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xServer 2 - technical basics (120min)

Bernd Welter

„Which info would have prevented me from a lot of painful experiences and do-it-again's?"

Topics based on questions I answered again and again in the past during integration phase of projects

Today on air for you

- Bernd Welter
  → Technical Partner Management
  - with PTV since 2000
  - in touch with D-A-CH and EE
  - covers as many modules as possible
  - C# light developer
  - PreSales ⇔ Integration ⇔ Troubleshooting

- Internal connections to   External connections
  - Partner Managers / Sales   - Partners
  - Product Management   - End customers
  - Subsidiaries   - Prospects

- Born 1972
  EBM - MTB - MFT

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Today on air for you

Taking care of the chat / Q&A

➡Product Management

➡PTV ITALY

➡PTV USA

➡PTV UK

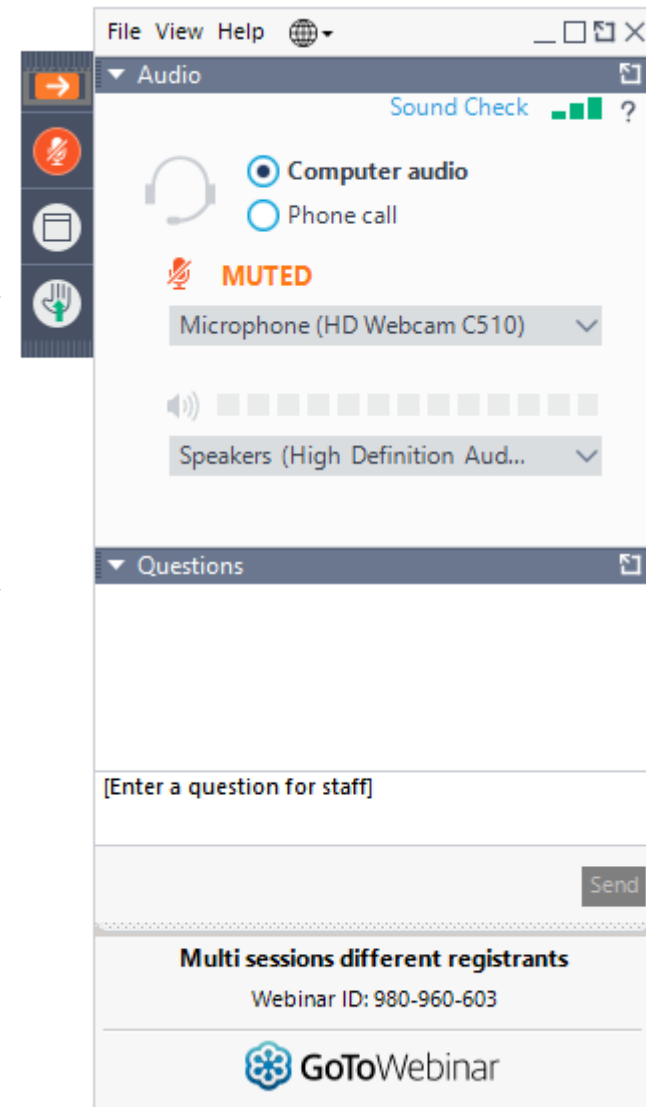# Quick technical advice

➡ You can provide feedback via…

→ "raise rour hand" – if we see this
we will mention that you will be unmuted
soon and you can return via audio

→ in the **questions** section
Ask your question here. One of our
moderators will decide whether to answer via
text or forwarding the topic into the session

→ **Email** after the session

➡ Whenever possible we want to create a recording and provide
it afterwards. Therefore please take care of these hints:

→ do not raise sensitive topics (proposals, business ideas)
→ do not mention customer names or curse
→ do not start ping pong
→ remain patient: the presentation covers many questions
→ use English in the chat: the moderators are from anywhere

File View Help

▼ Audio
Sound Check

◉ Computer audio
○ Phone call

🎤 MUTED

Microphone (HD Webcam C510) ∨

🔊 ▪▪▪▪▪▪▪▪▪▪

Speakers (High Definition Aud… ∨

▼ Questions

[Enter a question for staff]

Send

Multi sessions different registrants
Webinar ID: 980-960-603

GoToWebinar

➡ Block1 → ? → Block2 → ? → Block 3 → …

Agenda / Goals

- **Spend 120mins of our time on various topics – let's see how far we can get**

- **Reflecting our experience as consultants**

- **Goals!**
  → check generic topics which are relevant for broad audience
  → recording for youtube
- **No goals!**
  → detailed intro into every function, parameter & mechanism
  → discussion of individual solutions: ask for 1:1 training

- Recurring every 2 months?

- This is a pilot session – errors may occur

Today	Not today
▪ Core topics	▪ Usecase Last Mile
▪ Documents	▪ Usecase Freight forwarding
▪ Generic mechanisms	▪ Usecase Service technicians
▪ Typical errors	▪ Usecase Sales Reps
▪ …	▪ Usecase Health Care
Generic event (periodically)	Dedicated events (unique)

If it turns out that a topic requires more attention than expected → dedicated webinar later…

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Framework (Bookmark 01)

- https://xserver2-europe-eu-test.cloud.ptvgroup.com/

- **Supported Protocols**
  - JSON (JavaScript Object Notation)
  - SOAP (XML via HTTP)
  - REST (reduced access to features, only some methods)
  - OpenAPI
  → https://xserver.ptvgroup.com/forum/viewtopic.php?f=14&t=733#p3634

- **Release ⇔ Experimental** 🧪 (2.20)

- **Clients**
  - Java / C# / JavaScript

- SAP → get in touch with me 1:1
  https://xserver.ptvgroup.com/forum/viewforum.php?f=50

- **Own clients:**
  Install-Package Ptv.XServer.Net
  wsdl /namespace:"XServer2" /out:"XServer2.cs" /sharetypes "https://xserver2-europe-eu-test.cloud.ptvgroup.com/services/ws/XLocate/experimental?wsdl" "https://xserver2-europe-eu-test.cloud.ptvgroup.com/services/ws/XRoute/experimental?wsdl"

- Though REST seems to be less flexible than SOAP/JSON many mapping interfaces support REST out of the box

Example Protocols (xRoute)

„Mechanism"	REST	Json/Soap
storedProfile	OK	OK
requestProfile	Nope	OK
ResultFields	Only polygon + standard	Flexible
TimeConsideration	OK	OK
>2 waypoints	Nope	OK
FeatureLayers	OK	OK
Waypoints	Only 2 OnRoad	All
Isochrones	Nope	OK
Emissions	Nope	OK
BinaryFeatureLayer	Nope	OK
TourRestrictions	Nope	OK
…	…	…

Framework
(Bookmark REST)

- https://xserver2-europe-eu-test.cloud.ptvgroup.com/
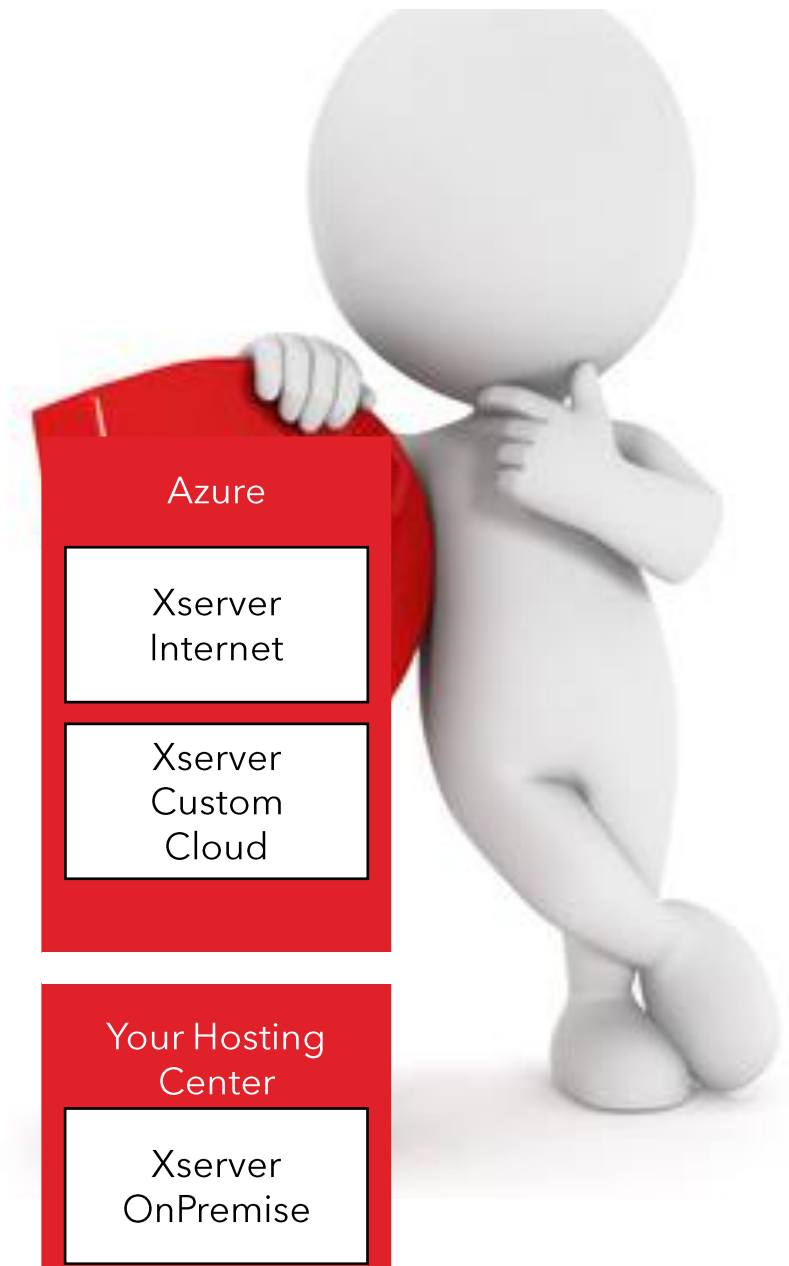 https://xserver2-europe-eu.cloud.ptvgroup.com/

- **Environments**
  - xServer Internet / PTV Standard Cloud: TEST / PROD
  - xServer / Custom Cloud (on request)
  - xServer / On Premise

- **TOKEN**
  - Username = "xtok" → Password = your token
  - "Token for PROD" != "Token for TEST"
  - partners: end customers get individual tokens

- **Attention:**
  We also provide a dashboard version which does use reduced data... if you want to evaluate real quality use TEST or PROD

Azure

Xserver Internet

Xserver Custom Cloud

Your Hosting Center

Xserver OnPremise

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Documentation

- **API Doc**
  - List of all available methods, parameters and return values
  - API Changes
  - Release History

- **Examples**
  - Showcases → deciders, small applications
  - Integration Samples → JavaScript samples
  - RawRequestRunner (RRR) → reproduce requests

- **Important to know API Doc**
  - Links from class to derived classes (e.g. SearchLocationRequest)
  - Links from class to its base class (e.g. RouteRequest → RequestBase)
  - Fundamental : RequestBase
  - Experimental features!

- **Forum / Blog / Youtube**
  Bookmark 02 Generisches

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Look who's talking now

➥ **Cloud requires authentication**

Username → **xtok**
Password → **individual token**

➥ Implementing for your own company → **customer**

➥ Implementing a product you sell to 3rds → **partner**

➥ Implementing within a (first) project → **partner**

- Test token
- Production token
- Partner user token
- Presales token
- …

Questions?

JOBS: Sync ⇔ Async calls (e.g. bulk)

➡ **Standard call**
SearchByAddressBulkRequest (Address[] , SearchOptions)
→ waiting…
→ LocationsBulkResponse returns SUCCESS / ERROR

➡ Async call
job = startSearchByAddressBulkRequest (Address[] , SearchOptions)
→ returns Job incl.
  - ID / Status / Progress / elapsedTime

do…
{
      watch(job) , e.g. every 2 seconds…
      consume progress
}
while (Job.Status != SUCCEEDED) && (Job.Status != FAILED)
&& (Job.Status != DELETED) && (Job.Status != UNKNOWN)
…
LocationsBulkResponse res = svc.fetchResponse(… Job.ID …);

- QUEUEING
- RUNNING
- STOPPING
- SUCCEEDED
- FAILED
- DELETED
- UNKNOWN

Important because of AZURE timeouts

Applies for
- 4 times in xCluster
- 2 times in xDima
- 1 time in xLocate
- 2 times in xRoute
- 4 x in xTour

StoredProfile ⇔ RequestProfile

- **RequestBase → source of all transactions**
  - → coordinate format
  - → geometry options
  - → timeouts

- **Stored Profile**
  - → labelled reference to preconfigured server XML profiles

- **Overwritten by Request Profile**
  e.g. → access to many routing parameters such as
  - specification of vehicle dimensions / properties
  - activation of feature layer
  - routing algorithm control / preferences

- **VEHICLE** PROFILE

- **ROUTING** PROFILE

- **FEATURELAYER** PROFILE

- **RENDERING** PROFILE

- **CLUSTER** PLANNING PROFILE

- **MAPMATCHING** PROFILE

3 levels of routing

- **Simple A→ B → C → A : xRoute**
  - sequence remains unchanged
  - determination of KPI such as distance, period, toll
  - polygon
  - output can be used as navigation input

- **Sequencing : xTour**
  - sequence may be changed, e.g. if A→ C→B → A is "shorter"
  - only one vehicle in consideration within a transaction
  - add unscheduled orders to existing tour/trip
  - engine supports dispatcher

- **Tour Optimizazion : xTour**
  - various vehicles considered within single transaction
  - service determines both assignment (order2vehicle) and
    sequence of stops
  - engine supports dispatcher

- Usual constraints:
  volumes → capacities ⇔ quantities
  times   → operating times ⇔ opening times
  skills   → equipment / skills ⇔ requirements

- • Plan from scratch → automatic
- • Plan manually → evaluate constraints

- • Proposals → offer alternatives

- • Replan during execution

Routing: Bonus ⇔ Malus
(bookmark 03 routing)

▶ **Step 1: Linking → connect coordinates to street network**

▶ **Step 2: Routing means to**
   - "filter forbidden segments"
   - "determine basic costs of segments" (time and distance)
   - "determine temporary costs of segments" (add malus)
   - "determine cheapest sequence segments between wayp
   new in xRoute2: MonetaryCostBased

▶ Malus can be applied to various categories
   → toll, combinedTransport, network types…

▶ **Step 3: Once the sequence is determined: listing**
   - Maneuver list
   - Emission
   - Toll details
   - various "Events" (border crossing, enter/exit combined
   transport…)

- Toll roads
- Combined Transport
- … road categories

Routing: TimeConsideration

➡ **TimeConsideration**

➡ **Status of a segment can depend on time context, e.g.**
With
TruckAttributes
TrafficIncidents
TruckSpeedPatterns
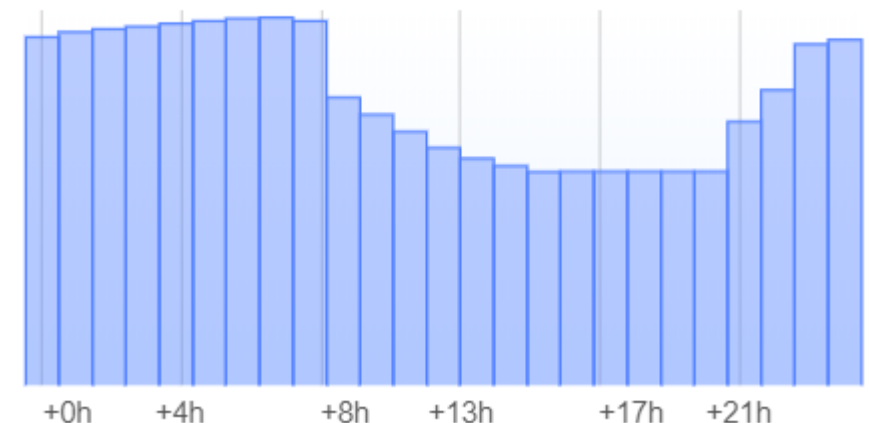
➡ Temporary conditions e.g.
- blocked due to traffic incidents or truck attributes
- reduced speed due to traffic incidents / speed patterns

➡ We determine a temporary context of "when do we pass a segment" and derive conditions

- None ;-) → static routing,
  speed derived by speed vector

- ExactTimeConsideration**AtStart** (+Ref.Time)
- ExactTimeConsideration**AtArrival** (+Ref.Time)

- **Optimistic**Consideration
- **Snapshot**Consideration (+Ref.Time)
- **TimeSpan**Consideration (+Ref.Interval)

- **MultipleTravelTimes**Consideration (sliced day)

Time-dependent travel times

+0h +4h +8h +13h +17h +21h

Routing / Mapping: FeatureLayers

Additional data sets

▶ **TruckAttributes ("area forbidden during night")**
→ legal restrictions
→ value driven (e.g. MAX_WEIGHT
⇔ category driven (e.g. COMBUSTIBLES yes/no)

▶ **General TruckRestrictions**
→ nation wide driving rule (e.g. "weekend lorry ban")

▶ **Traffic Incidents**
→ Live data (long term construction / short term incident)
→ updated every 3 minutes

▶ **SpeedPatterns / TruckSpeedPatterns → Historical data**
→ 168 conditions (24 x 7)
→ updated 2 / year

▶ **RestrictionZones / Preferred Routes**
→ push heavy traffic outside specific regions

- PTV_TruckAttributes
- PTV_GeneralTruckRestrictions

- PTV_TrafficIncidents

- PTV_SpeedPatterns
- PTV_TruckSpeedPatterns

- PTV_RestrictionZones
- PTV_PreferredRoutes

Routing: Break- and Restrules

- **Enforce DrivingTimeRegulations**
  → vehicle drivers

- **Enforce WorkingTimeRegulations**
  → every working person

- **xServer1**
  → flexible parameters, not required
  → no driver history

  xServer2
  → static rules by "Standard"
  → driver worklogbook / history
  → Rest positions (since 2.5)

- Driving Time
  → EU_EC_561_2006
  → US_FMCSA_395_2013

- Working Time Directive
  → EU_2002_15_EC

- None ;-)

Routing: ResultFields

- Toll

- Legs ⇔ Nodes ⇔ Segments ⇔ Points

- Events

- Emissions (various standards e.g. HBEFA 3.2, CEN…)

- Polyline → crucial for visualization

- TourReport (breaks…)

- Guided navigation (BCR)

- Monetary costs
  → toll prices
  → per km
  → per minute
  → per speed

- Request only information you need!
  → performance
  → network

How to handle distance matrices with xServer2 (Cloud, OnPrem)

➥ Detailed webinar on August, 5th – 2020 (15:00-16:00 CEST)

➥ https://register.gotowebinar.com/register/4728609592535351820?source=BWE_11

➥ While xTour 1 took care of your distance matrices it is now time for the user to be in charge: With xServer2 the creation and maintenance of your DIMAs is now possible through API.

➥ During this webinar I want to introduce you into the mechanisms of the xDima2 and I invite especially those who are already familiar with the framework of xServers in general. I want this session to be interactive and technically detailed.

➥ Here's a little bit more info about what I want to show:

➥ What is a distance matrix? What is it's content?

➥ How are mechanisms such as searchgraphs and optimization connected to each other?

➥ What effects should you be aware of?

➥ How much time does it take to compute large distance matrices, e.g. (10'000)²

➥ LIVE DEMO

And more

The session will be public, feel free to share it with your developers. We may also put 2-3 parties on audio.

Register if you are interested in the topic even if you don't have time: we always send info to registered users afterwards.

If you have specific questions you may also send them to me in advance: bernd.welter@ptvgroup.com

Questions?
Answers…

On the following slides I have extraced the questions you asked in the chat. Some of the answers are just taken from my teams's contribution. I also added some more text during my aftermath. If you need more details get back

- To me via email bernd.welter@ptvgroup.com

- To the forum at https://xserver.ptvgroup.com/forum

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Q & A - 29.7.2020

➡ **Question:** "Hello, I have a route from Germany to Norway. I would like to show two routes, one via the road system and one using the ferry. Could you explain how a scenario like this can be achieved?"

➡ **Answer (BWE) :** "Sure, this can be done. Just process two routing requests and display the two result polygons on your mapping interface. The difference between the two routing calls is just the parameter RequestBase.RequestProfile.RoutingProfile.Course.CombinedTransport. boatPenalty : set it to 0 to allow the router to use a ferry without and avoidance behaviour and to a value >0 to push the route to the country https://xserver2-europe-eu-test.cloud.ptvgroup.com/dashboard/Default.htm#API-Documentation/routingprofile.html#com.ptvgroup.xserver.routingprofile.CombinedTransport

➡ **Question:** "If within routes, ferry's are included as you just shown in your example, then how is the time matrix calculated as now the travelling time will include ferry times as well and that will depend on availabilzty ferry's as well?"

➡ **Answer:** "When a ferry are used on a trip the distance will be 0m for the ferry's part (not driving) but will have a crossing time. Ferries availability won't be considered yet."

➡ **Answer BWE:** "To be more precise: the standard routing does not consider ferry timetables, in fact a connection between two ports does only contain a generic period. If you are interested in the consideration of timetables you may have a look at PTV xIntermodal which is also mentioned in the forum https://xserver.ptvgroup.com/forum/viewforum.php?f=52 xIntermodal is a special routing engine which enables users to maintain the timetables which are then used for sequential routing."

Q & A - 29.7.2020

➡ **Question:** "I am integrating xServer using .NET and a few of the routing calls are not working correctly. How can I get log of messages passed to xServer and received from xServer? Just want to know if in PTV there is any module where I can see recently posted messages as an admin.

➡ **Answer:** "If you want to log the incoming and outgoing traffic by code you can add an interceptor to your client endpoint, e.g. xTour.Client.Endpoint.Behaviours.Add(requestInterceptor), so you can have your soap messages logged.

➡ **Answer (BWE):** you can also use tools such as FIDDLER to capture the network traffic on a local machine.

➡ **Question:** "What about avoid path or avoid area?"

➡ **Answer:** "You mean defining some kind of area or tagging street segments that then get avoided? This is possible with a so-called Custom Feature Layer, but to be honest: this is a topic on its own."

➡ **Answer BWE:** https://xserver.ptvgroup.com/forum/viewforum.php?f=55
There's also an initiating video on my channel:
https://www.youtube.com/watch?v=3p14zlzwA-Q
Attention: Custom Feature Layer does not work on the Cloud Service. At the moment (august 2020) this is a pure OnPremise feature!

Q & A - 29.7.2020

➡ **Question:** "Hi about toll cost is possible update toll price is price had increase or to add a new toll point if map provider have no update?"

➡ **Question:** "Ok It means that we can share some pending toll to add and you can update data wit your provider or your self ?? it takes log o shorttime to have an idea"

➡ **Answer :** "It is not possible for you as a developer/user of the service. But we do updates on toll data quite often. We even can add toll data for the future and you can make use of that data beforehand - it just works like the demonstrated time considerations for e.g. truck restrictions."

➡ **Answer:** "Usually we gather all the toll data from different sources, process them and than make'em available to our clients via an automatic update service."

➡ **Answer BWE**: "As my colleague wrote: as a user you can't change the data in the internal toll tariffs we use. Usually we update the data some months before new tariffs apply. If such data is missing let us know. If you have access to authorities who are responsible for such data let us also know. Maybe we can improve our communication processes between PTV and such providers and authorities."

➡ **Question:** "what are the maximum parameters that xTour can take in inputs for a computing time kept into reasonable range (<1 hour calculation)? "

➡ **Answer (BWE) :** "It is hard to determine. As it depends on many parameters and constraints taken into account for the computation (opening hours, truck attributes, vehicles profiles, priorities, etc...). We do have benchmark for defined scenarios.,Benchmark are available for every versions in the customer area. If I remember correct we appliead tour optimization to a set of about 15.000 orders (KEP) and the optimization based on our latest algorithms took about 30 minutes (excluding the DIMA). Usually if someone asks for large scenarios I offer to discuss how to slice the given challenge into smaller peaces. Works fine in almost 95% of the cases."

Q & A - 29.7.2020

➡ **Question:** "Where are time windows for specific locations configured? For example, if multiple trucks are used for delivery, and location A has a requirement of delivery on Monday from 9 do 11 a.m.."

➡ **Answer :** "The site class has a member named openingIntervals"

➡ **Answer BWE**: "Though the delivery frame sounds like it is a property of an order you would have to model this as a property of the location. Sometimes this means that two different orders with individual deliver frames at the same stop requires you to define two CustomerSite objects with equal coordinates but different openingIntervals."

➡ **Question:** "link to next webinar please"

➡ **Answer :** "https://xserver.ptvgroup.com/forum/viewtopic.php?f=51&t=1281"

Q & A - 29.7.2020

➡ **Question:** "Hello. What is the default profile used? I am afraid that routing is sending a truck driver to tunnel or somewhere where he is not allowed to drive. Thanks!"

➡ **Answer:** "Hello, By default all profile just have different speed and dimension defined for toll. Usage of the Truck Attributes (road truck restriction) is licensed and and needed to be added in the request. The profile are described here ; https://xserver2-test.cloud.ptvgroup.com/dashboard/Default.htm#Administration/FileViewer.htm#"
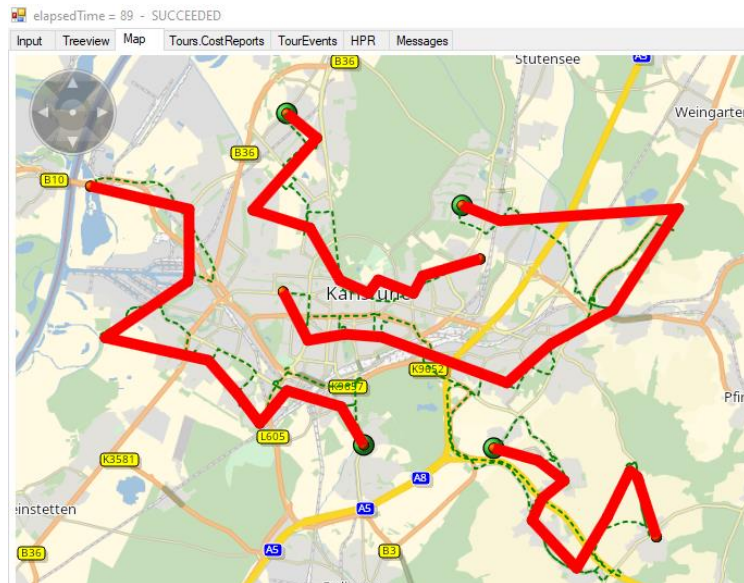
➡ **Question:** "do you consider live traffic conditions while doing routing calculations? Is the live traffic feed availible accross the world?"

➡ **Answer:** "Yes, we do. But keep in mind that not all routings are suitable for live traffic. E.g. when preparing tours the day before their executed, live raffic does not makes sense.,To be a little bit more precise, you as a developer have to switch on the usage of live traffic information. So you have the choice if and when to use it.
Technically yes, it also depends on the TomTom® Traffic® feeds, and the quality of the infomation available per country"

➡ **Answer (BWE):** "To be more precise: we can consider LiveTraffic in many regions of the world. This showcase enables you to check the coverage (change map scale and navigate to the regions you deal with) https://xserver2-europe-eu-test.cloud.ptvgroup.com/dashboard/Default.htm#Showcases/Routing/TimeConsideration/index.htm%3FTocPath%3DShowcases%7CRouting%7C_____7
Furthermore you should know that the consideration of additional data such as TruckAttributes or Speed Patterns or Traffic Data has to be switched on by parameters (FeatureLayerProfile), it is not enabled by default."

Q & A - 29.7.2020

▰ **Question:** "How much does it take for xTour to calculate the fastest route between let's say 10 waypoints in sequencing for one truck?"

▰ **Answer:** "Bernd answered that via audio. It may thake only a view seconds, when the distance matrix is already available."

▰ **Answer BWE:** "The pure optimization of 10 stops is probably done with in some hundred milliseconds. The attached screenshot does the optimization of 40 stops and also dispatches them to several trucks within less than 100ms. Be aware that many factors influence the performance: various time windows per stop, number of trucks, number of orders, geographic variance of the orders, utilization of orders …

▰ **Question:** "where can I get video of this session?"

▰ **Answer:** "you will find it on Bernd Welters YouTube channel within the next days."

▰ **Answer BWE:**
"ENGLISH → https://www.youtube.com/watch?v=jxSCoxy16AQ"
"German → https://www.youtube.com/watch?v=elutgIqwV1w"
https://xserver.ptvgroup.com/forum/viewtopic.php?f=51&t=1281

Q & A - 29.7.2020

➤ **Question:** "You have already said that xTour works fast when the distance matrix is available, but what does this actually means? Is this some array on server-side? When is it build and how is it stored? "

➤ **Answer:** "The matrix calculation, is the first step of trip planning. The system needs to know all the distances between all locations in order to determine the best route sequence. To do so, we provide a specific service named xDima (Distance Matrix) that allow you to calculate and manage your matrix, and then use it with the xTour."

➤ **Answer BWE:** "I recommend to check the following videos to understand the processes within tour optimization!
https://youtu.be/pMY9_Va7UPE (English)
https://youtu.be/nzr8vFYDdFE (German)

➤ **Question:** "Planing tours was amazingly fast. If you slowing down a presentation anyway you can show more demos. Pick the one you are more proud of :) "

➤ **Answer BWE:** "Thanks, I will try to consider this ;-)"

Q & A - 29.7.2020

➡ **Question: "**Do you have navigator component for Android devices? I need to calculate my route but want to use my build-in navigation (with additional features) instead your app so I'm looking for something for Android in Kotlin/Java or Xamarin."

➡ **Answer:** "We do have an Android app called Truck Navigator" which is a full-featured navigation solution. You can partner it with xServers as well. Or you use our NavigationSDK (available for Android, iOS, …) and roll your own app.**"**

➡ **Answer BWE: "**Partner it with xServer – maybe a bit misleading. Be aware that there's no direct interface communication between the xServers and the navigation. **"**

➡ **Question:** "Is NavigationSDK currently in TEST/PROD token for xServer or is it some side licence?"

➡ **Answer : "**It's a license of its own but contact four sales rep for further details.**"**

Q & A - 29.7.2020

➡ **Question:** "You mentioned break- and rest rules which have to be applied for a driver. Is it possible to provide a driver history or is the driver always fresh like after 6 months vacation?"

➡ **Answer:** "Look at the so-called Drivers Logbook: in xServer 2 you can set various elements which describe the current state of a driver even after a longer previous trip."

➡ **Question:** "You described the difference of the coverage of the protocols, especially the restriction in the REST API. How about OpenAPI? Does it cover same 100% as SOAPA/JSON?"

➡ **Answer BWE:** "As far as I know the OpenAPI is somewhere in the middle between SOAP/JSONM (100%) and REST (very limited). At least I know that some of the "deprecated" methods and parameters are excluded from OpenAPI but most regular methods such as the routing request and search locatons are covered by OpenAPI."

Q & A - 29.7.2020

▶ **Question:** "I saw that you specify two different kinds of waypoints: OnRoad and OffRoad. Could you give us more details about them? What is the difference? The usecase behind it?"

▶ **Answer:** "OnRoad means that the linking of a coordinate is based on the closest street segment and the routing distance and period is applied on the street network only. With OffRoad waypoints the input coordinate could also be located further away from the street network and there's also be a distance/period contribution for the path from the offRoadCoordinate to the street segment. This could be meaningful in KEP usecases where the courier's relevant part is both walking (off) and driving (on). "

▶ **Question:** "Can I use the REST Routing Call for a route with more than 2 waypoints?"

▶ **Answer BWE :** "Nope, the current REST signature supports only start⇔destination routing without any intermediate points. Furthermore the waypoints are OnRoadWapoints. If you want to deal with more than 2 waypoints or with Waypoint types other than OnRoad you need to use one of the other potocols. Just my personal gut feeling: don't use the REST routing call. It is way too limited."

Q & A - 29.7.2020

- **Question:** "One important aspect of the routing is the calculation of the toll prices based on latest tariffs. Does the routing API also return toll distances?"

- **Answer:** "Yes it does but you should be aware that the kind of toll depends on the country: in some countries we determine the relevant toll sections based on look aside tables of the providers and we return the original process and distances mentioned in the tables (check TollSection.officialDistance).
For countries where we do not have the table based info you may have to aggregate the segment lengths for those segments where toll flags are set. As a workaround."

- **Question:** "I saw that you support an asynchrony protocol which enables me to start some larger transactions such as geocodings of 1000 in a chunk. I can also ask for the status of such a bulk operation. Do I also have access to the partial results while the WatchJob is processed?"

- **Answer :** "No. The intermediate results aren't available on client side. You only get some kind of rough KPI such as progress (%). In the case of bulk geocoding you get the info about how many input addresses have already been geocoded successful, with errors and still remain. The core purpose of the Watch approach is to enable you to get rid of single long lasting transactions (Azure bottleneck!) and to be able to compute a potential E.T.A of the transaction as a whole.
If you stop a job through the API you can gather the partial results."

Q & A - 29.7.2020

➡ **Question:** "What is the impact of FeatureLayers on performance during routing?"

➡ **Answer (BWE):** "In fact the application of FeatureLayers has an impact on performance für routing (incl. DIMA) and also mapping. The level of impact depends on the type of the layer (e.g. RestrictionZone data is comparably small while SpeedPatterns may suck.) I also recommend to check whether you can use parameters which have a positive impct on performance without harming the quality of the output, e.g. the ALLOWED_COUNTRIES"

➡ **Question:** "is there an option in the routing system to draw a route between 2 points that minimizes the GHG emissions for a specified type of vehicule? "

➡ **Answer:** "You mean if emissions have an impact for routing? Not at the moment, we can give you the emissions of a route but we do not optimize on it. "

➡ **Answer (BWE):** "As my colleague said: we can report various standards of emission computation but the emission settings are not considered in the routing step when the geometry is determined. Once the routing geometry has been computed by the routing engine we perform several optional steps afterwards such as the reporting of emissions or the creation of segment lists and manouvers if requested through the API."

Q & A - 29.7.2020

➡ **Question:** "Can you show us calculating routes for a couple of trucks at once?"

➡ **Answer:** "Bernd will demo this now."

➡ **Question:** "Are there any performance differences between the protocols?"

➡ **Answer:** "We can provide release benchmarks in the customer area. If you don't have access to the Customer Area (restricted to customers/partners with a license) you may ask for them through the support."

➡ **Answer BWE:** "Well, there might be a small performance difference between SOAP and JSON but I'd generically recommend to focus on other aspects within a protocol:
1. make sure not to request information if you do not need it, e.g. thousands of polygon points if you never display the route or segment lists.
2. evaluate to use the bulk operations e.g. for geocoding of hundreds or thousands of addresses
3. check whether you can work with compressed communication to reduce bandwith consumption
https://xserver2-europe-eu-test.cloud.ptvgroup.com/dashboard/Default.htm#DevelopersGuide/DSC_WebService_Interface_Principles.htm%3FTocPath%3DDeveloper's%2520Guide%7CWeb%2520Service%2520Interface%2520Principles%7C___0

Finally…

Additional PTV Services

➡ PTV Drive&Arrive
   → provide your latest GPS position
   → we perform continuous eta calculation
   → users can gather ETA / pull,push notification service

➡ PTV TruckNavigator
   → offline navi
   → navigator SDK, remote interface
   → guided navigation

➡ Fuel Price API (in development at DDS)
   → search for live fuel prices

➡ Professional Services (CEE → Oliver Mangas, Sales)
   → Individual Training
   → Application coding
   → Project Management
   → Data production

- And much more

Functional hints

Geocoding

➡ use "Allowed Countries" if you deal within a specific region

Routing

➡ Don't forget to request FeatureLayer PTV_TruckAttributes

➡ DrivingSide (new in 2.19)

Distance Matrix Calculation

➡ use "HighPerformanceRouting" if possible

Forum

- Community of about 500 global users

- https://xserver.ptvgroup.com/forum

- For deciders & developers

- Announcements

- Feature demos / Technical articles

- Descriptions of error messages → search for them!

- Discussions

- **Subscribe**
  → specific category (e.g. infostream → stay up2date)
  → specific post

- **Contribute**

- Registration recommended, free of cost

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Stay in touch: Contacts

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  https://www.youtube.com/channel/UCgkUli9yGf0gwTDdxbMZ-Kg
  → recorded webinars
  → small teasers
  → small technical demos / micro trainings

- **Technical Support**
  Support.DE@xserver.ptvgroup.com
  → **generic errors**
  → **expired tokens**

- **Local sales or partner managers**

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Links/Ressources you should know   ···

- **Test environment**
  https://xserver2-europe-eu-test.cloud.ptvgroup.com

- **xServer Developer Forum**
  https://xserver.ptvgroup.com/forum

- **DevBlog (Product Management)**
  http://devblog.ptvgroup.com

- **xServer Internet Developer guide**
  https://www.ptvgroup.com/en/solutions/products/ptv-xserver/developer-guide

- **Github xServer.NET**
  https://github.com/ptv-logistics/xserver.net-samples

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Merci beaucoup!

➡ Thanks for watching!

➡ Thanks for your feedback!

➡ https://xserver.ptvgroup.com/forum

➡ Future webinars – subscribe!!
https://xserver.ptvgroup.com/forum/viewtopic.php?f=51&t=1281

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