



Migration & Managed Service:

A UK Government Department's Nine-Year Evolving AWS Journey

The Client

A mid-sized, UK government department that delivers services to tens of thousands of users across the UK. For the purposes of this case study, and for security reasons, they will be referred to as the 'Department'.

The Challenge

Digital Space (DS) worked with the Department to meet four main challenges across nine years: migration, managed service, data analytics and self-service.

For migration, they first needed to host applications on an environment that was scalable, resilient and secure. Later, they wanted to analyse the data that those applications gathered.

Once the environment was established, the Department needed to manage frequent changes to applications as well as guard against foreign hacking attempts and keep costs down. They required an effective managed service that would stay current as technology evolved.

In the wake of the Grenfell Tower disaster, the Department needed to expand upon its data analytics capability so they could share data

Results at a glance

- ✓ Successful build and migration resulting in 300+ servers running over nine years
- ✓ Managed service enabled frequent application releases while maintaining security and resilience
- ✓ Data analytics environment started with 10TB of geospatial data and has grown by 100%+, supporting 300 Data Scientists
- ✓ Virtual desktop solution overcame local technical constraints and provided power and the latest tools
- ✓ Effective hand-over to self-service

with other government departments and agencies. Due to users being in different departments and supported by different suppliers, it was very difficult to agree a common desktop and keep it up to date.

DS migrated the Department to the Cloud, successfully supporting them over 8 years. This inspired the Department to build their own Cloud team, enabling self-service. They turned to DS to help them understand and run their own infrastructure.

Get in touch:

Head office: Brunel Business Park, Jessop Close, Newark,
Nottinghamshire NG24 2AG

📞 0333 220 0222
✉ hello@digitalspace.co.uk
🌐 www.digitalspace.co.uk



The Approach

DS won the Department's tender back in 2015 to host their applications. The proposition included building a new hosting environment on AWS, migrating their existing applications to the new platform and working with their developers to set-up new systems.

Once that environment was established, DS brought in their managed service, effectively running critical national infrastructure with advanced security and resilience. As DevOps approaches were introduced, DS built automated pipelines and created innovative means of analysing issues.

For data analytics, DS suggested building a shared database environment and virtual desktops for Data Scientists that could be easily accessed through a browser but were secure, powerful and equipped with the latest tools.

To enable self-service, Digital Space had to re-work their service documentation so that the Department's new staff could understand an environment that had evolved over time. They provided training and work-shadowing, alongside flagging and suggesting solutions to risks and issues as they arose.

What our client says



They are a true partner, pro-actively suggesting improvements, overcoming obstacles and consistently delivering a great service".

Head of IT Applications for the Department

Why Digital Space and AWS?


Innovation & Flexibility- innovative in its technical proposals and flexible in accommodating the Department's requirements.

Security & Resilience- Digital Space's architects delivered a managed service that was demonstrably resilient over the long-term.

Value- regular FinOps reviews with recommendations on keeping costs down. Similarly, AWS has a track-record of reducing prices over time.

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The Solution and The Results

Digital Space's approach led to the following solutions in each main challenge area:

Migration: approval of the design and the subsequent migration took nine months. The platform then ran successfully with minimal downtime (whilst remaining secure) and grew to accommodate 300+ servers.

Managed service: DS designed resilience into the platform through a self-healing infrastructure and near real-time replication for disaster recovery. To guarantee an excellent managed service, DS became an AWS Managed Service Partner in 2015 (audited against annually increasing targets) which challenged them to stay in step as technology and methodologies evolved. In order to speed-up development and issue resolution, DS built DevOps pipelines and integrated a time series database into its portal so that code could be released more frequently and log analysis could be done rapidly and effectively across multiple servers.

Data analytics: DS removed the desktop control problem by designing a virtual desktop solution using Amazon Workspaces with a clever automated provisioning system. This meant that the latest tools and libraries could be deployed to over 300 Data Scientists, regardless of the machines they used or the companies that supported them.




Self-service: DS has supported the Department in understanding its own architecture and services; training staff and advising on potential risks as services moved in-house. The process led to a redesign of Digital Space's managed service model so that other customers can take-on the service in steps as they grow in confidence and expertise.

Digital Space won the initial contract through a competitive tender and won every subsequent re-tender. They are proud to have built and supported an effective service for nine years and hope that the Department continues to gain value from their AWS investment for many years to come.



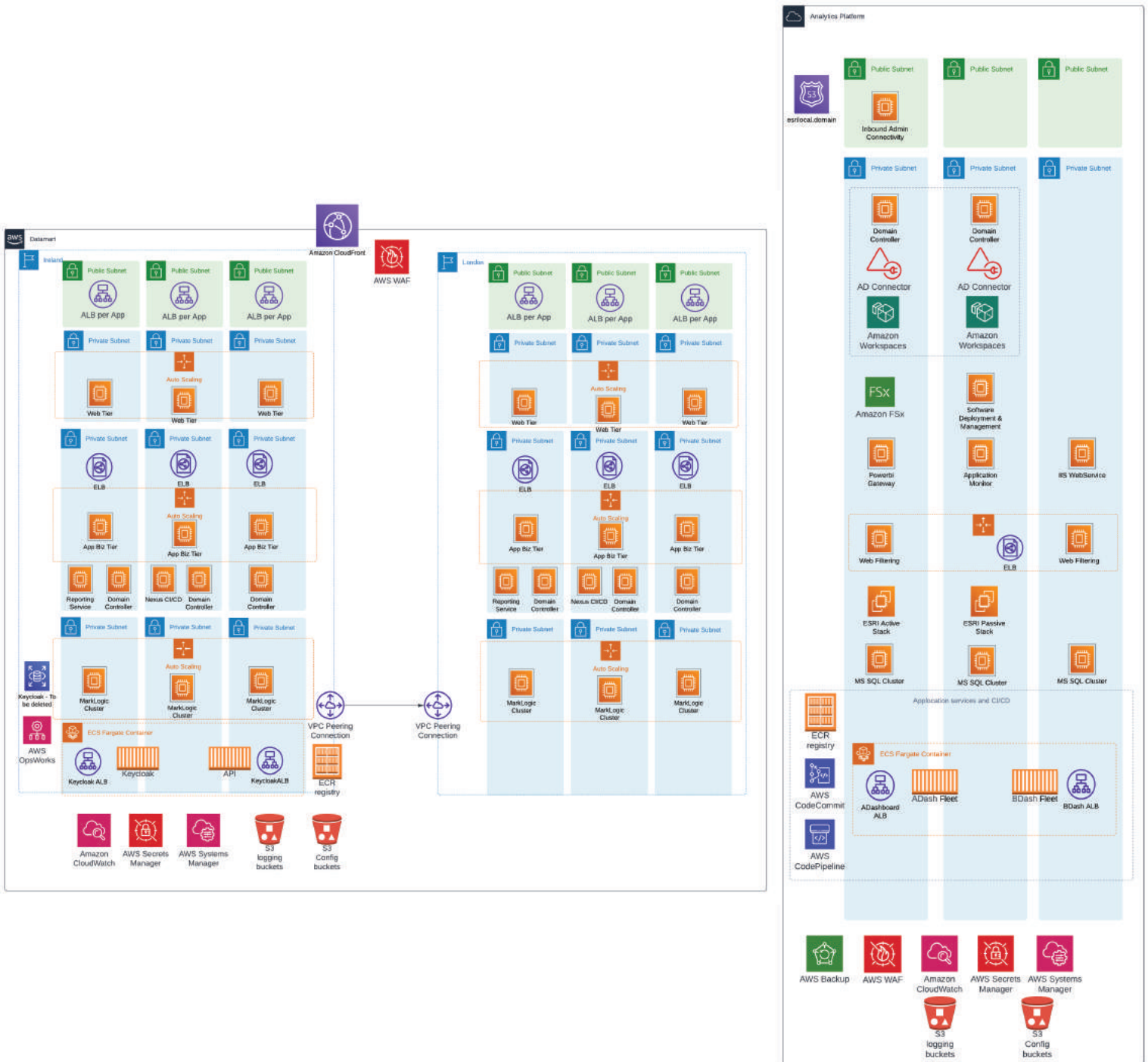
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AWS Architecture Diagram

This diagram shows our solution architecture for Department.



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