Transportation Management System Setup & Settings

Transportation

Management System

Setup & Settings

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Setup & Settings



Introduction

The TMS configuration process involves the creation and editing of TMS directories and entities to ensure optimal alignment of the TMS module with the company's business processes.

The configuration process is contingent on the company type, whether it is a Shipper, that is, it manages the shipment of its own goods, or an LSP (Logistic Service Provider), whose business revolves around managing the transportation of third-party cargo.

Many settings are utilized in both scenarios but with varying levels of detail.

Setup & Settings



Introduction

TMS comprises two main components: the core TMS and the Logistic Units extension. The core TMS utilizes functions provided by Logistic Units, which offers functionality for handling pallets and containers and features its own configuration system.

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Logistic Units

After Installation

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After installing the TMS extension, several steps must be completed to make TMS available to users.

1. **Purchase and assign licenses**. Immediately after installation, TMS is not available to users and is not visible in the Business Central menu, therefore, it is necessary to purchase TMS licenses. This can be done from the TMS page on AppSource by selecting the pricing plan that best suits your company. Then, assign licenses to users who will work with TMS in the Admin Center, just as you do with Business Central licenses.

p.s. It is not mandatory to buy as many licenses as Business Central licenses; you can limit it to only those who work with transportation and TMS.

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2. **Assign user permissions**. Users can be divided into two groups: those who work with TMS, perform operations, and handle documents, and administrators who can configure

TMS and change settings.

The permission sets that need to be added to the User:

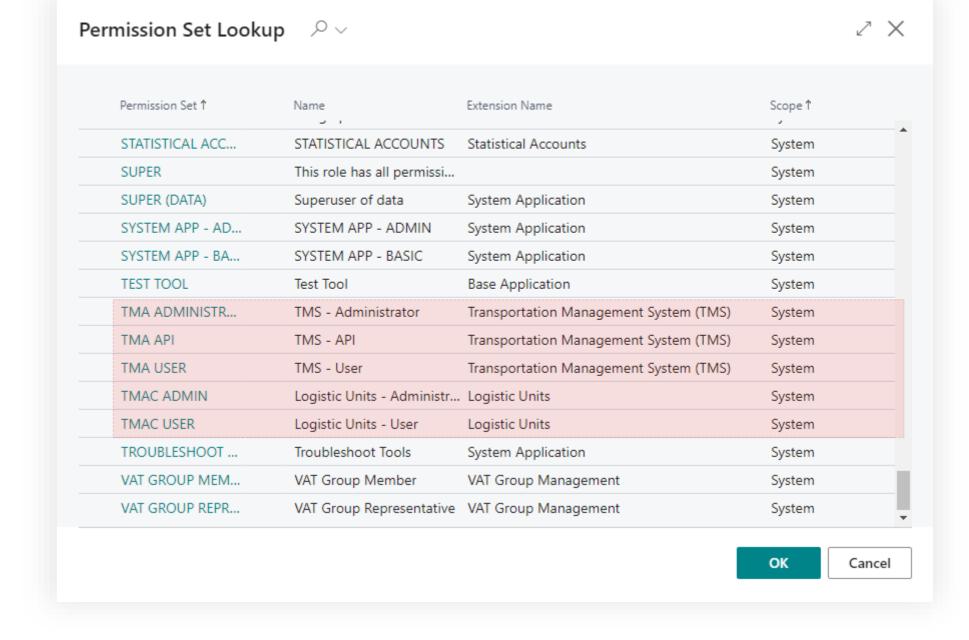
- TMA USER
- TMAC USER

To the Administrator:

- TMA ADMIN
- TMAC ADMIN

For external access via API or Power BI

TMA API



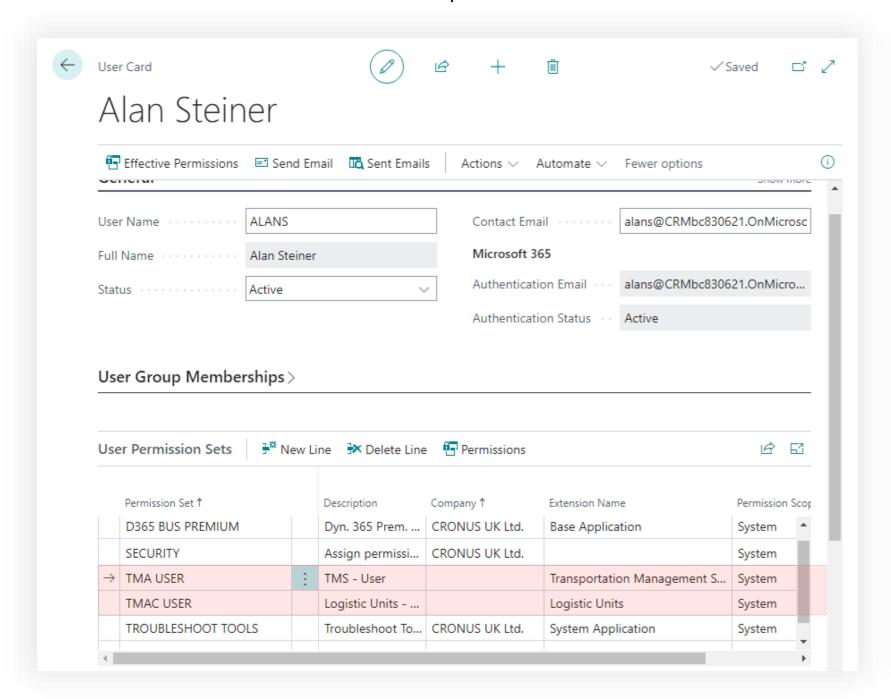
The next slide provides an example of user settings.

After Installation

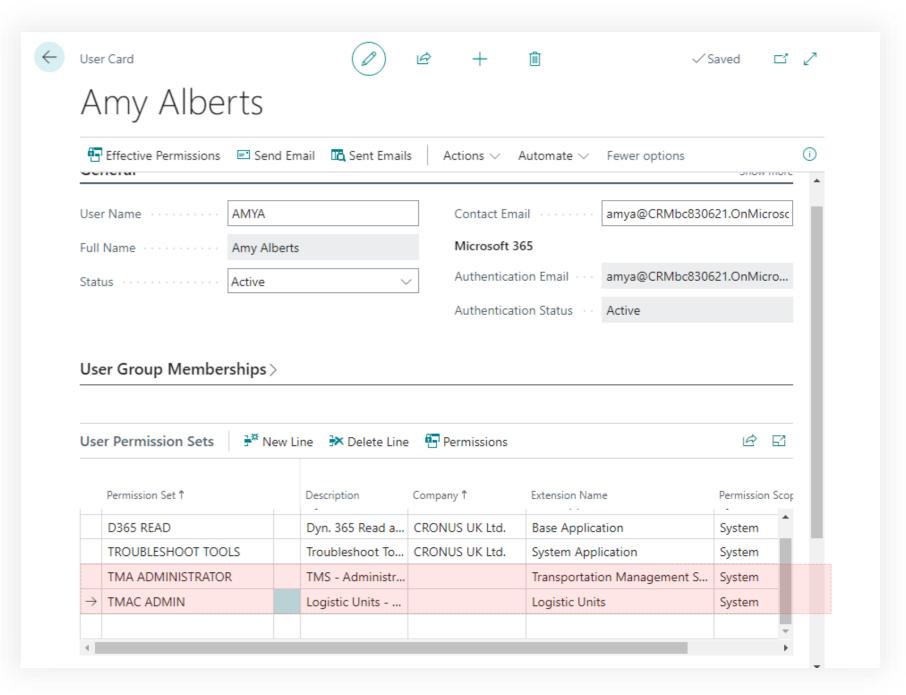
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User/Operator



Administrator





Transportation Management System Setup & Settings

Overview

Setup & Settings Workflow

Stages & Statuses

Services & Charges

Document Types

Maps

Master Data

The system of statuses and stages defines the steps of the transportation process and the steps for processing transportation documents.

Directory of transportation services provided to clients and the costs incurred during the transportation process. These are used for invoicing clients and for accounting for expenses from third-party carriers.

Configuration of the document template system. Templates set many default parameters of the transportation process, reducing the costs associated with entering documents into the system.

Configuration of integration with map services such as Google Maps.
Setting up geolocation and geocoding objects.
Configuration of map objects used in the transportation process.

General directories.
Carriers.
Vehicles.
Routes.
Drivers.
Units of
measurement.
Freight classes, etc.

Settings

	Description	LSP scenario comment	Shipper Scenario comment
Stages profiles	Defines the structure of the transportation process, including the number of stages, such as whether it will be a single-stage delivery or a three-stage multimodal transportation.		
Status profiles	Statuses are used to organize the workflow of document processing in accordance with the business process. Different types of documents may have different status structures.		
Services	The Services directory is a reference within the TMS system designed for accounting for transportation services provided by the company. These services are used to invoice clients for transportation services.	Required for invoicing	
Charges	The Charges directory is a reference within the TMS system intended for the recording and allocation of costs to orders and the calculation of profitability for transportation orders.	Required for profit calculation	
Service Set	This setting allows for the definition of sets of services and costs that can be added automatically when creating orders, or for the use of restrictions on the sets of services and costs that can be utilized in an order.		
Content Set	Predefined set of content automatically added to an order upon its creation.		

Settings

	Description	LSP scenario comment	Shipper Scenario comment
Forwarding Order Types	Templates for forwarding orders that establish the structure of the order and the business process for handling said order, as well as setting default values.	Required	
Freight Order Types	Templates for freight orders define order parameters, including the status structure and the model for order numbering.		
Logistic Unit Type	Templates for logistics units, such as pallets, containers, and boxes, define dimensional parameters: length, width, height, as well as fill control parameters: by weight or volume.		
Map Locations	Map Locations is a directory of map-based locations utilized for precise pinpointing using geolocation services. Map Locations are employed for route mapping, distance calculations, and estimating transportation durations. Map Locations can be linked to the addresses of clients and suppliers.		useful if we have our own fleet
Map Location Types	A directory of location types on the map, such as Client, Vendor, Port, Gateway, Hub, etc.		useful if we have our own fleet
Google Maps services integration	Configuration of Google Maps and TMS integration		useful if we have our own fleet

Settings

	Description	LSP scenario comment	Shipper Scenario comment
Carriers	A directory of third-party carriers that provide transportation useful if we ervices to our company		useful if we have our own fleet
Vehicles	, , , , , , , , , , , , , , , , , , , ,		useful if we have our own fleet
Drivers	Configuration of the directory for drivers, whether from our company or external.		useful if we have our own fleet
Routes	Routes are used for the logical grouping of customer addresses by geographical attribute to facilitate the assignment of a set of customer orders to a specific truck or carrier.		
Units of measure	The TMS module's measurement units directory defines the primary linear, volumetric, and weight measurement units, along with their interrelationships and conversion coefficients.		
Freight Classes	The Freight Class Directory is a standardized classification system for less-than-container load (LCL) freight shipments, categorizing them based on specific attributes. The classification of cargo freight is established using various criteria, such as value, weight, length, density, and additional factors.		

Transportation Management System Setup & Settings

Forwarding Order Type



Forwarding Order Type

Customizable template defining transportation order flow.

The Forwarding Order Type specifies parameters for the document such as:

- Structure A template that shapes the entire transportation order lifecycle.
- Default Parties Pre-establishes consignee and shipper details for consistency.
- Service Catalog A catalog of available services for tailored shipping solutions.
- Number Series Default numbering for organized tracking of orders.
- Status System A comprehensive list of statuses for clear order progression.
- Content Presets Includes default content settings for quicker order creation.

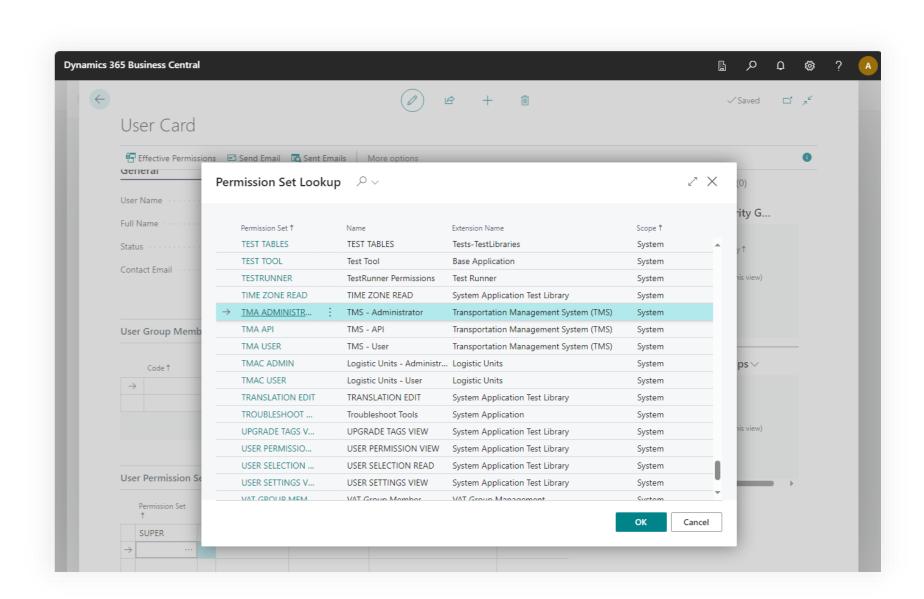


Prerequisites

To change "Forwarding Order Types" user must have TMS Admin Permissions.

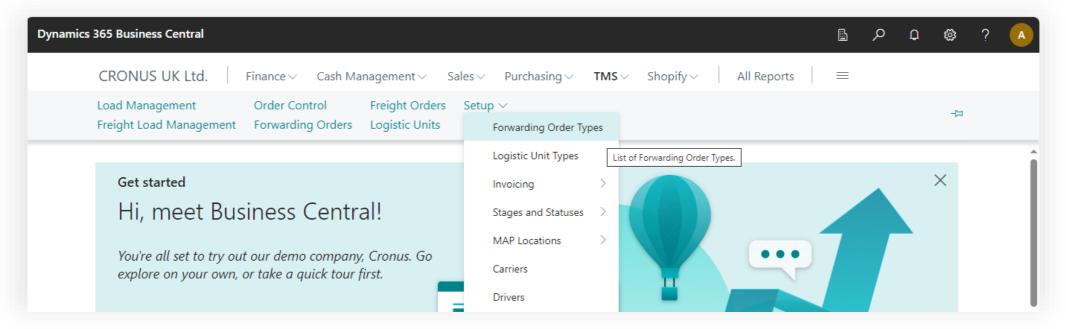
Before configuring forwarding order types, you must create the required entities: a set of services, a number series, a shipper and consignee, status profiles, and stages profiles.

If necessary, refer to the supplementary documentation.

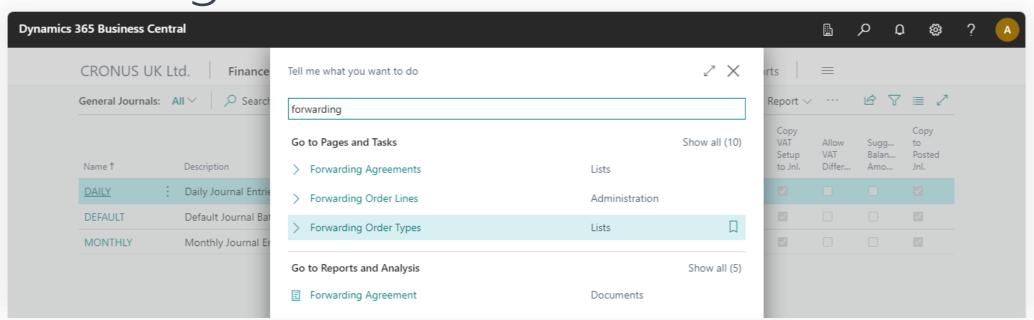




Where to find using main menu of the TMS

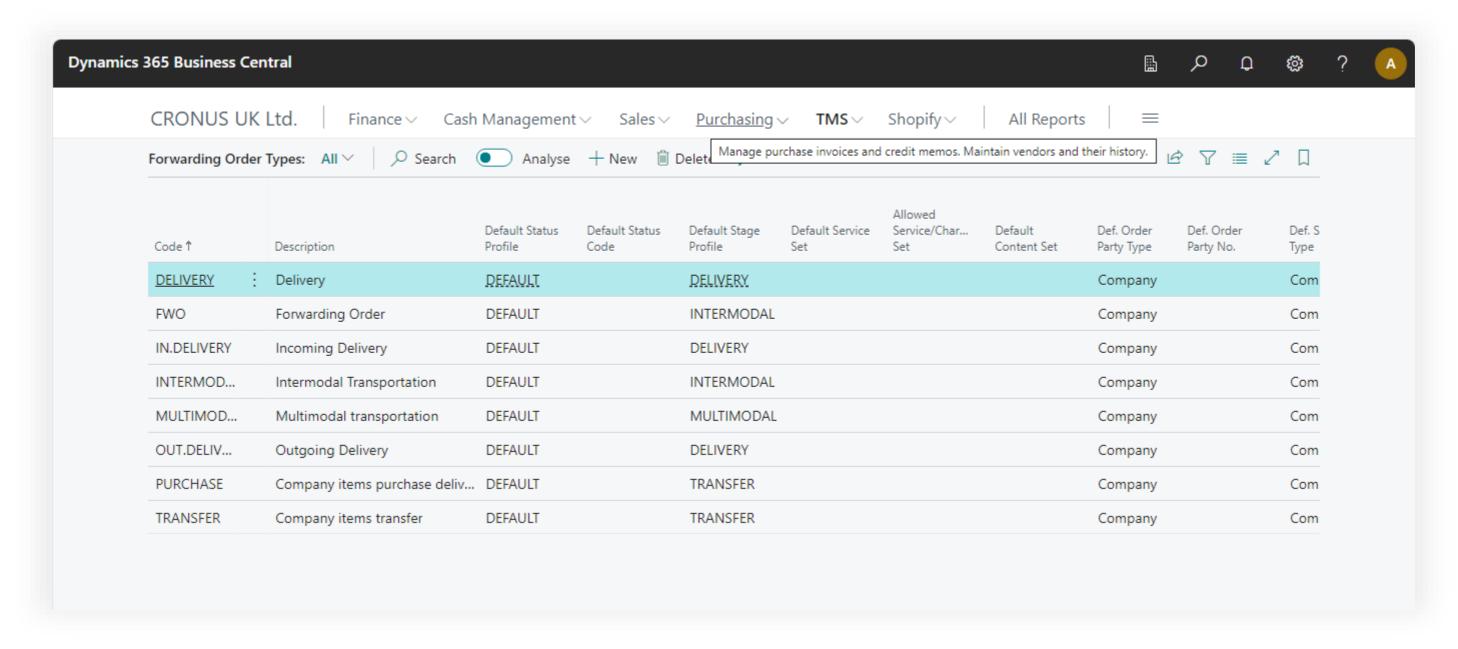


Where to find using search



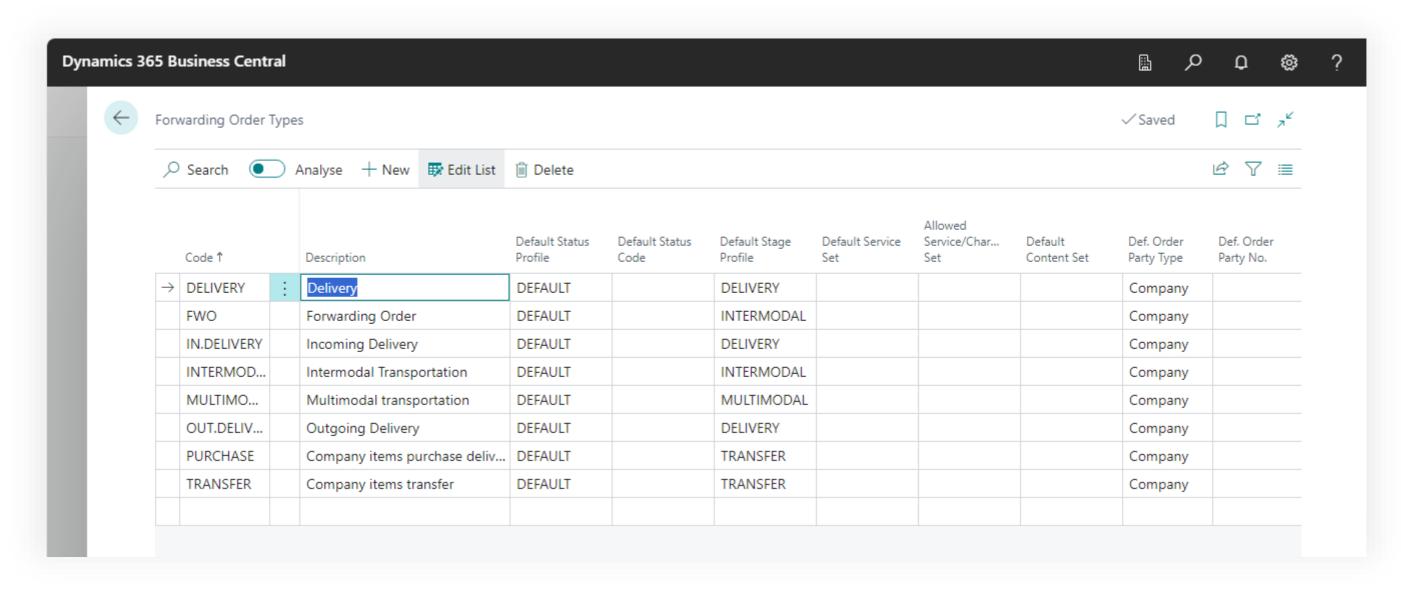


To establish a new forwarding order template or modify an existing predefined set, please proceed as follows.



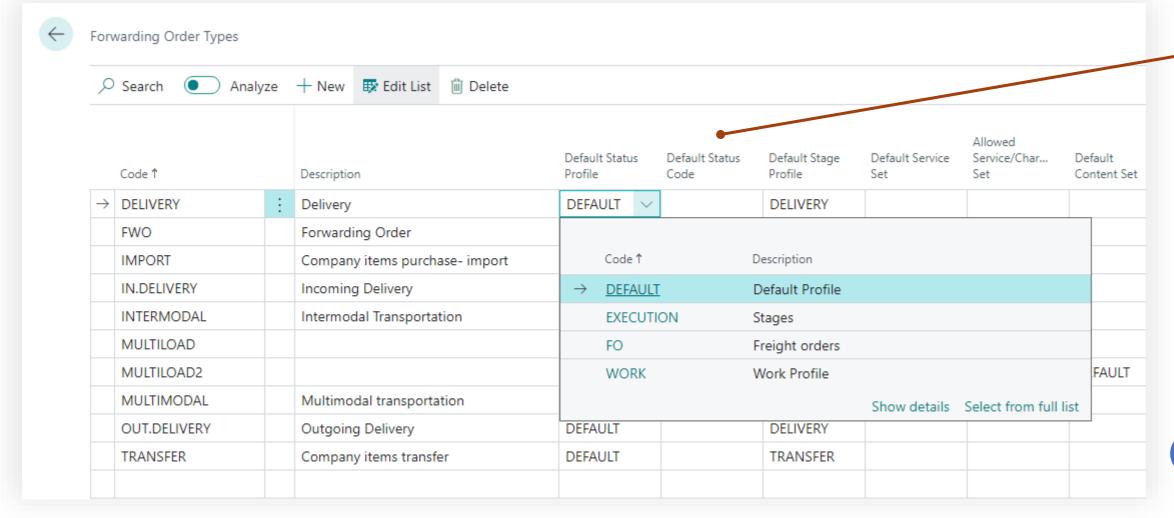


Switch the page to Edit mode, click the "Edit List" button. The Forwarding Order Type does not have a card page.





Default Status Profile - the status profile that will be set for an order upon its creation for the selected order type. A status profile is a set of statuses that a document can have within the business process of its handling.

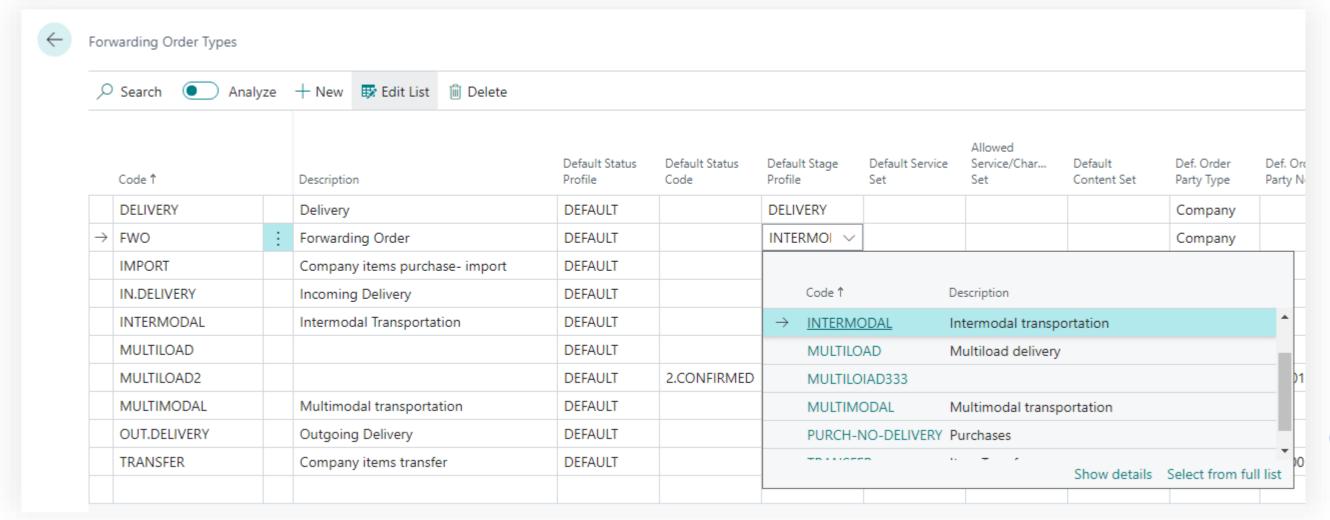


Default status code - the status value that a document will have upon creation, thereby allowing for the automatic advancement of the document to a specific stage of its processing.

You can find detailed information on configuring the status profile in Setup.Settings.StatusProfile.pdf.



Default Stage Profile - the stage profile defines the structure of the transportation, whether it be a simple single-stage delivery or a complex multi-stage intermodal transportation involving multiple carriers.





You can find detailed information on configuring the status profile in Setup.Settings.StageProfile.pdf.

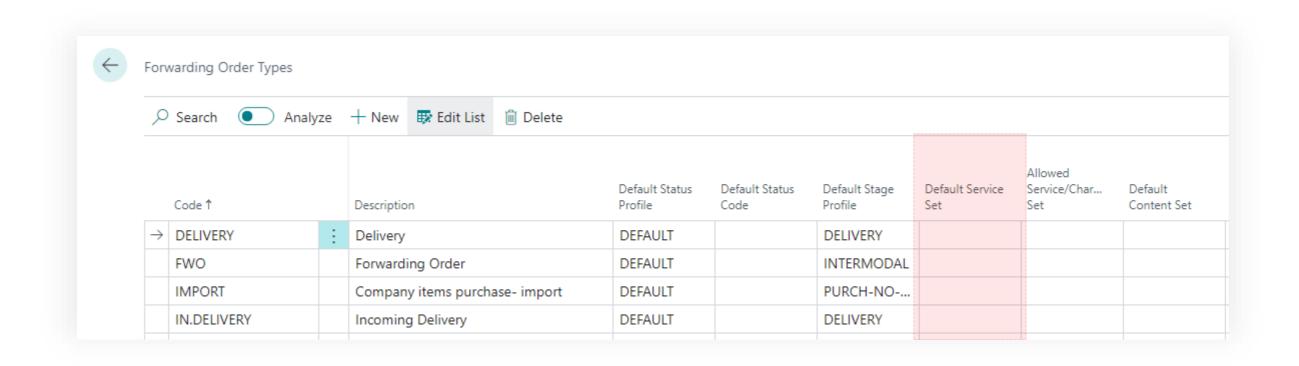
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Setup & Settings – Forwarding Order Type

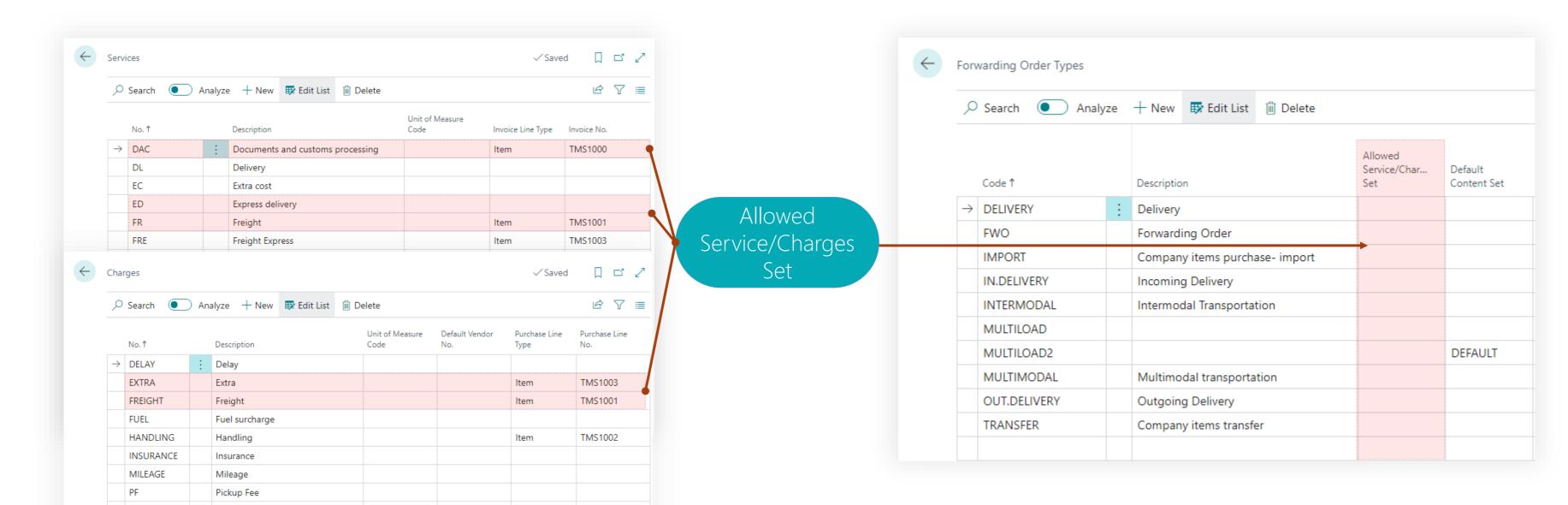
known in advance.

Default Service Set - is a set of lines for default settlement. This setting allows for the creation of a set of services and charges that will be automatically added to the order upon its creation. The Service Set can include services to be invoiced as well as charges whose structure may be



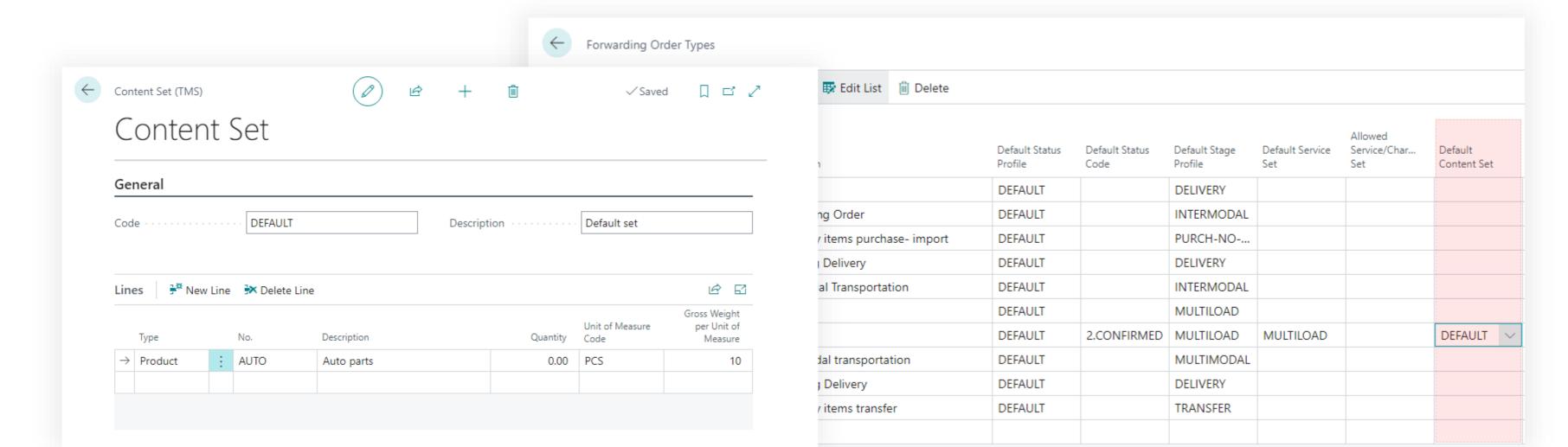


Allowed Service/Charges Set - a set of permitted services or charges that can be added to the settlement. If this field is filled, a restriction system is activated, allowing only values from this set to be added to the settlement.





Default Content Set - a default set of contents for transportation. It's possible to create a set of standard contents and add them automatically when an order of this type is created. This is convenient for LSPs with abstract cargo descriptions like SHIPMENT (cargo space).

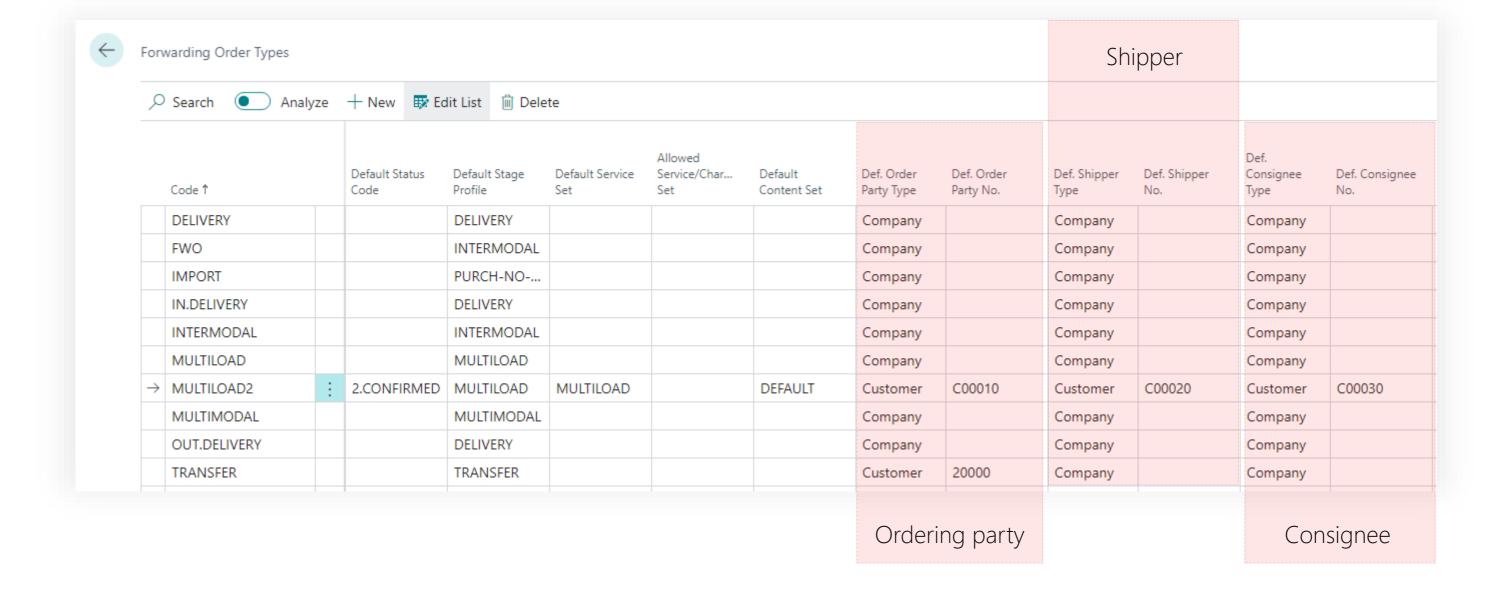


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Setup & Settings – Forwarding Order Type

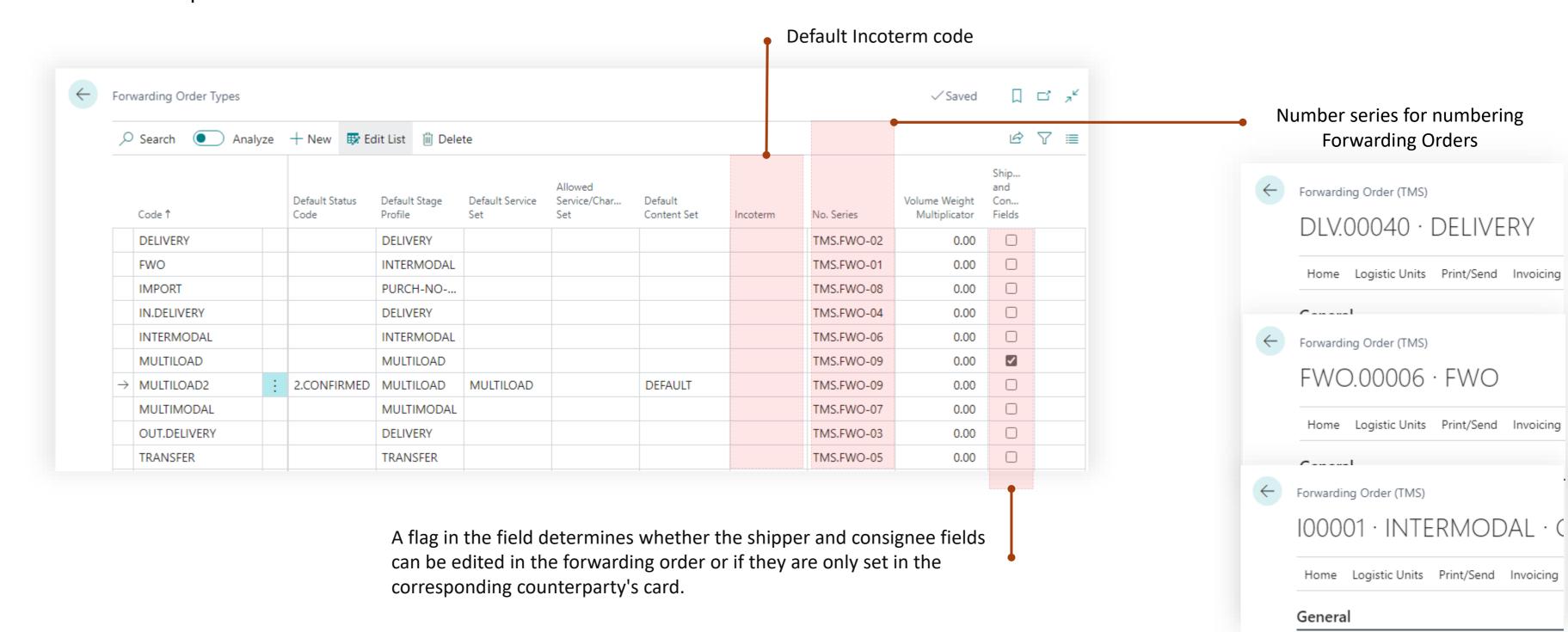
Default values - specific default values for the ordering party, shipper, and consignee can be set for regular transportation orders. Fill in the type value and then select the value in the "... No." field.



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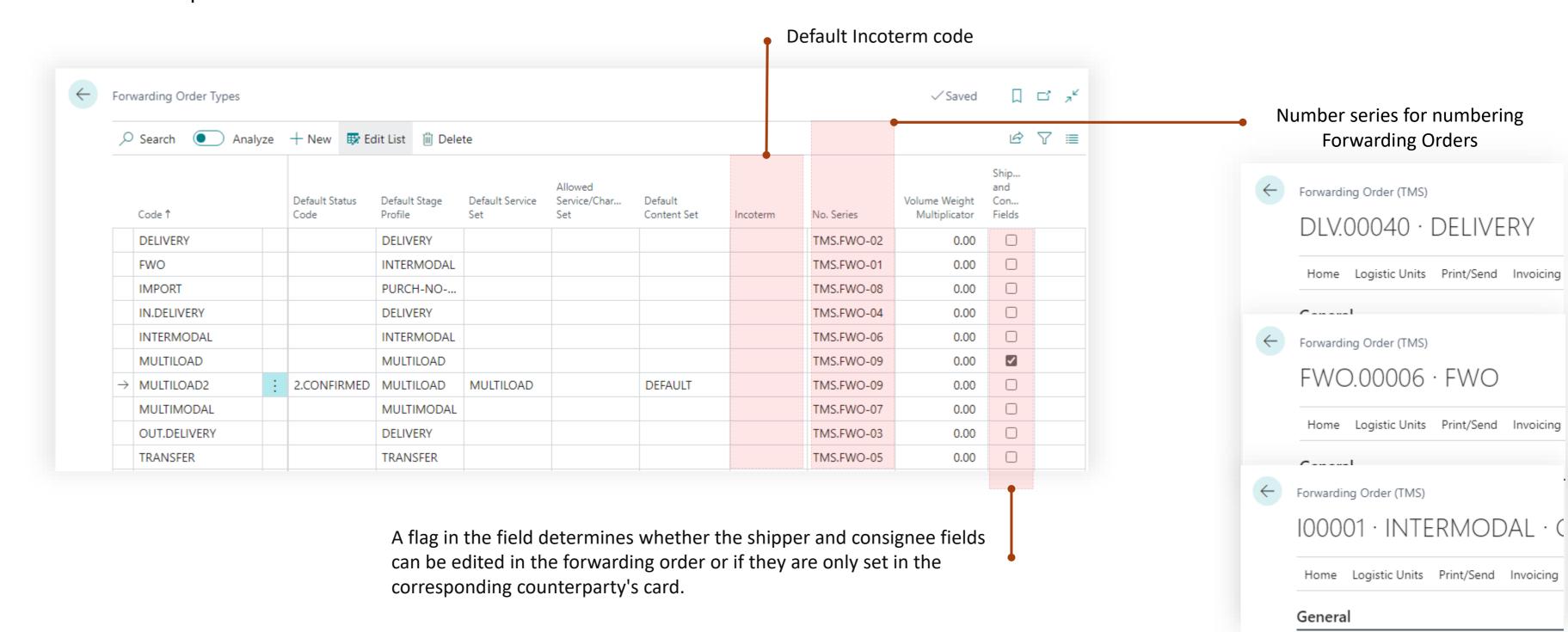
Other parameters



Transportation Management System



Other parameters



Transportation Management System Setup & Settings

Status Profiles

Setup & Settings



Status Profile

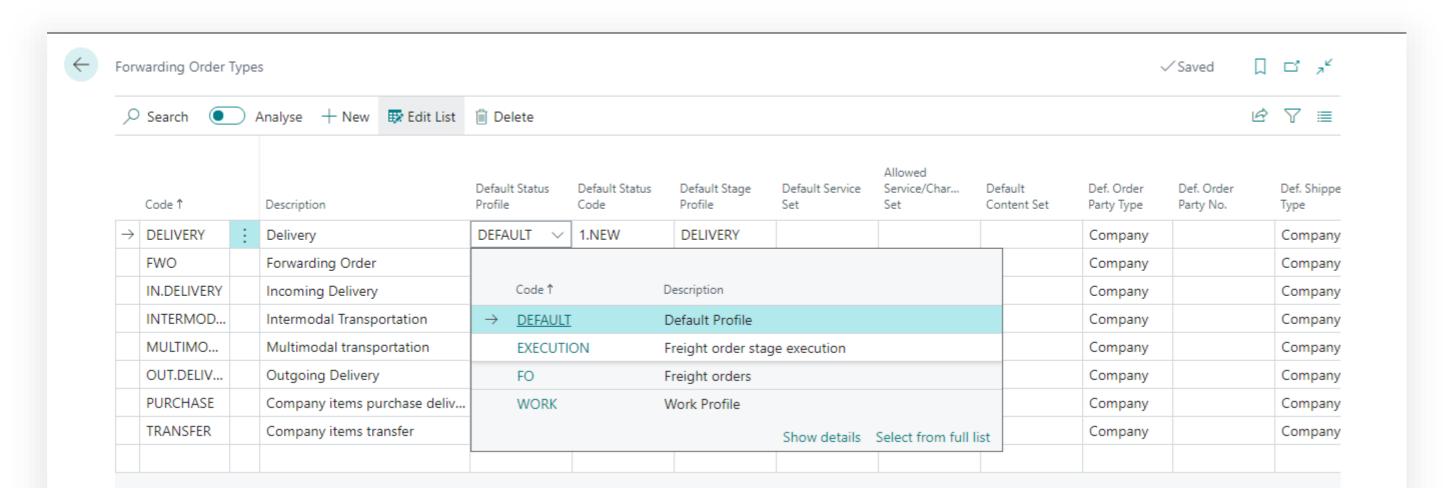
- A status profile constitutes a defined sequence of statuses that a forwarding and freight order can assume during its lifecycle within a business process.
- The profile specifies the permissible operations and restrictions applicable to the document when it is in a given status. This framework ensures structured progression and governance of document states throughout the processing workflow.

	Code		Description
\rightarrow	1.NEW	:	New
	2.CONFIR		A forwarding order confirmati
	3.PLAN		Planning process. Dates. Stage
	4.EXECUTI		Execution process. Units and fr
	5.EXECUTED		Order was executed. Invoicing
	6.INVOICING		Order is in the invoicing proce
	7.COMPLE	:	Order was completed. Posting.
	8.CANCELED		Order was canceled.



How TMS uses the status system

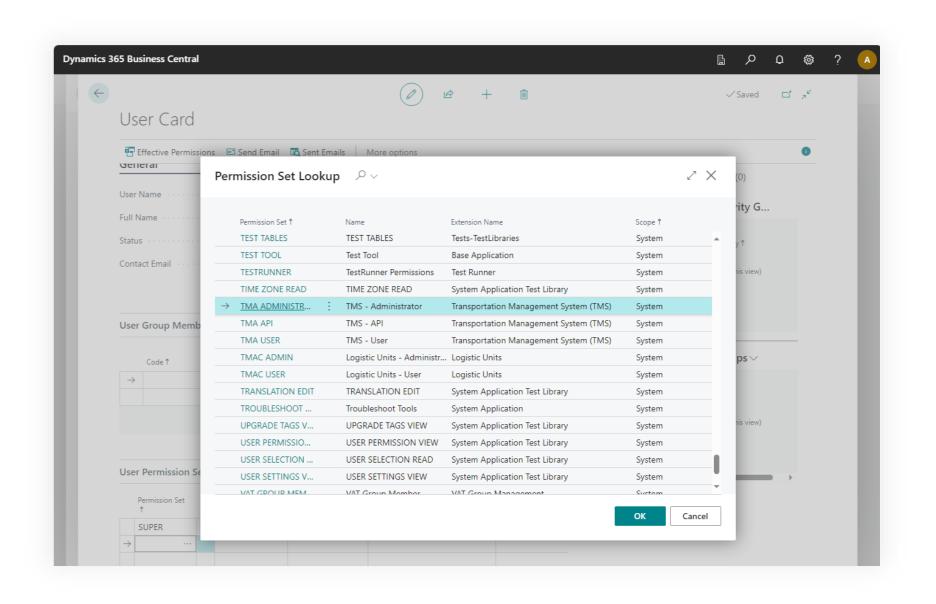
The status system is utilized for document types such as Forwarding Orders and Freight Orders. Different types of documents may have diverse status structures, allowing for more flexible configuration of the document processing business process.





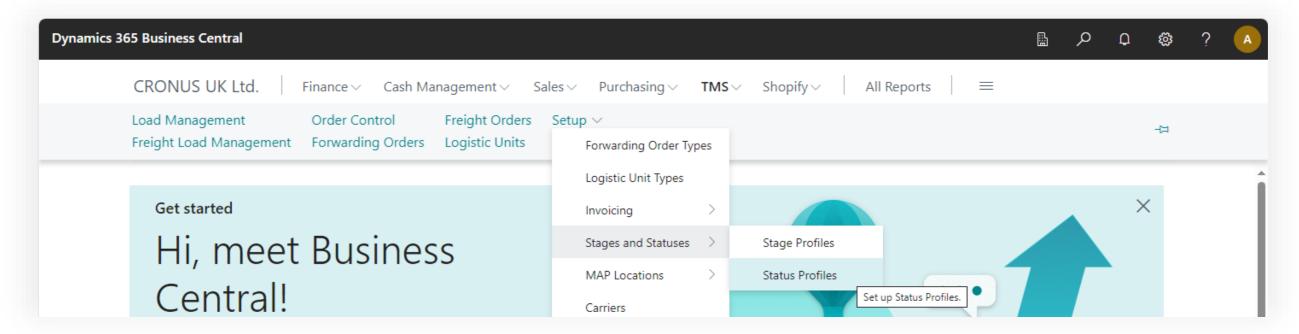
Prerequisites

To change or create status profiles user must have TMS Admin Permissions.

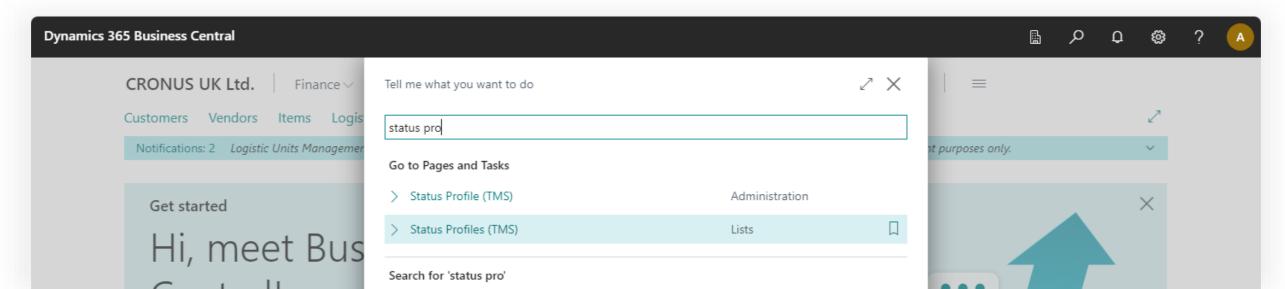




Where to find using main menu of the TMS

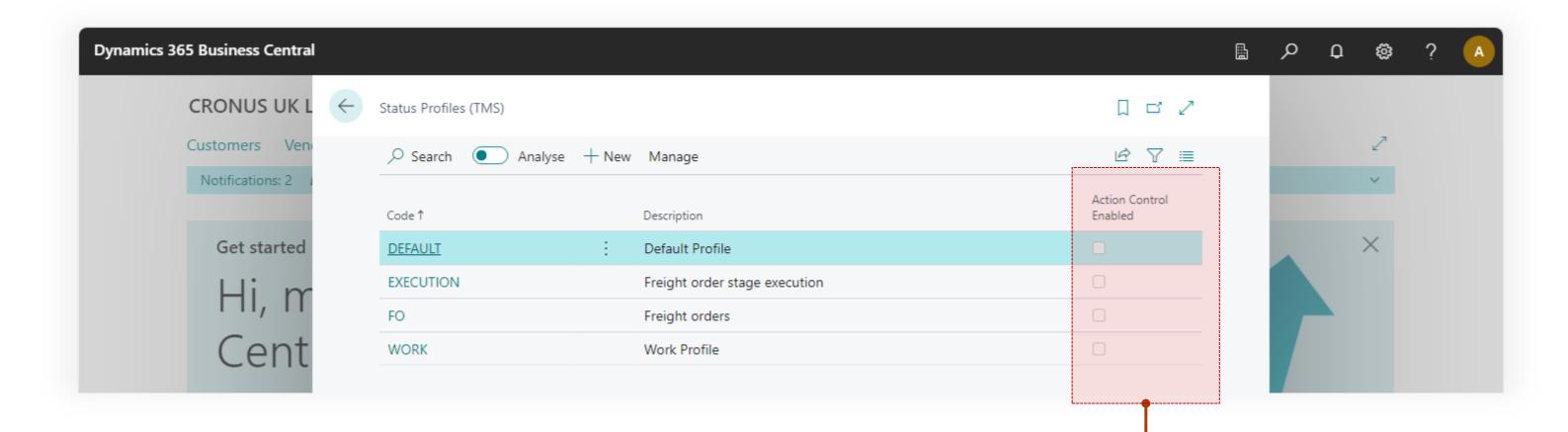


Where to find using search



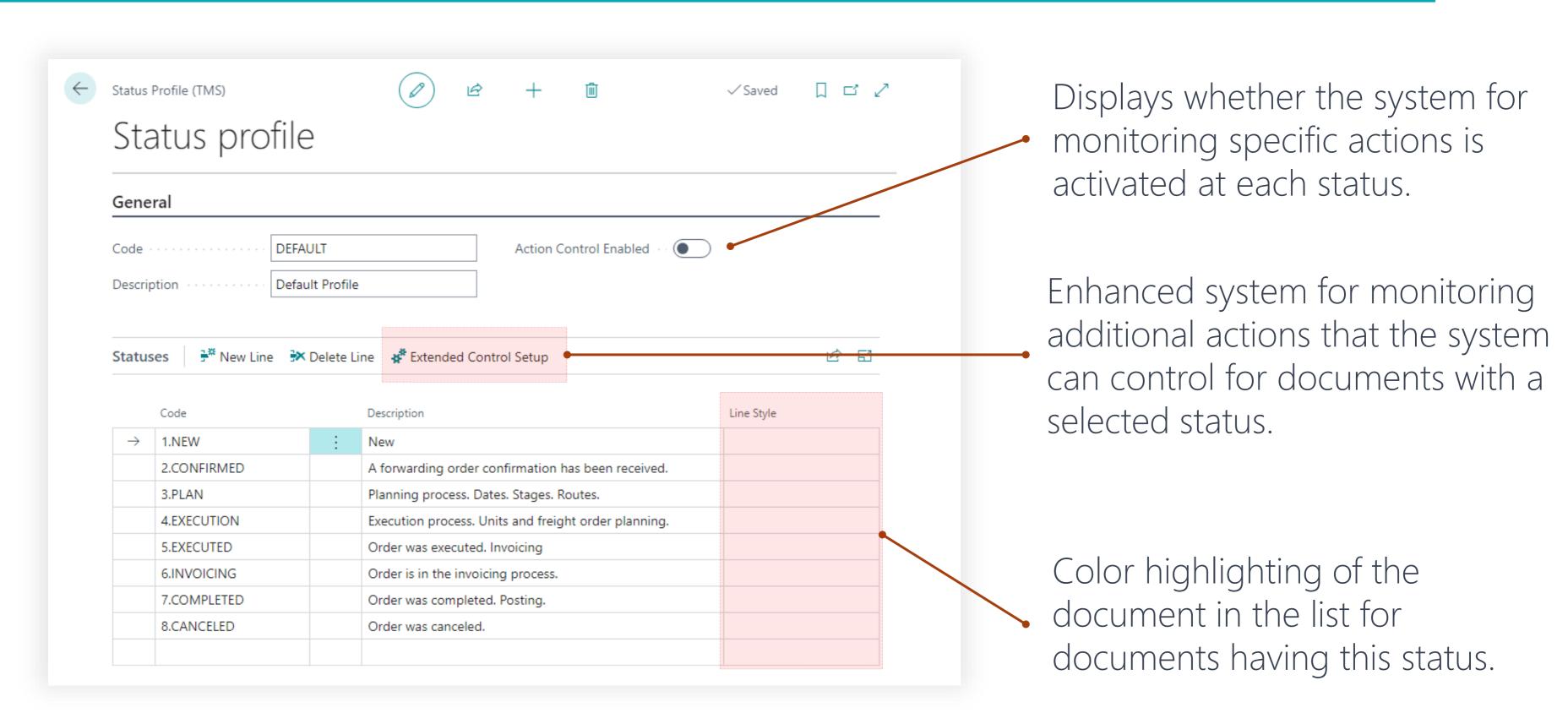


Status Profiles page



Displays whether the system for monitoring specific actions is activated at each status. The status monitoring system can be locked for all profiles in TMS Setup.



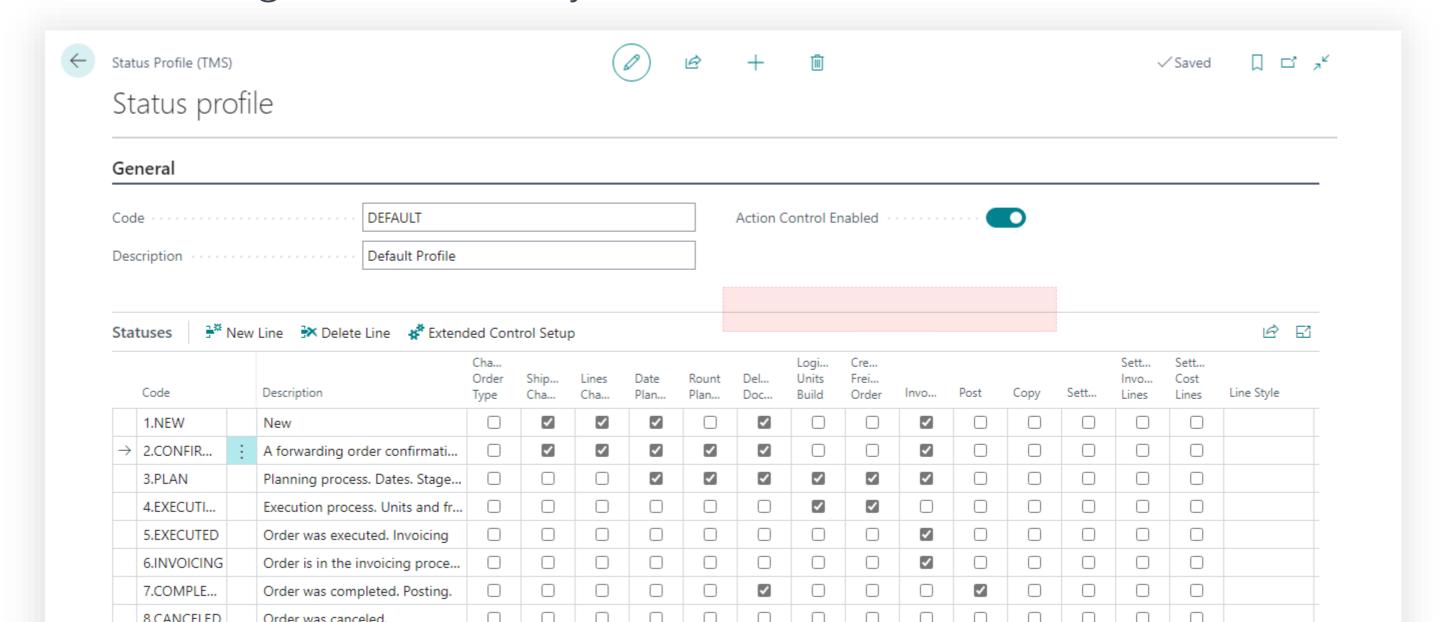


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Setup & Settings – Status Profile

Action Control System allows for the authorization or prohibition of actions that can be performed with documents having a selected status. This facilitates the organization of workflow and the orderly processing of documents, as well as synchronizing the efforts of individuals working simultaneously on the same document.

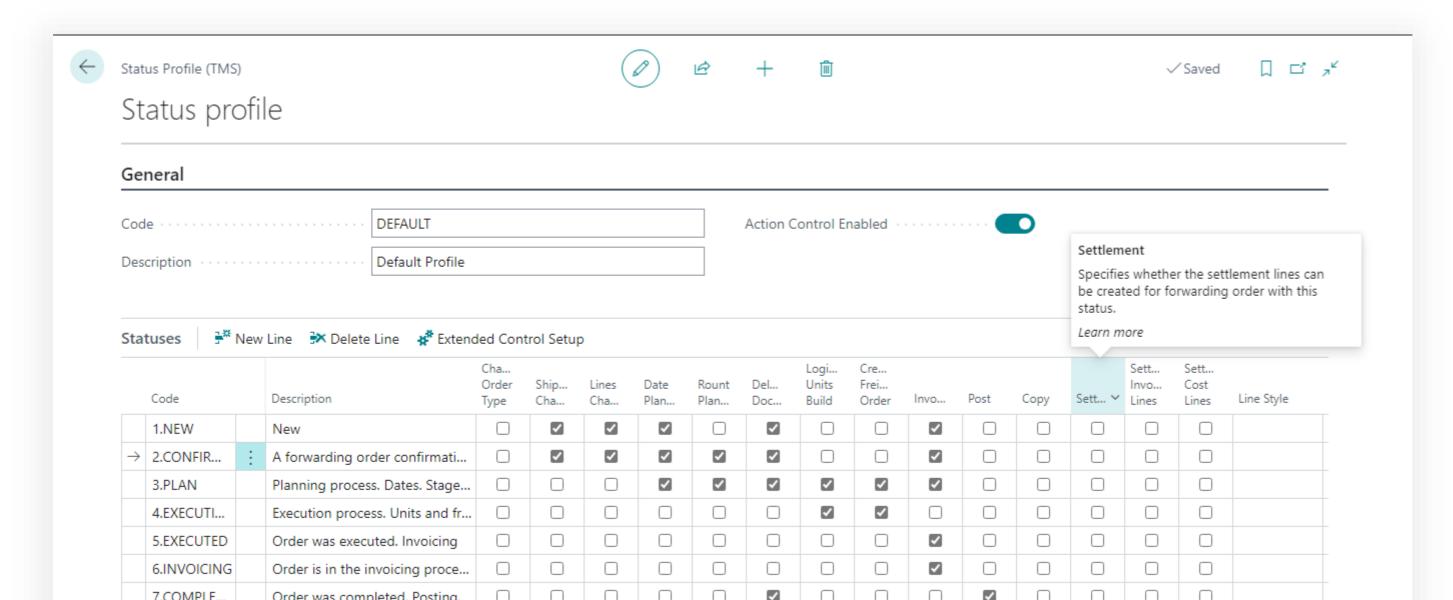


Transportation

Management System

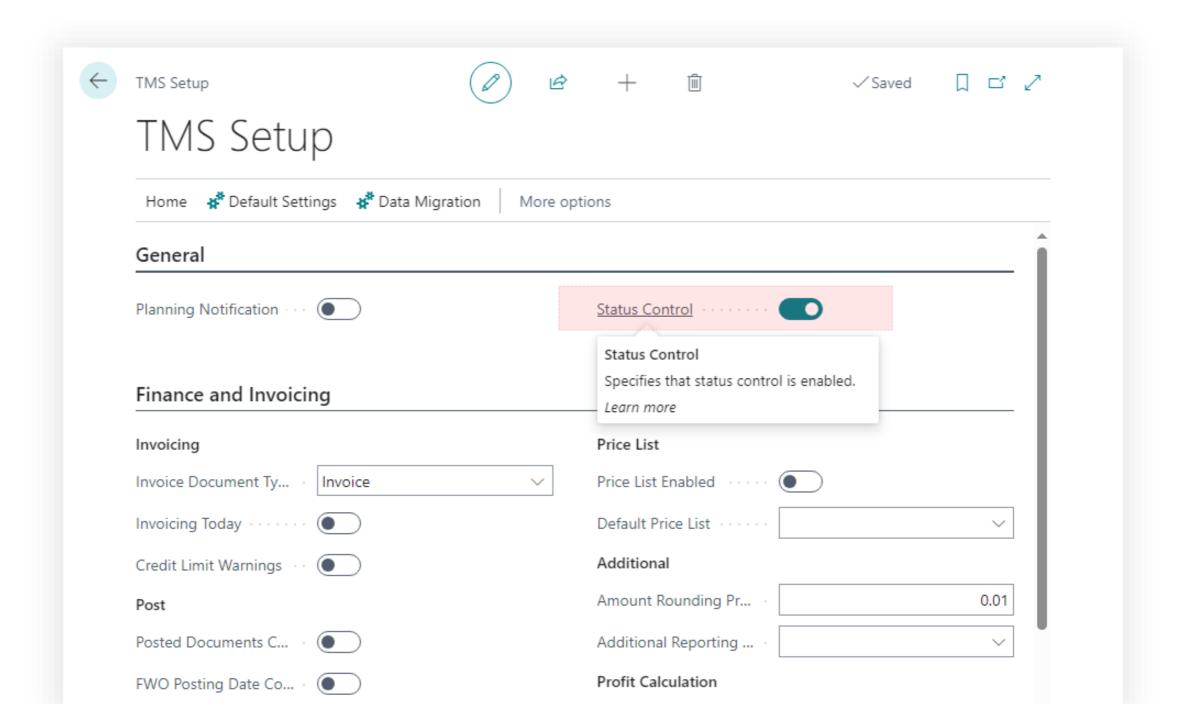
Setup & Settings – Status Profile

You can activate verification by setting a flag in the field of the corresponding column. Determine whether an order can be posted, whether an invoice can be issued, and whether copying or modifying a document with the given status is allowed.





To ensure the action control system functions, it must be activated globally in the TMS Setup page.



Transportation Management System Setup & Settings

Stage Profiles

Setup & Settings



Stage Profile

- The Stage Profile defines the sequence of steps that will occur during the transportation process.
- The profile may include both mandatory steps executed via the Freight Order and additional steps that are manually added to the transportation process.

Delivery

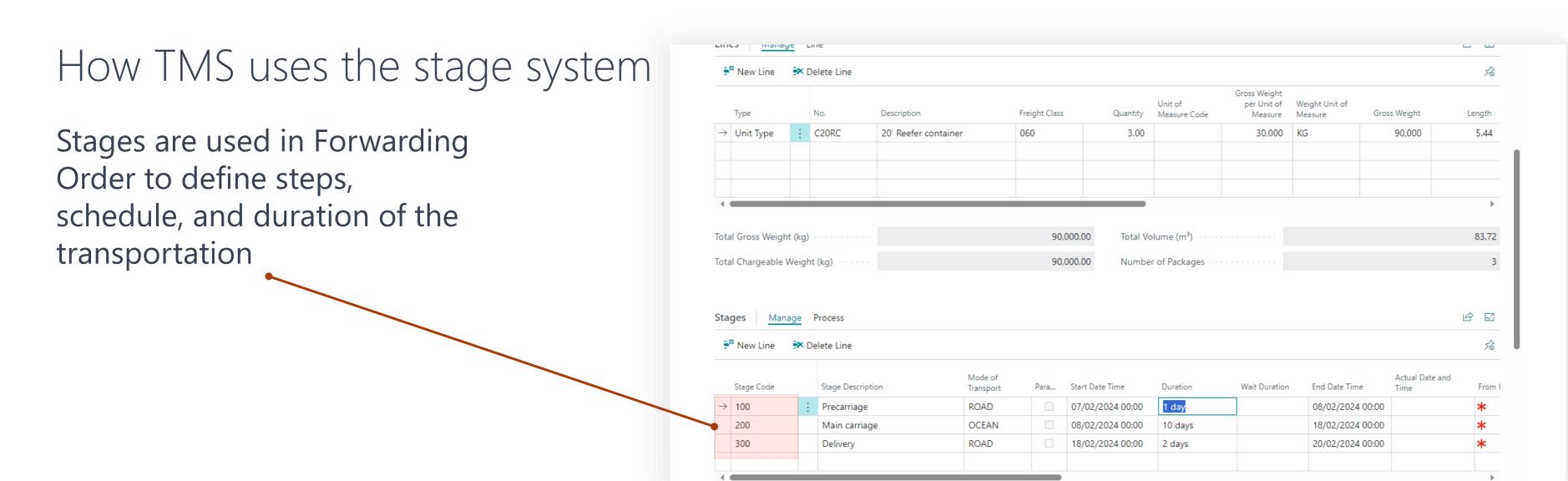
	Code		Description	Mode Of Transport Code
\rightarrow	100	:	Delivery	ROAD

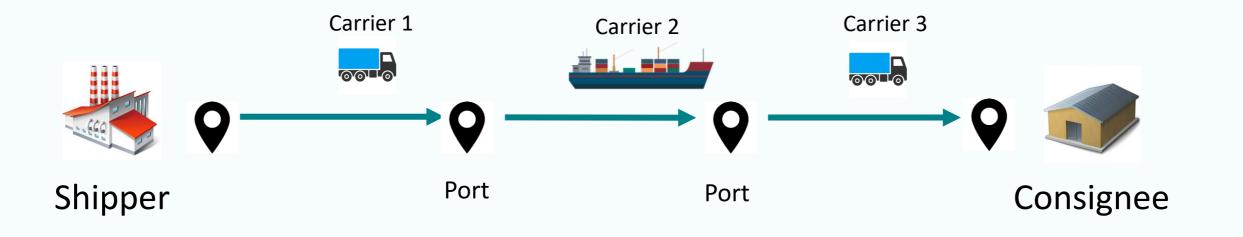
Multimodal

	Code		Description	Mode Of Transport Code
\rightarrow	100	:	Precarriage	ROAD
	200		Main carriage	OCEAN
	300		Delivery	ROAD

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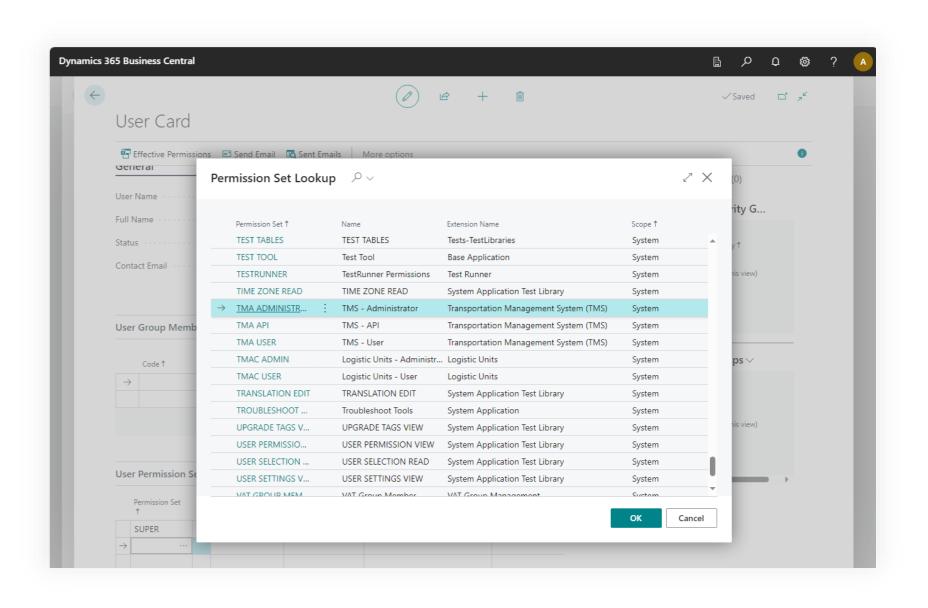






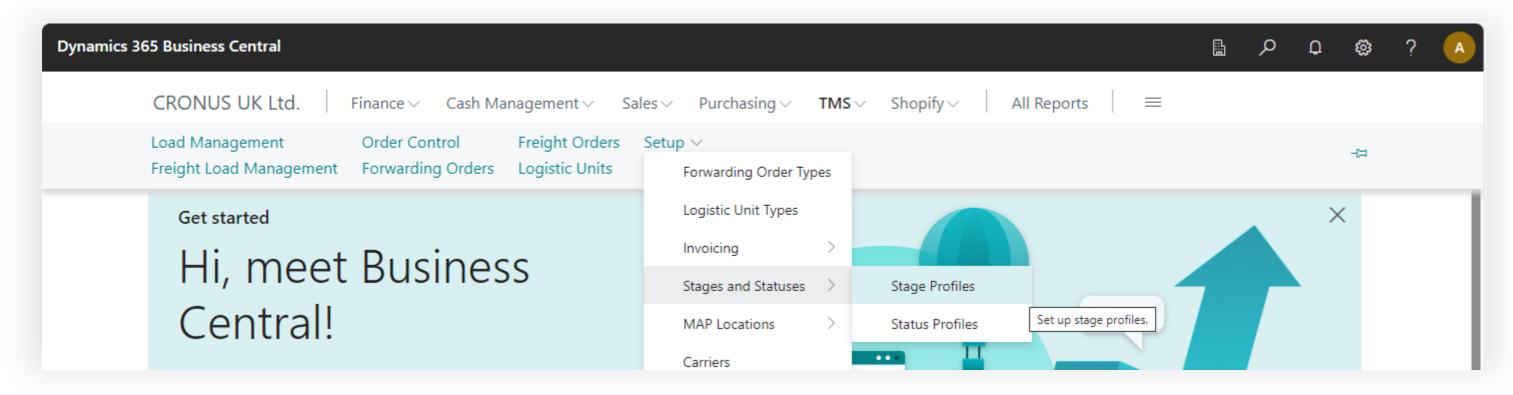
Prerequisites

To change or create status profiles user must have TMS Admin Permissions.

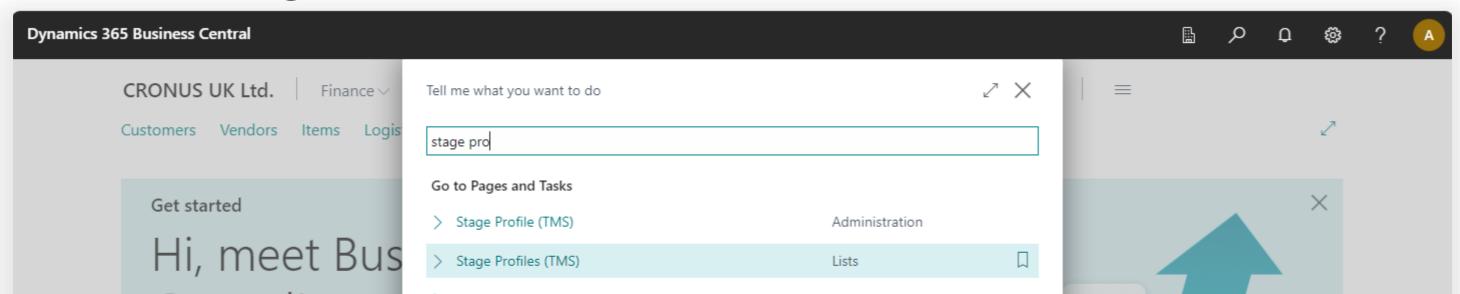




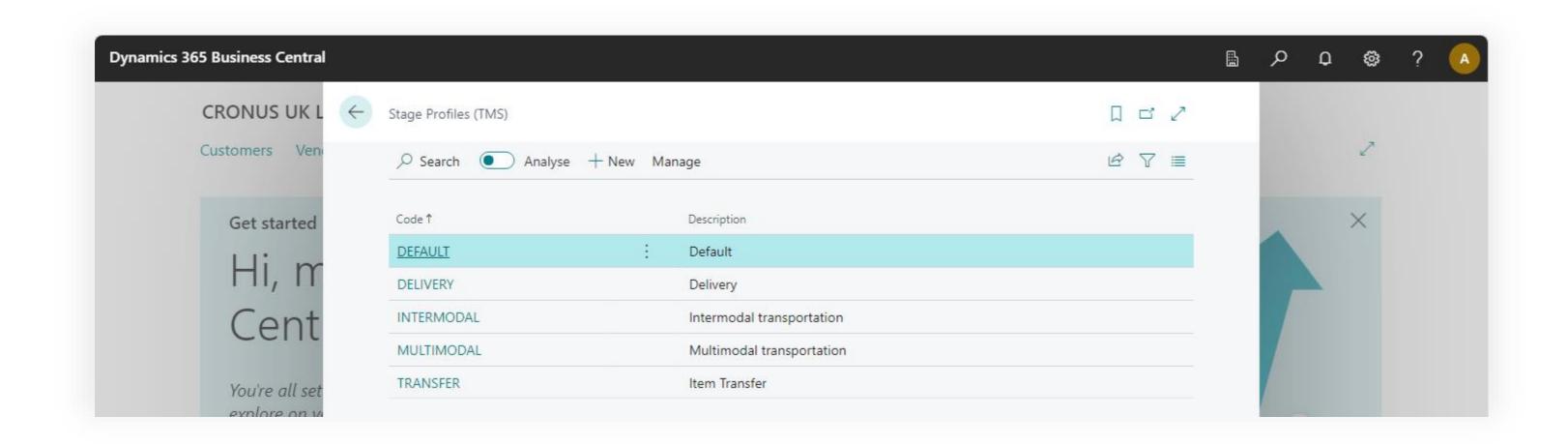
Where to find using main menu of the TMS



Where to find using search



Status Profiles page



added to the order but can be

manually selected.

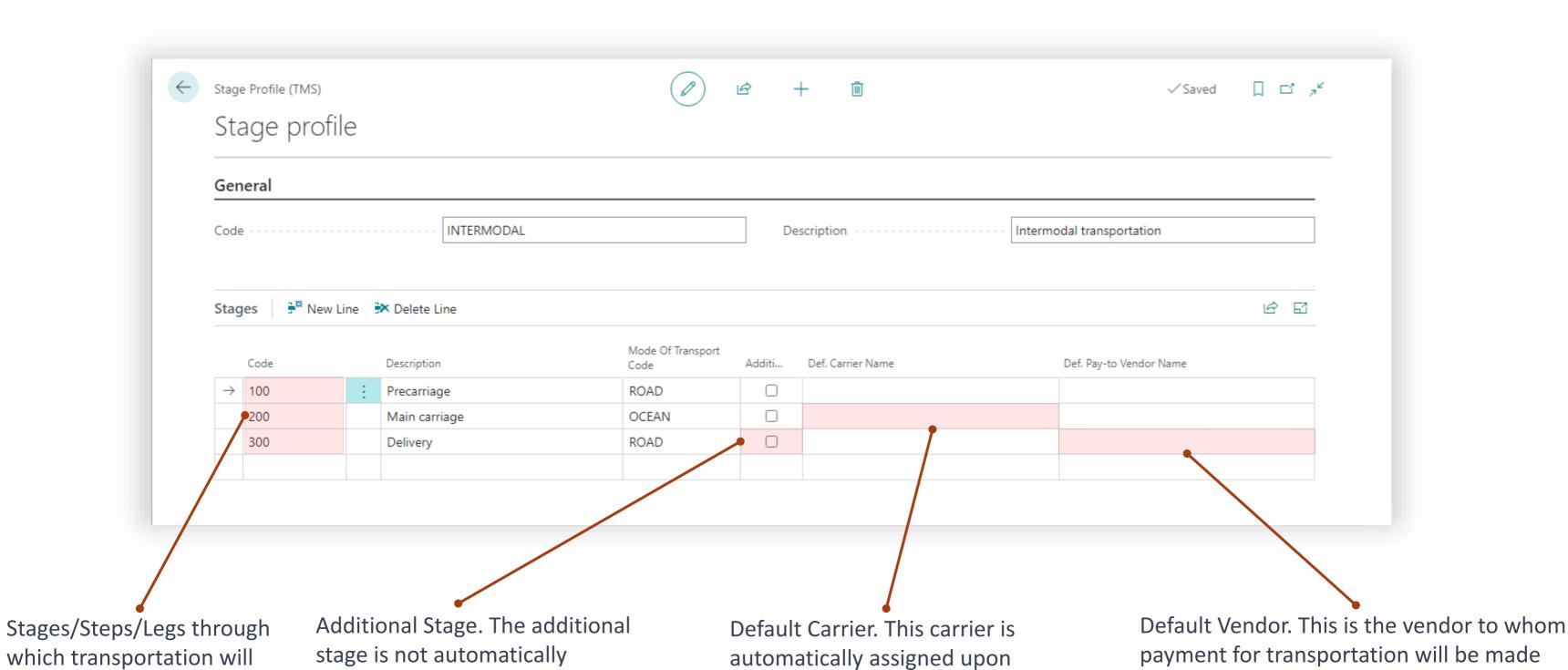
occur.

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for the given stage. This could be either the

carrier directly or their agent.





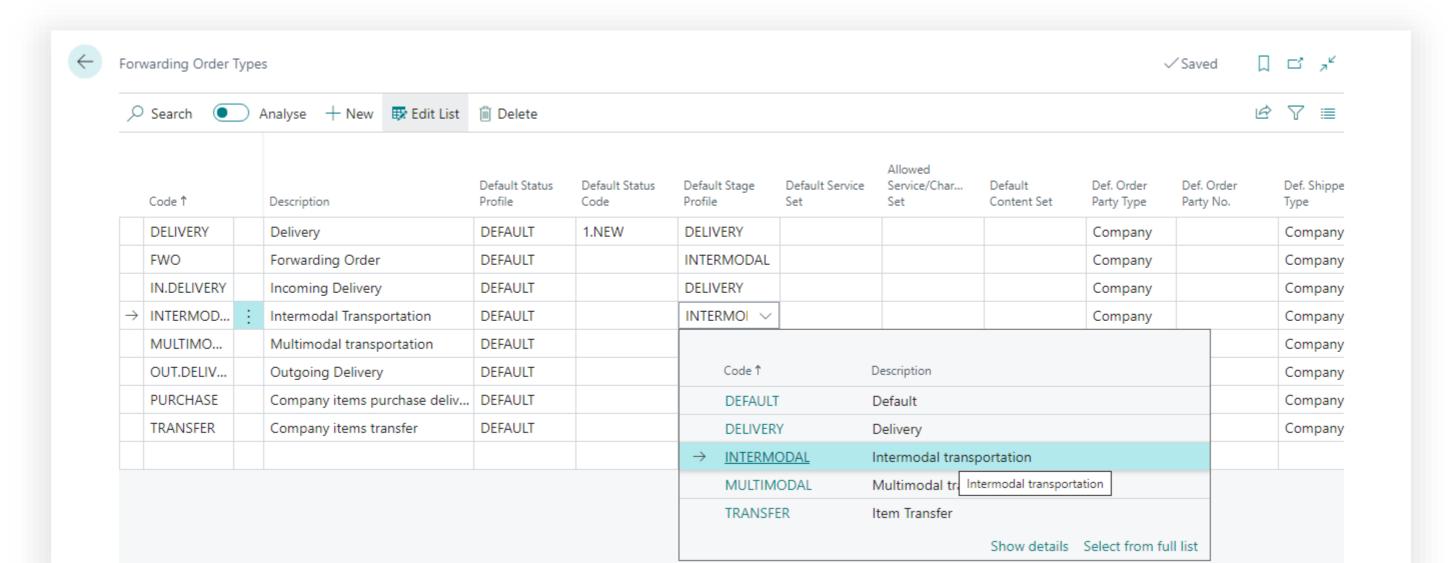
the creation of a freight order

for the given stage.



Where stages are using

Stages are used in Forwarding Orders Types page. By assigning a stage profile to the forwarding order type, a set of stages is defined for all documents of this type.





Transportation Management System Setup & Settings

Services

Setup & Settings

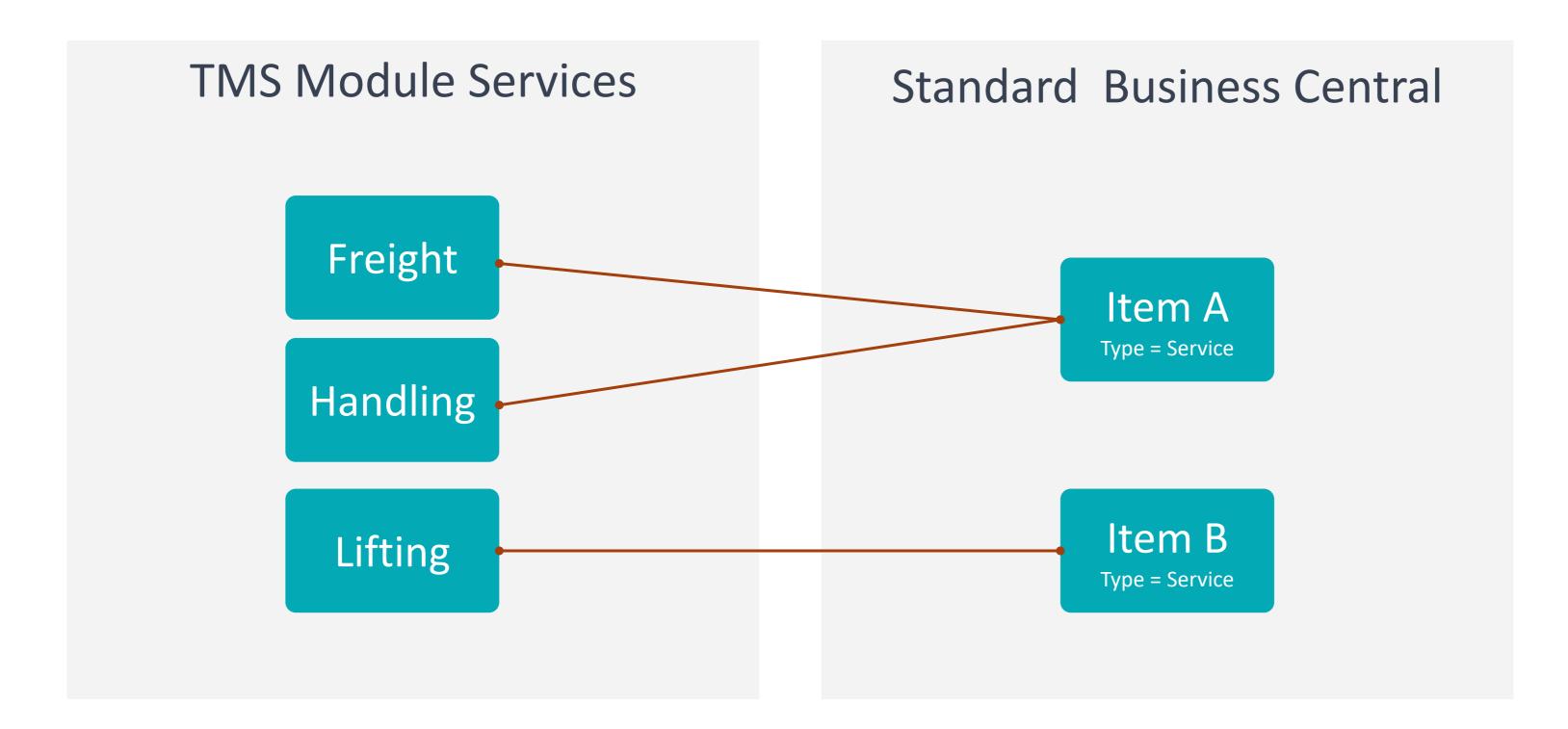


Services

- The TMS module possesses its own service directory/system, enabling the flexible customization of services offered within the context of the transportation process.
- TMS services are mapped to entities within the standard Business Central, facilitating operations for billing.
- Mapping can be one-to-one, where a TMS service is directly mirrored in the item
 directory, or many-to-one, where multiple TMS services aggregate into a single billable
 item-service.
- TMS services are employed in the settlement of forwarding orders, and setting up TMS services is essential for invoicing clients.
- TMS represents the suite of transportation services we provide to the client and for which we issue invoices.



Possible relations between TMS Services and Items of the Business Central







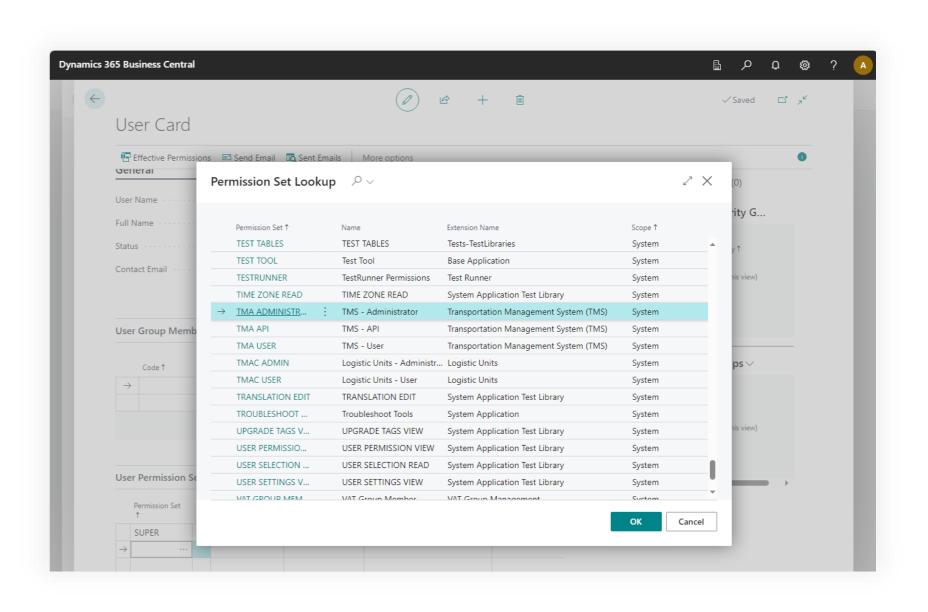
- Mapping TMS services to BC items means that within the TMS module, we operate and work with TMS services, but when invoicing or allocating costs in standard BC documents, items will appear instead.
- Business Central is unaware of the TMS module and cannot interact with its entities.

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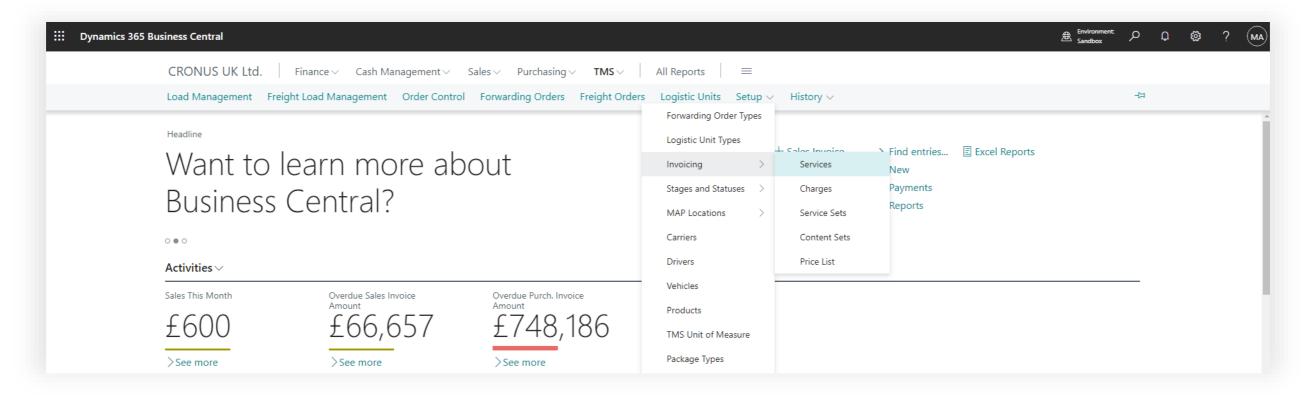
Prerequisites

To change or create status profiles user must have TMS Admin Permissions.

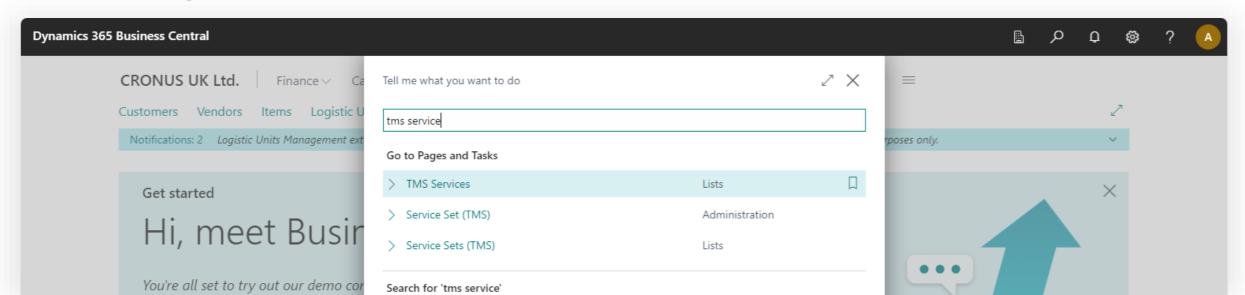




Where to find using main menu of the TMS

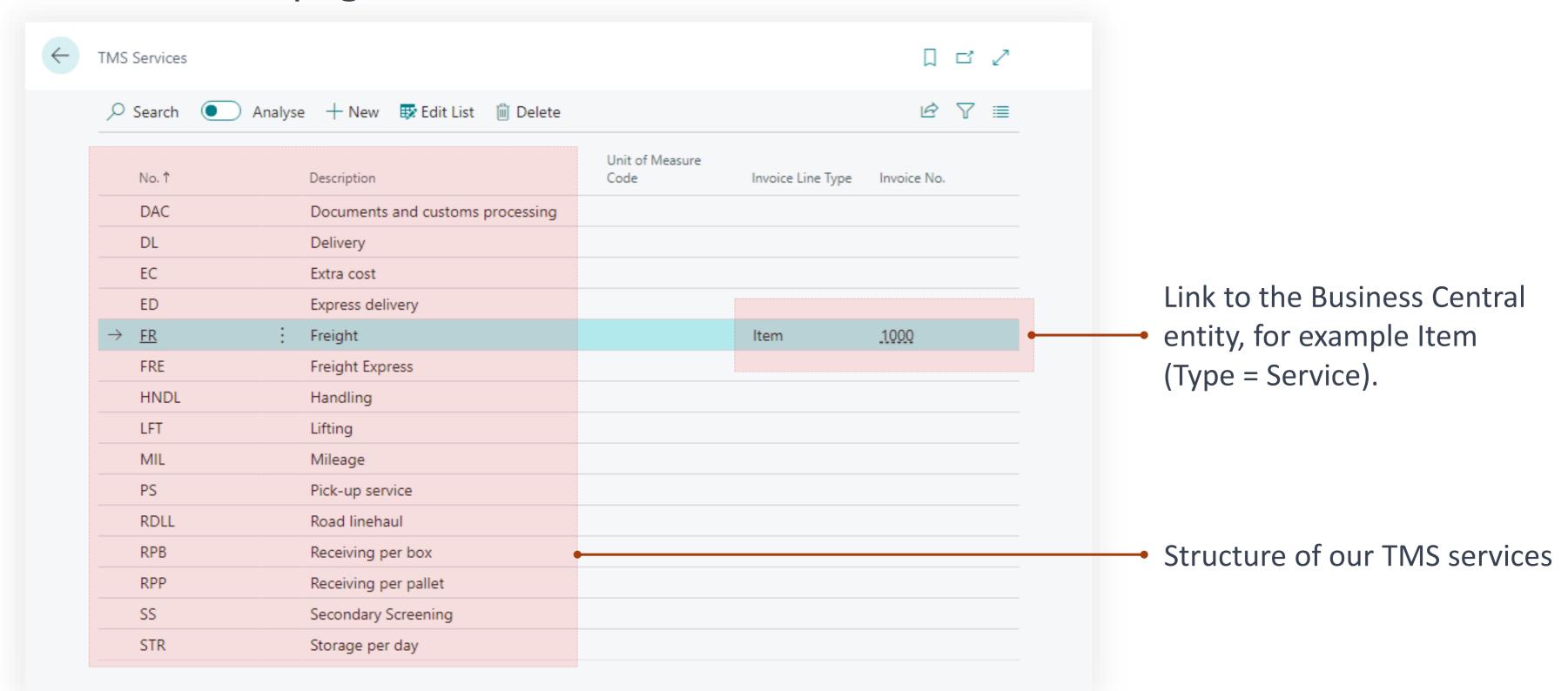


Where to find using search



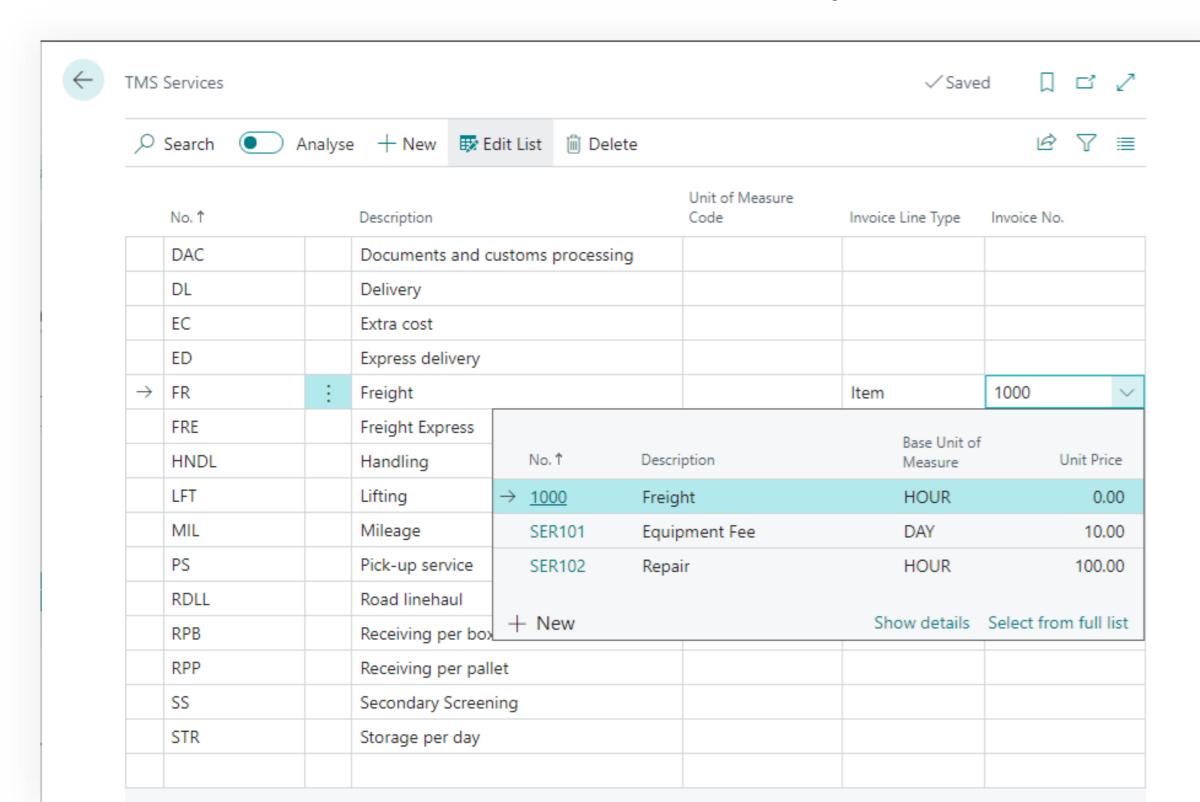


TMS Services page





Set link to the Business Central entity



- Create a product that will serve as a reflection of the TMS service in the standard Business Central module.
- 2. Establish the link.
- p.s. The entity type corresponds to the type of purchase or sales order line.

Transportation Management System Setup & Settings

Charges

Setup & Settings

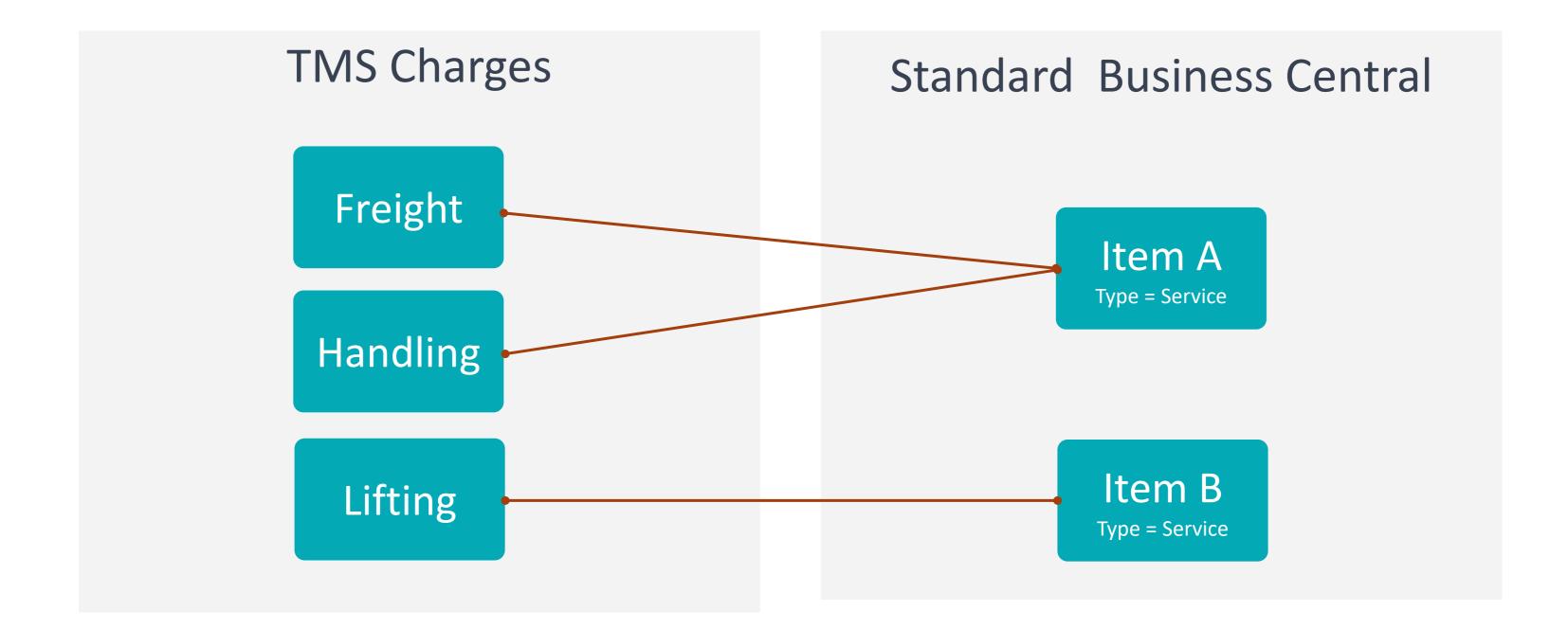


Charges

- The TMS module includes a charges directory, allowing for the accounting of costs incurred during transportation.
- TMS Charges, similar to TMS Services, have mapping to the standard business center items, facilitating the allocation of transportation order costs.
- Mapping can be one-to-one, where a TMS charge has its equivalent in the product directory, or many-to-one, where multiple TMS Charges are represented by a single item.
- TMS Charges are used in the settlement of forwarding orders to account for expenses entered in Business Central as a purchase invoice.
- When a service provider (transportation or others) issues an invoice to our company, we enter it into Business Central as a Purchase Invoice document, specifying products (with a Type = Service) that are mapped to TMS Charges in the lines.



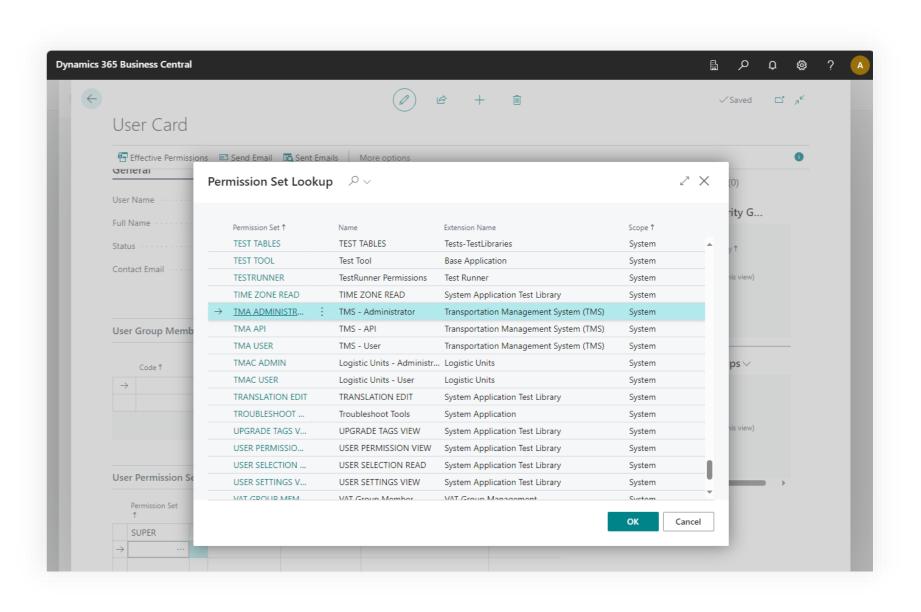
Setting up a connection between TMS charges and items with type = Service in Business Central is implemented similarly to "TMS Services"





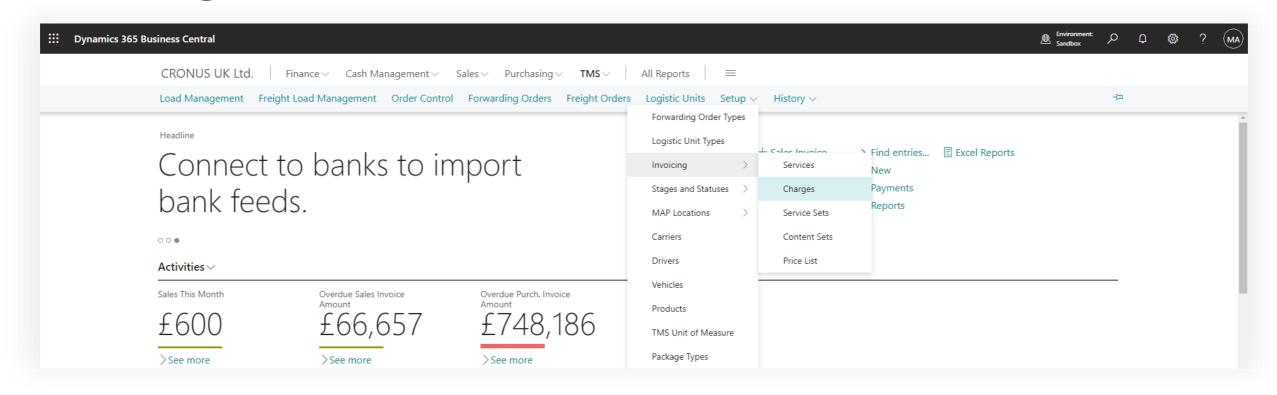
Prerequisites

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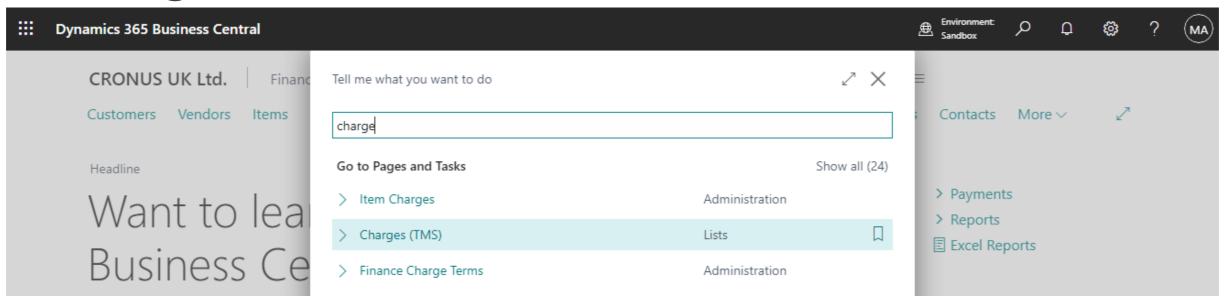




Where to find using main menu of the TMS

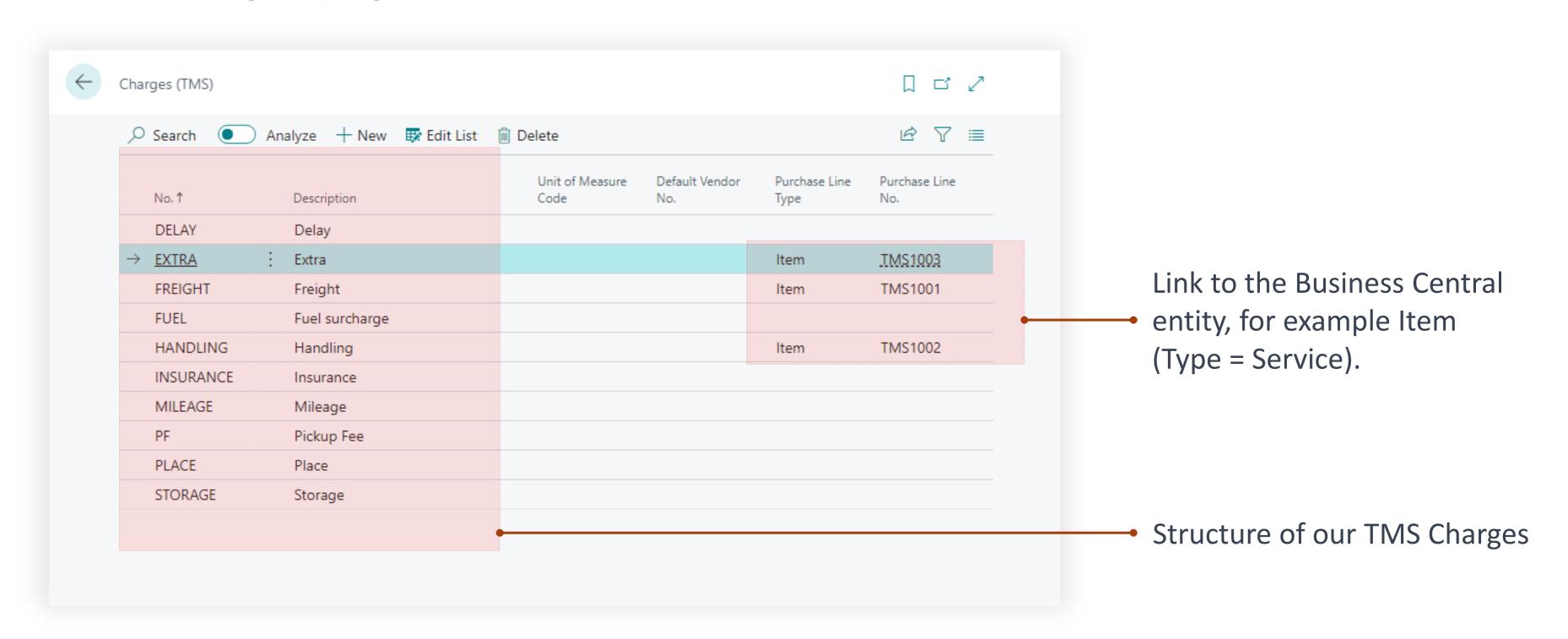


Where to find using search





TMS Charges page



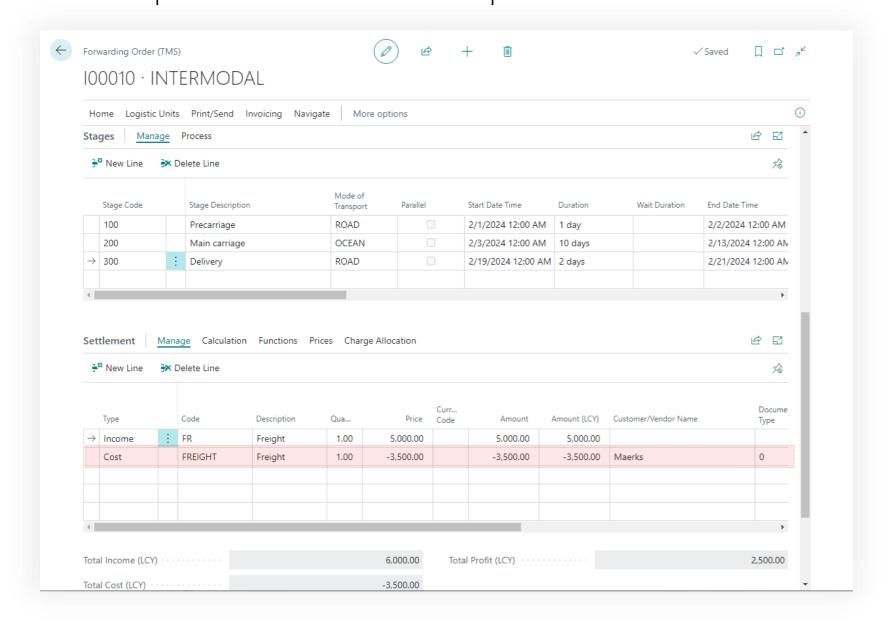
Transportation

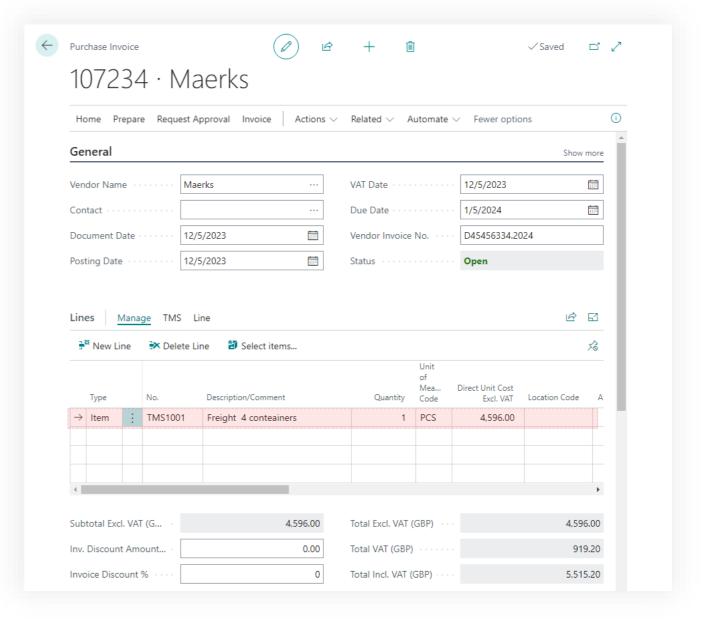
Management System

Setup & Settings – Charges

How it works

When planning the transportation, we estimated that the sea stage would cost 3500 pounds. After the transportation, the supplier Maersk sent an invoice for 4596. In the Forwarding Order, we select TMS Charges, which in the purchase order are represented as item.





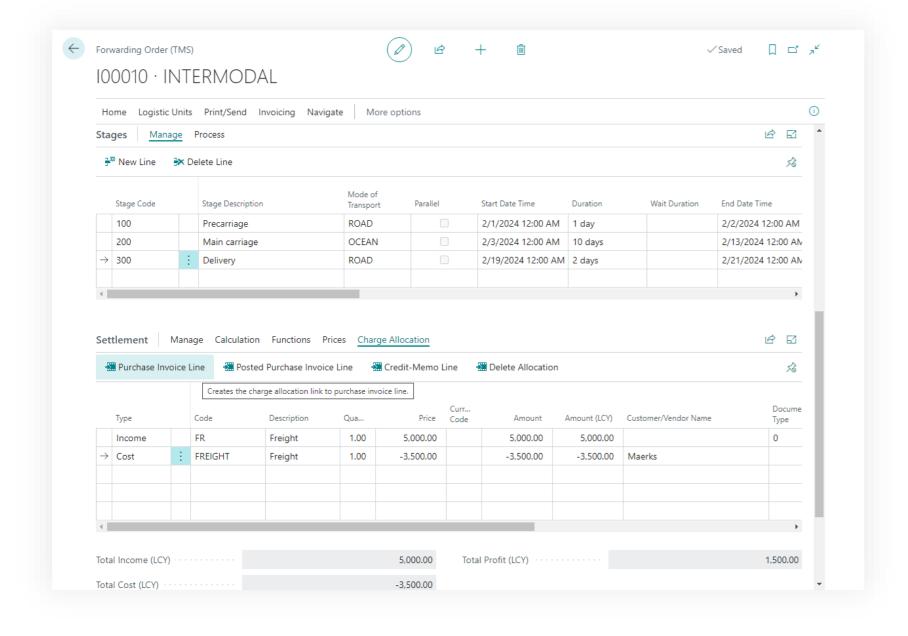
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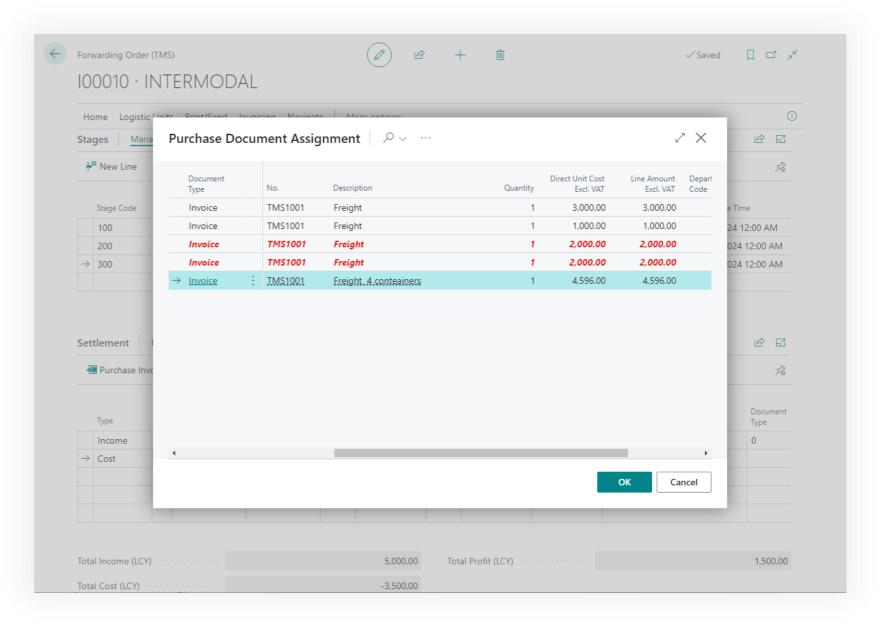
Management System

Setup & Settings – Charges

How it works

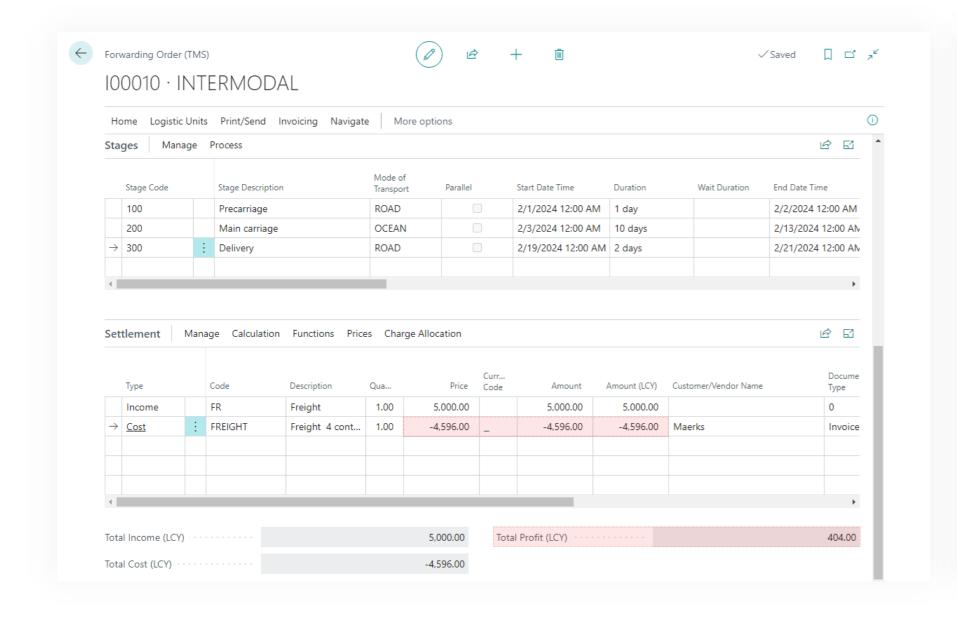
We will allocate the actual costs to the transportation order. Click "Charge Allocation" then "Purchase Invoice Line" (cost allocation is performed at the line level). In the window that appears, select the lines of the desired invoice and click OK. The system relies on the mapping of TMS charges and items.

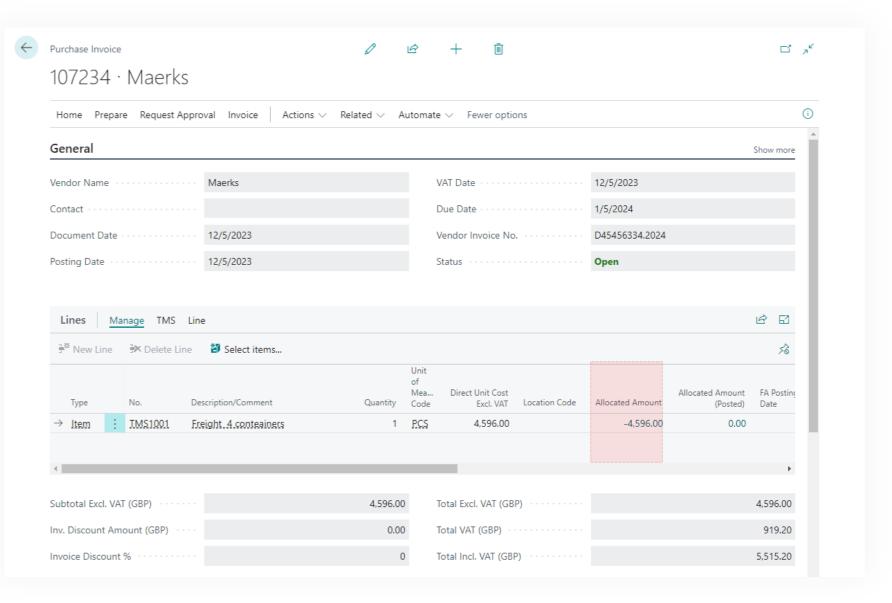




How it works

The system will establish a connection between the settlement line and the purchase invoice line, adjusting the amounts in accordance with the actual values.





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Google MAPs Integration

Transportation Management System



TMS utilizes the Google Maps service for access to mapping services for geocoding addresses, route planning, and determining distances and transport durations.

Companies using TMS must have their own Google account with activated Google Maps services, which will be used by TMS.

• Google Maps is a paid service.

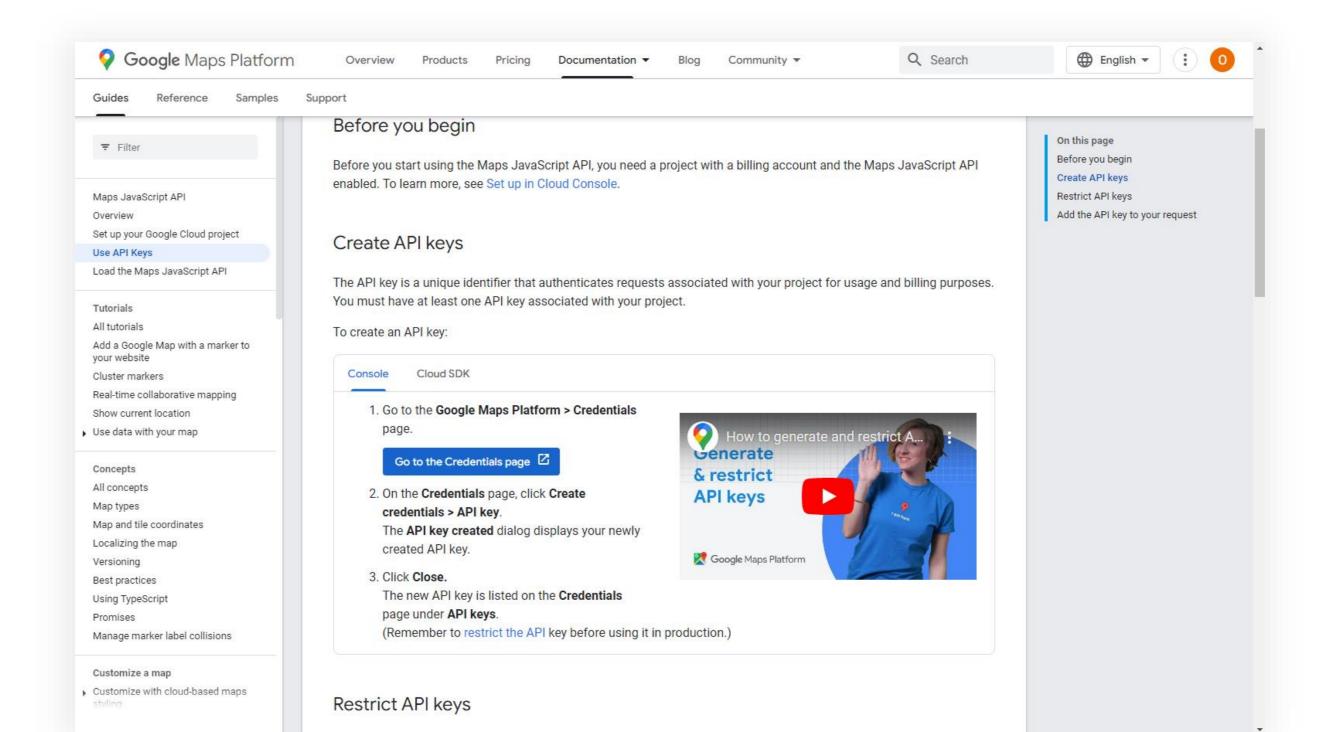
To enable Google Maps in TMS, it is necessary to enter the Google API Key in the Assisted Setup window of the TMS module.

₹ <u>0</u> }					
Map Provider Settings					
The map provider allows show the re transportation.	outes, calculate distances and duration of the				
To get an API key, you need to register with the map api provider. This service is pa At the moment, TMS only supports Google Map, but Bing MAP support will appea the next versions.					
Enable Maps JavaScript API, Geocod	ling API, Distance Matrix API, Directions API in				
your google map account.					
your google map account. Map Provider	Google Map ~				
Map Provider					



How to receive Google MAP API Key

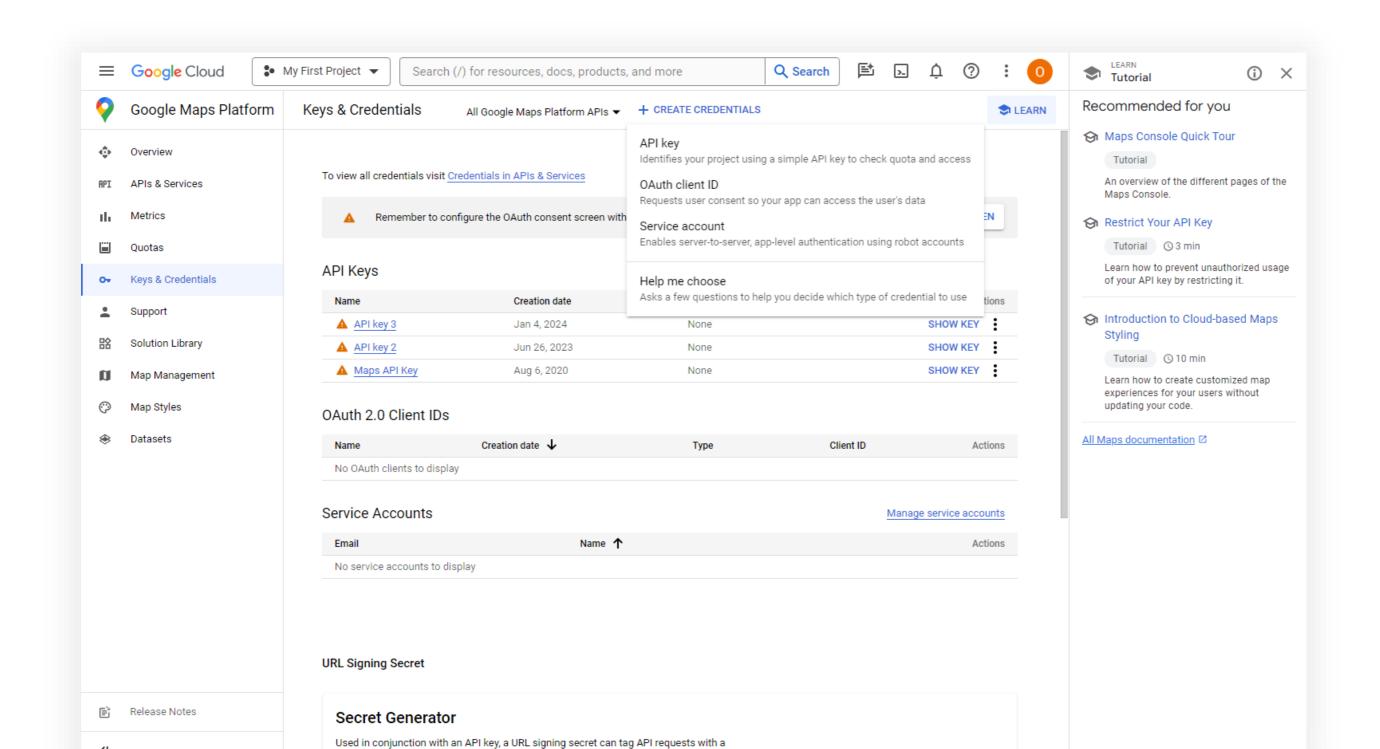
Follow the link from the Assisted Setup window. Click on blue "Go to Credentials page" button.



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On the page that opens, click "Create Credentials" and then "API Key."



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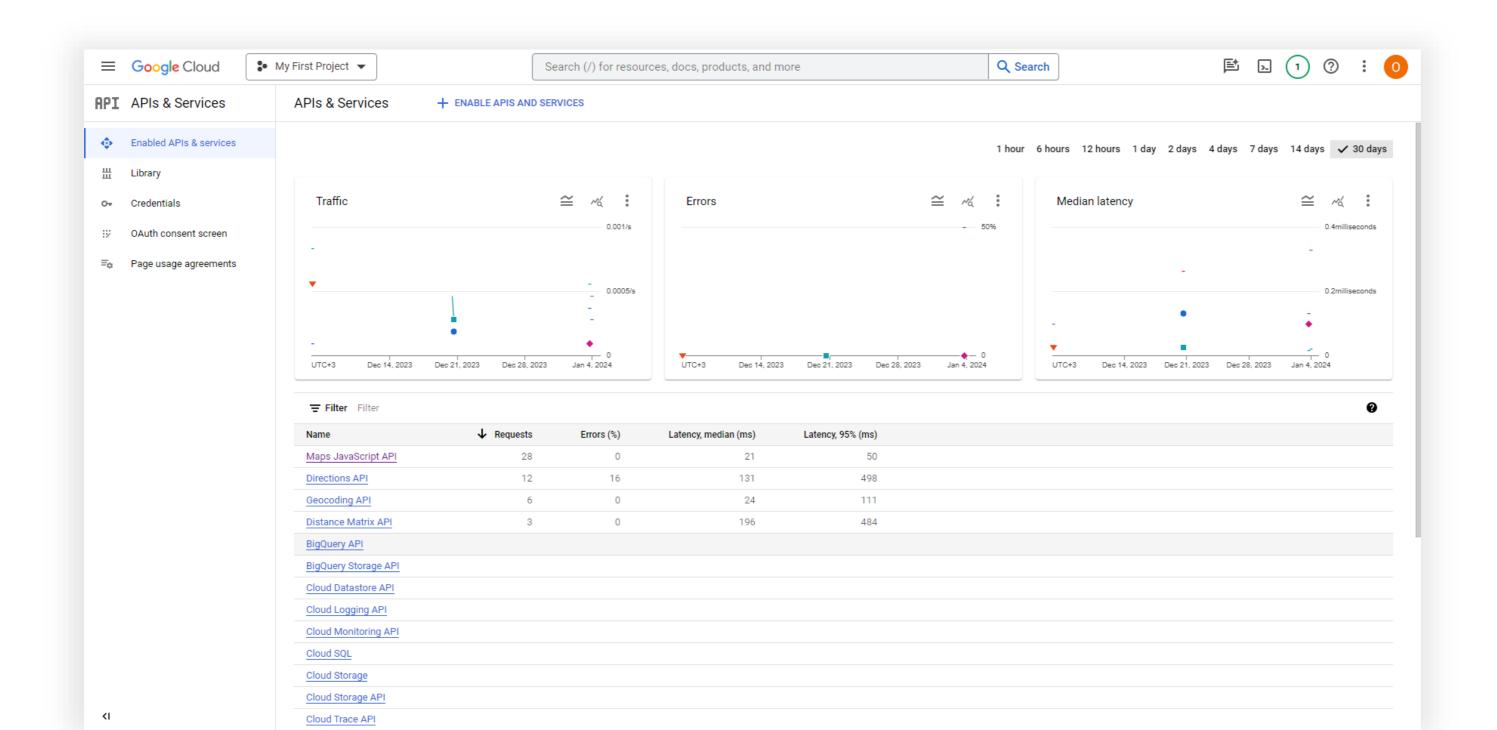


Copy API Key field value to past in field Google API of the TMS Assisted Setup page.

=	Google Cloud	\$● My First Project ▼	Search (/) for resources, docs, products, and more		Q Search	E	⊵ ¢	?	:	0
API	APIs & Services	← Edit API key	C REGENERATE KEY							
	Enabled APIs & services	Name *		Additional inforn	nation					
Ш	Library	Maps API Key		API Key —						
0+	Credentials				34k0ZCtk0ZCnVAqSkPPNqRe	AA		6		
:97	OAuth consent screen	Key restrictions		Use this key in your ap	our application by passing it with key=API_KEY parameter.					
≡o	Page usage agreements		tricted. To prevent unauthorized use, we recommend restricting nich APIs it can be used. Learn more 🖸	Creation date	August 6, 2020 at 3:42:	52 PM GMT+3				
		 None Websites IP addresses Android apps iOS apps API restrictions API restrictions specify the example of the second of the se	ons. You can set one application restriction per key. enabled APIs that this key can call nutes for settings to take effect							



Enable 4 services for API key: Maps JavaScript API, Directions API, Geocoding API, Distance Matrix API

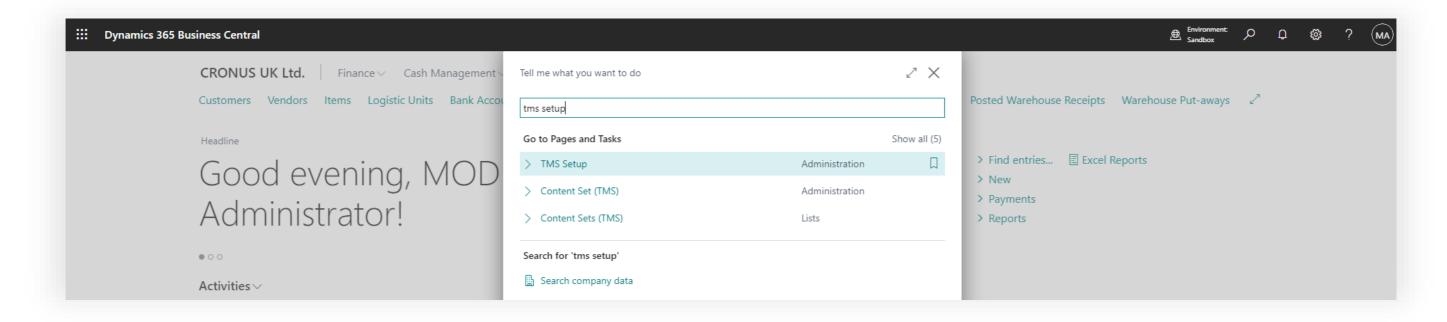


Transportation Management System Setup & Settings

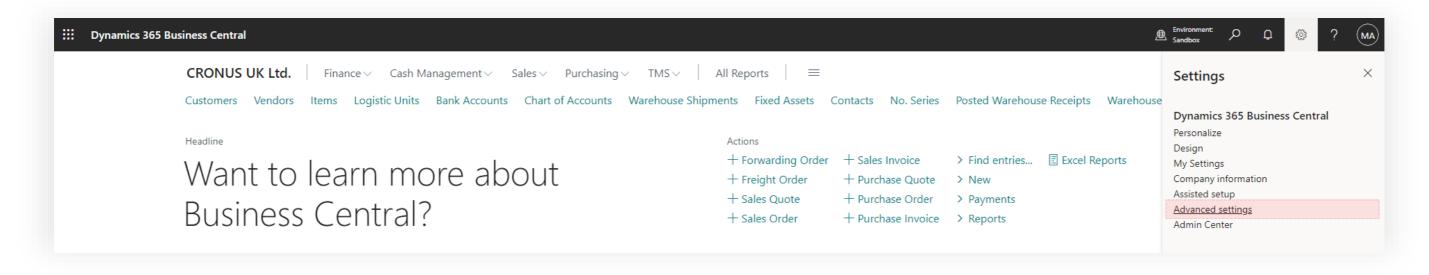
Setup & Settings – TMS Setup



TMS Setup is accessible via search



or through Manual Setup in Advanced settings.



Transportation Management System



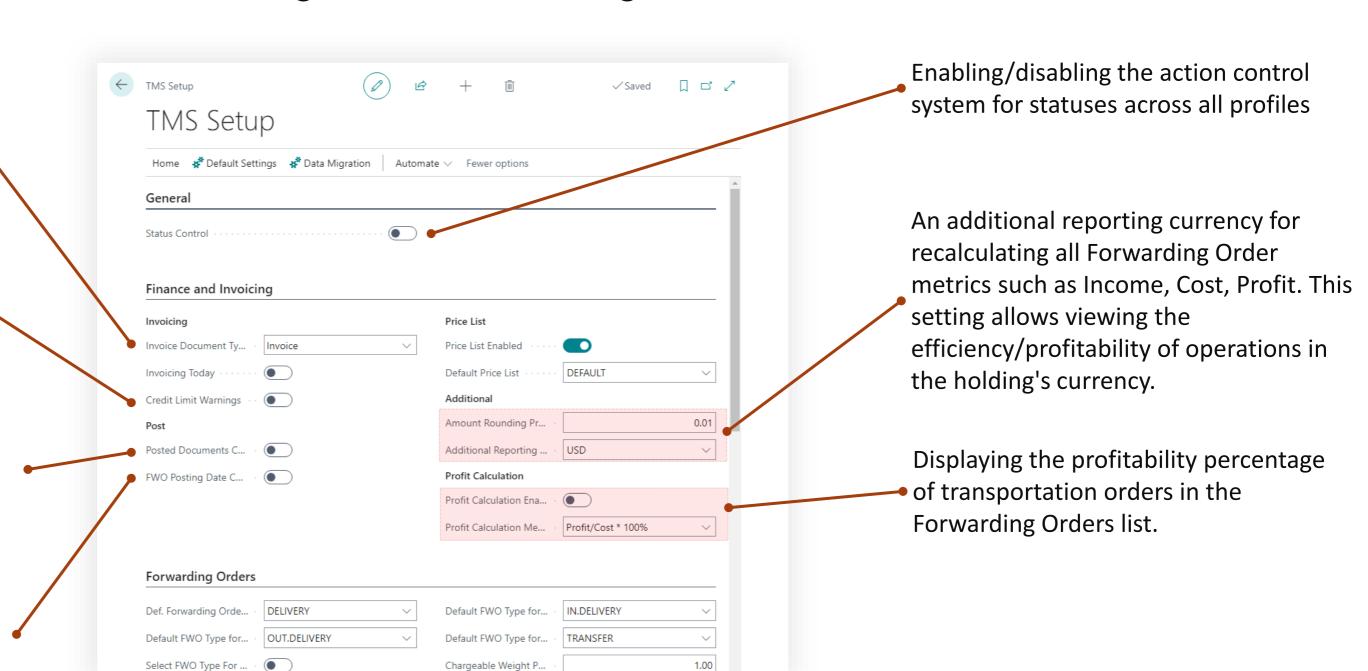
On the TMS Setup page, the core settings for the TMS module are established, such as default types for created documents, document accounting features, numbering, etc.

The type of sales document created for the function of invoicing **Income** lines in Settlement.

Activation of credit limit check when selecting a client in Forwarding Order.

Verification during the posting of Forwarding Order of the fact that all related documents ins settlement have been posted for: Sales Invoices for issued bills and Purchase Invoice for expenses.

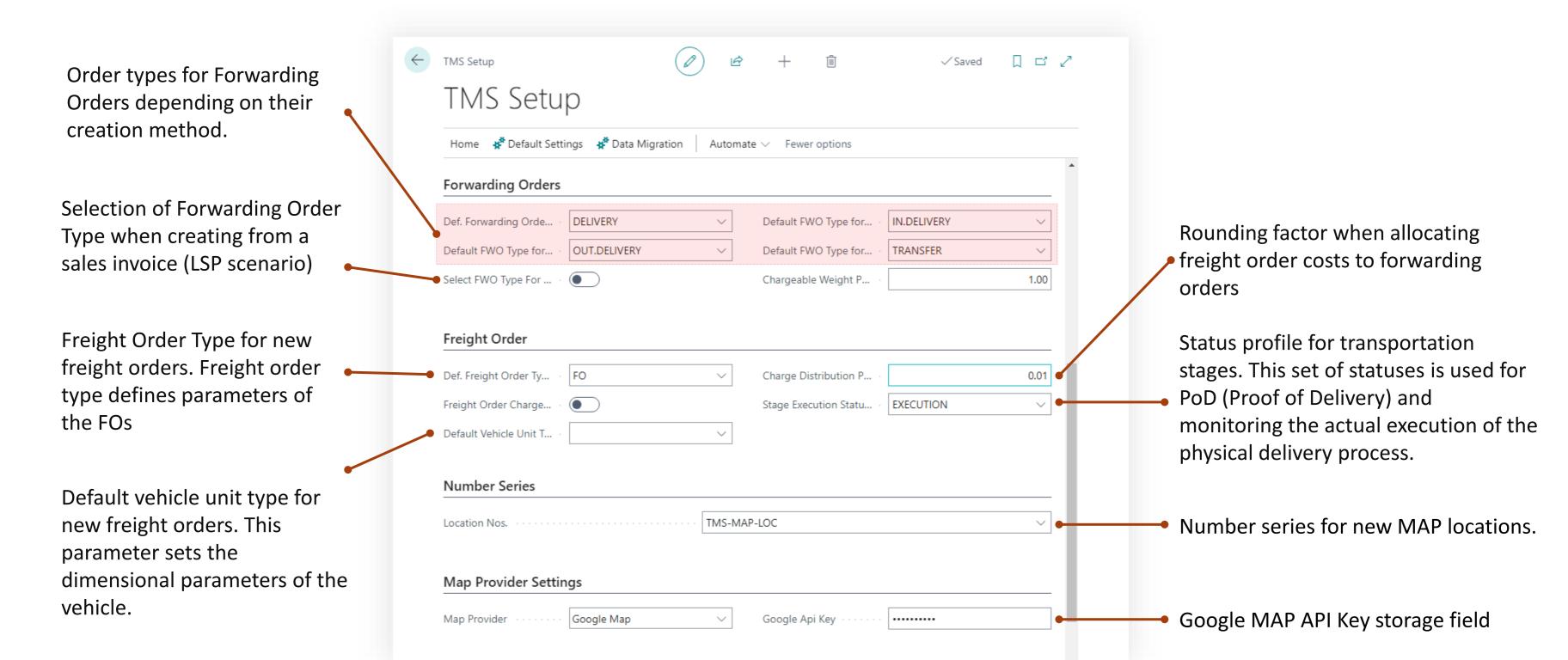
Ensuring that the posting date of the Forwarding Order is later than the posting date of any documents in the settlement.



Transportation Management System



Set default values

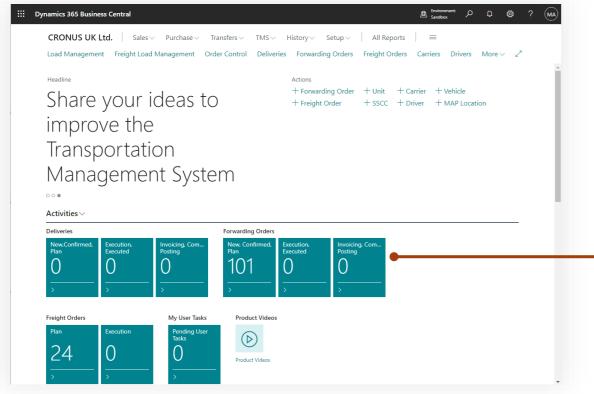


Setup & Settings – TMS Setup



Role center settings

If you are using the TMS module role center for a user, you can set filters for documents based on the status field value, which are displayed in tiles. This allows quick access to a list of documents filtered by that status.



It enables the manager responsible for processing documents at a certain status to respond more quickly to new documents relevant to them.

