload elements, hierarchies, and attributes to a dimension. Example: Parent (All products), Child (Product group) Parent (Product group), Child (Product) Alternative: check out FH and EA.
Power user	A user of the Jedox software on customer side whose skills and expertise are (will be) more advanced than most other users, especially a person who is assigned additional administrative rights and responsibilities for Jedox. For example: definition of dimension structures, defining source systems, load of data. Usually, attendee in Kick Off workshop.
Reporting currency	A reporting currency is the currency with which all legal entities can be compared. Therefore, data of different currencies will be converted to this reporting currency.

Role	System rights are set across roles. Like granting access to different sections ”Designer”, ”Modeler” and/or ”Integrator”.
Rule	A rule is a business logic, a calculation within the cube which calculates for example measure 1 * measure 2.
User	A user is assigned to a user group. All rights in Jedox are set to user groups or roles. Multiple users can be in one user group. One user can have multiple user groups. In this case the user gets the rights of the most powerful user group.
User group	A user is assigned to a user group and a user group is assigned to a role. Application rights are set across user groups. Like user group controlling has access to database with the Profit and Loss model.
YTD	Year-to-Date. Parallel hierarchy within “Month” dimension. Example: 2022-03_YTD > 2022-01, 2022-02, 2022-03.
YTG	Year-to-Go. Parallel hierarchy within “Month” dimension. Example: 2022-10_YTG > 2022-10, 2022-11, 2022-12.

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