



Business challenge

Connected cars often experience latency issues that can affect safety-related insights. Travelping GmbH needed to develop an IT infrastructure platform that could negotiate the challenges of cross-border data management regulations to make IoT networking more efficient.

Transformation

EU data protection regulations and network latency issues can stall advancements in connected vehicle performance. To help auto manufacturers gain real-time Internet of Things (IoT) insights, Travelping used IBM® Cloud™ infrastructure products and its own Kubernetes deployment to create a cloud-native solution that transports data to the vehicles.

Results

Reduces IoT latency by more than 95%

for real-time vehicle safety data insights

Saves resources

by providing scalable services on commodity hardware

Keeps data in the country

by transporting the payloads to where the vehicles are

Travelping GmbH

Drives connected cars into the data fast lane with cloud-native technologies

Based in Magdeburg, Germany, [Travelping](#) is a privately held company that develops software solutions for networks and communication devices. Founded in 2004, it has 30 employees.

“Having a simple service on an available platform makes it possible [for a small team to deploy] globally technical services with a five-9 take on it.”

—Holger Winkelmann, Founder and CEO, Travelping GmbH

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Stuck in the slow lane

You don't have to be George Jetson or his wife, Jane, to enjoy space-age features in your vehicle. Connected cars take advantage of IoT technology to allow drivers to determine how long a trip will take and issues to avoid along the way, all while streaming a movie for the kids in the back seat. The ability to connect devices in vehicles to other devices and networks produces insights such as automobile status, position and speed. These insights can improve passenger safety and vehicle maintenance, among other benefits.

But in the EU, there's a roadblock of sorts: the General Data Protection Regulation (GDPR). Enacted in May 2018, the GDPR is designed to protect data and privacy for EU citizens and those in the European Economic Area (EEA). In part, the GDPR doesn't allow personal data to be exported outside the EU and the EEA. When you have a connected car but your data isn't allowed to leave the region, the ability to gain vehicle insights stalls. Traditional network solutions aren't ideal, because that's where the latency comes in.

Let's say car manufacturer ABC Autos goes to telecommunications provider XYZ Mobile to provide

connectivity for its new line of IoT-enabled cars. In a classic deployment, the data is attached to a network housed in a local data center. The car goes to a country outside the EU, but the data can't. And when the car is in the EU, the data pings all over the place, from the home network to where the vehicle is.

To avoid collisions, connected cars must communicate with one another in real time. Traveling needed to develop an IT infrastructure platform that could negotiate the challenges of cross-border data management. Plus, the data had to remain in a security-rich environment.

"It's all about the five 9s"

Equipped with years of expertise in the telecommunications industry, Traveling knew it had to get the network closer to the connected devices. It also knew that the environment needed to be highly available. "It's all about the five 9s [99.999 percent service availability]," says Holger Winkelmann, Traveling Founder and Chief Executive Officer (CEO). "But running on five 9s is highly expensive and complicated."

So Traveling took a route that led it back to the basics: bare metal servers with a containerized application based on a Kubernetes

platform. The client used IBM Cloud infrastructure products and Kubernetes tools to create cloud-native workloads. These containerized workloads can be transported rapidly to auto manufacturers to help make remote diagnosis or maintenance a real-time reality.

Some define Kubernetes as the new Linux or a new API. It uses open source software to enable apps to be deployed as loosely coupled services by packaging individual parts into their own containers. This modular programming process of deconstructing an application into various smaller services helps make the app easier to develop, test and deploy. It also allows for continuous delivery of scalable services.

"That was the reason we moved to Kubernetes and container deployment," explains Winkelmann. "Because you can run services that are rather simple, maybe even stateless, in a five-9 environment—99.99 percent service availability environment (backed by the IBM SLA). And then we increased to a five-9 environment you get mostly for free."

The solution helps Traveling customers deploy in different locations and different environments. If they implement deployments that are network based, they "touch the heart of carrier," says Winkelmann.

"Usually the carrier says that it has to go on its typology. There are reasons for that. It must be in the licensed territory."

But with Kubernetes, there's a common API. "It works on private cloud and private deployment, but it also works in public clouds," Winkelmann adds. "So you are totally agnostic, where you go from developer notebook to private cloud deployments, to edge deployments, or to your Raspberry Pi on the lamppost. You deploy in exactly the same way again and again, and this is only possible with Kubernetes."

Traveling uses IBM Cloud because it helps the company manage data compliance. It also allows the client to operate its network service on top of that. "Many clouds in the field are what we call north-south clouds. They're about terminating web traffic," says Winkelmann. "That's not what we're doing. We forward the payloads, the traffic for our mobile users. IBM Cloud is the only one that still allows us to transport data from node to node in a network, and not just terminate it."

Cultural shift

Traveling's journey to a connected car mobile platform required a cultural shift for its customers. Processing power is centralized in cloud computing and is ideal for IoT-enabled devices. The data is

processed closer to the point of origin, which helps reduce latency between devices and the data processing layer. This can enable faster response times and more informed decision-making.

Providing scalable services on commodity hardware rather than telecommunications equipment wasn't an easy sell. "It's definitely a cultural shift," explains Winkelmann. "The biggest challenge here is to bring our customer base, which is telcos, out of classic ITSM [IT service management] into the cloud. It's a level of acceptance that you trust the stuff, and you accept that you can deploy a new service version three times a day, and not three times a year as we see it today."

Even George Jetson's cantankerous boss, Mr. Spacely, would be pleased.

Solution components

- IBM® Cloud™
- IBM Cloud bare metal servers

Take the next step

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