

Project

Vessel Profile initiative aims to enhance communication with sales agencies, provide sales management with accurate targets, and establish a robust performance monitoring system. The primary benefits of the project are increased efficiency, enhanced collaboration, data-driven decision making, and heightened accountability throughout the process.

Application description

General functional description

Vessel Profile application architecture has various components. Vessel Profile frontend is a web application and based on Micro Frontend architecture. Vessel Profile backend is based on headless microservices architecture. PostgreSQL database is used to persist the data. Vessel profile exports, LMT and NOVA.

Vessel Profile Front End

- Vessel Profile application uses Angular and PrimeNG to build the front end.
- Angular is a platform and framework for building client applications in HTML and TypeScript.
- NGX-translate library for angular will be used for internationalization.
- PrimeNG is a collection of rich UI components for Angular.

Vessel Profile Back End

- Vessel Profile backend uses spring boot framework to build microservices.
- Distributed Tracing provides a standard specification for implementing tracing across multiple services during inter service communication.
- Distributed logging writes logs to the sys out (on the console). Logs are forwarded to AWS CloudWatch and used for analysis
- User management service will manage user permissions and restrictions.

Functional Description

Vessel profile is a sales target tool to setup target for each commercial sub trade and services. The tool can create sales target for each commercial scope and commercial haul and enhance communication with sales agencies, provide sales management with accurate targets. MVP scope is mainly focus on setting up targets by liner managers for their respective commercial scope.

It contain different node level target like, CIF/FOB, CUSTOMER, COMMODITY, EQUIPMENT and also setup target for export and import for each country level and sales office level. The

project's key benefits include increased efficiency, improved collaboration, data driven decision-making, and greater accountability throughout the process.

➤ **Dashboard Content**

Create a Vessel Profile

- **Commercial Subtrade:**

A commercial subtrade is a more specific subdivision of a commercial trade. It details the maritime routes within a commercial trade between specific ports or areas. For example, within the commercial trade Asia to Northern Europe, there can be subtrades such as:

- Asia to Northern Europe (main ports): which could include major ports like Rotterdam, Hamburg, etc.
- Asia to Northern Europe (Baltics): which could include ports in the Baltic countries like Riga, Tallinn, etc.

- **Services :**

Services are a major maritime route used for the transport of goods between two main geographical regions. For example, the maritime route between Asia and Northern Europe constitutes a commercial trade. These routes are established based on the most frequent and significant trade exchanges between economic regions.

- **Hauls :**

Head Haul: The primary direction where the demand for transport is highest and where ships are most often loaded.

Back Haul: In term of sailing a vessel and route is heading to EAST bound we call as back haul

- **Document Type :**

1. **Vessel Profile**

In the vessel profile document, we can select a year and a particular quarter of that year.

2. **Vessel Profile Budget**

In the vessel profile budget document, we can select only one year.

- **Reference Period for Volumes :**

Define the period for comparison about weekly volumes of TEUs.

- **Reference Period for Contributions :**

Define the period for comparison per TEU to be displayed.

Dashboard Search

In dashboard search, the user can select any combination of search fields and click on search according to search criteria. The result will display in the dashboard table.

Dashboard Table

When the user creates a vessel profile and clicks the save button, a new vessel profile will be created, and that newly created vessel profile will display in the dashboard table.

Create Bookmark

When the user searches for any result and clicks on the bookmark button, a bookmark will be created, and it will display in the bookmark section.

When the user selects that bookmark, the bookmark dashboard table will update.

User can update or delete bookmarks.

➤ Step-1 : Capacity Per Service

Return to Dashboard functionality:

This button enables user to return to dashboard.

Next Step functionality:

This button enables user to move to the next Step

Update List functionality:

This button enables user to select the services for the opened vessel profile, on the basis of selecting services Capacity Per Service will be shown.

Listing Capacity Per Service:

This step lists Capacity Per Service and also provides provisions to update the Carrier Capacity in the Target Filling vs Capacity. It has save changes button to save the updated details.

➤ Step-2 : Trade Volume Target

Return to Dashboard functionality:

This button enables user to return to dashboard.

Next Step functionality:

This button navigate to user to next Step which means user can navigate to step 3.

Previous Step functionality:

This button user can navigate previous step which means user can navigate to step 1.

Listing Trade Volume Target :

This step lists Trade Volume Target and Target period will be auto updated with Reference period value in both weekly volume in TEU's and contribution per TEU.

For all the services we are updating the variance and variance as a percentage in weekly volume in TEU's and Contribution per TEU.

Save Change functionality:

Save change button is disabled initially and when user modify the target Period Weekly volume in TEU's and/or Contribution Per Tue fields then enable the save button to save the updated details.

➤ Step 3 : Vessel Profile

Vessel Profile Header Functionalities:

Name of the vessel profile:

This information can be taken from vessel profile dashboard, which means when user click on the hyperlink under the vessel profile name same name will be updated

Commercial Haul:

HH, BH, or INTTRA (based on the sub trade selected under the commercial scope haul). Which means when user select the sub trade, the haul of the sub trade needs to be updated

Target period:

It can be year or Year + Quarter based on the create vessel profile which user has updated. For Example - 2024 or 2024-Q1

Reference period(s) for the weekly volumes:

In create vessel profile what user has defined

Reference period(s) for the contribution:

In create vessel profile what user has defined

Commercial trade:

When we define the commercial sub trade then we need to update the 2nd last scope of the subtrade. For Example - when we select the commercial sub trade as – ASIA-CAR_ECCA_NCSA then 2nd last node is ASIA-LATAM, and this value will be updated

Commercial subtrade:

In create vessel profile what we defined

Remarks:

In create vessel profile what user has update

-By default, in this step when user is moving then summary of the vessel profile header details are displayed collapsed.

-In the final target there will be an information mark and when user mouse over we display below wording as "Evolution vs reference period" .

Listing Vessel Profile Buckets:

- This step lists vessel profile bucket items such as **(Parent Nodes, Sub-nodes, Child/Left Nodes as per selected feature items and Total)** and also provide provisions to update the weekly volumes in TEU's in final target. It has save changes button to save the updated details.
- Under the buckets – we update the Total with (+) mark as per the UI. This + mark is to add nodes in step 3. This + mark is enabled in the UI screen when the document status is draft and this + mark is also disabled when the document status is expired or published
- After making a data list selection and validating it user will be navigated to the step3 screen. Here the data will be displayed for the features we selected in a row and the unassigned data will be displayed under “Others” row. Where as when this data is displayed on the table then these four icons such as two people (**Customer List**) icon, minus (**Remove**) icon, plus (**Add**) icon and filter (**Edit**) icon should be visible in the table next to the data option we selected
- When the user clicks on this “>” icon on the table this will expand the feature and will display the data that was selected before in hierarchy structure and in the “Other” row only this icon Two Persons icon” needs to be displayed, And in the “Total” row line only this “+” icon will appear .

Final Targets Input Functionalities :

- Updates the final targets in the table in the step3 screen and see the variations with the reference with the common formatting used in all steps & save changes in step3.

- User can be able to manually edit/update the Final Target (weekly volumes & Contribution per TEU) only for the last nodes of the Parent. Or on Parent node row if it doesn't have any child.
- User can be able to edit only the last nodes (leaf node) in the hierarchy of the Parent node (OR) on Parent node row itself (if it doesn't have any child nodes).
- When a user inputs at the last level of the tree (volume or contribution), then the upper levels as well as the total line must be recalculated.
- When a user inputs at the last level of the tree and subsequently adds a lower or higher level, then the inputs must be considered
- Formatting of Final Target Variation (Weekly Volumes):
 - When a user manually updates the weekly volumes for the final target.
 - The system calculates the variation between the updated weekly volumes and the reference value for the final target.
 - Then the user should be able to see the variation in TEUs and percentage on the table.
 - Weekly volume - user can update 0 to 99999 value and if user remove the value (make it blank) then we display the last saved value in the field
- Formatting of Final Target Variation (Contribution per TEU):
 - When a user manually updates the contribution per TEU for the final target.
 - The system calculates the variation between the updated contribution per TEU and the reference value for the final target.
 - Then The system displays the variation in USD (US Dollars) and percentage.
 - We display USD value which will not change, and user can update the contribution from 0 to 99999 and 0 to -99999
 - If user need to update a negative value in the field user need to use the hyphen (-) mark to make the value negative
- Saving Vessel Profile Changes (Draft Status):
 - When a user is editing the settings and target of a vessel profile with the status "Draft". The user selects step 3: "Vessel Profile". The user modifies data within the table. And The user clicks the "Save Changes" button
 - Then A confirmation toaster popup appears at the bottom right corner of the screen, displaying the message: "Your modifications have been saved." And the current page remains displayed in edit mode.
- Saving Error Handling (Draft Status):
 - When an error occurs while a user attempts to save a vessel profile as a draft. And the save operation fails.
 - Then A warning toaster popup appears at the bottom right corner of the screen, indicating: "The vessel profile has not been saved."
- Unsaved Changes Confirmation (Draft Status):
 - The user is editing a vessel profile with the status "Draft". The user modifies the table structure (adding, editing, or removing nodes) or updates at least one value within the table. The user attempts to navigate away from the current step without saving changes. This can be done by clicking the "Next Step" button or "Previous Step" button or an icon in stepper line. And The system detects unsaved changes.

- Then A confirmation popup appears, prompting the user: "Do you want to save your changes?" And The popup displays two buttons “Yes” and “No”
- If clicking “Yes” then the changes are saved and redirects the user to the newly selected step.
- If clicking “No” then the changes are not saved and redirects the user to the unsaved step.

Save Changes Button:

It has save changes button to save the updated details. It will be showing a banner "The total targeted volume and/or the average contribution per TEU is not aligned with the values defined at the previous step" if the final target values are not matching with the previous values

Export Button:

It has export functionality which allows the user to export the view in .csv format.

Previous Step Button:

This button navigates to previous step which means user can navigate to step 2.

Next Step Button:

This button navigates to next step which means user can navigate to step 4.

Manage Group of Data Functionalities :

- There are 3 different types of feature groups of data:
 - Group of Customer
 - Group of Commodity
 - Group of Origin/s and/or Destination/s
 - Group of Sales Office
 - Group of Booking Agents

Customer Drill Down Functionalities:

Customer List icon button is displayed on selected node item/s or line of total. This button is disabled when the document status is expired or published. But this button is enabled when the document status is draft.

Add Node/s Setting Functionalities:

User clicks on add button to open Add Node/s Setting Popup and It has Select the feature dropdown, select how to add the new node/s in the table (radio options) and select the data you want to display in the table (multi-checkboxes or multi-select dropdown), manage groups of data button, cancel button and validate button

Edit Node/s Setting Functionalities:

User clicks on edit icon button to open Edit Node/s Setting Popup and It has Selected the feature (displayed text only and non-editable), select how to edit the node/s in the table (radio buttons) and select the data you want to display in the

table (multi-checkboxes or multi-select dropdown), cancel button and validate button. And manage groups of data button will not be displayed for Edit mode.

Remove Node/s Setting Functionalities:

User clicks on remove icon button to open Remove Node/s Setting Popup and It has Selected the feature data to be removed (displayed text only and non-editable), select how to remove the node/s in the table (radio buttons), cancel button & validate button. And manage groups of data button will not be displayed for Remove mode.

Features functionalities:

Features already in the table will be disabled in the dropdown menu. Disabled features will be grayed out and unselectable. All features already in the table will be disabled in the dropdown. If all features are added to the table, the entire dropdown will be disabled

➤ **Step 4 : Target Volume per Country**

Listing target per countries:

This step lists the target volume per counties and also provide provisions to update the weekly volumes in TEU's in final target. It has save changes button to save the updated details.

It will be showing a banner "The total targeted volume and/or the average contribution per TEU is not aligned with the values defined at the previous step" if the final target values are not matching with the previous values.

Export functionality:

It has export functionality which allows the user to export the view in .csv format.

➤ **Step 5 : Target Volume per Agency**

Publish functionality:

This button enables user to publish the current document. This button is available only for the vessel profile document having "draft" status.

Export functionality:

It has export functionality which allows the user to export the view in .csv format

Previous step functionality:

This allows user to navigate to previous step (step 4).

Listing target per agency:

This step lists the target volume per agencies. It will be showing a banner "The total targeted volume and/or the average contribution per TEU is not aligned with the values defined at the previous step" if the final target values are not matching with the previous values.

Vessel Profile application is deployed through a ci/cd pipeline.

This allows Vessel Profile team to manage the application lifecycle. As we are in a containerization environment, there is no stop/start operation on the application.

CI/CD pipeline

CI/CD Overview

Project is composed of **two Gitlab repositories**. (one containing application code used to **build the application docker image** and the other has the **Kubernetes configuration files**).

The **Jenkins job builds the Gitlab project** and retrieves **dependencies from Nexus** (if there are any).

Jenkins performs the tests (if defined in the project) and triggers **static scan of the code in SonarQube**.

nginx-internal Jenkins builds the image and uploads it to the registry then sends the **Kubernetes configuration files to XLDeploy**.

User will deploy to all the different environments (UAT/PRE-PROD/PROD) using **XLDeploy**.

CI/CD tools

Gitlab

Authenticate via SAML and store the code / Kubernetes configuration files in the respective repository.

Jenkins

Authentication is performed using Gitlab auth. (Auth to Gitlab provides auth to Jenkins)

Trigger the appropriate job. It will build the application code, test (if defined at project level by the developer), scan the code to SonarQube, create the docker image then upload to the registry, and finally upload the configuration files to XLDeploy.

Sonarqube

Authentication is performed using Gitlab auth. (Auth to Gitlab provides auth to Jenkins)

Review the code analysis of your applications for issues and make the appropriate fixes to pass the Quality Gate.

XL Deploy

Authenticate using your AD account.

Deploy the package containing the configuration files on the target cluster/namespace.

Environment for prd: Environments/customer-sales-and-service/vessel-profile/PRD/Env/vessel-profile-prd

Application path: Applications/customer-sales-and-service/VESSEL-PROFILE

CI/CD Pipeline Framework

Project builds are driven by file “Jenkinsfile” kept in project root. The default Jenkinsfile has bare minimal code as most of the logic is implemented in a global CI/CD framework that is implicitly made available to all of the jobs. However, the framework allows PRE and POST hooks for the pipeline steps. For advance use cases required for your projects and details on using hooks.

Deployment assets

Before a project can be deployed in an EKS cluster, some assets need to be created.

In the EKS Cluster, one namespace for each environment that will contain:

- A docker secret that allows pull of the image from the ECR registry
- Add permissions to the default service account to read configuration maps and pods

Configuration must also be done in Jenkins to allow push to the ECR registry and in XL Deploy to perform deployments.

These configurations are created using the “EKS Bootstrap” process in Camunda.

The developer will need the below information to start the process: (in addition to the project information - business, name, ...):

EKS URL and application access token for the cluster

ECR registry account with pull/push permissions (login and password)