

Bala Murugan

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Summary:

Dedicated AWS Certified Solutions Architect Associate with a keen passion for designing and maintaining highly available & scalable websites, apps & APIs. Have more than 7 years of hands on experience working with private, public & hybrid Cloud Computing at various capacities including QA, DevOps, Design, Implementation & Compliance confirmation.

Have excellent problem solving, analytical and communication skills, with the ability to interact with individuals at all levels and also work in a team as well as independently to achieve the objectives. A quick learner, highly motivated team player and self-starter with strong desire to learn, contribute and to make a difference.

Roles & Skills:

- Design, implement and maintain highly scalable & highly available AWS cloud based solutions
- Proficient in setting up AWS Aurora DB clusters and performance analysis
- Write & maintain repeatable & reproducible infrastructure as a code using cloudformation & terraform
- Load / performance benchmarking of the app using various tools like JMeter & LoadImpact
- Exposure to Kubernetes, Helm & Vault
- Conducting required compliance confirmation of Disaster Recovery
- Work with a range of personal on a day-to-day basis including Product Owners, BA, Developers, Integration Engineers, Testers, Operations team, Technical leads, Architects and Portfolio managers to ensure desired infrastructure & pipelines are setup.
- Influence the product design & development so that devops philosophy is baked in
- Proficient in the principles of hosted infrastructure with an understanding of virtualisation
- Experience in setting up Automation Test frameworks and integration with CI / CD pipelines.
- Thorough understanding and practical hands-on experience of Agile & BDD methodologies
- Proficient use of git and GitHub
- Experience of automating testing of web applications and RESTful APIs
- Ability to be agile and context switch between different projects and teams

Professional Experience:

Ostmodern (Leading Digital Agency & Content Delivery Experts)

Infrastructure Engineer / DevOps (Contract)

July '19 - Present

Worked on a specific HA project for one of their top clients - F1. Was involved in the refactoring of the DB and API setup from a single region to multi-region clusters. After the successful POC, implemented the architectural changes involving their public API CMS, Cross region S3 bucket replication, PgBouncer and Postgresql DB clusters. Also wrote JMeter scripts to run performance benchmarks and compare performance against the different architectures and also against the different EC2 instance types.

Tools & Tech: CloudFormation, Aurora Postgresql, PgBouncer, AWS CodeDeploy, S3 replication, JMeter, Docker, Terraform

Property Partner (FinTech Startup - FCA authorised Multilateral Trading Facility)

Senior Platform Engineer

Sept '15 - June '19

Started as a lead QA but soon moved on to be a Senior Platform Engineer, responsible for the overall infrastructure, working closely with the CTO to design, build and maintain a reliable, scalable, secure

& highly available AWS Cloud based solutions for the MTF (Multilateral Trading Facility) platform fully adhering to the required MiFID II compliance. The entire app and its peripherals are built on the AWS platform.

Core App Infrastructure: The core app is a web based trading platform that has a front end built on Angular and the back end on Scala.

Tools & Tech: Elastic Beanstalk, Docker, Auto-scaling, S3, RDS MariaDB, DynamoDB, CloudFront with WAF Jenkins

Lambda Functions: Lambda functions are extensively used for various dashboards and progress reports that were used in the main app and some stand alone apps. All the app and sys logs were also moved into elasticsearch used with Kibana.

Tools & Tech: Python, AWS Lambda, Kinesis, Elastic Search, various 3rd party APIs

MiFID II Reports: A separate stack for fulfilling the several daily reports on the trades that happen on the platform. Compliance also required where these reports are stored and who has access to it. This was all achieved using the appropriate IAM policies and network level separation.

Tools & Tech: AWS Lambda, S3, workspaces, AWS VPC, RDS MySQL, Slack integration

Automation: There are other small nitty gritty repetitive manual tasks that are identified and automated to make it quicker and reduce human error e.g. quarterly property reports updates

Tools & Tech: S3, SQS, AWS Lambda, Slack integration

Load & Stress Tests: A separate environment identical to the production app will be spun up and used to run the load tests over extended periods of time to find any memory leaks and the ability of the system under sustained load. Also used to run the stress tests to find the breaking point for the app and how it buckles.

Tools & Tech: AWS CloudFormation, VPC, RDS MariaDB, CloudWatch, LoadImpact

Kubernetes: Was working on moving the stack to kubernetes with integrated logging and monitoring with fluentd and prometheus before I moved on to pastures green.

Tools & Tech: Kubernetes, Fluentd, Prometheus, helm

The Financial Times (One of the world's leading business news organisations)

Senior QA / DevOps (FT Technology)

May '09 – Sept '15

Leading a team of testers in the 'Environments' programme, which was responsible for the infrastructure & deployment tools that run all of FT's services. During my time here, the engineering function within the 'FT Technology' has seen significant growth especially in the last couple of years in response to the gathering momentum behind the Financial Times digital publishing objectives. This meant as a team we emphasis more on high availability & continuous delivery but not at the cost of quality and hence increasing the role played by the Platform team significantly.

FTPlatform: This is the flagship tool, developed in-house, that can do a complete end to end provision and deployment of the whole stack - starting from spinning up new VMs, configurations, code from repo, to CDN for any service. I was involved from the initial brainstorming session that acted as the foundation for the whole project to various teams within FT adopting it. Implemented RESTful api automated testing & performance monitoring.

Tools & Tech: AWS EC2, Puppet, Python, Lettuce, Selenium WebDriver, Nose, Jenkins, JMeter

DB Replatforming & Migrations: This work involved moving from MySQL in Solaris to MariaDB in Linux across all of the estate in every environment involving 100s of DBs and various teams. We also moved away from a proprietary SRM (site recovery manager) technology to an open source Tungsten replicator for high availability and disaster recovery.

Tools & Tech: MariaDB on EC2 instances, Physical & Logical backups, Tungsten Replicator, MONyog, Puppet, HA Proxy, Nagios, Dashing, Splunk, HP LoadRunner

Network Colo & Simplification: This work involved moving off a third party managed network to a self managed colocation in three data centers. It had a high impact across the whole of FT Technology and I took the lead to coordinate and collaborate with all the teams and get an impact analysis and testing strategy.

Tools & Tech: SolarWinds, DNS, Dyn, Firewalls, PCI compliant network, Zabbix

Private Cloud: This was setting up a private cloud offering for the FT's Technology teams using VMWare on UCS cluster across the 3 data centers.

Tools & Tech: VMWare virtual Cloud Director (vCD), VMWare virtual organisations (vOrgs), Virtual Security Gateway (VSG), RHEL6, RHEL Satellite & Repo Management, Python, Bash Scripting, PowerShell, API testing, Jenkins

Cloud Computing: This was setting up private links and easy access to the publically available cloud offerings to the FT Tech teams. Monitoring including tagging and billing info was embedded into it.

Tools & Tech: AWS - EC2, S3, VPC, Custom image builds; Zabbix

Disaster Recovery & HA: Though every team strives to achieve high availability of their service, I was part of a dedicated team that worked across all of Technology teams to ensure they have the right amount of cover, availability and readiness to recover in case of a disaster.

Tools & Tech: DC & AZ failovers, Dyn, Splunk, Nagios, Dashing, JetNexus, HP LoadRunner

CDN: Akamai was the CDN provider and the team was working to integrate it within our continuous delivery pipeline and also got a set of automated tests covering all the domain and subdomains running on a regular interval and constantly monitored.

Tools & Tech: Lettuce, Selenium Webdriver, Python, Jenkins, Dashing

Other projects that I was involved during my time at the FT - Membership, eRights Scaling, Classic Decomm; Salesforce internal apps; End User Computing

B&Q (The largest home improvement and garden center retailer in the UK & Europe)

Served as a **UAT (Software Team)**

Feb '09 – Apr '09

I was responsible for the UAT in the Multi-Channel department working for their new 'diy.com' e-commerce website. The role involved interacting with members from various teams internally and external IT development company – KITS and the design team.

Tools & Tech: HP Quality Center, ATG, SAP R/3 – SAP CO and SAP MD, Fredhopper Access Server, Opal verifications, RMLink and site analytics from Omniture

FDM Group (A London based, International IT Services Company)

Served as a **Software Tester (Enterprise Solutions Team)**

Apr '08 – Feb '09

I was part of the Enterprise Solutions team, which was responsible for the quality of the various client's software.

Tools & Tech: HP Quality Center, HP QTP, Shell Scripting, SQL Queries, Test Strategy

Certifications:

AWS Certified Solutions Architect Associate	2019
Introduction to Computer Science and Programming Using Python from MITx	2015
Introduction to Linux from Linux Foundation	2014
Foundation Certificate in Software Testing (ISTQB) from ISEB	2007
Introduction to Securities and Investment certificate from the Securities & Investment Institute	2007

Education:

MSc in Embedded Systems and Robotics from University of Essex, UK	2004
BE in Instrumentation & Control from Madras University, India	2002

Reference:

Available on request.