**Karthik Nagavelly**

**Sr. Cloud / DevOps Engineer**

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**Summary:**

**9+ Years** of experience in the IT industry with specialized experience in **cloud & DevOps** like **Azure**/**AWS/GCP** and **GitHub/ GitLab** repositories, configuration management tools **Ansible** CI/CD tools **Jenkins/ ADO,** Infrastructure as Code **Terraform**and**Docker** to run and segregate containers, Orchestration tools like **Kubernetes** and **Azure DevOps**.

* I have expertise in working on **Microsoft Azure Services, Virtual Networks, Subnets, Virtual Machines, Resource Groups, Express Routes, Traffic Manager, VPN, Load Balancing, Application Gateways, Virtual Machine Scale Sets** and **Auto-Scaling.**
* Expertise in Azure Development and worked on **Azure web application**, App services, Azure storage, Azure SQL Database, Virtual machines, Fabric controller, **Azure AD**, Azure search, and notification hub. Experience in using **Azure service fabric** to package, deploy, and manage scalable and reliable microservices and containers.
* Hands-on experience designing Azure cloud models for establishing secure and cross-premise connectivity with **Azure VPN gateway** and Content Delivery Network.
* Expertise in **AZURE** services like **Compute (Web Roles, Worker Roles), Databases, Networks**, Internet of Things (**IoT**), **PowerShell** Automation, **Monitoring**, **Key Vault,**and **Scheduling.**
* Explorer designing, configuring, and deploying solutions on Microsoft **Azure** using **ARM** Templates, AZURE PowerShell Module,and Azure CLI focusing on high availability and auto-scaling.
* Experience in setting up **Azure DevOps CI/CD** pipelines for deploying API Management service with Backend certificates and backend configuration by writing **ARM** templates.
* Used **Azure Kubernetes Service (AKS)** to deploy a managed Kubernetes cluster in Azure and created an AKS cluster in the Azure portal using driven deployment options like **Azure Resource Manager (ARM)** templates and **terraform**.
* Planning, deploying, **monitoring**, and maintaining **Azure** cloud infrastructure consisting of multiple VM nodes as required in the environment.
* Proficient in working with Azure**Monitor for** detecting and diagnosing issues across applications and dependencies with Application Insights. Correlate infrastructure issues with VM insights and Container insights.
* Experience in Implementing **Terraform** modules for deployment of various applications across multiple cloud providers and managing infrastructure.
* Expertise in deploying Azure IaaS virtual machines (VMs) and cloud services (PaaS role instances) into secure VNet’s and subnets. Implemented **Terraform** modules for deployment of applications across multiple cloud providers like Azure, and AWS.
* Good Knowledge of components like **Docker** Engine, Docker-Hub, Docker-Compose, Docker Registry, and Docker container snapshots. Used **Docker** for local Application Deployment and Vagrant for different infrastructure setup and testing of code.
* Developed **Kubernetes** Cluster on Azure with master and Agent Node architecture and wrote YAML files to create services like pods, deployments, auto-scaling, load balancers, labels, health checks, and Namespaces.
* Experience in developing **APIs** using **Kubernetes** to manage and specify the copies of the containers to run the actual servers in the cloud. Scheduled, deployed, and managed container replicas onto a node cluster using **Kubernetes.**
* Experienced in branching, tagging, and maintaining the version across the environments using SCM tools like Git, GitHub, and Subversion (SVN).
* Experience in Infrastructure Development of **AWS** Cloud Services like **VPC, Subnet, EC2, IAM, S3, RDS, ELB, Auto scaling, Cloud Front, Cloud Formation, Elastic ache, AWS Import / Export**.
* Expertise in writing **AWS** Cloud Formation templates in JSON and YAML to use them as blueprints for building &and deploying multiple AWS resources. Worked on Kinesis Data Streams & Kinesis Firehouse &and integrated with AWS Lambda for serverless data collection.
* Experience in multiple areas of **Jenkins** like Plugin Management, Securing Jenkins, Performance issues, Analytics, Scaling Jenkins, integrating Code Analysis and Test Phases to complete the CD pipelines within Jenkins.
* Authored Playbooks in **Ansible** using YAML scripting and Manifests in Puppet using DSL to provision Nginx, Apache Spark, Apache Web servers, and Tomcat servers.
* Worked on **Windows 2016**/**2019 servers** and SMS Migration of servers that have Windows OS from VMware to the AWS console.
* Setting up, configuring, and troubleshooting TCP/IP, DHCP, DNS, NFS, CIFS, NTP, and Samba servers on **Linux** platforms.
* Experience in provisioning of IaaS, PaaS Virtual Machines and Web, Worker roles on Microsoft AZURE Classic and Azure Resource Manager (ARM), Deployed Web applications on Azure using **PowerShell** Workflow.
* Ability to build deployment, scripts, and automated solutions using scripting languages such as **Shell scripting, PowerShell,** and **Python**.

**Technical Skills:**

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| **TitleTitle** | **Tools Used** |
| **Cloud Environments** | Microsoft Azure, AWS, GCP |
| **Version Control Tools** | GIT, Git Lab, Azure Repos, Bitbuckets |
| **Configuration Management Tools** | Ansible, Terraform |
| **Scripting/Programming Languages** | Python, Shell (PowerShell/Bash) |
| **CI/CD Tools** | Jenkins& ADO |
| **Build Tools** | Maven, ANT |
| **Container Tools** | Docker, Kubernetes |
| **Monitoring Tools** | Splunk, Gary log, App Insights, ELK, Grafana, CloudWatch, Nagios |
| **Operating Systems** | Windows, UNIX, RHEL, CentOS& Ubuntu |
| **Databases** | MYSQL, NoSQL, MongoDB, Dynamo DB, MSSQL, PostgreSQL, Oracle |
| **Web/Application Servers** | Apache Tomcat, WebLogic, Oracle Application Server, Nginx, JBOSS |

**Education Details**:

**Bachelor of Technology**: Bachelor's in Electronics and Communication and Engineering (2015), JNTU, Hyderabad.

**Professional experience:**

**Delicato Family Wines (Manteca, California)** MAY 2023 to Present.

Senior DevOps Engineer

**Responsibilities:**

* Configured and deployed **Azure Automation Scripts** for an application utilizing the **Azure stack for Compute, Web and Mobile, Blobs, Resource Groups, Azure Data Lake, HDInsight Clusters, Azure Data Factory, Azure SQL, Cloud Services, and ARM** Services and utilities focusing on Automation.
* Involved in migrating the application from Infrastructure as a Service (IaaS) to Platform as a Service (PaaS) by converting the existing solution to Windows **Azure Worker Role** and then Configuring VM, Networking, Private Static IP Address and Public IP address.
* Created and configured HTTP Triggers in the Azure Functions with Application Insights for monitoring and performing load testing on the applications using the VSTS and used Python API for uploading all the agent logs into Azure blob storage.
* Hands-on Experience in designing and implementing Service Oriented Architecture underlined with Ingress and Egress using **Azure Data Lake Store** &**and Azure Data Factory** by adding **blobs** to lakes for analytic results and pulling data from **Azure Data Lake** to the **Blobs**.
* Used Azure blob to access required files and Azure Storage Queues to communicate between related processes. Configuring the Azure load balancer to load balance incoming traffic to virtual machines in Azure Cloud.
* Created Azure SQL database and performed monitoring and restoring of Azure SQL database. Performed **migration** of **On-premises** Microsoft SQL server to **Azure SQL database**.
* Deployed two-tier .NET, Python applications to **Azure DevOps** to focus on development by using services such as Repos to commit codes, Build Pipelines using PowerShell scripts for CI/CD and Test plans for unit test, deploy to **App Service**, **Azure Application** Insights collects health performance and usage data of the process, stored artifacts in blob storages.
* Created **CI/CD** pipelines for .NET, and python applications in **Azure DevOps** by integrating source codes GitHub, VSTS, and **artifacts**. Created deployment areas such as testing, pre-production, and production environment in Kubernetes cluster and configured App Insights, Prometheus, and **Grafana** monitoring dashboard for regular analysis.
* Defined resources and specified deployment parameters to **Azure Resource Manager (ARM)** templates to create a resource group of virtual machines.
* Worked on **Terraform** key features such as Infrastructure as code, Execution plans, Resource Graphs, Change Automation, and Implemented Terraform modules for deployment of applications across Azure.
* Implemented **Terraform** modules for deployment of various applications in Azure cloud providers and managing infrastructure.
* Deployed microservices-based applications on Azure Kubernetes by using **Azure Kubernetes Service (AKS)**, Ingress API Gateway, MySQL, SQL Databases, and Cosmo DB for stateless storage of external data, and set up reverse proxy Nginx servers and encrypting with SSL and TLS.
* Responsible for implementing container-based applications on **Azure Kubernetes** by using **Azure Kubernetes Service (AKS)**, **Kubernetes Cluster**, which are responsible for cluster management, Virtual Network to deploy agent nodes, Ingress API Gateway, MySQL Databases, and Cosmo DB for stateless storage of external data, and set up reverse proxy Nginx in the cluster.
* Implemented Jenkins pipelines into Azure pipelines to drive all microservices builds out to the Docker registry and then deployed to Kubernetes, Created Pods, and managed using **Azure Kubernetes service (AKS)**.
* Automated various infrastructure activities like continuous deployment, application server setup, and stack monitoring using **Ansible** playbooks.
* Building/Maintaining Docker container clusters managed by Kubernetes Linux, Bash, GIT, and Docker, on GCP.
* Used Chef for configuration management of hosted Instances within **GCP**. Configuring and Networking of Virtual Private Cloud (VPC).
* Provided high availability for IaaS VMs and PaaS role instances for access from other services in the VNet with Azure Internal Load Balancer. Work with business process managers and be a subject matter expert for using state-of-the-art big data technologies (Hive, Spark, Scoop, and NIFI for ingestion transforming vast amounts of data, and creating business intelligence reports of big data, python/bash scripting /Apache Airflow for scheduling jobs in GCP/Google’s cloud-based environments).
* Used Apache airflow in GCP composer environment to build data pipelines and used various airflow operators like bash operator, **Hadoop operators, and python callable** and branching operators.
* Worked on TERRAFORM for the provisioning of Environments in the GCP platform.
* Handle the various platforms like Linux, Windows, and GCP for automation purposes at the same time.
* Integrated **Jenkins/Helm/Kubernetes/Vault with GCP** to perform semi-automated and automated releases to lower and production environments.
* Created Service accounts, VM instances, and VPC networks using Terraform on GCP.
* Automated Compliance Policy Framework for multiple projects in GCP.
* Deployed GKE on GCP with the help of **Gitlab-Jenkins-Terraform integration**.
* Experience in Designing and implementing scalable cloud-based web applications using AWS and GCP.
* Migrated applications to the PKS and GCP cloud.

**Environment**: Azure Cloud, Azure-DevOps, GCP,Terraform, AKS, Ansible, Maven, Azure-Monitoring, Power-Shell, Windows.

HCL Technologies (Chennai, India) September 2021 to April 2023

Cloud/DevOps Engineer

**Responsibilities:**

* Implemented AWS solutions using EC2, S3, RDS, DynamoDB, Route53, EBS, Elastic Load Balancer, and Auto scaling groups, which was done by creating AWS launch settings based on customized AMI. AWS IAM and security groups have been configured in VPC's public and private subnets.
* Worked on creating AWS Lambda functions to insert and retrieve data into DynamoDB. Worked with the architect to discuss the design and implementation to make sure data is stored from AWS S3 and DynamoDB securely.
* Manage AWS EC2 instances utilizing Auto Scaling, Elastic Load Balancing, and Glacier for our SIT, UAT, Prod, and DR environments as well as infrastructure servers for GIT and Puppet.
* Worked AWS Lambda to run servers without managing them and to trigger to run code by S3 and SNS and converting existing AWS infrastructure to serverless architecture deployed via gulp and AWS cloud formation.
* Created AWSLambda Deployment function and configured it to receive events from AWSS3buckets. Created Lambda functions and assigned roles in AWS Lambda to run Python scripts.
* Provisioned the highly available EC2 Instances using Terraform and cloud formation and wrote new plugins to support new functionality in Terraform.
* Involved in using Terraform to migrate legacy and monolithic systems to Amazon Web Services.
* Managed Kubernetes charts using Helm. Created reproducible builds of the Kubernetes applications, templatized Kubernetes manifests, provided a set of configuration parameters to customize the deployment, and Managed releases of Helm packages.
* Implemented a production-ready, load-balanced, highly available, fault-tolerant, auto-scaling Kubernetes cloud infrastructure and microservice container orchestration.
* Created Clusters using Kubernetes and worked on creating pods, replication controllers, replica sets, services, deployments, labels, health checks, and ingress by writing Yaml files.
* Extensive experience in using Build Automation tools like ANT, Maven, Artifactory, and Jenkins
* Extensively worked on Jenkins continuous integration and for End-to-End automation for all builds.
* Worked on the end-to-end setup of the Artifactory pro as a container with a secure private Docker registry and local Docker repositories for storing the built Docker images.
* Worked on deployment automation of all the microservices to pull images from the private Docker registry and deploy them to the swarm cluster.
* Designed an ELK (Elastic Logstash Kibana) system to monitor and search enterprise alerts and configured ELK stack in conjunction with AWS and using Logstash to output data to AWS S3. Terminated SSL onto Nginx to remove overhead on API servers.
* Experience in creating Splunk and Data Dog dashboards and Alert’s creation.
* Experience in complete software development life cycle (SDLC) with software development models like Jira, Agile Scrum Model, Prototype model & RUP, and Waterfall model.
* Installation and configuration of Apache Webserver and making junction work for the transportation of applications through a Webserver.
* Implementing a Continuous Delivery framework using Jira, SVN, Bamboo, maven & Nexus, and Puppet in a Linux environment.
* Hands-on experience in Diagnosing, and troubleshooting various networking, hardware & Linux / UNIX server services issues and performing preventive maintenance.
* Performing two types of Server migration one from Physical to Virtual (P2V) and another from Virtual to Physical (V2P).
* Perform software installations and upgrades to Linux systems and maintain them by established policies, procedures, and service-level agreements. System.
* Experience in deploying infrastructure as a code in AWS using Terraform, CloudFormation, and AWS SDKs like Python, node.js &and PowerShell.
* Infrastructure Code Cloud Formation, Terraform
* Worked with Ansible integrated with Terraform to deploy applications after infrastructure build using playbooks, creating roles for each application, error handling, and usingAnsible-Lint.
* Ansible, Chef, terraform, Cloud Formation Templates.
* Experience in building the infrastructure by writing various Terraform/Cloud Formation templates.
* Configured Azure Infrastructure Automation using Runbooks and Terraform scripts.
* Involved in using Terraform to migrate legacy and monolithic systems to Amazon Web Services.
* Setting up the build and deployment automation for Terraform scripts using Jenkins.
* Provisioned the highly available EC2 Instances using Terraform and Ansible Playbooks.
* Developed environments of different applications on AWS by provisioning on EC2 instances using Docker, Bash, and Terraform.
* Managed AWS infrastructure as code using Terraform.
* Extensively involved in infrastructure such as code, execution plans, resource graphs, and change automation using Terraform.
* Environment: AWS Lambda, AWS S3, EC2, RDS, AWS Route53, Jenkins, Terraform, EBS, Linux, Ant, Maven, Data Dog, Puppet, Docker, Python,Ansible, Unix, Jira, Maven, GIT, Kubernetes, DynamoDB, Nginx, Splunk, ELK.

JDA Software (Bangalore, India) November 2017 to August 2021

DevOps Engineer

**Responsibilities:**

* Managed **Azure** infrastructure such as **Azure Web Roles**, **Worker Roles, SQL Azure**, **Azure Storage**,**and Azure AD Licenses** for development teams.
* **Identity & Access Management**: Azure Active Directory, Azure Identity, Multi-Factor Authentication (MFA).
* Implemented Cloud Solutions using various **AWS Services** including **EC2**, **VPC**, **S3**, **Glacier**, **Security-Groups**,**CloudFront**.
* Build **Jenkins**jobsand create Infrastructure from GitHub repositories containing Terraform code.
* Provisioned AWS networking Infrastructure such as VPC, subnets, and security groups using Terraform reusable modules utilizing Jenkins**shared libraries.**
* Virtualized the servers using **Docker** for the test environments and dev-environments needs as well as configured automation using **Docker** containers.
* Written **Ansible Playbooks** with Python SSH as the Wrapper to Manage Configurations of Azure Nodes and Test Playbooks on Azure instances using Python SDK.
* Creating **Dynatrace** dashboards for business-defined KPIs and performance dashboards for applications performance monitoring using Application Insights and **Dynatrace SAAS**.
* Developed tools using **Shell scripting** to automate some of the tasks. PowerShell scripting experience in creating automation processes for Branching, build creation, and deployments.
* Performed WebLogic Server administration tasks such as installing, configuring, monitoring, and performance tuning on a **Linux** environment.
* Extensive Experience working on **Kubernetes** to orchestrate the deployment scaling and management of docker containers.
* Experience in creating Docker images using Docker files, backing up using snapshots and managing the images and Docker volumes, and writing JSON format scripts to automate and integrate Docker with Kubernetes.
* Virtualization VMware, **Docker**, Kubernetes
* Used Jenkins pipelines to drive all microservices builds out to the Docker registry and then deployed to Kubernetes, Created Pods, and managed using Kubernetes.
* Building/Maintaining Docker container clusters managed by Kubernetes Linux, Bash, GIT, and Docker, on GCP.
* Used Docker to containerize Microservices in the cloud and managed clusters using **Docker Swarm** and Kubernetes. Developed Private cloud system solution on CoreOS using Kubernetes (Docker weave).
* Changing the **AWS infrastructure** Elastic Beanstalk to Docker with Kubernetes.
* Used Jenkins pipelines to drive all microservices builds out to the Docker registry and then deployed to Kubernetes, Created Pods, and managed using Kubernetes.
* Experience in Virtualization technologies like **VMWare**, and Vagrant and worked with containerizing applications like Docker, and Kubernetes.
* Leverage Docker containers and Docker consoles for managing the application lifecycle and worked on setting up the automated build on Docker HUB and deployed **CoreOSKubernetes** Clusters to manage Docker containers with lightweight Docker Images as base files.
* Used Kubernetes to manage containerized applications using its nodes, Config Maps, selector, Services, and deployed application containers as Pods.
* Created Pods and managed using Kubernetes by building Production-grade cube Clusters with **KOPS**.
* Managed local deployments in Kubernetes, creating local clusters and deploying application containers.
* Container management using Docker by writing Docker files setting up the automated build on Docker HUB and installing and configuring Kubernetes.
* Container management using Docker by writing Docker files setting up the automated build on Docker HUB and installing and configuring Kubernetes.
* Worked with **Kubernetes** to manage containerized applications using its **nodes**, **ConfigMaps**, selector, and Services and deployed application containers as Pods.

**Environment:**Azure cloud, Amazon AWS cloud, Bit-Bucket, Jenkins, Gradle, Kubernetes, Docker, Terraform, Ansible, Dynatrace, Shell Scripting, Linux.

**Verizon (Hyderabad, India)** May 2015-October 2017

Build & Release Engineer

**Responsibilities:**

* Configured SAML authentication to log in to our AWS accounts using single sign-on and deployed cross-account roles using AWS CloudFormation stack sets across different accounts from the master account.
* Automated cloud deployments using Python (boto & fabric) and AWS   Cloud Formation Templates.
* Responsible for managing IAM Policies, providing access to different AWS resources, and designing and refining the workflows used to grant access.
* Deployed and configured Elasticsearch, Logstash, and Kibana (ELK) for log analytics and application monitoring in integration with AWS Lambda and CloudWatch. Then store those logs and metrics into an S3 bucket using the Lambda function.
* Used Azure DevOps, GitHub Actions, and Octopus to build CI/CD pipelines.
* Implemented CI and CD for application using Jenkins as a CI tool for integrating different tools like GitHub, Maven, JUnit, and Nexus Artifactory and used Ansible as a configuration management tool for continuous deployment into testing, staging, and Production Environments.
* Create develop and test environments of different applications by provisioning Kubernetes clusters on AWS using Docker, Ansible, and Terraform
* Created Docker images using a Docker file, worked on Docker container snapshots, removed images, and managed Docker volumes.
* Installed Docker Registry for local upload and download of Docker images from Docker Hub and created Docker files to automate the process of capturing and using the images.
* Create, develop, and test environments of different applications by provisioning Kubernetes clusters on AWS using Docker, Ansible, and Terraform.
* Configured the Kubernetes provider with Terraform which is used to interact with resources supported by Kubernetes to create several services such as Deployments, services, ingress rules, Config Map, secrets, etc., in different Namespaces.
* Building/Maintaining Docker container clusters managed by Kubernetes, Linux, Bash, GIT, and Docker. Utilized Kubernetes and Docker for the runtime environment of the CI/CD system to build, test deploy.
* Integrated Kubernetes with Hashicorp Vault to inject configurations at runtime for each service using init, config sidecars, and persistent volume sharing between app and config containers.
* To deploy instances using Ansible playbooks and write modules in Ansible to integrate with Apache Tomcat and AWS. And used the Ansible playbook to deploy applications.
* Worked extensively on the automation engine Ansible which automates cloud provisioning, configuration management, application deployment, intra-service orchestration, and many other IT needs.
* Designed an ELK (Elastic Logstash Kibana) system to monitor and search enterprise alerts and configured ELK stack in conjunction with AWS and using Logstash to output data to AWS S3. Terminated SSL onto Nginx to remove overhead on API servers.
* Worked with RedHat OpenShift Container Platform for Docker and Kubernetes. Used Kubernetes to deploy scale, load balance, scale and manage Docker containers with multiple namespace versions.
* **Environment**: AWS, Azure, GitLab, Jenkins, Nexus, Go lang, GitHub Actions, Maven, Gradle, Docker, Kubernetes, Ansible, VMware, Web Logic, Tomcat, Cloud Watch, Perl, Oracle 10g/11g, GitHub, Grafana, Hashicorp Vault, Ruby, Git lab, Nagios, YAML, Splunk, JIRA, AppDynamics.