**Canonical Written interview and psychometric assessment for Akabom Kadana**

**Engineering**

* **What kinds of software projects have you worked on before? Which development environments, languages, databases?**

I have worked on Cloud migrations, IoT systems, Serverless apps and DevOps automation.

My primary working environment is through the Amazon Web Service console, with VS Code for CLI interaction and Docker

For application development, I use React JS. While my use of Python is to develop functions for Lambda and program IoT devices

* **How extensive is your experience of Python software engineering? Would you describe yourself as a high quality coder? Why?**

My Python experience is mainly focused on cloud automation, serverless development, and IoT backends.

My use of Python is mainly for cloud development, rather than pure software engineer.

I write functional code for AWS Lambda, data pipelines, and scripting (Bash/Python).

* **What is your most senior role in a software engineering organisation? Describe your span of control, and the diversity of products, functions and teams you led.**

My most senior role is a Solutions Architect at Melian Dialogue (UK-based research consultancy). Where I led the end-to-end cloud architecture for 5+ projects. I also directed DevOps, development, and client teams to align technical solutions with business goals.

My diversity of products are Cloud Migration where I redesigned legacy systems into AWS serverless architectures (Lambda, DynamoDB), I also architected ESP32-based monitoring systems with React Native frontends and AWS backends, and I developed Proof of Concepts for contracts that was used to bridge the gap between technical and non-technical stakeholders.

I mentored junior engineers on Cloud integrations, cost optimization, and security best practices. I also managed a hybrid team content developers and network engineers during the UNESCO World book capital initiative in Port Harcourt

* What is your proudest success as an engineer?

My Proudest Engineering Success would be Leading the AWS cloud migration of the digital resources for the University of Port Harcourt Library, which achieved an annual cost reduction compared to running the services on-premises and achieved a zero downtime.

* Describe your experience building large systems with many services - web front ends, REST APIs, data stores, event processing and other kinds of integration between components. What are the key things to think about in regard to architecture, maintainability, and reliability in these large systems?

While working on an IoT project, I designed some smart devices that can be controlled using a mobile application, with AWS services at the backend. I designed the frontend of the application with React Native, and since the application ran some RESTful microservices I used API Gateway and Lambda. For data stores DynamoDB was my preferred database, with SQS for asynchronous communication between services.

The heart of the device was an ESP32 microcontroller which was programmed with Python. I used AWS IoT Core to manage and connect the devices, that would trigger Lamba functions on different events. Other application I used the project are Node-Red and Grafana to create a real time dashboard

While building a large system, it is crucial to decouple your infrastructure into microservices. This eliminates the single point of failure and it is easier to isolate a problem without affecting other services in the project. A decoupled system is easier to maintain, because you can update individual components of the project without affecting others. Systems designed this way are more reliable and can dynamically handle increased traffic to the system.

* How comprehensive would you say your knowledge of a Linux distribution is, from the kernel up? How familiar are you with low-level system architecture, runtimes and Linux distro packaging? How have you gained this knowledge?

I am comfortable working with Ubuntu/CentOS for cloud servers (AWS EC2) and basic system administration. I perform common tasks like Installing and configuring software using APT/YUM, managing users, permissions, and services, writing Bash scripts for automation, and also troubleshooting using commands like top, df, grep, and journalctl.

Although I am aware of core concepts (processes, filesystems) with limited hands-on kernel tweaking, I use pre-built .deb/.rpm packages but haven’t created custom ones.

I gained my knowledge of Linux from managing AWS Linux instances (monitoring, updates), setting up Raspberry Pi for basic tasks (no deep kernel work) and online courses (Linux basics) and troubleshooting real issues

Describe your networking experience. How do you go about troubleshooting complex networks?

My knowledge on networking has recently concentrated around Cloud related infrastructure, where I designed VPCs with public/private subnets, NACLs, and security groups in AWS, configured Route 53 DNS, CloudFront CDN, and VPNs for secure hybrid cloud setups.

For the on-prem infrastructure, I supported the network for the UNESCO’s World Book Capital initiative which had over 50 users and 30 e-learning classrooms in different schools. Recently I have debugged ESP32 Wi-Fi/Bluetooth connectivity issues in IoT deployments.

For troubleshooting complex networks, I start with basics pinging of devices, then dig deeper with tools like traceroute or viewing logs, then I isolate the network in layers. On the Physical/Link Layer, I check cables/Wi-Fi, for the Network Layer, verify IPs/routing and finally the Transport/Application where I test ports and services

* Describe your experience with large-scale IT operations, SAAS, Private Clouds or other running services, in a devops or IS or system administration capacity

I have developed and run several Cloud & SaaS Operations focused on AWS services and virtualized infrastructure.

These include managing AWS environments for 50K+ users at the University e-library migration that ensuring 99.9% uptime. Services used here are Auto-scaling groups (EC2) + multi-AZ RDS for fault tolerance, Cost optimization (25% savings) through Reserved Instances and S3 lifecycle policies.

For DevOps, I deployed CI/CD pipelines for a serverless application with Lambda, API Gateway and DynamoDB used to develop the backend for an IoT project.

On the Private Cloud Infrastructure, the deployment was used to host electronic resources on a virtualized physical server. The resources ran on different operating systems and had different requirements. Using VMware ESXi, a bare metal hypervisor, I was able to run the resources on one server and assign interfaces to the different installations. This installation reduced hardware costs by 30% while providing access to resources of over 50TB to over 5k users of the library.

* Describe your experience with public cloud based operations - how well do you understand large-scale public cloud estate management and developer experience?

I have extensive experience managing large-scale AWS environments, focusing on governance, cost efficiency, and reliability. I designed multi-account structures using AWS Organizations to streamline billing and enforce security policies, achieving 25% cost savings through automated resource scheduling and reserved instances. For high availability, I implemented multi-region failover with Route 53 and CloudFront, ensuring seamless performance during traffic spikes. Security and compliance were prioritized via IAM best practices, automated PCI-DSS checks, and centralized logging with CloudTrail. My approach balances scalability with control, ensuring cloud resources are both agile and well-governed.

On the developer side, I’ve worked to simplify cloud adoption by creating reusable Terraform modules and CI/CD pipelines for serverless and containerized workloads. I standardized observability with CloudWatch dashboards and X-Ray tracing, reducing debugging time for distributed systems. By addressing pain points like Lambda cold starts and local testing bottlenecks, I improved deployment efficiency by 60%. My goal is to make public cloud operations intuitive for developers while maintaining operational rigor—whether through self-service templates, clear runbooks, or cost-aware architectures. This dual focus on infrastructure and developer experience ensures teams can innovate quickly without compromising stability or cost control.

* What is the next technology you want to learn about, and why ? How do you plan on learning it ?

The next technology I want to learn is Generative AI. The emergence of AI into the technology space is a major leap in information technology, and it is opening opportunities every sector of development.

I particularly want to learnt more about Generative AI because it would add be a great advantage in the development of IoT devices which I am currently working on. I can use this technology to analyse trends and project outcomes.

There are several courses that I plan on taking to gain the knowledge I require to fully to implement Generative AI. Even with taking courses, I would get as much hands on experience as I can through practise and executing more projects with Generative AI.

* Do you have experience with customer-facing roles ?

I have extensive experience in customer-facing technical roles, as a Solutions Architect and IT Manager, where I bridged the gap between technical solutions and business needs.

At Melian Dialogue, I led 5+ AWS proof-of-concept (PoC) projects for enterprise clients, translating technical capabilities into tangible business value. This involved presenting architecture designs, demonstrating cost-benefit analyses, and addressing stakeholder concerns. As th IT manager for the UNESCO World Book Capital initiative, I acted as the primary IT liaison for non-technical teams, training staff on tools and troubleshooting live-streaming events for 200K+ viewers. My role required simplifying complex topics for educators and executives. While a worked at the University of Port Harcourt, I provided hands-on support to the automation unit during AWS migrations, ensuring seamless adoption of e-learning tools.

* Outline your software documentation experience.

I have extensive experience creating user documentation for cloud architectures and IT systems, ensuring it aligns with business goals. This is a principle reinforced by my TOGAF awareness.

I created step-by-step guides for AWS services, on how to access the e-library resources with screenshots and troubleshooting tips. I recently documented IoT device onboarding processes to make it easy for users to use the devices.

I developed runbooks for incidents response at the Melian Dialogue. This document includes actions to take when CloudWatch alarm triggers. The documents also include architectural diagrams using tools like Visio and Draw.io

**Education**

We consider academic results in high school and university for all roles, regardless of seniority or department. To enjoy a long and varied career at Canonical, one would need to tackle problems that cannot be defined today! From engineering to marketing to operations and sales, we intensely value colleagues who are able to puzzle through difficult problems and find the optimal path forward.

* How did you rank in your high school, in your final year in maths and hard sciences? Which was your strongest?

In high school, I was an average student, scoring a little above average in both science and maths. I was stronger in the Maths, that was a major deciding factor to my choice of Engineering in the university.

* How did you rank in your high school, in your final year in languages and the arts? Which was your strongest?

In my high school, we were not have the opportunity of having a variety of language classes and Arts was one of my options, since I was in the Science class

* Please state your high school graduation results or university entrance results, along with the system used, and how to understand those. For example, in the US, you might give your SAT or ACT scores. In Germany, you might give your scores 1-5.

My educational qualification related to this application is my Master’s Degree in Network Computing where the requirement for entry was a transcript from my first degree and a personal statement.

For my first degree, I scored a total of 216 points in the JAMB, the university entrance exam in Nigeria, which was enough to get my in to the Electrical Engineering course on merit.

* What sort of high school student were you? Outside of class, what were your interests and hobbies?  What would your high school peers remember you for, if we asked them?

In high school, I had a lot of extra curricular activities, which included joining the martial arts club. I was friendly with my classmates and I would be remembered for being outspoken and standing up for others.

* Which university and degree did you choose? What other universities did you consider, and why did you select that one?

I have an MSc in network Computing for the University of central Lancashire in the United Kingdom. Other universities I considered were a few in my Home Country and the University of Derby in the United Kingdom. I preferred my choice of university because the course was narrowed to my preference which was networking, the other options then were web design and data analytics.

* At university, did you do particularly well at any area of your degree?

In both my first degree and my Master’s degree, I performed exceptionally well in the final project and dissertation. This was due to my skills in gathering requirements and my ability of analyse and represent the information.

* Overall, what was your degree result and how did that reflect on your ability?

I earned a Creditin my Master's while working part-time in a foreign country - a challenging experience that ultimately strengthened my resilience and time management skills. My career achievements demonstrate that practical problem-solving and adaptability matter more than perfect grades, as evidenced by earning AWS certifications and delivering impactful technical solutions post-graduation. The degree provided me with foundational knowledge that I've consistently built upon through hands-on experience in cloud architecture and operations.

* In high school and university, what did you achieve that was exceptional?

I achieved more accolades, from **practical problem-solving and leadership**. In high school, I learnt to repair and upgrade computers in the school lab through hardware swaps and Operating System installations. In the university, I assembled and repaired computers for other students. These experiences foreshadowed my career strengths

* What leadership roles did you take on during your education?

In the 2nd year of my BSc, I organized peer-led computer familiarization tutorial class to help classmates understand fundamentals of computer operations in an engineering society

**Context**

* Outline your thoughts on the mission of Canonical. What is it about the company's purpose and goals which is most appealing to you? What do you see as risky or unappealing?

Canonical’s mission to make open source accessible to everyone deeply resonates with me. Ubuntu’s balance of reliability, cost-efficiency, and enterprise readiness mirrors my approach to cloud architecture—where I have optimized costs and maintained 99.9% uptime. I leveraged Ubuntu Server for both on-premises projects and scalable cloud workloads, appreciating its role in bridging on-prem and public cloud environments.

What excites me most is Canonical’s ability to serve diverse users, from individual developers to large-scale enterprises, much like my experience supporting non-technical stakeholders while architecting complex AWS solutions.

I am aware a few key challenges that could impact Canonical’s goals. The risk of balancing enterprise services (Ubuntu Pro, support subscriptions) with grassroots developer trust is delicate. Looking at organisations with a tight budget, it is preferred to have a transparent pricing model to justify value and have

Also the risk that comes with competing in a Saturated Cloud Market. AWS/Azure dominate with proprietary tools, while Canonical’s cloud offerings (OpenStack, MicroK8s) have a different learning curve.

* Who are Canonical's key competitors, and how should Canonical set about winning?

Canonical has competitors in different areas that they have their products in.

For Enterprise Linux *the competitors they have are* Red Hat (RHEL), SUSE which also provide free and paid subscription models. Ubuntu’s free tier + paid support model undercuts RHEL’s subscription costs. They can get the advantage by emphasizing Ubuntu LTS’s stability and scalability for budget-conscious enterprises.

On the part of Cloud/Containers, the major competitors are AWS (EKS), VMware Tanzu, OpenShift. MicroK8s and Charmed Kubernetes offer simpler, lightweight Kubernetes for edge/IoT. Canonical can win by targeting hybrid-cloud use cases where vendor lock-in is a concern.

When it comes to Developer Tools, Caninical competes with Docker Desktop, Rancher. Their Snap packages and LXD provide sandboxed, cross-platform app deployment.

* Why do you most want to work for Canonical?

I want to work for Canonical because of its unique combination of mission-driven purpose, global culture, and commitment to personal and professional growth. Their dedication to amplifying open source and resonates deeply with my values, as I believe open access to technology can drive innovation and positive change worldwide.

Canonical’s remote-first, model is appealing which allows me to collaborate with talented colleagues from all over the world, making every day an opportunity to learn from diverse perspectives and experiences. Their inclusiveness, equal opportunity and employee development aligns with my desire to keep growing and exploring new challenges

* What would you most want to change about Canonical?

Canonical’s combination of open-source and proprietary features cause a misunderstanding for those who expect a consistent open model. A clearer distinction between open and proprietary components would help manage expectations.

* What gets you most excited about this role?

The chance to work with Ubuntu and tools like MicroK8s/Juju which power everything from Raspberry Pis to enterprise clouds, fit perfectly with my passion for scalable, accessible technology. I am inspired by Canonical’s mission to make open source usable for everyone.

Canonical’s global, remote-first culture mirrors how I’ve thrived in distributed teams (e.g., UK/Nigeria collaborations). I’m excited to learn from and contribute to a team that balances engineering rigor with open-source idealism.

There is no rush, I will leave your application open for two weeks to give you time to reflect and draft your response. Please submit your answers as a PDF document - and in order to help us reduce bias, please do not put identifying details in the submission or document filename. Don't worry, the system will track it against your application if you use the URL below.