G-Cloud 14

Services Definition Document

Tuesday, 07 May 2024

Case Study: UK Health and Security Agency (UKHSA)

- Capacitas was brought in by Test and Trace (DHSC, now UKHSA) to assist with the quality of the systems required as part of the Covid pandemic response, particularly around scalability and speed of delivery. The service was particularly complex due to the number of government organisations and 3rd party delivery partners involved, large volumes and tight deadlines due to policy decisions and new initiatives. There was a mixture of legacy systems used by PHE for historically small outbreaks and new systems put in very swiftly and heavily cloud-based. We initially provided some resources as part of scaling an existing team, and then were awarded the contract for all test supporting services (pipelines, environments, data and frameworks) and all non-functional testing. Our Transformation Roadmap for DHSC achieved staff efficiency gains of 50% and cut cloud environment costs by $600,000 per year while significantly improving the speed and throughput of testing. Complex load scenarios which had taken a week to prepare, run and analyse are now automatically run and analysed, from data creation to raising defects, at a single dick of a button. We used tools such as Jenkins, GitHub, Elastic, JMeter, Postman and Selenium, and various monitoring tools for the different technical platforms, along with a scalable QA portal and backend APIs built on AWS serverless services. We also automated document management in Confluence and defect creation and reporting in Jira. The technical assets we built included:

  - A graphical environment and test scheduling portal, reducing efforts from all teams on shared components while at the same time providing an easy to understand pictorial representation of all environments and the interfaces between components

  - A flexible and scalable data generation solution (based on an API gateway with associated Lambda functions) which generates sample data for any component interface based on customisable templates

  - A 6 step fully automated pipeline for complex load tests with millions of diverse data entries, creating environments, generating data, running, analysing and reporting on tests before clearing down environment resources.

- After 4 months of running the managed service we then led the work to create a Blueprint for the whole of QAT, defining the standards for process, environments, tooling, reporting, data and roles. We have since been involved in rolling this out to other vendor teams across the scope of the newly formed UKHSA and successfully shifting left to product teams from other 3rd parties, including to those using off-shore resources, transferring knowledge and coaching. In continuous delivery, we are now leading work in rolling out a full DevSecOps maturity model and standardising the toolchain and processes.

- Giulio Saggese, UKHSA Head of QAT, Development & Operations, said: *"Capacitas were brought in to accelerate our digital transformation in readiness of the expected COVID19 winter spike in 2020. The main challenge was the upscaling of our digital cloud platforms underpinning the COVID19 IT service offering across the nation, in a very short timeframe. The IT services covered the breadth of the government response, from the booking of the testing to the tracing of positive cases and people being in close contact. Their small team of very technical and knowledgeable people worked around the clock to make sure the whole infrastructure would be ready to scale to millions of tests per day. A full End-To-End automation pack they put together to cover one of the asks allowed significant savings in cloud costs and faster testing turnarounds, with an unmatchable quality of service which resulted in no major downtime or service disruption since. They're now a trusted vendor we rely upon to cover our DevSecOps transformation journey, supporting our Shift-left agenda across our change pipeline and allowing us to achieve some ambitious targets in efficiency gains through heavy use of test automation and re-use of test assets. I couldn't speak more highly of the work they provide!"*

Service Overview

AI Cost Optimisation	Cloud Cost Optimisation	FinOps	GreenOps	Capacity Planning
Cloud Migration	Cloud Centre of Excellence	Client side Partner	DevSecOps in the Cloud	DevOps Centre of Excellence
	Quality Assurance Managed Service	Performance Testing	Operational Acceptance Testing	Observability

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AI Cost Optimisation

AI Cost Optimisation tackles the rising cost of AI and data workloads whether hosted on the cloud or internally. Our AI Cost Optimisation teams deliver cost optimisation up to 50% and start by delivering a free diagnostic to quantify the scale of cost optimisation we will achieve for you.

Features	Benefits
Free diagnostic to build a business case for cost optimisations	Up to 50% optimisation of cloud costs, guaranteed following diagnostic
Audit to identify cost optimisation opportunities and total cost savings	x4 the cost saving opportunities delivered by classic FinOps techniques
Assessment of AI application performance and architectural efficiency	Prevention of future cost growth by improving teams' optimisation practices
Prioritisation of cost opportunities based on complexity/benefit analysis	Improve stability and resilience of services in the cloud
Experimental approach with teams to prove cost optimisations	Increase the accuracy and predictability of future cloud cost budgets
Coaching teams to adopt cost saving approaches	Increase team efficiency; more time for product delivery
Advanced optimisation, going beyond tooling and FinOps	Maximise cloud cost reduction by going beyond tooling
Upskilling and enabling to embed optimisation practice in your teams	Improve technology scalability in the cloud
Teams trained in identifying AI-related cost opportunities	Top-down approach to communicating business-critical cost optimisations
Track record across AWS, Azure, GCP in implementing cost optimisations	Upskilling on best cost optimisation techniques delivered by cloud experts

Cloud Cost Optimisation

Cloud Cost Optimisation tackles the rising cost of workloads on public cloud, optimising resources, architecture and usage. Our Cloud Cost Optimisation teams are proven to deliver cost optimisation up to 50% and start by delivering a free diagnostic to quantify the scale of cost optimisation we will achieve for you.

Features	Benefits
Free diagnostic sizing the cost optimisation that will be delivered	Up to 50% optimisation of cloud costs, guaranteed following diagnostic
Cloud Cost Optimisation discovery identifies opportunities and creates implementation plan	x4 the cost saving opportunities delivered by standard optimisation techniques
Assessment of application performance and architectural efficiency	Realisation of quick optimisation opportunities within one month
Prioritisation of opportunities based on complexity/benefit analysis	Assisting with implementation of deep optimisation for maximum lasting savings
Experimental approach with teams to prove optimisations	Prevention of future cost growth by improving teams' optimisation practices
Coaching teams to adopt cost saving approaches	Increase the accuracy and predictability of future cloud cost budgets
Advanced optimisation, going beyond tooling and FinOps	Maximise cloud cost reduction by going beyond tooling
Upskilling and enabling to embed optimisation practice in your teams	Improve technology scalability in the cloud
Teams trained in cloud architecture across AWS, Azure and GCP	Top-down approach to communicating business-critical cost optimisations
Track record across AWS, Azure, GCP in implementing cost optimisations	Upskilling on best cost optimisation techniques delivered by cloud experts

FinOps

FinOps tackles the rising cost of workloads on public cloud, optimising resources, architecture and usage. Our FinOps teams are proven to deliver cost optimisation up to 50% and start by delivering a free diagnostic to quantify the scale of cost optimisation we will achieve for you.

Features	Benefits
Free diagnostic to build a business case for cost optimisations	Up to 50% optimisation of cloud costs, guaranteed following diagnostic
FinOps Audit to identify optimisation opportunities and total cost savings	x4 the cost saving opportunities delivered by classic FinOps techniques
FinOps Assessment of application performance and architectural efficiency	Prevention of future cost growth by improving teams' optimisation practices
Prioritisation of cost opportunities based on complexity/benefit analysis	Improve stability and resilience of services in the cloud
Experimental approach with teams to prove optimisations	Increase the accuracy and predictability of future cloud cost budgets
Coaching teams to adopt cost saving approaches	Increase team efficiency; more time on product delivery
Advanced optimisation, going beyond tooling and classic FinOps	Maximise cloud spend reduction by going beyond tooling
Upskilling and enabling to embed optimisation practice in your teams	Improve technology scalability in the cloud
Teams trained in cloud architecture across AWS, Azure and GCP	Top-down approach to communicating business-critical cost optimisations
Track record across AWS, Azure, GCP in implementing cost optimisations	Upskilling on best cost optimisation techniques delivered by cloud experts

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GreenOps

GreenOps tackles the rising cost in carbon emissions of workloads on public cloud, optimising resources, architecture and usage. Our GreenOps teams are proven to deliver sustainability improvements of up to 50% and start by delivering a free diagnostic to quantify the scale of carbon emissions we will reduce for you.

Features	Benefits
Free diagnostic to build a business case for optimisations	Up to 50% reduction in carbon emissions
Audit to identify sustainability optimisation opportunities and total efficiency savings	x4 the emissions reduced beyond classic FinOps interventions
Assessment of application performance and architectural efficiency	Ensuring future sustainability by improving teams' capability
Prioritisation of sustainability opportunities based on complexity/benefit analysis	Improve stability and resilience of services in the cloud
Experimental approach with teams to prove sustainability optimisations	Increase the accuracy and predictability of future GreenOps targets
Coaching teams to adopt sustainable approaches	Increase team efficiency; more time on product delivery
Advanced monitoring and optimisation avoiding greenwashing	Maximise sustainability by going beyond tooling
Upskilling and enabling to embed optimisation practice in your teams	Improve technology scalability in the cloud

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Capacity Planning

Our Capacity Planning service tackles the challenge of increasing technology scalability and service stability, whilst still reducing cloud costs. Our Capacity Planning service ensures that future cloud architecture and solutions will remain resilient and scalable when implemented, and flags potential risks to address before planned rollout of new solutions.

Features	Benefits
Capacity planning at Business, Application and Resource levels	Up to 50% reduction in cloud costs
Audit to identify capacity requirements and remediate limitations	Accurate budget forecasting for next 1-3 years
Assessment of application performance and architectural efficiency	Prevention of future cost growth by improving teams' capability
Forecasting of capacity at high granularity for cloud budgeting	Improve stability and resilience of services in the cloud
Diagnosis of capacity planning constraints	Increase the accuracy and predictability of future cloud budgets
Maturity assessment and coaching of teams to embed capacity planning	Increase team efficiency; more time on product delivery
Capacity planning driving budget and cost optimisation in cloud	Maximise cloud spend reduction by going beyond tooling
Capacity planning experience across AWS, Azure, GCP and legacy infrastructure	Improve technology scalability in the cloud

Cloud Migration

Cloud Migration service ensures confidence in migration to the cloud by simultaneously addressing reduction of cloud costs and increasing cloud technology scalability, as well improving both service stability and teams' capability and efficiency in the cloud.

Features	Benefits
Impact assessment of cloud migration options	Maximise cost reduction from moving to cloud post migration
Understanding pros and cons of different cloud providers for migration	Improve stability and resilience of cloud confident services
Evaluating costs associated to Cloud Migration to optimise migration value	Prevention of future cost growth by improving teams' migration practices
Cloud Migration in stages with quick wins delivered fast	Reduce migration delivery risk by finding migration constraints earlier
Modelling and fixing at each Cloud Migration rollout stage	Increase the accuracy and predictability of future cloud budgets
Identifying unnecessary capacity in early stages of Cloud Migration	Improve technology scalability with cloud confident services
Upskilling Engineering Teams for cost efficient & confident cloud operation	Proven track record of reducing cloud incidents by over 90%
Guided Cloud Migration using intelligent data analysis from rollout	Increasing cloud capability, reducing cloud costs by millions p.a.
Offering technical support post Cloud Migration rollout	

Cloud Centre of Excellence

Transformation and standardisation of your Cloud landscape through implementation of a Cloud Centre of Excellence function. Cloud Centre of Excellence encompasses sharing of best Cloud engineering practices from small platform teams to the wider organisation; includes Operational practices, performance, efficiency, CostOps/FinOps, sustainability, reliability and security of the Cloud architecture.

Features	Benefits
DevSecOps target operating model definition	Guaranteed delivery quality against agreed DORA metrics (quality, speed)
Maturity Assessment of existing DevSecOps teams to identify optimisation areas	Increased speed, frequency & quality of engineering teams' output
Deep-Dive sessions to understand Cloud-specific DevSecOps functions	Improved Cloud understanding and communication of practices between functions
Working with Cloud engineering teams to understand practices & communications	Standardised templates and processes for consistent Cloud engineering teams' improvements
Defining Excellence standards for how Cloud engineering teams should operate	Stronger DevSecOps team ethos through consistent adoption of best practices
Setting up a Cloud Excellence framework to engineering team adoption	Up to £200k in cloud savings identified through DevSecOps automation
Setting up Cloud Enabling functions to transfer Cloud Excellence practices	Increased security awareness from engineering team through better Cloud practices
Mentoring Cloud functions to collaborate in community of best practices	Better knowledge-sharing on Cloud Excellence across engineering teams
Governing and supporting the Cloud Cloud of Excellence company-wide	

Client side Partner

As your client side partner, Capacitas specialise in reducing your costs while increasing delivery speeds, while maintaining BAU operation. We work from the client side with your delivery partners and vendors to optimise commercials while helping move internal transformations forward. We have particular expertise in DevOps and Cloud practices.

Features	Benefits
DevSecOps target operating model definition	Guaranteed delivery quality against agreed DORA metrics (quality, speed)
Maturity Assessment of existing teams to identify optimisation areas	Increased speed, frequency & quality of delivery through early embedment
Tooling assessment and recommendations	Stronger DevSecOps team ethos through adoption of best practices
Award-winning implementation of DevSecOps CI/CD pipelines	Up to £200k in cloud savings identified through automation
Award-winning implementation of DevSecOps testing automation frameworks	Test environment costs cut by £2m through Cloud recommendations
Embedding non-functional practices and quality assurance into delivery teams	75% head-count reduction through DevSecOps automation and shifting left
Mentoring teams to adopt DevSecOps culture and best practices	Better knowledge-sharing on Cloud Excellence across engineering teams
Maintaining and supporting the DevSecOps technology in the cloud	Increased security awareness from engineering team through better Cloud practices

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DevSecOps in the Cloud

Implementation of DevSecOps capabilities into a cloud native environment, through a future-proof DevSecOps Operating Model, modernised and Agile ways and working, cloud native tooling to support a cloud confident service, mentoring and upskilling of DevSecOps personnel whilst embedding best DevSecOps cultures and cloud practices into teams.

Features	Benefits
DevSecOps target operating model definition	Guaranteed delivery quality against agreed DORA metrics (quality, speed)
Maturity Assessment of existing DevSecOps teams to identify optimisation areas	Increased speed, frequency & quality of DevSecOps teams' output
DevSecOps & Cloud tooling assessment and recommendations	Stronger DevSecOps team ethos through adoption of best practices
Award-winning implementation of DevSecOps CI/CD pipelines	Observability highlights inefficiencies and potential incidents in DevSecOps tooling
Award-winning implementation of DevSecOps testing automation frameworks	Up to £200k in cloud savings identified through DevSecOps automation
Embedding non-functional practices and quality assurance into DevSecOps teams	Test environment costs cut by £2m through Cloud recommendations
Mentoring teams to adopt DevSecOps culture and best practices	75% head-count reduction through DevSecOps automation and shifting left
Maintaining and supporting the DevSecOps technology in the cloud	20x increase in deliverables produced after introduction of DevSecOps tooling
Automation of DORA Metric retrieval for optimising DevSecOps team efficiency	Increased security awareness from DevSecOps team through better DevSecOps practices
Expertise in GitHub, Azure DevOps, Jenkins and other CI tooling	Reduction in regression time through DevSecOps pipelines & test automation

DevOps Centre of Excellence

Transformation and standardisation of your DevOps landscape through implementation of a DevOps Centre of Excellence function. DevOps Centre of Excellence encompasses sharing of best DevOps practices from small platform teams to the wider organisation; from CI automation and testing techniques, to templates and ways of working.

Features	Benefits
DevOps target operating model definition	Guaranteed delivery quality against agreed DORA metrics (quality, speed)
Maturity Assessment of existing DevOps teams to identify optimisation areas	Increased speed, frequency & quality of DevOps teams' output
Deep-Dive sessions to understand business-critical DevOps functions	Improved DevOps understanding and communication of practices between functions
Working with DevOps teams to understand DevOps practices & communication	Standardised templates and processes for consistent DevOps teams' improvements
Defining Excellence standards for how DevOps teams should operate	Stronger DevOps team ethos through consistent adoption of best practices
Setting up DevOps Enabling functions to transfer DevOps Excellence practices	Up to £200k in cloud savings identified through DevOps automation
Mentoring DevOps functions to collaborate in community of best practices	Increased security awareness from DevOps team through better DevSecOps practices
Governing and supporting the DevOps Centre of Excellence company-wide	Test environment costs cut by £2m through Cloud recommendations
	75% head-count reduction through DevOps automation and shifting left
	Better knowledge-sharing on DevOps Excellence across DevOps teams

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Quality Assurance Managed Service

Our Quality Assurance Managed Service ensures high standards of Quality Assurance to give you confidence in the cloud. Through automation of Quality Assurance across functional and non functional testing and shifting Quality Assurance left in the delivery cycle we deliver reduced managed service costs of up to 60%.

Features	Benefits
Creating Quality Assurance Blueprints for defining functional and non-functional quality	60% delivery cost savings across Quality Assurance teams and environments
Adapting Quality Assurance Blueprints to address Processes, Data, and Environments	Guaranteed delivery quality against agreed DORA metrics (quality, speed)
Adapting Quality Assurance Blueprints to address Tooling, Reporting and Roles	Fewer incidents in production by reducing defect leakage
Roadmap to implement and rollout Quality Assurance changes	Increased speed & quality of output through Shift Left practices
Transforming delivery teams working Quality Assurance practices	Test environment costs cut by £2m through Cloud recommendations
Shifting teams left through mentoring and training	75% head-count reduction through Shift Left practices
Holistic automation across Quality Assurance tests, data, environments and reporting	Reduction in regression time through Quality Assurance test automation
Fully managed Quality Assurance service with defined SLAs	
Implementation of Continuous Quality Process across all lifecycle stages	

Performance Testing

Our Performance Testing service ensures high standards of performance across your delivery to give you confidence in the cloud. Through automation of Performance Testing and shifting Performance Testing left in the delivery cycle we deliver reduced managed service costs of up to 60% at up to 90% fewer incidents.

Features	Benefits
Blueprint for Performance Testing as part of Quality Assurance	60% delivery cost saving across Quality Assurance teams and environments
Blueprint covers Process, Data, Environments, Tooling, Reporting and Roles	Guaranteed delivery quality against agreed DORA metrics (quality, speed)
Roadmap to implement and rollout changes from Performance Testing blueprints	Fewer incidents in production by reducing defect leakage
Transforming delivery teams working practices around Performance Testing and Assurance	Increased speed & quality of output through Shift Left practices
Mentoring & training teams to Shift Performance Testing Left	Test environment costs cut by £2m through Cloud recommendations
Holistic automation across tests, data, environments and reporting	75% head-count reduction through Shift Left practices
Fully managed Performance Testing service with defined SLAs	Reduction in regression time through Quality Assurance test automation
Full coverage of Stress Testing, Load Testing, Soak/Spike Testing	
Implementation of Continuous Quality Process across all lifecycle stages	

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Operational Acceptance Testing

Our Operational Acceptance Testing (OAT) or Operational Readiness Service validates that upcoming services or releases are able to be effectively supported by live operational teams. Operational Acceptance Testing (OAT) ensures that the appropriate processes, standards and technologies are in place to support every technical change.

Features	Benefits
Blueprint for Operational Acceptance Testing as part of Quality Assurance	60% delivery cost saving across Quality Assurance teams and environments
Blueprint for Operational Acceptance Testing covers processes, standards and technologies	Guaranteed delivery quality against agreed DORA metrics (quality, speed)
Operational Acceptance for monitoring and alerting and level 1 support	Fewer incidents in production by reducing defect leakage
Operational Acceptance Testing includes resiliency, process, chaos & regression testing	Increased speed & quality of output through Shift Left practices
Operational Acceptance of Joiners Movers Leavers and ITSM processes	75% head-count reduction through Shift Left practices
Mentoring teams to adopt best proactive Operational Acceptance Testing practices	Reduction in regression time through Quality Assurance test automation
Holistic automation across tests, data, environments and reporting	
Fully managed Operational Acceptance Testing service with defined SLAs	
Implementation of Continuous Quality Process across all lifecycle stages	

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Observability

Transformation of your DevSecOps Observability capabilities with appropriate and cost-effective Observability tooling, as suggested by a future-proof DevSecOps Operating Model, modernised & Agile ways of working. Mentoring and upskilling of best DevSecOps Observability tooling, its usage and its performance/cost optimisation potential is also provided as part of the service.

Features	Benefits
DevSecOps target operating model definition	Guaranteed delivery quality against agreed DORA metrics (quality, speed)
Maturity Assessment of existing DevSecOps teams to identify optimisation areas	Increased speed, frequency & quality of DevSecOps teams' output
DevSecOps & Cloud tooling assessment and recommendations	Stronger DevSecOps team ethos through adoption of best practices
DevSecOps Observability tooling assessment and recommendations	Observability highlights inefficiencies and potential incidents in DevSecOps tooling
Embedding non-functional practices and quality assurance into DevSecOps teams	Up to £200k in cloud savings identified through DevSecOps automation
Mentoring teams to adopt DevSecOps culture and best practices	Test environment costs cut by £2m through Cloud recommendations
Maintaining and supporting the DevSecOps technology in the cloud	75% head-count reduction through DevSecOps automation and shifting left
Automation of DORA Metric retrieval for optimising DevSecOps team efficiency	20x increase in deliverables produced after introduction of DevSecOps tooling
Automation and provision of our 15-Metric model for Observability	Increased security awareness from DevSecOps team through better DevSecOps practices
	Reduction in regression time through DevSecOps pipelines & test automation

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Proof

"Silver Lake (the investors) provided me with confidence that the audit findings were accurate based on previous experiences with Capacitas. My teams embarked on an ambitious 1-year programme to start delivering the recommended optimisations"

Andre Brunetiere, CTO & CPO Cegid

We worked with the Cegid team to reduce their **Cloud spend by €4m p.a.** and **27% increase in SaaS users,** with stability improvements

"Capacitas have a uniquely analytical approach to modelling both cloud and Capex based infrastructure provision. Their thoughtful and actionable insights unlock both spend and performance based interventions supporting both architects and DevOps teams in optimization and forward planning for global scale services"

Mark Gillet, COO at Skype & Managing Director, Silver Lake

We worked with the Skype team to scale from **60-90m** subscribers while **reducing Cloud spend by $26m p.a**. Performance improved during this period with a **96% reduction in incidents**.

"Capacitas brought its new way of thinking about performance to the team. Working with them, we applied together new ideas of application performance and combined them with cost along with the architecture to make recommendations that reduced the costs by 70%+.."

Niraj Nagrani, SVP Ancestry

At Ancestry.com we worked with their teams to deliver a $**30m p.a. reduction in Cloud spend**, **30% increase in users** with an improvement in performance.

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