PTV Route Optimizer

Service Description

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Document information

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Service Description

1   Product objective

PTV Route Optimizer is a cloud-based route optimization product designed for depot-based distribution and last mile delivery organizations to reduce miles driven, better planning and utilization of assets. Transportation planners are supported in the best possible way by a high degree of automation and transparency in operational planning and scheduling. Numerous functional enhancements will be added to the standard product over time.

The target groups are shippers and transport service providers that plan general freight transports (preferably LTL) for internal or external fleets.

Thanks to PTV optimization methods, robust and efficient routes can be built automatically, by taking various restrictions into account, such as opening time windows, quantities, weight and volume.

2   Product description

2.1   Workflow

After login with MyPTV ID, the Product Main Page opens which includes the following apps: Route Optimization, Order Management, Vehicle Management, User Management, Support, Contact Sales and Help Center (includes Quick Start).

In the Order Management App, order data can be imported and geocoded addresses can be adapted manually. Order data can be transferred to the system with either API or excel file import (template provided in the Order Management App).

Order data can include geographic coordinates (latitute, longitute). Alternatively order data can include addresses which are automatically geocoded during import. Post-geocoding can be processed manually.

In the Vehicle Management App, vehicle data can be imported with excel file import (template provided by Vehicle Management App).

By opening the Route Optimization App, a new planning can be created. After entering planning name (title), planning date and selecting taskfield(s) a new planning can be saved and opened.

The central working window of the route optimization application now opens in the browser tab, which includes separate sheets for Depots, Vehicles, Orders and Routes. On the left side of the browser tab, planning objects can be found, which show the current state of data. By using the right arrow key, the map view will be extended to the full browser window. By using the left arrow key, the most important KPIs of the planning will be extended to the full browser window. The active view can be changed at any time by clicking the left or right arrow key.

The sheets for Depots, Vehicles, Orders and Map can be distributed into new browser tabs. This enables the user to open multiple tabs in full screen on separate monitors.

By pressing the "Sync Data" button, data will be synched from the Order and Vehicle Management App - according to the selected parameters of the planning.

The imported orders will be shown on the map. By clicking the "Generate Routes" button in the Routes sheet, the optimization algorithm starts. The generated routes will be displayed in the Route and the Map sheet.

By clicking the "Dispatching" button in the central working window, the dispatch view is shown in the browser window. This handling dialogue enables the user to apply changes to the routes planned such as delete single or multiple routes, generate routes based on selected order and vehicle data, change stop sequence, insert orders into routes, delete orders from routes, assign vehicles. Between Order, Vehicle and Route Sheet, data can be moved via drag&drop functionality.

In the Route sheet, planned routes and orders can be exported by pressing the "Export Routes" button.

2.2   Handling concept (UX)

PTV Route Optimizer can be accessed on your PC and laptop; in the office and on the go. No time-consuming integration or training needed. Start planning routes in minutes.

Route optimization often goes hand in hand with mass data. This can be challenging in a web application. For this reason, we have developed an innovative screen and handling concept that enables the best possible use of the available space on one or multiple monitors.

Planning and scheduling routes has never been this intuitive and user friendly. You can configure and use the application to your preferences, including:

- Distribute of sheets into new browser tabs
- Distribute browser tabs on multiple screens
- Slide between main windows with left and right arrow keys
- Manually drag and drop data between sheets (tables)
- Select preferred row height (small, medium, large)
- Customize columns (rename, show, hide, change position)
- Use smart filters
- Save personal view configuration/settings

3   Subscription

PTV Route Optimizer is made available as a Subscription (time-limited use of the cloud service) as a SaaS product. The use of PTV Route Optimizer is offered to the Customer as follows.

3.1   Product Limitations

The following are the current product limitations:

In the Route Optimization App of the product, the following parameters are limited. These limits depend on the subscription which was activated for the product instance.

- Orders per planning

- Orders per monthly subscription term

- Vehicles per planning

- Exportable datasets of planned routes, trips and orders

3.2   Glossary

- **'Planning'** corresponds to the creation of optimized routes, which can be done by the user in the Route Optimization App of the product. The user assigns the orders that shall be planned and optimized, and the user assigns the vehicles that are made available for the optimization. The user can either create routes manually or the user can start the optimization to build optimized routes automatically.

- **'Route'** usually corresponds to a depot-related round trip that starts in a depot (warehouse) and ends in a depot again. One single route can contain several such round trips within one shift period. A route includes orders that are planned to be fulfilled with a specific vehicle.

- **'Vehicles per planning'** corresponds to the sum of vehicles that have been assigned to a unique planning in the Route Optimization App of the Product.

- **'Order'** corresponds to one single task, pickup or delivery with a unique order ID.

- **'Orders per planning'** corresponds to the sum of orders that have been assigned to a unique planning in the Route Optimization App of the Product.

- **'Planned order'** corresponds to one order that has been assigned to any route within a unique plan in the Route Optimization App of the Product. The assignment can be done either by automatic optimization or manual planning.

- **'Orders per monthly subscription term'** corresponds to the sum of 'planned orders' whose initial assignment to a unique route took place in the same 'monthly term'. The sum is calculated taking all plans of the Route Optimization App of the Product into account that were initially created by the Customer.

- The sum is increased if the user assigns one order to multiple plans. The sum is not increased if the user automatically optimizes or manually plans one order multiple times (planning frequently) within one unique plan.

- '**Monthly subscription term'** corresponds to the "monthly" subscription period.

- The 'monthly subscription term' of the product starts by the day of product activation. Each subscription term starts from this date of a month and ends with the previous date of the following month. (e.g. 9.2.-8.3., 9.3.-8.4., 9.4.-8.5. etc.).

4 User management

In the MyPTV User Management, the Subscription admin has the option to activate authorized Users for the use of the PTV Cloud Service/PTV Route Optimizer as well as to manage the roles of its authorized Users.

5 Technical system description

5.1 General

PTV Route Optimizer can be used as a web client and is recommended to be used with the Google Chrome™ web browser on a desktop computer.

Functionality and layouts from untested web browsers and operating system recommendations can vary.

PTV Route Optimizer operates via Windows Azure™ on Europe cluster; PTV GmbH's data center and network.

The Service Description is not an assurance of a claim to all variants.

5.2 Technical scope and requirements

- Language and units of measurements: English (US) language and US units of measurement are available in this version.

- Browser: Use the latest version of Google Chrome™ or another Chromium-based browser.

- Client configuration:

  - Network bandwidth: recommended connection speed 20 Mbps or more

  - Screen resolution: 1600 x 900 (high color quality) or higher (1920 x 1200 recommended)

  - Processor: Recommended Intel Core i5 or newer

- Operating system: Microsoft Windows 8 or newer

- Mobile requirements: Currently not available