

Iain Samuel McLean Elder

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Certified AWS solutions architect and security specialist. 12 years experience as an IT professional and 7 years building solutions in the AWS cloud. Specialist in architecting, implementing, and operating security infrastructure at from a small to an enterprise scale. Focussed on improving security and reducing operational cost. I develop custom solutions using Python's boto3 SDK to meet clients' specialized requirements.

Freelance AWS solutions architect. 2018 - 2019, 2020 - Present

Highlighted work with clients:

Volkswagen AG's basic platform team maintains an AWS landing zone implementation and provides a compliant security baseline for internal customers.

- Rolled out AWS Config and Security Hub to 1000+ AWS accounts across 6 regions and 3 organizations
- Rolled out organization CloudTrails with S3 compliance-mode object lock
- Designed and implemented CloudTrail event delivery to on-premises Splunk Enterprise
- Developed custom tooling for managing CloudFormation stack sets each containing 6000+ instances
- Popularized botocove as a solution for complex inventory collection and arbitrary modifications

Tech: CloudFormation, CodeBuild, AWS Config, Security Hub, CloudTrail, AWS Organizations, IAM, Lambda, Python, boto3.

Denstu Tracking provides track-and-trace solutions for tobacco products to the EU commision.

- Rolled out AWS Config and Security Hub across 50+ AWS accounts
- Led an effort to modernize the Terraform IaC codebase
- Designed a solution to allow on-premises sensors to log securely to S3

Tech: Terraform, Terragrunt, AWS Config, Security Hub, DynamoDB.

Build38 is a mobile security startup.

- Implemented role-based SSO to avoid sharing long-lived credentials
- Implemented a multi-account architecture to separate development from production
- Rolled out Session Manager to reduce EC2 attack surface and key administration
- Recommended cost reductions by analyzing cost explorer data and inspecting architecture
- Enhanced the open-source aws-gate to allow access to private RDS via Session Manager

Tech: JumpCloud, AWS IAM, SAML, Session Manager, SSH, Cost Explorer, aws-gate, saml2aws

Spotlight Education turns education data into stories that students, parents and educators can easily understand.

- Improved reliability of a batch process that personalizes 1 million videos on a fleet of almost 3,000 EC2 instances. Replaced custom autoscaling code with with auto scaling groups mixed instance policies

Tech: AWS CloudFormation, AWS auto scaling, Ruby.

Keeper Data Tech. May 2019 - September 2020

Keeper applies Agile and DevOps methodologies with a Data Product approach to guarantee continuous and operational value deliveries from the beginning.

- Launched operations service for inaugural client, **Atresmedia**. Monitoring 500 technical and business metrics across multiple AWS environments
- For a **PC and printer developer** migrated sales data warehouse from on-premises SQL Server to AWS Aurora PostgreSQL. Rewrote stored procedures and checked for data quality issues.

Tech: AWS CloudFormation, AWS CloudWatch, Opsgenie, Redshift, ELB, Compute Optimizer, Savings Plans, IAM, SQL Server, Aurora PostgreSQL, Python, Docker.

Wakoopa/Netquest. July 2016 - July 2018

Wakoopa provides passive metering solutions to collect reliable, high-quality online behavioral data. Acquired by Netquest in 2014 and by GfK in 2016. Reporting directly to the CTO, I lead the devops initiative to improve application security and stability, and maintain continuity through changes to staff and strategy.

Tech: AWS CloudFormation, CloudWatch Logs, Route 53, Opsgenie, AWS CloudWatch, Ruby, Chef, Bash, Ansible, Squid, Apache, Nginx, Codeship, Github, Jira, Confluence, IAM, Docker.

Skyscanner. October 2010 - June 2016

Skyscanner aimed to be the first travel website to show every commercial flight on Earth. Acquired by Ctrip in 2016. Responsible for data acquisition, database administration, and geospatial pipelines.

Tech: Python, Windows Server, Microsoft SQL Server, T-SQL, PowerShell, PostgreSQL, CentOS Linux, Bash, PostgreSQL, AWS CloudFormation, FogBugz, Jira, svn, git.

Education and Certifications

- **Security - Specialty**. Amazon Web Services. October 2020
- **Associate Solutions Architect**. Amazon Web Services. February 2018
- **Business Intelligence MSc**. University of Dundee. May 2015
- **Internet Computer Science BSc**. University of St Andrews. May 2010
- **DELE C1**. Cervantes Institute. May 2019

Custom Solutions

On client engagements I encounter common problems where AWS's standard tooling does not provide a complete solution. To deliver value to the client, learn more about AWS, and improve my software engineering skills I have worked on these custom solutions created using Python and boto3, the official AWS SDK.

- `botocove` runs a Python function across all accounts in an AWS organization in parallel. I use it to collect inventory to fill in the gaps left by AWS Config. I use it to modify resources that can't be managed using CloudFormation.
- `aws-stack-set-snapshot` dumps all instances of all stack sets in an AWS account. I use it to generate statistics about the overall status and coverage of large stack set deployments.
- `orgtreepubsub` read and writes a snapshot of an AWS organization as an object graph. It provides a more Pythonic interface to Organizations' clumsy API. I use this to analyze complex organizational structures.