Muhammad Faris Khan

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AWS	EC2, EKS, ECS, S3, RDS, ECR, ALB/ELB/NLB, Route53, Lambda, State Functions/Machine, API Gateway, CodeDeploy, PinPoint, VPC Lattice, DynamoDB, Secrets Manager, Elasticache, Redis Global Datastore, CloudWatch
Azure	CosmosDB, Blob Storage, Azure DevOps, Azure App Service
GCP	Cloud Vision API, Cloud Run, Google Apps Script (JavaScript)
IaC	Terraform, AWS CDK, AWS CloudFormation, ansible
Container Orchestration	Kubernetes (EKS), Docker Swarm, Helm charts
CI/CD	Jenkins, GitLab CI, BitBucket pipelines
Automated Testing	Selenium (Chrome WebDriver), Apache JMeter, ab, Grafana k6, Google PageSpeed Insights
Programming Languages	Python 3.7+, JavaScript (ES6), ReactJS (v18.0), NodeJS, BASH, Assembly (Intel 8086)
Kernel source debugging	gdb, valgrind, gcc, make
Penetration testing	Android, iOS and web (adb, sqlite3, nmap, MobSF, Metasploit, otool, BurpSuite, Nessus, OpenVAS, wireshark, tcpdump)
Keen to work on	AI/MLOps pipelines, GitOps (learning in progress), Big Data, Log aggregation (ELK Stack)

Professional Experience

Senior DevOps Engineer - talentsconnect AG, Köln, West Germany (May 2023 - Oct 2023) (Remote)
- Managing cloud and on-premises infrastructure migration.
- Set up standards for "better to degrade a service than to fail a service" through Ansible and Terraform.
- Automated testing for performance of web applications and services on Grafana k6.
- Migrating services and decommissioning legacy private cloud platform on AWS.
- Maintaining SLAs and observability.
- Stress tested KeyCDN along with mathematical analysis using Lsyncd for media assets.
- Alerting mechanism and health status dashboard using Atlassian status page.
- Mitigating security issues and vulnerabilities. Enabled and enforced TLS client and server end for storage infrastructure.
- Proactively enhancing infrastructure automation from provisioning to configuration of services.

DevOps Architect - AutoLeap Inc. - Toronto, Ontario (August 2020 - July 2022) (Remote)
- Managing AWS infrastructure for 280+ clients through collaboration, agility and adaptability
- Enhancing and supporting CI/CD pipelines reducing build times by more than 12x in the first iteration
- Deploying and managing Kubernetes cluster using self-managed nodes on AWS EKS - resulting in more confidence for teams in rolling out builds using blue-green deployments
- Practicing empathy and trust to evolve leadership skills useful in and out of work. Allowing being corrected by and learning from my colleagues
- Tuning Nginx for better throughput and concurrency for static assets leading to improved UX for customers (gzip, brotli) delivering several MBs of static assets in < 1MB finally improved by upgrading from HTTP/1.1 to HTTP/2
- Migrating CI/CD pipelines to Jenkins, coupled with improved build deployment strategy and pods placement strategy resulting in optimized cloud resource usage, higher reliability and availability
- Migrating existing YAML templates for Kubernetes to Helm charts
- Successfully secured the infrastructure resources, ensured fault-tolerance, resilience in architectures and overachieving the target (99.99995% uptime) as per committed SLAs during the first 7 months after joining
- Deploying and managing RESTful APIs with secure WebSockets (wss)
- Ensuring vulnerability scans are run and reported - vulnerability databases and signatures are always up to date
- Gap analysis for SOC-2 compliance certification for enterprise customers enablement
- Sharing and applying AWS best practices learnt from AWS whitepapers and AWS re:* events
- Set up performance reports for key metrics and developing insights into resource utilization patterns

- Cultivating DevOps culture for aligning teams with business goals
- AWS Secrets Manager: Secrets management/rotation and access federation
- Developing disaster recovery architectures to support multi-region AWS EKS failover cluster setup using AWS CDK and Route53
- AWS CloudWatch and Datadog: Aggregating health metrics and tracing for better observability
- Atlassian Statuspage setup for incident reporting, disclosure and resolution via email/Slack notifications
- AWS ECR - Repository lifecycle policies and IAM users/roles/groups setup
- Setting up monitoring on AWS EKS (fluentd) and Kubernetes API endpoint logging (audit logs)
- Setting up SMS/email notifications for AWS resources (Pingdom)
- Improved sub-optimal object storage by using object lifecycle policies for optimal object storage utilization on S3 buckets
- Predicting monthly costs for services (AWS/non-AWS) and proactively keeping costs close to the bare minimum

Staff DevOps Engineer - TenPearls Pvt. Ltd., Karachi (May 2015 - July 2020)

- Deploying, managing and supporting full-stack software applications using Amazon Web Services (AWS) cloud computing platform, synergizing team efforts, attention to detail and rapid communication
- Mentored, trusted, managed and successfully led two departments with multiple projects and teams working in rotation while learning differences in becoming a leader and creating one
- Setup and maintained continuous integration, continuous deployment and continuous delivery pipelines using Jenkins and build-agents for all organization-wide projects (freestyle jobs, Groovy pipelines and multi-branch pipelines) resulting in better build velocities
- Collaboration, technical growth and team capacity planning resulting in higher self-reliance within teams and squads
- Using EC2, ELB/NLB/ALB, API Gateway, S3, Lambda, ECS, RDS, SES, SNS and Elasticache for designing and implementing highly-available, scalable, resilient, secure and fault-tolerant architectures for application deployment
- Extensively used Azure DevOps, Azure App Service, Azure CosmosDB and Azure Blob Storage for projects hosted on Microsoft Azure
- Tuning databases and improving schemas (MySQL, PostgreSQL, Amazon RDS, MongoDB) for better query response times
- Containerizing legacy applications using Docker and Docker Swarm for container orchestration
- Developing and testing disaster recovery scenarios
- Implemented Consul by HashiCorp for service discovery of Docker nodes
- Experience in Terraform by HashiCorp and AWS CloudFormation templates for infrastructure resource provisioning and infrastructure-as-code (aws provider)
- Proactively monitoring infrastructure, application resources, exceptions and implementing remedies based on best practices by implementing and leveraging tools (such as netdata and Zenoss). Ensuring issue resolution, escalation and upkeeping SLAs
- Documenting issues on JIRA and Confluence resulting in lowering down stress for known issues
- Tuning Apache and Nginx web servers for better performance based on workloads
- Implemented lightswitch for spinning down resources on Microsoft Azure via Slack notifications resulting in more than 50% cost reduction for certain (but not all) resources
- Experience on IoT projects and data ingestion into the AWS cloud and processing for meaningful patterns (CoAP protocol to HTTP) resulting in reduction of about 50ms latency for clients on GSM/4G networks
- Successfully maintained highly secure and resilient architectures (AWS IAM, AWS CloudWatch, SSH access, system hardening, mitigating DDoS attacks, port knocking, XSS attacks etc.)
- Pre kick-off meetings and aligning workflows resulting in setting expectations right across teams and business owners
- Implemented IDS/IPS (Intrusion Detection Systems/Intrusion Prevention Systems) to reduce risk of application/infrastructure breach using TrendMicro Deep Security (from AWS Marketplace) to proactively monitor fleet of AWS EC2 instances and to generate automated scan reports
- Penetration testing of web and mobile (Android/iOS) applications for vulnerabilities, reporting them, suggesting remedies and ensuring vulnerabilities are resolved before builds are rolled out (MobSF, otool, BurpSuite, Nessus, OpenVAS)
- Setting up and maintaining multiple small MongoDB clustered deployments
- Leading GitLab management for organization-wide project repositories hosted on-premise and attaining better development velocities, improved developer productivity experience and reducing change-to-deploy times (managing Git repositories, webhooks and build triggers)
- Forecasting cost of projects, cost optimization and performance tuning of infrastructure resources

Cloud Solutions Engineer - RentVM Inc. Lahore (July 2014 - February 2015)

- Managing Citrix Xenserver pools for highly-available data centers in San Francisco, New York and Dubai
- Maintenance and optimum resource utilization of NAS devices (Nexenta) and ZFS pools

- Maintaining SLA uptime for on-premises infrastructure
- Deployed and managed several small to medium scale deployments of Apache Cloudstack
- Network security using OpenSSL, nmap and wireshark
- Building a self-reliant small team of individuals
- Resolving and documenting issues reported by clients
- Using post-analysis methods to look for patterns in issues and fixing them

Projects

- Experience in Python 3.6 (boto3, numpy, vpython, math)
- AWS CDK: Provisioning resources on personal AWS account (learning about Stacks, Apps and Constructs)
- eBPF: An amazing answer to federating packets at the application layer without disrupting the kernel and without using kernel modules (on-going)
- protobuf (early stages): Those API to API communications that are constrained and involve a lot of chatter between the participants, results in worsening the overall throughput of APIs. Google's protobuf seems to be a nice contender
- JavaScript ES6 (using Eloquent JavaScript ebook) and ReactJS (by learning from an ebook named The Road to React) (useState, useHook and useRef)
- Learning from Alex Xu's (linkedin.com/in/alexxubyte) YouTube channel ByteByteGo (youtube.com/c/ByteByteGo) and his website bytebytego.com
- Kubernetes playground cluster setup on an on-premise server at home
- Linux kernel module in C, fetching bytes of incoming/outgoing packets using netfilter module chains (INPUT and OUTPUT)
- Linux source code debugging (net/ sub-system) for TLS-encrypted packets using an OpenSSL debug build on gdb (GNU debugger) and valgrind
- Reusing knowledge of physics, mathematics hence computer science to look for and improve upon existing renewable energy sources (patent pending)
- Python Selenium and Apache Jmeter for automated software quality testing (learnt automated testing of applications, browser internals etc.). Ramping up concurrent users using Apache Jmeter, observing response times and HTTP status codes
- Using unconventional techniques in mathematics to solve issues in storage at scale specifically addressing problems arising when moving, storing and archiving large datasets (without using analytical means)
- Understanding the elusive nature of prime numbers used in encryption algorithms (Riemann hypothesis and spirals in primes)

Trainings

- Delivered trainings on key AWS cloud platform services for company-wide projects
- AWS Events - Modern Applications, October 2020 (certificate available on request)
- AWS Business Professional Certification (certificate available on request)
- Conducted trainings on issue resolution on multiple projects

Achievements

- Assigned technical mentor and business growth representative by AWS after contributions to the AWS ecosystem (US and Singapore region representatives assigned)
- Humbled to receive Team of the Quarter award (April 2020) at TenPearls Pvt. Ltd., Karachi
- Employee of the month award at TenPearls Pvt. Ltd., Karachi

Education

- Ghulam Ishaq Khan Institute of Engineering Sciences and Technology (Bachelors in Modeling and Simulation) (2014)

Skills

- Technical discussions for problem-solving and socially mentoring team members
- Improving upon verbal, interpersonal, and written communication skills
- Reading fluency in French
- Interest in core linux kernel subsystems (net/ and fs/ as per the kernel source)
- An amateur table-tennis and chess player