

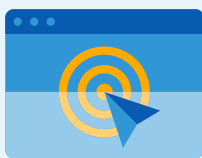
Success Story

Buchanan Computing slashes application maintenance time by 75 %

Web-based mapping application Traffweb is easier to manage, update, and scale, now it runs on IONOS Cloud Managed Kubernetes.

+++ Featured learnings +++

- Experiment! The IONOS interface made it easy for Buchanan Computing's developer team to try Kubernetes, and support from IONOS was readily available when needed.
- Buchanan Computing's old platform predates Kubernetes. By moving to containers, the company was able to access highly granular scalability with a software architecture that is resilient and more manageable.
- Now that Buchanan Computing has adopted Kubernetes and IONOS is managing the platform, the developer team is spending 75 % less time on maintenance and updates.



Buchanan Computing is the company behind Traffweb, an online mapping application that makes it easy for local authorities and police to build online portals based on highways data. For nine years it ran on IONOS dedicated servers. However, as the solution became more complex and its user base grew, onboarding new clients and application maintenance were consuming more and more developer time. In response, Buchanan Computing changed the application architecture to use containers, and deployed it on IONOS Cloud Managed Kubernetes. The time taken to on-board new clients fell from days to hours, and developers have been freed of 75 % of the time they were spending on maintenance to work on higher-value projects.

The challenge

Outgrowing dedicated servers

Many UK local authorities provide detailed information on their kerb side controls via Buchanan's Traffweb web app. Enabling motorists and other road users to assess where they can park, make deliveries, access the legal documents they may need as part of an appeal regarding an issued parking ticket, or, to engage in the consultation process with respect to new schemes.

The web app consumes the information it requires directly from the authorities traffic order creation and management service (ParkMap). Thus ensuring the information provided to motorists and others represents the live legal position.

Local authority staff use it, too. Civil Enforcement Officers (traffic wardens) can log road markings that need repainting and signs that need replacement. In the office, the parking and legal teams can use Traffweb to check the restrictions in force at a given time, and generate the documents needed as part of their evidence pack for submission to either the Traffic Penalty Tribunal (in England and Wales) or London Tribunals (in London.)

Buchanan's range of back office applications are licenced for use by all English county councils and London boroughs, over half of Welsh unitary authorities, most Scottish unitary authorities, and more than 120 English district and borough councils. The Department for Transport, Highways England, Transport Scotland, and Transport for London use it, as do half of the UK's police forces. It's also used by big engineering consultancies and road sign manufacturers. All of these back office systems and services have the potential to present their information for sharing with other wider non specialists via Traffweb's web service

And that's the challenge: with so many client organisations, Buchanan Computing found that its initial hosting infrastructure was no longer suitable. Traffweb was originally created for each individual organisation. To begin with, each client organisation had its own dedicated IONOS server.



"We quickly decided that was not a great way of doing it," said Robin Morrison, Director – Technical Development, Buchanan Computing. "So, we built a dedicated server with multiple clients on it,

but we ended up with too many clients for a single server. We'd start a new server, then another. Over the last few years, our software has become more complex, and we want to update it to make it even more sophisticated. Trying to do that and then update all the different client websites was not practical. Increasingly, we found that more and more time was taken up just managing the updating and maintenance of the application."

Buchanan Computing is a partner in the EU project MORE, which is researching how street use can be changed according to community needs at different times of the day. Loading bays could be used for deliveries by day, but be turned over to seating spaces or pop-up restaurants in the evenings, for example. When substantial changes to Traffweb were required for the EU project, it prompted Morrison and his team to reconsider the environment the application sits on.

"We either had to rethink the architecture or hire more people to look after what was becoming an unwieldy system," said Morrison. "We knew it was time for a change."

The plan was to migrate to a multitenant application shared by all client organisations, and hosted on two servers. One would be the production server and the other would be for failover in the case of a fault.

Buchanan Computing needed a solution that would be easy to maintain, easy to upgrade, and easy to scale as new customers are added in the future.

The solution

Moving to containers and managed Kubernetes

"We're constantly progressing our software, and always looking at new ideas that might be beneficial to us," said Morrison. "We spoke to IONOS, and they suggested taking a look at Kubernetes."

Kubernetes is an orchestration platform for containers, which are software units that combine code with all of its dependencies. Containers ensure that code runs reliably in a wide range of environments. Applications that are architected to use containers can be highly scalable, with the capability to automatically spin up additional containers or provision them in line with demand.



IONOS Cloud Managed Kubernetes wraps IONOS management services around the Kubernetes platform, including automated security patches, bug fixes, and feature updates. The service sets up Kubernetes clusters automatically and right-sizes the deployment to prevent performance loss. Users can adjust the number of CPUs per node, the CPU type, RAM per node, storage size per node, and storage type. The managed service is free, and customers are only charged for resources they provision in the node pools.

By using containers, Buchanan Computing could make Traffweb easier to manage and maintain, and enable much more granular scalability.

The implementation

IONOS manages and supports Kubernetes

"In the past, we've always managed our own systems," said Morrison. "We have eight developers, and we look after about the same number of products. We spend a lot of time updating servers, sorting out glitches and security vulnerabilities, managing maintenance, and upgrading. We'd all rather be developing software and writing new features. So, the managed aspect of IONOS Cloud Managed Kubernetes was a big bonus. It gave us a great opportunity to cut out a lot of the handle-turning side of our job, where we just go in and do the same thing over and over again. We hadn't used a managed service before, although we've always had excellent support from IONOS when we've needed it. We were pleased to have that support expanded to day-to-day operations and know that we can depend on IONOS to help us if we get stuck."

He adds: "The inherent scalability of Kubernetes is important, too, as we look to expand Traffweb and add new capabilities to hopefully attract more clients."

Being a software house, Buchanan Computing was comfortable trying new technologies and eager to experiment with Kubernetes. The IONOS team encouraged them and was available if Buchanan came across any difficulties. "It's good to know that IONOS has our back," said Morrison. "We could build a solution much quicker than we could if we'd just been working on our own."

The solution provides an easy path to disaster recovery and gives Morrison and his team the flexibility to migrate the server hosting to a different country if data sovereignty requirements should require that in the future. "We use a tool called Velero that allows us to safely backup and restore, perform disaster recovery and migrate Kubernetes cluster resources and persistent volumes. For an extra layer of security we also compact our persistent volumes and upload it into an IONOS bucket. If disaster strikes, we can restore the entire cluster in a few minutes with some simple steps."

Conclusion

Saving 75 % of maintenance time

The switch to Kubernetes has dramatically cut the time taken to onboard new Traffweb clients. It used to take between 1 and 3 days. Now, it only takes 2 to 4 hours. "We don't have to worry about building a web server, installing the software, and updating everything," said Morrison. In addition to this saving Buchanan Computing used to spend 100 hours per annum on maintenance and updates, that time has now been cut by 75 %.

Morrison said: "I hope that our clients will use the systems more and more. We know we can use the scalability in IONOS Cloud Managed Kubernetes to meet their expectations. We won't have to scurry around building new servers just to try to keep ahead of everyone. We'll also be able to develop more sophisticated products because we'll be able to spend more time on development, and it's much easier to deploy. We expect the developer cycle for the web application to accelerate."

About IONOS

With over 8.5 million customer contracts, IONOS is a leading global provider of cloud infrastructure, cloud services, and hosting services.

Our product portfolio includes Compute Engine, an IaaS compute engine with its own virtualized code stack; Managed Kubernetes for container applications; a private cloud powered by VMware; and S3 object storage. Our solutions provide established medium-sized and large companies, regulated industries, the digital economy and the public sector with all the services they need to be successful in and with the cloud.

We are convinced that data sovereignty is essential for successful digitisation. That's why we are committed to ensuring that our customers retain control over their data and applications.

Treating our customers fairly is very important to us, so we offer transparent pricing and by-the-minute billing, no vendor lock-ins and the best price/performance ratio in the IaaS market. Ease of use is another priority, so we provide highly flexible solutions and easy, drag and drop configuration through our patented Data Center Designer and APIs.

We also attach great importance to customer needs. Dedicated account management, tailored cloud architecture consulting – including support with proof of concept by professional services – and free 24/7 enterprise-level support with certified system administrators are available to help users in any situation.

Our history

For over 30 years, IONOS has been developing innovative, reliable and high-quality solutions that help companies of all sizes to digitise their business processes.

These include web hosting products and office applications, proprietary data centres and innovative cloud solutions. In addition, we have continuously enhanced our portfolio through strategic acquisitions.

Since its foundation in 1988, IONOS (formerly 1&1) has become Europe's largest hosting provider. In 2010, Achim Weiß, the current CEO of IONOS, founded an IaaS provider, which is now the basis for IONOS Cloud. With 8 million customer contracts and georedundant data centres in Germany, Europe and the USA, we provide intelligently coordinated products for every phase of a company's development.

IONOS Cloud is a sub-brand of IONOS, a United Internet AG company.

More information is available at cloud.ionos.co.uk.



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