**Karthik G**

**Cloud DevOps Engineer/ Azure DevOps Engineer/ DevOps Engineer/ Build and Release Engineer**

**Email:** [**kst.do.xit@gmail.com**](mailto:kst.do.xit@gmail.com)

**Phone: 609-848-8002**

**PROFESSIONAL SUMMARY:**

* Around 10 Years of experience in IT industry comprising of **DevOps migration/automation**, **Cloud Computing**, **Build and Release Engineering**, Servers/**System administration** involving cloud computing platforms like **Amazon Web Services (AWS), Google Cloud Platform (GCP) and Azure.**
* Design, prototype and deliver cloud native solutions, leverage cloud specific (**AWS/Azure/GCP/OpenStack**) platform rich services offering.
* Strong experience on DevOps concepts like Build automation, Continuous Integration (CI), Continuous Deployment (CD), Infrastructure as code technologies and Cloud computing.
* Hands on experience on technologies and platforms including **Python, Jenkins, Subversion (SVN), Git, Unix/Linux, windows server, VMWare, Docker, Kubernetes, Ansible, Terraform, Chef, Puppet, AWS** for various sectors.
* Setting up continuous integration of applications in **Apache** **Tomcat** servers in EC2 using **Jenkins plugins GIT**, **MAVEN**. Implemented new deployment process with **Jenkins 2.0** using **groovy** code.
* Hands on experience on AWS cloud services (**VPC, EC2, S3, RDS, Redshift**, **Data Pipeline, EMR, DynamoDB, Workspaces, Lambda, Kinesis, RDS, SNS, SQS**)
* Extensive experience with software builds tools like **MAVEN**, Selenium, Gradle, Sonar, Nexus, Jfrog, Ant etc.
* With the help of DevOps tools like chef, run deck, Jenkins and Docker I can create on demand AWS instances and setup test environments, perform deployments on the fly.
* Expertise in **WAMP (Windows, Apache, MYSQL, and Python)** and **LAMP (Linux, Apache, MySQL, and Python)** Architecture.
* Exposed to all aspects of software development life cycle (**SDLC**) such as Analysis, Planning, Developing, Testing/Quality Analysis, implementation, and post-production analysis of the projects.
* Experience in implementing scalable cloud-based web applications using **AWS** and **Azure**.
* Proficiency in scripting languages such as **PowerShell**, **Bash**, **Python**, **Groovy**, **Ruby**, **Perl**, **YAML**, **Shell**.
* Created and maintained highly scalable and fault-tolerant multi-tier **AWS** and **Azure** environments spanning across multiple availability zones using **Terraform** and CloudFormation.
* Proficient with container systems like **Docker** and container orchestration like **EC2 Container Service (ECS)**, **Kubernetes**, **Rancher**, **OpenShift**, worked with **Terraform.**
* Experience working on several **Docker** components like Docker Engine, Docker-Hub, Docker-Compose, Docker Registry and Docker Swarm.
* Running of Apache Hadoop, CDH and Map-R Distro’s, dubbed **Elastic MapReduce (EMR)**on **(EC2).**
* Strong experienced in branching, tagging, and maintaining the version across the Environments using SCM tools like **Git, GitLab, GitHub and Subversion** (SVN), TFS, Azure DevOps Server on Linux and windows platforms.
* Implemented a “**Serverless**” architecture using API Gateway, **Lambda**, and **Dynamo DB** and deployed **AWS Lambda** code from **Amazon S3 buckets**.
* Experience working on **Docker-Hub**, creating **Docker images,** and handling multiple images primarily for middleware installations and domain configurations.
* Created and managed a Docker deployment pipeline for custom application images in the cloud using **Jenkins**.
* Experienced with deployments, maintenance and troubleshooting applications on **Microsoft Azure Cloud infrastructure.**
* Automate Datadog Integrations through **Ansible** Scripts for QA, Regression and Prod environments.
* Used Jenkins pipelines to drive all microservices builds out to the **Docker** **registry** and then deployed to Kubernetes, Created Pods and managed using **Kubernetes**.
* Provisioned **Azure/ AWS** resources for Data Engineering and Data Science projects
* Experience in Design and Automation of **uDeploy** Application process, component process, Environment resources model, Plugins, Security Model (Roles, Teams) in **uDeploy**, Notification Schemes, Environment Gates, and Approval Process.
* Experience in Creating secured cloud infra using (VPC) for Staging and Development environment on AWS. Design & implemented VPC service for extension of customer's on-premises datacenter with AWS Cloud using AWS VPC and VPN & Direct connect services.
* Experience in using **Splunk**, **AppDynamics**, **Dynatrace**, **Nagios**, and **Grafana**.
* Expertise in working with AWS provided Solutions like EC2 and **ELB** which includes Creating EC2 instances, adding EBS volumes for EC2 and familiar with **VPC, Route 53, RDS, S3, IAM, SNS, SQS, ECS, EKS, SWF, SES**, Auto scaling, Storage gateway, Elastic Beanstalk, CloudFormation and CloudWatch.
* Extensive experience in configuration, deployment automation with various App Servers like **Oracle WebLogic, WebSphere, JBoss**, Webservers like **Apache, Tomcat, Httpd** and more modern Web Containers like **Nginx** etc.
* Experience in installing, configuring, managing **MYSQL**, **SQL Server**, **PostgreSQL**, **Oracle**, **Aurora**, **MongoDB** & **Cassandra**. Ability to build deployment, build scripts, automated solutions using **Bash**, **SHELL**, **Ruby**, **and Python**.

**TECHNICAL SILLS:**

|  |  |
| --- | --- |
| **Operating Systems** | Red Hat, CentOS, Fedora, SUSE, Ubuntu, Solaris, Debian, MacOS, Windows |
| **CI/CD Tools** | Jenkins, Bamboo, GitLab CI, uDeploy, Travis CI, Octopus |
| **Cloud Environment** | Amazon Web Services (AWS), Google cloud platform (GCP), Azure |
| **Infrastructure as code** | Terraform, CloudFormation, Ansible, Puppet, Chef |
| **AWS Services** | VPC, IAM, S3, Elastic Beanstalk, CloudFront, Redshift, Lambda, Kinesis, DynamoDB, Direct Connect, Storage Gateway, EKS, DMS, SMS, SNS, and SWF |
| **Scripting** | SHELL Scripting, Groovy, Python, Ruby, Perl, YAML and PowerShell |
| **Version Control Tools** | GIT, GITHUB, GitLab, Subversion (SVN), Bitbucket, TFS and Azure DevOps Server |
|  |  |
| **Build Tools** | Maven, Selenium, Gradle, SonarQube, Nexus, Ant, Junit |
| **Containerization Tools** | Docker, Kubernetes, AWS ECS/EKS, Apache Mesos, OpenShift, Rancher, Marathon |
| **Application Servers** | Apache Tomcat, Nginx, Httpd, WebSphere Application Server, Kafka, JBoss, WebLogic |
| **Networking Protocols** | DNS, DHCP, TCP/IP, Cisco Routers/Switches, WAN, LAN, FTP/TFTP, SMTP |
| **Monitoring Tools** | Nagios, AWS CloudWatch, Splunk, ELK, Grafana |
| **Bug Tracking Tools** | JIRA, Confluence, ServiceNow, Bugzilla, Red Mine |

**WORK EXPERIENCE:**

**Client: DirecTV - El Segundo, CA Oct 2021 - Present**

**Role: Cloud DevOps Engineer**

**Responsibilities:**

* Worked on Azure Cloud Services (**PaaS & IaaS**), Storage, Web Apps, Active Directory, Application Insights, and Logic Apps. Implemented Azure APIM modules for public facing subscription based authentication.
* Created and Managed hosting plans for **Azure** Infrastructure, implementing & deploying workloads on Azure Virtual Machines (VMs), Design and implement VM storage.
* Created clusters in **Azure Cloud** and manage the clusters using **Kubernetes** (AKS-**Azure Kubernetes service**). Using Jenkins to deploy code to Azure Cloud, create new namespaces, creating Docker images and pushing them to container registry of Google Cloud.
* Migrating the existing v1 (Classic) **Azure** infrastructure into v2 (ARM), scripting and templating the whole end to end process as much as possible so that it is customizable for each area being migrated.
* Configured **Azure** VPN-Point to Site, Virtual networks, Azure Custom security, Endpoint security and firewall, Designed and configured Azure Virtual Networks (VNets), subnets, Azure network settings, DHCP address blocks, DNS settings, security policies and routing.
* Performed data Extractions using Dataflow streaming from **Kafka**.
* Worked on API development, AI/ML, Data Lake, Data Analytics, Cloud Monitoring tool like **Stack driver**.
* Installing, configuring, and managing virtual infrastructure and virtual center.
* Created several pods and services using Master and Minion architecture of **Kubernetes** and developed micro service onboarding tools leveraging **Python** allowing for easy creation and maintenance of build jobs and Kubernetes deploy and services.
* Extensively used Kubernetes charts using **Helm** and created reproducible builds of the Kubernetes applications, managed **Kubernetes manifest files** and managed releases of **Helm packages**.
* Orchestrated the computing, networking, and storage infrastructure of the **Kubernetes cluster, utilized Kubernetes** and **Docker** for the runtime environment of the **CI/CD** system to build test and deploy.
* Installed and Implemented **Ansible** configuration management system. Used **Ansible** to manage Web applications, Environments configuration Files, Users, Mount points and Packages.
* Maintain, Manage and Monitor **Splunk** Infrastructure (Identify bad searches, dashboards and manage overall health of Splunk).
* Expertise in working with **Terraform** key features such as Infrastructure as a code, execution plans, resource graphs, change automation and created infrastructure such as Web app, Function App, VNet's, DNS Settings, Routing, Security Policies, Load Balancer, App gateway, Application Insights in a coded manner using Terraform.
* Extensively worked on Function API Management and **Azure** **AD** B2B API's. Created Guest Users for other Organizations in order to collaborate and share Company information securely between them.
* Implemented **Blue/Green Deployments** in k8s to maintain Zero Down time while new Production Release. And maintained Branching Standards in Git-Flow.
* Implemented **Docker-Maven plugin** and Maven POM to build Docker Images for all micro services and later used Docker file to build the Docker Images from the java jar files.
* Worked on **TFS/Azure Devops** for continuous integration (CI) and for end-to-end automation using PowerShell for all builds and deployments and also worked on Build tools like Maven for the building of deployable artifacts into antifactory like **Jfrog** and **Nexus** from source code.
* Automated and orchestrated workloads using **Terraform**, **Ansible** and **ARM** Templates over Microsoft Azure.
* Created **Terraform** templates for provisioning virtual networks, subnets, VM Scale sets, Load balancers and NAT rules and used **Terraform graph** to visualize execution plan using the graph command.

**Environment:**

TFS/Azure Devops, Azure Infrastructure, Azure AD, Azure Portal, Json, Azure CLI, Bash, Powershell Scripting, IIS, Windows Server 2012, Kubernetes, .Net, C#, Visual Studio, Terraform, Docker, Ansible, GitHub, Jfrog, Confluence, SonarQube, Service now, Cassandra, Kafka, Blue/green deployment.

**Client: Cummins - Columbus, IN May 2018 – Sept 2021**

**Role: Azure DevOps Engineer**

**Responsibilities:**

* Built CI/CD pipelines using **Jenkins** for deployments for End-to-End automation to support all build and deployment as a pipeline.
* Created job chains with **Jenkins Job Builder**, Parameterized Triggers, and target host deployments. Utilized many Jenkins plugins and **Jenkins** API.
* Developed strategy for cloud migration and implementation of best practices using **AWS** services like database migration service, **AWS** server migration service from On-Premises to cloud.
* Responsible for Setup and build **AWS** infrastructure using resources **VPC**, **EC2**, **S3**, Dynamo DB, IAM, EBS, **Route53**, SNS, SES, SQS, CloudWatch, CloudTrail, Security Group, **Autoscaling** and **RDS** using CloudFormation templates.
* Backing up AWS **PostGRE**to **S3**on daily job run on **EMR**using Data Frames.
* Implementation of new tools such as **Kubernetes** with **Docker** to assist with auto-scaling and continuous integration (CI) and upload a **Docker** image to the registry so the service is deployable through **Kubernetes**. Use the **Kubernetes** dashboard to monitor and manage the services.
* Experienced in Building, Testing, and deploying the applications by adopting the DevOps tools like **GIT, Ansible, Jenkins, Dockers, and Kubernetes**. Having good working experience in **AWS** with **EKS** by using CloudFormation.
* Worked on setting up **Rancher** orchestrator, to manage Kubernetes everywhere it runs, worked with **Rancher CLI**.
* Experience in **Kubernetes** to deploy scale, load balance, and manage **Docker** containers with multiple names spaced versions using Helm charts.
* Deployed pods using Replication Controllers by interacting with **Kubernetes** API server defining through declarative YAML files.
* Using **Bash** and **Python** included **Boto3** to supplement automation provided by **Ansible** and **Terraform** for tasks such as encrypting EBS volumes backing AMIs.
* Adopted **Ansible** for the Automation of the environment and worked on Installation and configuration of Master and client machines.
* Wrote **Ansible** Playbooks with **Python** **SSH** as the Wrapper to Manage Configurations of AWS nodes and Tested Playbooks on AWS instances using **Python**.
* Developing procedures to unify, streamline and automate application development and deployment procedures with Linux container technology using **Dockers**.
* **Kubernetes**is being used to orchestrate the deployment, scaling and management of **Docker**Containers.
* Building the **AWS** Infrastructure using VPC, EC2, S3, Route 53, EBS, Security Group, Auto Scaling, and RDS in Cloud Formation, AMI, EBS, IAM, and Cloud Watch.
* Designed various **Jenkins** jobs to continuously integrate the processes and executed **CI/CD** pipeline using Jenkins, and **Ansible Playbooks**.
* Deployed application which is containerized using **Docker** onto a **Kubernetes** cluster which is managed by Amazon Elastic Container Service for Kubernetes (EKS). Configured ‘Kubectl’ to interact with Kubernetes infrastructure and used **AWS Cloud Formation Templates (CFT)** to launch a cluster of worker nodes on Amazon EC2 instances. Built/deployed custom Docker images from Artifactory into EKS K8s cluster as part of a **Gitlab** CI
* Utilized **Ansible** and **Jenkins** to automate the provisioning of our identity management solution which is used to implement Single Sign On for AWS. **EKS** authentication integrated with SSO as well.
* Worked on Docker container snapshots, attaching to a running container, removing images, managing director structures, and managing containers in AWS ECS.
* Involved in performing **Ansible** setup, managing hosts file, Using **Yaml** linter, authoring various playbooks and custom modules with Ansible.
* Deployed and configured Elasticsearch, Logstash, and Kibana (ELK) for log analytics, full-text search, application monitoring in integration with **AWS** **Lambda**, and CloudWatch.
* Deployed and manage containerized applications more easily with a fully managed Kubernetes service like **Elastic Kubernetes Service** (**EKS**) offers Serverless Kubernetes, an integrated continuous integration and continuous delivery (CI/CD) experience, and enterprise-grade security and governance.
* Created Clusters using **Kubernetes** and worked on creating many **pods**, **replication** controllers, replica sets, services, deployments, labels, health checks and ingress by writing **Yaml** files.

**Environment**: AWS, EC2, RDS, Elastic Load Balancing (ELB), S3, CloudWatch, ElasticSearch, ECS, EKS, Cloud Formation, Route53, Lambda, BigQuery, Ansible, Terraform, Rancher, EMR, Ansible, Java/J2EE, Jenkins, Shell, Confluence, JIRA, OpenShift, Kafka, Jfrog**,** Docker, Kubernetes, Linux, Maven, GIT, GitHub, Python, uDeploy, Ruby, Bash Script, Nexus, SonarQube, Nagios, Nginx

**Client: Tailored Brands - Fremont, CA Jan 2017 – April 2018**

**Role: DevOps Engineer**

**Responsibilities:**

* Provide highly durable and available data by using **S3** data store, versioning, lifecycle policies, and create **AMIs** for mission critical production servers for backup.
* Configuring and deploying instances on **AWS** environment and Data centers, also familiar with EC2, CloudWatch, and Elasticsearch and managing security groups on AWS.
* Experience with an in-depth level of understanding in the strategy and practical implementation of AWS Cloud-Specific technologies including **EC2, EBS, S3, VPC, RDS, SES, ELB, EMR, ECS, Cloud Front, CloudFormation, Elastic Cache, CloudWatch, Red Shift, Lambda, SNS, Dynamo DB, Kinesis**.
* Created AWS Launch configurations based on customized **AMI** and use this launch configuration to configure auto scaling groups and Implemented AWS solutions using EC2, S3, RDS, VPC, DynamoDB, Route53, EBS, Elastic Load Balancer, Auto Scaling groups.
* Written Shell scripting to spin up clusters like **EMR, EC2, and amazon RDS.**
* Created functions and assigned roles in AWS **Lambda**to run python scripts.
* Automated the infrastructure using **Terraform** and making it auditable by storing all the infrastructure changes in a version control system like **GIT**.
* Installed Splunk in production servers for logging purpose. Built **Splunk** dashboards for application monitoring. Configured alerts for operational purpose.
* Used Splunk data Connector between **Splunk** Enterprise and Relational Database.
* Responsible for proper functioning DEV/TEST/STG/PROD environments for these applications.
* Maintaining the **Elasticsearch** cluster and **Logstash** nodes to process around 5TB of Data Daily from various sources like Kafka, Kubernetes, etc. **AWS EMR** Distribution for Hadoop
* AWS cloud services such as EC2, auto-scaling and VPC to build secure, highly scalable, and flexible systems that handled expected and unexpected load bursts.
* Set up CI/CD pipelines for Microservices and integrated tools such as **Maven**, **Bitbucket**, **SonarQube**, **Nexus**, **Docker**, **Slack** for providing immediate feedback to DEV teams after code check-in.
* Used **Terraform** in AWS Virtual Private Cloud to automatically setup
* Developed **Ansible playbooks**for Auto installation of IBM **WebSphere** software’s on the servers.
* Deployed application which is containerized using **Docker** onto a **Kubernetes** cluster which is managed by Amazon Elastic Container Service for **Kubernetes** (**EKS**).
* Managed **Kubernetes**charts using Helm. Created reproducible builds of the **Kubernetes**applications, templatize Kubernetes manifests, provide a set of configuration parameters to customize the deployment and Managed releases of **Helm packages.**
* Built/deployed custom Docker images from Artifactory into **EKS** K8s cluster as part of a **GitHub** CI pipeline.
* Installed and Configured Enterprise **Jfrog Artifactory**.
* Worked with Docker on multiple cloud providers, from helping developers build and containerize their application (CI/CD) to deploying either on public or private cloud.
* Developed micro service on boarding tools leveraging **Python** and Jenkins allowing for easy creation and maintenance of build jobs and Kubernetes deploy and services.
* Extensively worked on **Hudson, Jenkins** for continuous integration and for End-to-End automation for all build and deployments.
* Responsible for setting up **WCBD** tool (**WebSphere Commerce Build and Deploy**) for automation of Build and Deployment process.

**Environment:** SVN, GIT, Jenkins, Maven, Nexus, AWS (EC2, EBS, S3, VPC, RDS, SES, ELB, EMR, ECS, EKS, Cloud Front, Kubernetes, CloudFormation, Elastic Cache, CloudWatch, BigQuery, Splunk, WebSphere, Bitbucket, Puppet, Java/J2EE, Python Scripts, Jfrog, Docker, XML, Unix (Red Hat Enterprise Linux, CentOS

**Client**: **MapleLabs, IND Sept 2015 – June 2016**

**Role: DevOps Engineer**

**Responsibilities:**

* Provided Configuration Management and Build support for more than 5 different applications, built and deployed to the production and lower environments
* Defined and Implemented Configuration Management and Release Management Processes, Policies and Procedures
* Worked with Engineers on providing the configuration details of the DEV environments and assisting in Creating **CHEF recipes** for a Proof of Concept
* Experience working with **Chef Enterprise** Hosted as well as On-Premise, Installing Workstation, Bootstrapping Nodes. Experience writing Recipes and Cookbooks and uploading them to **Chef-server**, Managed On-site OS/Applications/Services/Packages using **Chef** with **Chef Cookbooks**
* Implemented a Continuous Delivery pipeline with **Docker, Jenkins and GitHub and AWS AMI's**, whenever a new **GitHub** branch gets started, **Jenkins**, our Continuous Integration server automatically attempts to build a new **Docker** container from it.
* The **Docker** container leverages **Linux** containers and has the **AMI** backed in expertise in implementation and maintenance of **Apache Httpd, SMTP, DHCP, NFS, NIS, NIS+, LDAP, FTP, Remote Access, Security Management & Security trouble shooting skills.**
* Configuring **DNS, DHCP, NIS, NFS in Red hat Linux other Network Services**. Analyze and resolve compilation and deployment errors related to code development, branching, merging and building of source code
* Installed configured performance tools like **Loadrunner**, **JMeter**. Wrote scripts, executed tests and generated detailed reports for load analysis.
* Created and maintained Subversion repositories, branches and tags and Experience in Administering **SVN**
* Coordinate/assist developers with establishing and applying appropriate branching, labeling/naming conventions using Subversion source control.
* Maintained and managed assigned systems, **Splunk** related issues and administrators.
* Managed build results in **Jenkins** and deployed using workflows.
* Maintained and administered **GIT** source code tool.
* Created Branches, Labels and performed Merges in **Stash and GIT**.
* Created scenarios and Vuser scripts to perform load, stress and capacity testing using LoadRunner.
* Parameterized the scripts for unique data across different users. Create rendezvous points using **LoadRunner** to test the application stability at concurrent load.
* Maintain and track inventory using **Jenkins** and set alerts when the servers are full and need attention.
* Developed build and deployment scripts using **ANT and MAVEN** as build tools in **Jenkins** to move from one environment to other environments.
* Involved in writing **Maven** scripts for the configuration of the **java** applications.
* **Shell scripting** for building and deploying **java** application to target environments.
* Good hands-on experience in GIT command line and work flows.
* Worked on **Chef** **Cookbooks** and **Chef** **recipes** to automate infrastructure as a code.
* Setup the **Chef Nodes, Chef Client, Chef Server, and Chef Workstation**. Worked on Bootstrapping the Nodes secured the passwords and data using encryption data bag for chef.
* Implementing Continuous Delivery frameworks using Jenkins, **Chef**, and Maven& Nexus in Linux environment. Worked on Managing the Private Cloud Environment using **Chef**.
* Build and maintain a CI/CD that includes automated tests.

**Environment**: Nexus, Bash Scripting, Amazon Web Services (AWS), CI/CD Pipeline, Maven, Tomcat, Chef, Jenkins, Terraform, GitHub, Docker, Kubernetes, Ansible, SonarQube, Git, Grafana

**Client: Zolon Tech, IND May 2014 – August 2015**

**Role: Build and Release Engineer**

**Responsibilities:**

* Build, manage, and continuously improved the build infrastructure for global software development engineering teams including implementation of build scripts, continuous integration infrastructure and deployment tools.
* Management of customer requirements and documentation of the Project Plan as per the requirements.
* Build and deployment of Java to a variety of environments executing continuous improvement of builds with Maven plugins and Maintained development infrastructure including Artifactory repository, **Jenkins** CI server, **JIRA** and **Confluence** for maintaining docs and calendars.
* Tested application module using Java on selenium grid using Jenkins automation tool.
* Installed and customized rational tools like **ClearCase** and **ClearQuest**, support and maintenance of these tools.
* Implemented &amp; maintained the branching, merging and build/release strategies utilizing Subversion/CVS.
* Wrote **ANT** Scripts to automate the build process. Configured Bamboo for doing the build in all the non-production and production environments.
* Implement **Puppet** and **GIT** into development environment for testing and cross training staff on the technologies.
* Wrote **Puppet** models for installing and managing java version files.
* Created **Puppet** **master** to configure the compiled files, templates and plugins to manage nodes.
* Integrated puppet with Artifactory and deployed the specific modules in Artifactory.
* Created **Roles** and **profiles** in **Puppet** and mapped them to the respective node group.
* Integrated **Jenkins** with **puppet** and configured data through the pipeline plugins.
* Configured Code Manger in **puppet** and integrated with **TFS-GIT** and successfully pull the code from TFS-GIT branches. Documented the POC for puppet and application servers.
* Worked on Artifactory repository to maintain artifacts and used as a local repository.
* Responsible for writing/modifying scripts using **sh**, **Ksh**, and Bash for day-to-day administration.
* Developed NIX and **Perl** Scripts for the purpose of manual deployment of the code to the different environments and email the team when the build is completed.
* Build artifacts (war and ear) and deployed into a WebLogic server by integrating the **WLST** scripts to **Shell** Scripts.
* Executed user administration and maintenance tasks including creating users, groups, reports and queries.

**Environment**: Linux, Unix, Puppet, Shell Scripting, Git BASH, JENKINS, Python (Programming Language), Amazon Web Services (AWS)