PTV LOGISTICS

Migration Guide PTV xServer 1

FAQ

Version 1.2

PTV LOGISTICS

Contents

Short title	PTV xServer Migration Guide
Template history	V1.0.0 dated 2025-06-18

1 Migration

1.1 Why should I migrate?

There are several important reasons to consider migrating to PTV Developer. One of the most significant reasons is the outdated technology used in PTV xServer 1 and PTV xServer 1 Internet. The central components of these servers require a Java Runtime Environment based on Java 8 (64-bit), e.g. provided by Amazon or Oracle. Oracle ended its premier support for Java 8 in March 2022, and extended support is now only available for users with commercial licenses (Oracle Java SE Support Roadmap). As the components continue to rely on Java 8, the risk of critical security vulnerabilities (CVEs) increases over time. Consequently, many software providers have announced their end of support by 2026 (e.g., Red Hat, Eclipse).

PTV xServer 1 has been in use since 2006 (PTV xServer 1 Internet since 2013), and two newer generations of services have already been released: PTV xServer 2 and PTV xServer 2 Internet in 2016, and PTV Developer, the latest generation, in 2021. PTV xServer 2 is based on Java 17, while PTV Developer utilizes modern cloud technology based on OpenAPI. From a commercial perspective, the costs of maintaining PTV xServer 1 have increased significantly due to the need for regular patches to critical Java components to comply with security policies. Therefore, PTV Logistics announced the end of support for PTV xServer 1 on June 30, 2026.

1.2 What should I use instead of PTV xServer 1 (internet)?

We recommend migrating to the latest generation, PTV Developer. If your IT policies do not permit the use of cloud services, PTV xServer 2 (on-premises) is still available. Please contact your sales partner for commercial information.

1.3 Which benefits do I receive from migrating to PTV Developer?

We differentiate between functional and non-functional advantages.
Non-functional benefits:

- High availability of 99.9% according to our SLA
- A modern API based on OpenAPI: Easily integrable into web-enabled applications
- Fast development cycles: Regular feature releases and quarterly map updates

- Security updates: Quick response to critical CVEs and bug fixes

Functional benefits:
Please note that using our showcases requires a valid API Key. Please create your PTV Developer account. Depending on the services you want to integrate, various benefits are available. See the following excerpt:

- **Geocoding:** Precise address data from HERE, including Places API, suggestions by text & addresses building an interactive address input and a feedback service to improve our database. Try it out: Interactive Address Search
- **Rendering:** Vector maps based on HERE and OSM. Displaying different layers such as truck restrictions or traffic patterns. Try it out: Map with data layers
- **Routing:** New emissions calculation according to ISO-14083 including electric vehicles, EV route planner and creating your own custom road attribute scenarios. Try it out: EV Route Planner or Custom Road Attribute Scenarios
- **Route optimization:** New high-performance algorithms for maximal efficiency and cost reduction. Try it out: PTV OptiFlow Optimization
- **Loading Space Optimization:** Optimize the loading of items into pre-defined bins. Try it out: Bin Packing

In summary, PTV Developer offers powerful cloud services with state-of-the-art technology and a wide range of functionalities for transport logistics.

1.4 How can I register?

Simply visit the PTV Developer website and click on 'Activate for free' or 'Start free trial.' Your account can be activated in just three steps.

1.5 Do I have a free trial if I migrate to PTV Developer?

Yes. After registration, you can use up to 500 requests per day for development and testing purposes. Your API token can be created in the API-Keys section after logging in. For commercial licensing regarding productive usage, please contact your sales partner.

1.6 What else should I consider when migrating to PTV Developer?

For production environments, we recommend registering with a group name and group email address, as invoicing and order management are linked to the account. The account should not be tied to an individual.

2 PTV Developer

2.1 Do you have more relevant information about PTV Developer?

Yes. Please open the following links:

Topic	Address
PTV Developer	developer.myptv.com
Sign Up	login.myptv.com
Tutorials	developer.myptv.com/en/resources/tutorials
Showcases	developer.myptv.com/en/resources/showcases
PTV Developer Blog	developer-blog.ptvlogistics.com
API Documentation	developer.myptv.com/en/documentation
API Services Overview	api.myptv.com/meta/services
FAQ	developer.myptv.com/en/help/faq-help
Support and Contact	https://developer.myptv.com/en/help/support-and-contact

2.2 How to start with PTV Developer: Best Practices?

We assume you have successfully registered and created your API key. To ensure a smooth and effective start with the PTV Developer, you are now seeking guidance on best practices.

If registration is already done, we congratulate: Completing the registration and securing your API key is an essential first step. To build a solid foundation, we recommend beginning with the official tutorials. These provide a

comprehensive overview, ranging from conceptual introductions to hands-on code samples.
To explore and test the APIs efficiently, download the latest version of **Postman**. Using the provided **OpenAPI specification**, you can easily create a Postman collection and begin interacting with the endpoints. Detailed instructions are available to guide you through this setup.

For those working in environments such as **Java or C#**, pre-generated client libraries are available via PTV's GitHub repository, streamlining integration and reducing development time.
The documentation also includes valuable guidance on:

- Implementing **asynchronous API calls**
- Integrating APIs within **Microsoft Excel**
- Developing lightweight applications using public **visualization frameworks**

Before diving into the API Reference, it is strongly recommended to review the **Concepts** section. Understanding the terminology and the methodology is key to successful and efficient implementation.

The APIs are built on OpenAPI **3.0**, and the included code samples are designed to accelerate development and reduce complexity.

To gain a clearer picture of what's possible with the PTV Developer, explore the Showcases which are designed as highlight real-world applications mirroring relevant use cases for transport logistics.

Try the following out (just replace <your_apiKey> with the real one):

```
https://api.myptv.com/geocoding/v1/locations/by-text?searchText=76131 Karlsruhe Stumpfstr.1&countryFilter=DE&language=DE&results=ADDRESS_SCORES,ADDRESS_SCORES&apiKey=<your_apiKey>
```

2.3 How can I test the capabilities of your services?

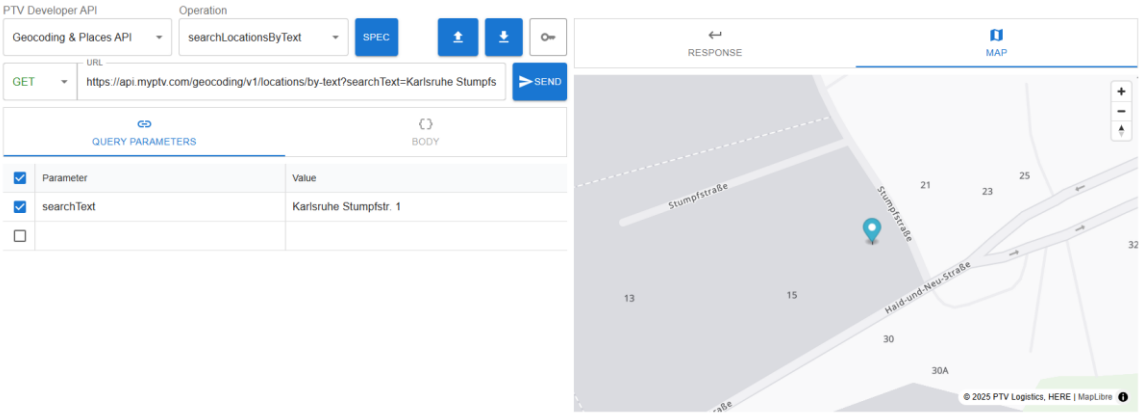
We recommend using the latest version of Postman to explore and evaluate the functionality of our APIs. To get started efficiently, please refer to our step-by-step tutorial: *How to use PTV Developer with Postman*.

Alternatively, you may use our in-house tool: Request Runner. Once you have your API key ready:

- Launch the application
- Select the desired API and operation

- Configure the request parameters accordingly

Example usage:



2.4 What is PTV Developer exactly?

PTV Developer provides a suite of cloud-based APIs designed for seamless integration into software solutions focused on transport logistics and geospatial applications. These APIs adhere to the **OpenAPI standard**, enabling straightforward integration into web-based platforms such as ERP, Transport Management, Supply Chain Management, and Field Service Management systems.

Hosted on **Microsoft Azure**, PTV Developer services are GDPR-**compliant** and backed by a **Service Level Agreement** (SLA) guaranteeing **99.9% system availability**.

To begin using PTV Developer, clients must register via **MyPTV**, in accordance with the terms of registration and usage. Upon registration, users gain access to a centralized management application, which includes:

- API Key management
- Usage monitoring
- Subscription handling
- Support services
- Sales contact options

Available APIs include:

- **Geocoding & Places API** (based on HERE or OSM): Search for addresses and places or find locations/places near given geographic positions.

- Maps API (Raster and Vector; based on HERE or OSM): Retrieve map tiles and visualize various data layers.
- Routing API (based on HERE or OSM): Calculate distances and travel times. The service based on HERE also supports toll cost and emissions calculations based on vehicle profiles and specific constraints.
- Matrix Routing API (based on HERE or OSM): Compute travel times and distances between multiple locations—ideal for solving Vehicle Routing Problems (VRP) and Traveling Salesman Problems (TSP).
- EWS Road Distance API: Access standardized distance matrices for transport cost calculations.
- Optimization API (OptiFlow): Solve complex VRPs and TSPs using advanced optimization algorithms.
- Loading Space Optimization API: Optimize cargo loading while considering delivery sequences.
- Map Matching API: Track fleet movements and perform actual-versus-planned route analysis.
- Data API: Access supplementary data and define custom road attribute scenarios.
- Account API: Manage API keys and monitor usage through the management interface.

2.5 Where can I find the OpenAPI specifications for individual services?

To access the OpenAPI specification for a requested API, follow these steps:

1. Navigate to the Documentation section.
2. Select the desired API.
3. Open the API Reference.
4. Click the "Download API Specification" button to retrieve the OpenAPI definition for the selected service.

If needed, you can use the following base URLs—these are typically preconfigured in tools like Postman when importing the API collection—for both GET and POST methods:

Name	URL
Account	https://api.myptv.com/account/v1
Data	https://api.myptv.com/data/v1
EWS Road Distance	https://api.myptv.com/ews/v1
Geocoding	https://api.myptv.com/geocoding/v1
Geocoding Batch	https://api.myptv.com/geocoding-batch/v1
Geocoding OSM	https://api.myptv.com/geocoding-osm/v1
Loading Optimization	https://api.myptv.com/binpacking/v1
Map Matching	https://api.myptv.com/mapmatch/v1
Matrix Routing	https://api.myptv.com/matrixrouting/v1
Matrix Routing OSM	https://api.myptv.com/matrixrouting-osm/v1
Raster Maps	https://api.myptv.com/rastermaps/v1
Route Optimization	https://api.myptv.com/routeoptimization/optiflow/v1
Routing	https://api.myptv.com/routing/v1
Routing OSM	https://api.myptv.com/routing-osm/v1
Vector Maps	https://api.myptv.com/maps/v1
Vector Maps OSM	https://api.myptv.com/maps-osm/v1

2.6 What is the difference between Routing and Route Optimization?

The Routing API is designed to calculate distances and travel times between specified locations using a single, predefined vehicle profile. It supports advanced features such as:

- Toll cost and emissions calculation
- Route customization based on vehicle-specific attributes and legal constraints
- Selection of routing strategies (e.g., shortest vs. fastest routes)

- Inclusion of real-time traffic data
- Options to avoid specific road types (e.g., highways, tunnels)

The API returns total and segment-specific values, route geometries (polylines), and event-related information. For comprehensive details, refer to the Routing API documentation.
In contrast, the **Route Optimization API (OptiFlow)** addresses complex logistical challenges such as the **Vehicle Routing Problem (VRP)** and the **Traveling Salesman Problem (TSP)**. It is designed to:

- Minimize overall transportation costs based on real cost factors
- Optimize fleet utilization
- Generate efficient multi-stop routes for multiple vehicles
- Respect physical, legal, and user-defined constraints (e.g., delivery time windows, vehicle capacities)

The result is a fully optimized plan, including detailed trip-level outputs for each vehicle. For more information, consult the Route Optimization OptiFlow API documentation.

2.7 Which key parameters should be considered when computing routes for transport cost calculations?

Transport cost estimation is influenced by a variety of factors that affect both routing and cost components such as cost per distance, cost per driving time and toll tariffs. To support decisions on routing strategies and cost optimization—while considering contractual relationships between shippers and carriers—it's essential to account for parameters that impact routing directly or indirectly. Below is a structured overview:

1. **Geographical Coordinates**
   Route calculations require coordinates in WGS84 format (EPSG:3857 projection). These can be obtained via address search or reverse geocoding.

2. **Waypoints and Stop Attributes**
   Set start, destination, and intermediate stops selecting road types which influence the routing behavior:

- **Off-road**: Direct access to the location.
- **On-road**: Stop near the location.
- **Pass-by**: Pass a location at a specified distance by setting the radius.

3. **Vehicle Profile Selection**
   Choosing between car, van, or truck profiles significantly affects routing outcomes.

4. **Vehicle Parameter Overrides**
   Customizing vehicle parameters can alter distance and duration calculations:

   - **Toll-related attributes**: Engine type, emission class, CO_2 category, dimensions, commercial use, and ETC subscriptions.
   - **Truck-specific behavior**: Selecting a truck profile activates truck-only routing and considers physical and legal restrictions (truck attributes).
   - **Low Emission Zones**: Entry depends on compliance with emission criteria.
   - **Hazardous Materials**: Routing is restricted to approved roads.

5. **Predefined Truck Routes**
   Use comma-separated lists to activate predefined routes (e.g., transit corridors or long truck routes specific to certain countries).

6. **Traffic Considerations**

   - **Live traffic** is enabled by default.
   - For standardized cost calculations, switch to **AVERAGE** mode to use historical traffic data.
   - To exclude traffic data, omit start or arrival times.

7. Routing Constraints
   Avoiding toll roads, ferries, highways, or specific countries can significantly alter the route.

8. Manual Route Adjustments
   Customer-defined bans or allowances on road segments will influence the calculated route.

9. Speed Factor
   Impacts driving time, which is critical when time-based costs are a major factor.

10. Route Strategy Definition

    - FAST: Prioritizes shorter travel time, possibly with detours.
    - SHORT: Minimizes distance, potentially increasing travel time.
    - SHORTEST: May produce unexpected results due to aggressive distance minimization.
    - MONETARY: Optimizes based on actual cost (distance, time, fuel). Some routing parameters will be ignored, but the result typically balances speed and distance based on cost efficiency.

11. Map and Data Usage

Our platform continuously integrates silent updates to ensure you always work with the most current data:

- Maps: Regularly refreshed with high-precision address data based on HERE.
- Toll Information: Up-to-date toll data available across Europe, the United States, and Australia.
- Traffic Insights: Real-time traffic conditions delivered via TomTom for accurate routing and planning.

2.8 What are the benefits of using the Route Optimization Opti-Flow API?

In today's logistics landscape, businesses face increasing demands: higher delivery precision, faster response to changes, and tighter cost control. At the same time, maintaining profitability while meeting these expectations requires smarter, more automated processes. The PTV OptiFlow API is designed to address these challenges by delivering measurable improvements across key operational areas:

Cost Efficiency: Reduce operational expenses by minimizing travel time, optimizing vehicle routes, and lowering fuel consumption.

Enhanced Customer Experience: Improve punctuality and meet customer-specific delivery constraints, leading to higher satisfaction and loyalty.

Optimized Resource Allocation: Maximize the use of your fleet and workforce, improving overall productivity and reducing idle time.

Operational Agility: Quickly adapt to dynamic customer requirements or last-minute changes, ensuring your business remains responsive and competitive.

2.9 I'm interested In PTV Developer. What are the commercial terms for transitioning from PTV xServer 1 to your Cloud Service?

We appreciate your interest in PTV Developer. Commercial terms for migrating from PTV xServer 1 to our Cloud Service are determined based on your specific use cases, service requirements, and projected usage volumes. To ensure a tailored and efficient contractual setup, we recommend reaching out directly to your designated sales representative for a detailed consultation.

If you're unsure who your sales contact is, feel free to get in touch with us—we'll connect you with the right person.

2.10 Does PTV Developer support vehicle profiles?

Yes, PTV Developer offers a comprehensive set of predefined vehicle profiles tailored to different regions and vehicle types. These profiles consist of average values for each specific vehicle type for use in routing, distance matrix calculations, and route optimization.

Available Vehicle Profiles by Region:

- Europe: Car, Van, Truck, Trailer Truck

- **America**: Pickup, Delivery, Semitrailer
- **Australia**: Light Commercial, Medium Rigid, Heavy Rigid
- **IMEA (India, Middle East, Africa)**: Car, Van, Truck
- **Global**: Pedestrian, Bicycle only

⚠️ **Important:** Use region-specific profiles only within their designated geographic areas. Applying them outside their intended regions may result in inaccurate or suboptimal routing outcomes.

Use Cases and customization:

Routing: Profiles can be customized by overriding vehicle parameters to reflect your fleet's specific characteristics. This customization can impact toll cost estimations and emissions calculations.

Distance Matrix & Route Optimization: Predefined profiles can be directly applied to streamline calculations and planning.

Accessing Attributes and Values:

Attribute	Value
Name	String (e.g. EUR_TRUCK_40T)
Description	String (e.g. typical 40T truck with 5 axles)
Region	String (e.g. EUROPE)
Vehicle	Array of various values (e.g. fuelType=Diesel)
Currency	String (e.g. EUR according to ISO 4217)
Monetary Cost Options	Number (e.g. cost per km ≥ 0)

2.11 What data is provided and how frequently is it updated, in addition to the core map data?

We provide a comprehensive set of regularly updated datasets to support routing and real-time decision-making:

- **Map Data (based on HERE)**
  Update Frequency: Quarterly
  Includes:
    - Updated routing networks
    - Address points and places (POIs)

    - Truck-specific restrictions
    - Low emission zones
    - Historical traffic patterns

- Live Traffic Information (TomTom)
  Update Frequency: Every 2 minutes
  Details: Real-time traffic incidents and congestion data to support dynamic routing and ETA calculations.

- Toll Information (based on various toll providers)
  Coverage: Most countries in Europe, the USA, Australia, and New Zealand
  Update Frequency: Frequently, based on regional changes
  Distribution: Updates are scheduled by our toll domain experts and will be published at PTV Developer in section Resources-API Changes as soon as available.

Explore the data layers in Showcases.

2.12 What attributes can be modified using Custom Road Attribute Scenarios?

When configuring a custom road attribute scenario using our showcase, the following modifications are supported:

- Ban or unban specific road segments
- Adjust relative speed values to reflect long-term traffic conditions or policy changes
- Modify physical constraints, including:
    - Maximum weight
    - Maximum height
    - Maximum width

To define time-based validity (e.g., temporary restrictions), use the "createCustomRoadAttributeScenario" method. This allows you to specify:

- Time intervals
- Weekly schedules

Important: After a map update, some road segments may become unmatched. These are flagged with a Boolean value of true. It is recommended to review and correct these segments to avoid unintended routing behavior.

2.13 What will I gain from using Load Space Optimization?

PTV Logistics' Load Space Optimization (LSO) is a value-added service designed to enhance digital transport logistics by algorithmically optimizing how goods are packed into transport units. It is particularly beneficial for operations with high freight volumes, where maximizing vehicle utilization directly translates into cost savings and operational efficiency.
Key Benefits:

- Maximized Load Efficiency:
  LSO uses advanced bin-packing algorithms to arrange cuboid-shaped items in a way that minimizes unused space. This leads to a reduction in loading meters and can significantly increase the number of goods transported per trip.
- Sequencing and Unloading Optimization:
  The system considers unloading sequences and groups items accordingly. This ensures that goods are accessible in the correct order at each stop, reducing unloading time and minimizing handling errors.
- Compliance with Physical Constraints:
  LSO accounts for real-world constraints such as:
  - Orientation restrictions (e.g., no tilting)
  - Stacking rules (e.g., whether items can be stacked, and if so, how many layers)
  - Compatibility with next-stop stacking requirements
- Flexible Optimization Strategies:
  Depending on operational priorities, the algorithm can be tuned to favor either:

  - **Volume efficiency** (maximizing space usage), or
  - **Speed** (faster computation by focusing on horizontal layer packing, which may slightly reduce volume efficiency)

- **Integration with Route Optimization:**
  When combined with PTV's route optimization services, LSO contributes to a more synchronized and cost-effective supply chain. The synergy between route and load planning reduces total mileage, fuel consumption, and CO_2 emissions.

- **Real-Time Visualization:**
  Open-source 3D visualization frameworks can be implemented in operational applications allowing users to instantly review and validate the optimized loading plan. This supports better communication between planning and operational teams and facilitates rapid decision-making. Try it out!

Conclusion:
Load Space Optimization is not just about packing more into a truck—it's about smarter logistics. It enables better resource utilization, reduces operational costs, and improves service levels across the supply chain.