

A background image showing the silhouettes of people walking in a modern, brightly lit building with large glass windows, creating a sense of movement and progress.

Elevating from on-premise to the Cloud with DevOps principles and technologies

CASE STUDY

Our Client, one of the world's largest integrated oil and gas companies with operations in 78 countries, is on a strategic IT modernisation journey which involves moving their existing assets from on-premise data centres to the Cloud. Concerns about the risks of security breaches drove the Chief Information Security Officer (CISO) to sponsor a programme to improve the processes and tools used in the business' software delivery lifecycle.

As part of their modernisation initiative, our Client had adopted DevOps principles and technologies to provide application teams with a degree of autonomy: enabling them to design, build and run their software with the minimum number of external dependencies. This, however, presented them with some key challenges:

- Applications were being delivered into production with limited visibility and scrutiny of the risks posed by security vulnerabilities
- Inconsistent approaches were used for the end-to-end application delivery lifecycle
- Low levels of automation were included in the application lifecycle
- Relatively low maturity of DevOps understanding and adoption within development teams
- High cost of mobilising new development teams
- Limited governance around the DevOps tool chain had resulted in a proliferation of different tools - significantly driving up operational complexity and cost

To help address these pain points, our Client needed a partner with experience in implementing DevSecOps best practices across application delivery engagements for other large organisations. The chosen partner would need to integrate quickly to identify and understand the root causes behind their issues and work closely with key stakeholders to define and execute improvements. The Head of Application Engineering for the Enterprise IT function approached Icon Solutions to advise and assist with the uplift of the platform engineering capabilities underpinning software delivery across all areas of the business.

Why Icon Solutions?

Icon was engaged to shape a programme of work, supporting the vision of the CISO, introducing security tools into the application delivery lifecycle. Icon's experience working with other large organisations on their transformation programmes gave our Client confidence that we were the right partner to work with on this strategic initiative. Icon's consultants also demonstrated the breadth and depth of their knowledge, adaptability and level of professionalism to senior stakeholders of the business.

Our Approach

On successful completion of the initial engagement, Icon was asked to build out the programme with a broader scope and budget. This involved finding opportunities for improving other aspects of the application delivery lifecycle across their main target platforms.

Icon has worked on several large application delivery programmes, applying modern development processes within an agile framework, adhering to the culture and principles of DevSecOps. Icon's team of architects applied an approach that:

- Consistently mapped application journeys from development to production
- Documented pain points associated with people, processes and technologies
- Identified opportunities where automation would be of benefit
- Worked with platform owners to define the desired target state for CI/CD
- Standardised the DevOps tool chain for each of their main platforms
- Supported the introduction of security tools into the standardised DevOps tool chain

The team was mindful of the impact of change on inflight projects and worked closely with the service owners to determine the optimal point at which to transition.

The Outcomes

The programme delivered on our Client's objectives to introduce standardisation across the application development lifecycle, enabling the move towards DevSecOps and applying the practice of "Shift Left". This practice supports the early detection of defects when the cost-to-fix is lowest, by moving tasks to the left in the application lifecycle. Embracing "everything as code" and utilising CI/CD pipelines with "baked-in" testing and security have led to dramatic quality improvements in the end-to-end process. The work undertaken by the Icon team has given our Client an improved level of clarity and transparency across their development processes.

Key deliverables the team produced:

- Reference Architecture for Pipeline Engineering - providing a generalised solution for CI/CD pipelines
- Template CI/CD pipelines for the Client's major development ecosystems and deployment platforms
- Standard integrations for security tools and conventions that govern when they are run (and prevent them from being circumvented)
- Automation to reduce friction in operational processes, e.g. developer onboarding, service request handling and change management

Looking at the longer term, our Client has a suite of patterns that can be applied to new ecosystems and deployment platforms. Furthermore, flexibility in the Reference Architecture allows products in the DevSecOps tool chain to change and evolve as our Client's needs change. This programme has been a crucial accelerator for the journey to increase the application development maturity of the teams in the organisation.



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