

# Kickstarting Yell's **tech refresh** and migration to **AWS**



## CASE STUDY



**As further continuation of a successful partnership with Yell, PGS Software helped the company to refresh their technology solutions, moving away from older monoliths and towards further **migration to AWS and adoption of a microservices-led approach.****



## BUSINESS NEED

While Yell's origins lie in physical, paper phone directories, the company has been actively moving towards digital advertising services, taking advantage of the latest technologies to offer a range of ever-better digital solutions to help merchants advertise and promote their business and engage their customers.

Yell was aware their current digital offering was in need of updating. During their cooperation with PGS Software, release cycles were reduced from a 4-week process to a 2-week cycle. However, this still wasn't enough. To acquire a more suitable, adaptable process, able to offer **near-instant changes when required**, Yell knew they needed to overhaul some of its older technology solutions to more modern variants that allowed for such flexibility.

They had already utilised Amazon Web Services (AWS) to some extent and wanted to further push into the Cloud. Moving more services into the Cloud would also allow for **a smoother, seamless experience** for end users. This would also ensure they are able to better grow and expand their services without relying on outdated systems.

Due to an already well established, three year relationship, Yell recognised PGS Software as a trusted partner, able to deliver the solution they required. Because of this, the latter was able not only to deliver the solution, but also define Yell's needs from the start.

## SOLUTION

The chosen solution occurred in three stages. For the first step, Yell's monolith was split into two services. This made each component easier to manage and marked a key step in moving away from the old, integrated system.

Secondly, various on-premise services were moved directly into AWS as independent microservices. From here, each microservice could be managed on its own, but was still connected and able to operate with the rest of Yell's products.

Finally, PGS Software also moved Yell's middle-tier and database, which connected to the frontend app, from older Oracle structures to AWS Aurora. This also had the added benefit of moving away from Yell's managed servers, removing maintenance and upkeep issues. The actual **migration process was completed within an hour**, causing minimal disruption.

Alongside this, it was also decided to update some of Yell's internal technology to more modern, stable builds. This included moving to Spring 5.0 and Spring Boot 2.0, as well as updating from Java 1.6 to 1.8. New elements, such as ELK Stack, were also implemented, allowing Yell to more effectively browse logs across servers via a centralised depository, rather than logging into each machine separately. As part of this process, Docker containers were also deployed directly to AWS.

To support Yell's developers and testers, an automated testing layer was built to run during build processes. This script is designed to test an application's frontend components and identify issues that don't work. This way, developers are made aware of any large issues before anything is even sent to QA.

## BUSINESS BENEFITS

This technology refresh introduced many new benefits for Yell. Release cycles are now exceptionally fast. What once took up to 4 weeks can now often be done within hours, allowing Yell to make the changes they need on the fly. This in turn helps them to **release new features faster and to better adapt** to the dynamic digital landscape.

The final solution also has a reduced memory footprint in any remaining systems. In the old system, 12 servers were each using 16 GB per instance, which is now reduced down to 6 GB. This makes these processes much easier to lift and shift in the future. Once in AWS, they will also be cheaper to manage, as Yell can utilise smaller, more efficient instances. All of this ensures that any remaining solutions or processes are already **optimised and Cloud-ready**.

Furthermore, by moving part of the monolith infrastructure into the Cloud, this migration became a tipping point in Yell's digital transformation, signifying the start of a continued move into cheaper, more effective AWS solutions.

→ **Moving this is a big milestone and signifies great progress towards a more efficient, cost-effective Cloud-native solution.**

Similarly, because each new solution is being developed in AWS, every feature shares a common tech stack and library. As a result, teams can move from one service to another and find it is very familiar. This makes it easier for teams to **manage new**

**services without a steep learning curve**, or to move from one task to another without any difficulty from a technical knowledge perspective.

All of these solutions have helped achieve the primary goal of a shorter release cycle. Now, **numerous updates can be deployed throughout the day**, rather than via 2-week windows.

The new solutions also feature a distributed cache, which removes any old issues with rebooting servers. Previously, users would be logged out of the system but, now, this shared session storage creates a more seamless process that doesn't hinder the end user's experience. Furthermore, such horizontal scaling also allows Yell to add or remove servers as required, without impacting user experience.

Of course, the final solution is also **fully scalable**, able to increase and decrease processing power in line with current usage volumes, ensuring there are no wasted costs during periods of low activity across Yell's various services and solutions.



**PGS has supported Yell in achieving a whole new digital engagement model with its customers and consumers. Bringing their experience and expertise to the table during this journey has been invaluable, adding value at various levels, input to planning and design, and heavy lifting with confidence where required.**

Leo Perrotta  
Head of Tech Delivery - Digital, ERP, BI, R&D  
Yell

## PROJECT DETAILS

**Solutions** — Continuous Integration, Automated Testing, AWS Cloud, Microservices, ElastiCache, Infrastructure as Code, Continuous Deliver

**Technologies** — Spring Boot 2.0, Spring 5.0, Java, Terraform, Docker, AWS Elastic Beanstalk

**Tools** — AWS Database Migration Service, AWS Aurora

**Team** — 3 backend developers, 1 tester, 1 project manager

## ABOUT THE CLIENT

Operating in the online marketing space, as of December 2018, **Yell** has created over 54,000 websites and managed 20,000 PPC (Pay-Per-Click) campaigns for customers in the United Kingdom. The final printed edition of the Yellow Pages, which started in 1966, will be published in January 2019. The company has been actively engaging with digital services, helping companies to advertise and promote their businesses and manage their reputations and succeed online. The digital journey continues with exciting new and improved offerings continuously being released.

## ABOUT PGS SOFTWARE

**PGS Software** is one of the largest public listed custom software & services providers in Poland. As an AWS Advanced Consulting Partner, we specialise in Cloud projects - consulting, cloud-native development, application modernisation, & migration. Working according to agile methodologies (Scrum, DevOps, & Continuous Delivery), we create mobile & web applications as well as provide Business Analysis, Visual Design, UX, UI, & QA services to Clients worldwide. We have development & business entities in Poland, UK, Germany, & Spain.

## For more information about our services:

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