

James Higgins

Director of Engineer | Technical Architect

SUMMARY

Huge experience in technical architecture, project migrations, and a focus on building teams within web and mobile application development.

Current focus on AWS Cloud solution design, domain & micro-service architecture and React with TypeScript.

I manage and mentor teams, collaborate with stakeholders to form product roadmaps and deliver operational excellence.

EDUCATION

AWS Certifications

Solutions Architect | 2021
Cloud Practitioner | 2020

BSc (Hons) Software Engineering
UCLAN | 2009

SKILLS

| Software Architecture

Technical specifications & designs
Micro-service / Domain service design
Cloud solutions architecture

| Languages and Frameworks

TypeScript / JavaScript, React, React Native, Angular, Ionic, PHP, Golang

| Operational and Management

Strong leadership and team building
Certified SCRUM Master

WORK EXPERIENCE

Director of Engineering

Epos Now | March 2022-Present

I rely on all my experience at Epos Now, including:

Managing a department within engineering, I've inherited existing teams and formed a new one. I take accountability for failure and lead by example, resulting in a strong bond with the engineers and high performance.

Delivering domain services and micro-services written in Go (Golang), gorgeous UI web applications written in React and PHP websites.

Producing AWS solutions architecture plans, following the five pillars of the well architected framework (operational excellence, security, reliability, performance efficiency, and cost optimisation).

Architecting domain service flows, api endpoint specifications for complex enterprise applications.

Collaborating on the business' product roadmap, guiding from a technical and user perspective.

Tech Used:

Code: ReactJS, JavaScript/TypeScript, Golang, .NetCore.

Cloud Solutions Architecture: AWS, EKS, S3, CloudFront, Ec2, ELB, Kafka, RDS

Roles/Hats: Manager, Mentor, Technical Architect, Developer, DevOps Engineer,

Technical Architect

Sage | March 2020 - March 2022

I **lead** the technical design and development of cloud based apps, focussing on front-end app development & services in a micro-service infrastructure. My primary goal was to drive the standards of UI development, improve the workflows within the development teams. I planned how the more complex / critical areas of the UI/UX should work.

In September 2021, I **delivered** a highly complex reporting engine, prototyped and lead by myself, reusable across any Sage application, entirely metadata and config driven. I **developed training workshops** & documentation on development and testing best practice, used by development squads in the UK, US, France, Spain and South Africa. This includes my workshops "Thinking in React" and "Testing Foundations for Modern UI Development".

Tech Used:

Code: ReactJS, JavaScript/TypeScript, HTML, CSS, .NetCore.

Cloud Solutions Architecture: AWS, S3, CloudFront, Ec2, ELB, SQS, SNS, RDS,



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AWARDS

Best Mobile App Award
Puzzleword for Android

Best Digital Marketing Campaign 2018
Sony PlayStation Gear

Best Digital Marketing Campaign 2017
Ascot Racecourse Website

Best eCommerce 2018
FTUK White-label

Best eCommerce Platform – 2017
Sony PlayStation Gear

REFERENCES

Marc Albaladejo
Director of Architecture
Sage
E: marc.albaladejo@sage.com

Allan Degnan
CTO
Epos Now
E: allan.degnan@eposnow.com

CONTACT

E: james@higgster.com
P: +44 7824 330558

WORK EXPERIENCE CONTINUED

Head of Technology

Ashfield Healthcare / 2019-2022

Leading a team of technologists within a multi-national healthcare communications agency, working with the top global pharmaceutical companies to deliver digital products for web, events and at home.

My focus was to **drive innovation** across the whole of Ashfield and to bring added value to client campaigns. With my technical architect hat, I supported all technology projects, on top of the general line-management, project management and web / app development duties.

Head of Development

e3creative / 2014-2019

Growing a team of 5 up to a mixed-skill, multi-award winning team of 30, **cultivating** junior developers into seniors and acting as a catalyst across the business.

Leading various projects from conception to maintenance, for Sony PlayStation, Ascot Racecourse, O2, Sage, Skittles, FlowTechnology, Manchester Pride, The Lowry and more. Including planning phases, server architecture, technical plans, development, testing and project management, across the range.

Consulting for Ascot and Enta as a domain expert working with payments, security and best practice, worth millions.



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Engineering Case Studies

TLDR

Architected, developed and successfully released the **eCommerce** platform for **Sony PlayStation Europe**.

6 weeks from inception to launch, with a tiny team of 3 developers..

4 languages, 3 warehouses, 2 currencies, multiple tax codes, serving **10 countries** at launch.

Record black friday sales

4 awards including Best eCommerce Platform

SKILLS USED

| Roles

Solutions architect, technical architect, developer, tester

| Software Architecture

PHP, Laravel, AngularJS, JavaScript, HTML5, CSS, Bootstrap, Sass.

| Servers

Hybrid physical & cloud server solution with multiple servers, load balancers, clustered databases, linux, nginx, MySQL, Redis etc.

Sony PlayStation Europe eCommerce Platform

The challenge

At e3creative, I was challenged to plan, architect, develop and maintain a brand new **eCommerce** platform for **Sony PlayStation Europe**, with a very tight deadline.

It must be slick, secure and scalable, whilst serving customers across Europe in different languages, currencies and integrated with multiple regional warehouses.

Oh and I was to be the lead eCommerce developer within a small, dedicated team to build it. I had wanted to work with Sony PlayStation all my life.

Challenge accepted.

Server architecture

The server architecture was pioneered in conjunction with UKFast, to provide a mix of virtual cloud and physical infrastructure to satisfy the varying security and scalability needs.

I planned out a solution, including WAFs, custom firewalls, load balanced virtual machines, network file systems, varnish caching, clustered database servers and an array of security layers and tools. These would power our PHP based, custom eCommerce, a MySQL database, Redis and more.

Server architecture

The server architecture was pioneered in conjunction with UKFast, to provide a mix of virtual cloud and physical infrastructure to satisfy the varying security and scalability needs.

Using my architecture experience I designed a solution, including WAFs, custom firewalls, load balanced virtual machines, network file systems, varnish caching, clustered database servers and an array of security layers and tools. These would power our PHP based, custom eCommerce, a MySQL database, Redis and more.

Award Winning

In 2017, we won "Best eCommerce Platform" at the Northern eCommerce Awards, Manchester.

A title we retained with FTUK, my subsequent project and hope to regain in the near future.

CONTACT

E: james@higgster.com

P: +44 7824 330558

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Engineering Case Studies

TLDR

Prototyped a simple but powerful end-to-end **ticketing solution** for **Royal Ascot**.

6 weeks from inception to launch..

Runs January-June every year.

£5,000,000 in first season.

Up a further **£5M, £10,000,000** the year after.

0 downtime. Ever.

SKILLS USED

| Roles

Business development, product planning, project management, lead developer, server architect

| Software Architecture

PHP, Laravel, AngularJS, JavaScript, HTML5, CSS, Bootstrap, Sass.

| Servers

Dedicated physical server solution with multiple servers, load balancers, clustered databases, linux, nginx, MySQL, Redis etc.

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Ascot Racecourse Ticketing Platform

Royal Ascot is one of the most prestigious events in the social calendar.

In 2016, I proposed replacing a traditional, paper-based invitation and ticket registration system for Royal Enclosure members, with a digital solution to reduce admin costs, improve efficiency but also increase sales of additional extras and bolt-ons.

The Challenge

I set about prototyping an elegant ticketing solution, which could handle heavy traffic with large volumes of transactions, over a short period of time. A prototype was created in AngularJS with a REST API in the background.

All GET requests were heavily cached and fine-tuned. The only requirement for public facing interaction with the API directly, was on login, basket manipulation and purchase. In demonstrating the speed of what we could build to Ascot, they approved quickly and proper development commenced.

Development

We set out to design a highly interactive layout which felt more like an app, with as little on the page as possible, to **reduce complexity**. Basket interactions were instantly updated, new pages loaded rapidly. Enhancements and add-ons were suggested, depending on the basket contents, to **maximise up-sell opportunities**.

Integrating with the ticketing management system proved fiddly, as it required a combination of external APIs, synchronisation with an existing Royal Enclosure database and payment facility integrations. After lots of collaboration with various third parties, we were ready with a fully functional ticketing platform.

Server architecture

With the expected traffic volumes being so high, needs a custom server solution. Architected by myself to allow as much caching as possible of front-end assets and data, a load balanced backend and clustered databases with recoverability and backup solutions throughout.

Launch

The site launched in the January, with a view to live right up until Royal Ascot in June. By April, we had had a **record number** and value of transactions, **huge uplift** on the additional up-sell items and a very happy client.

Even during its busiest periods, with large volumes of traffic and transactions, both platforms stood strong, barely even flinched. One of my proudest achievements to date, especially due to the relatively short amount of work



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Engineering Case Studies

TLDR

Consulted with a European investment management technology company using **AWS cloud solutions**.

In one evening, saved an average of **£3,000/month** + an additional £3000 in the first month.

18.4% in recurring costs saved, in a few hours.

£39,000 in annual savings

SKILLS USED

| Roles

Server Architecture, Cloud Software Consultant, AWS Solutions Architect.

| Cloud Services

AWS, Cost Explorer, EC2, Retention Policies

AWS Consultancy Saving 20% in Recurring Fees

Challenge

In March 2022, a friend asked me to audit his company's AWS Solution as they were paying far too much on a monthly basis and it was growing rapidly.

They were paying ~\$16,000 (~£13,300) /month for a small business and growing by ~\$1,000 every month.

AWS Consultancy / Audit

I had a nosey around Cost Explorer, immediately spotting that the ec2-other costs were eating up a huge portion of the costs, then noticing that there were 40k+ backups in storage and that this was growing daily.

The actual backup policy was reasonable but the key missing point was the lack of a retention policy (or lifecycle policy). A retention policy marks a backup for deletion after a set period of time when the backups are likely no longer useful anyways.

Solution

A quick call with the technical team at the company, recommending suitable retention policies for each of the data types, combined with a quick clear-out of the legacy and the costs are down ~\$6,000 in the first month (a lot of wastage) and ~\$4200 / £3000/month thereafter.

This quick audit, saved the company \$56,400 (~£47,200) in the first year alone and will continue to do so for as long as they use AWS.

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