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**Kannan Kathiresan**

**Site Reliability Engineer**

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**Professional Summary:**

Over 10+ Years of experience in Systems Administration, Software Development, Configuration, Automation, Build and Release Engineering, DevOps Engineering, Site Reliability Engineering and Cloud Computing Platforms like AWS, Microsoft Azure, Google Cloud.

* Extensively worked on infrastructure development and operations by involving in designing and deploying using AWS services like AWS EC2 Instance, Route53, DNS, ELB, EBS, AMI, IAM, VPC, S3, Elastic Beanstalk, CloudFront, CloudFormation templates, CloudWatch monitoring and In-depth understanding of the principles and best practices of Software Configuration Management (SCM) processes, which include compiling, packaging, deploying and Application configurations.
* Provisioning the AWS EC2 servers by assigning the EBS volumes, auto scaling groups, load balancers, security groups in the defined VPC (Virtual Private Cloud) and Implemented AWS Lambda functions to run scripts in response to events in Amazon Dynamo DB table or S3 bucket or to HTTP requests using Amazon API gateway.
* Hands-on Migrating On-premises applications and data onto AWS Cloud, leveraging the usage of different services available on AWS like AWS Direct Connect, S3 Transfer Acceleration, AWS Snowball Edge, Server migration service and Data Base migration service with Live Migration of applications implementing Hybrid Migration Strategy.
* Hands-on experience in creating AWS infrastructure such as EC2 instances, VPC, S3 buckets using Terraform templates and convert them to AMIs using Packer for production use as a part of a continuous delivery pipeline.
* Strong experience in creating and maintaining highly scalable and fault tolerant multi-tier AWS and Azure environments

spanning across multiple availability zones using Terraform and CloudFormation Templates.

* Experienced in creating private Cloud using Kubernetes that supports Dev, Stage, POC and PROD Environments.
* Experience in creating, developing, and testing environments for different applications by provisioning Kubernetes clusters on AWS using Docker, Ansible, and Terraform.
* Experience in using Jenkins and pipelines to drive all microservices builds out to the Docker registry and then deployed to Kubernetes, created Pods and managed using Kubernetes. Managed a PaaS for deployments using Docker, Kubernetes and Chef, Puppet which reduced considerably deployment risks.
* Extensively used Kubernetes and Docker for the runtime environment for the CI/CD system to build, test, and deploy.
* Used Docker for wrapping up the final code and setting up development & testing environment using Docker Hub, Docker Swarm, and Docker container network.
* Performed application Deployments & Environment configuration using Ansible, Chef, Puppet and treating Infrastructure as Code. Automate the installation of ELK agent with Ansible playbook.
* Deployed and configured Chef server including bootstrapping of Chef-Client nodes for provisioning and created roles, recipes, cookbooks and uploaded them to Chef-server, Managed On-site OS, Applications, Services, Packages using Chef as well as AWS for EC2, S3, Route53 and ELB with Chef Cookbooks.
* Development and version control of Chef Cookbooks, testing of Cookbooks using Foodcritic, Test Kitchen and running recipes on nodes managed by on-premise Chef Server.
* Proficient in developing Puppet module for Automation using a combination of Puppet Master, R10K Wrapper, Git Enterprise, Open stack (Horizon), Vagrant and Simple UI (Jenkins).
* Extensively worked on Jenkins and Bamboo by installing, configuring and maintaining for continuous integration (CI) and for End to End automation for all build and deployments. Implement CI/CD tools Upgrade, Backup, Restore DNS, LDAP, and SSL setup.
* Utilizing Jenkins CloudBees for enterprise scale infrastructure configuration and application deployments checking out code from SVN/GIT and use ANT/Maven to Build war/jar artifacts and Creating SonarQube reporting dashboard to run the analysis for every project. Experience in using Nexus and Artifactory Repository Managers for Maven builds.
* Experience in installing, configuring, and managing MYSQL, SQL Server, PostgreSQL, MongoDB & Cassandra.
* Proficient in scripting languages like Shell Scripting using Bash and Ruby to automate system administration jobs and PowerShell, BASH, Python, Groovy.

**Technical Skills:**

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| Cloud Environment | Amazon Web Services (AWS), Pivotal Cloud Foundry (PCF), Azure, Google Cloud Platform (GCP). |
| Infrastructure as code | Terraform and Cloud Formation. |
| AWS Services | VPC, VPN, EC2, IAM, S3, Cloud Front, Cloud Trail, Route-53, Security Groups, ELB, ALB, RDS, Elastic Beanstalk, CloudFront, Redshift, Lambda, Kinesis, DynamoDB, Direct Connect, Storage Gateway, DMS, SMS, SNS, and SWF. |
| Operating Systems | Amazon Linux, Linux (Red Hat, CENTOS & SUSE), Ubuntu, Solaris, DEBAIN, HP-UX, Aix-Unix, Windows. |
| Scripting | Shell Scripting, Groovy, Python, Ruby, Perl and Power Shell. |
| Version Control Tools | GIT, GITHUB, TFS, Subversion (SVN), CVS and Bitbucket. |
| Build Tools | Maven, Gradle Sonar, Nexus, and Ant. |
| Containerization Tools | AWS ECS, Docker, Kubernetes, Mesos. |
| Virtualization Tools | VM Ware, Hyper V, Vagrant, VIO, WPARs |
| Application Servers | WebSphere Application Server, Apache Tomcat, Jboss, WebLogic, Nginx. |
| Automation & Configuration Tools | Chef, Puppet, Ansible, Jenkins. |
| Orchestration Tools | EKS, Kubernetes, Docker swarm, and Apache Mesos. |
| Networking Protocols | TCP/IP, DNS, DHCP, Cisco Routers/Switches, WAN, LAN, FTP/TFTP, SMTP. |
| Monitoring Tools | Datadog, Dynatrace, Nagios, AWS Cloud Watch, Splunk, and ELK. |
| Bug Tracking Tools | JIRA, Bugzilla, and Red Mine. |

**Work Experience**

**Taco Bell Corp, Irvine, CA June 2020 - Present**

**Site Reliability Engineer**

**Roles & Responsibilities:**

* Responsible for the definition, planning and execution of all infrastructure activities required to support the Hybris platforms running on various **AWS** cloud services such as EC2, ECS, S3, IAM, VPC, VPN, Route53 and more.
* Proficient in designing and implementing VPN tunnels using **AWS** services, such as **AWS** Site-to-Site VPN and **AWS** Client VPN.
* Configured and managed **VPCs** in **AWS**, including subnet creation, routing tables, security groups, and network ACLs.
* Worked on troubleshooting **VPN** connectivity issues, including packet capture analysis and network performance tuning.
* worked with **AWS** networking services, **ALB**, **ELB** and **AWS** Route 53 and Security groups to integrate **VPN** tunnels and VPCs into a comprehensive architecture.
* Strong understanding of **AWS** **Lambda's** event-driven architecture and its integration with other **AWS** services such as **API** Gateway, **S3**, **DynamoDB**, and more.
* Worked on cost optimization for **AWS** service and removed unused **Snapshots**, **AMI’s** and **S3** andInvolved in **RDS** DB Upgrade and Downgrade for performance testing.
* Designed, implemented, and maintained **Kubernetes** clusters for container orchestration, leveraging tools like **kubeadm** or managed **EKS** Kubernetes services.
* Deployed and managed containerized applications on **Kubernetes** using **YAML** manifests or **Helm** charts, ensuring scalability, reliability, and high availability.
* Implemented **Kubernetes** best practices for resource management, pod scheduling, networking, and security (RBAC, Network Policies) and Automated **Kubernetes** operations and workflows using **kubectl**, Kubernetes **API**, and custom scripts for tasks like deployment, scaling, and monitoring.
* Troubleshooted and resolved issues related to **Kubernetes** clusters, container runtime, networking, and storage, ensuring optimal performance and uptime.
* Created **Docker** images and **Dockerfiles** for packaging and containerizing applications, ensuring consistency and portability across environments and Managed Docker registries in **AWS ECR** for storing and distributing Docker images, implementing access controls and image versioning strategies.
* Optimized **Docker image** builds and container startup times, minimizing resource utilization and improving application deployment speed.
* Customized **Jenkins** configurations, including security settings, plugin installations, and global tool configurations to align with project requirements.
* Configure Jobs in **Jenkins** and integrate with other 3rd party apps like **Pager duty, slack**, **Datadog** for notifications.
* Integrated **Jenkins** with logging and monitoring tool with **Datadog** to aggregate and analyze build logs and performance data for troubleshooting and optimization.
* Configured and maintained monitoring systems using **Datadog** to monitor infrastructure, applications, and services.
* Conducted system capacity planning and optimization based on performance and usage data collected by **Datadog**.
* Developed **Ansible** playbook to automate the deployment and configuration of **Datadog** agents, **Tomcat** config, **Solr** cofig, **MySQL** config and **EC2** Instance configuration.
* Configured DB monitoring and created the metrics and dashboard in **Datadog** for production support team.
* Implemented **Terraform** best practices for state management, module reuse, and versioning, ensuring consistency and reliability of infrastructure deployments.
* Wrote many **Terraform** Template to automate infrastructure and Provisioning **AWS** resources for Non-Prod and Prod Environment.
* Managed **Splunk** infrastructure, including deployment, scaling, and maintenance of indexers, search heads, and forwarders.
* Designed and implemented log ingestion pipelines in **Splunk** to collect and parse logs from various sources, including applications, servers, network devices, and security appliances.
* Configured alerting rules and thresholds in **Splunk** to proactively monitor system health, security events, and performance metrics.
* Utilized **Dome9**'s compliance management features to monitor and enforce regulatory requirements DSS within the **AWS** environment.
* conducted regular security assessments and audits using **Dome9**'s network security capabilities to identify vulnerabilities and implement necessary remediation measures.
* Designed and implemented **Akamai's** global traffic management (GTM) and load balancing solutions to optimize traffic distribution, ensure high availability, and route users to the nearest data center for optimal performance.
* Utilized **Akamai's** caching, compression, and image optimization techniques to improve website load times and enhance user experience across devices and geographies.
* Implemented **Akamai's** front-end optimization (FEO) techniques to optimize HTML, CSS, and JavaScript resources, reducing page render times and increasing conversion rates.
* Worked on **Service now** for change management and incident management ticket.
* Used version control tools like **Bitbucket**/**Gitlab** for CI/CD pipeline configuration.
* Used **JIRA** and **CONFLUENCE** for application and platform support.
* Worked with business to help them configure and deploy the changes during promotions such as World Taco Day/SABSAT/NBA Finals campaign etc.,
* Worked with testing teams to help them troubleshoot potential issues in lower/production environments.
* Managed/Guided the day-to-day log listings from Monitoring tools of production environment to train operations teams.
* Worked with developers and troubleshoot the deployment, coding issues.
* Handling all changes /deployments following standard ITIL process.
* Worked on 24/7 on call shift rotation as part of Level 3 production support to manage **Pagerduty** Tickets.

**Environment:** AWS, ECS, Lambda, EC2, S3, EBS, IAM, Elastic Load Balancer, VPC, VPN, CloudFormation, Cloud trail, Cloud watch, Route-53, AWS Auto Scaling, Splunk, Kubernetes, Docker, Datadog, Dynatrace, Gitlab-CI, Akamai, PagerDuty, Retool, Dome-9, Apache, Tomcat, Nagios, MySQL, Jenkins, Maven, JSON, Web Logic Application Server 9.x, 10.x, Ansible, GIT, Windows, and Linux.

**Fifth-Third Bank, Cincinnati, OH October 2018 – May 2020**

**Sr. Cloud / DevOps Engineer**

**Roles & Responsibilities:**

* Worked on Amazon AWS EC2 cloud services for installing, configuring and troubleshooting on various Amazon images like Amazon Linux AMI, different versions of RedHat and Ubuntu.
* Worked with various services of AWS: EC2, ELB, Route53, S3, Cloud Front, SNS, RDS, IAM, Cloud Watch and Cloud Formation, Elastic Beanstalk, Lambda, CloudTrail.
* Designed AWS Cloud Formation templates to create custom sized VPC, subnets, NAT to ensure successful deployment of Web applications and database templates.
* Setup and build AWS infrastructure various resources, VPC EC2, S3, IAM, EBS, Security Group, Auto Scaling and RDS in Cloud Formation JSON templates.
* Used Amazon Elastic Beanstalk, automatically handling the deployment, from capacity provisioning, load balancing and auto-scaling along with SQS, SNS, SWF services to application health monitoring.
* Provisioned the highly available EC2 instances using Terraform and CloudFormation templates, wrote new plugins to support new functionality in Terraform and involved in using terraform migrate legacy and monolithic systems to Amazon Web Services.
* Experienced in setting up of AWS relational databases like Aurora, MYSQL, MSSQL and NOSQL database DynamoDB.
* Implemented AWS solutions like Route 53, EC2, S3, IAM, EBS, Elastic Load Balancer (ELB), Security Group, Auto Scaling in Cloud Formation JSON templates. Created snapshots and Amazon machine images (AMI) of the instances for backup and created access Management (IAM) policies for delegated administration within AWS
* Orchestrated and migrated continues integration & continuous deployment (CI/CD) processes using Cloud Formation and Terraform, packer Templates and Containerized the infrastructure using Docker, which was setup in OpenShift, AWS and VPCs.
* Created Enterprise level application stacks to demonstrate how to deploy and scale applications on OpenShift Platform-as a-Service (PaaS).
* Worked with OpenShift platform in managing Docker containers and Kubernetes Clusters.
* Implemented Micro services on OpenShift based on Docker to achieve Continuous Delivery
* Worked on Container based deployments using Docker, working with Docker images, Docker HUB and Docker registries.
* Developed & maintained Infrastructure as code using CI/CD deployments using Terraform. Also, developed and tested environments of different applications by provisioning Kubernetes clusters on AWS using Docker, Ansible, and Terraform.
* Designed, developed and deployed applications on to several cloud-based solutions using configuration Management tools like Chef, Puppet, Ansible.
* Experience in Designing, Installing and Implementing Ansible configuration management system and in writing playbooks for Ansible and deploying applications.
* Developed Docker images to support Development and Testing Teams and their pipelines and distributed Jenkins, JMeter images, and Elastic Search, Log stash & Kibana (ELK).
* Integrated JFrog, SonarQube, Black Duck and Check Marx, Aquasec with Jenkins.
* Configured CloudBees Jenkins and Created Multibranch pipeline for various application.
* Installed Ansible Registry for local upload and download of Docker images and even from Docker Hub.
* Experienced in Installing, Configuring and Managing Docker Containers, Docker Images for Web Servers and Applications servers such as Apache, Tomcat using Docker and integrated with Amazon MySQL RDS database.
* Ability to build deployment, build scripts and automated solutions using scripting languages such as Shell scripting, Bash, Python and Ruby.
* Wrote Ansible playbooks with Python SSH as a wrapper to manage configurations and the test playbooks on AWS instances using Python.

**Catalyte, Baltimore, MD. Jan 2013 - Dec 2014**

**DevOps/AWS Engineer**

**Responsibilities:**

* Implemented a Continuous Integration and Continuous Delivery (CI/CD) pipeline with Docker, Jenkins and GitHub and Azure Container Service, whenever a new GitHub branch gets started, Jenkins, our Continuous Integration (CI) server, automatically attempts to build a new Docker container from it.
* Created Elastic Load Balancers (ELB) with EC2 Auto-scaling groups in multiple availability zones to achieve fault-tolerance and high availability. Implemented alarm notifications for EC2 hosts with CloudWatch.
* Implemented Security groups for inbound/outbound access, network ACLs for controlling traffic through subnets, Internet Gateways, NAT instances and Route Tables to direct the network traffic and to ensure secure zones for organizations in AWS public cloud.
* Used AWS Elastic Beanstalk for deploying and scaling web applications and services developed with PHP, Node.js, Python, Ruby, and Docker on familiar servers such as Apache, and IIS.
* Managed the services and resources for the users and managed the permissions for allowing and denying the services using IAM roles and assigned individual policies to each group.
* Implemented LAMP stack image in multitier AWS instances in different subnets in Amazon VPC, attached ACL’s and Security Groups to maintain high security.
* Setup of Virtual Private Cloud (VPC), Network ACLs, Security Groups and route tables across Amazon Web Services and configure and administer Load Balancers (ELB), Route53, Network and Auto-scaling for high availability.
* Implemented Terraform modules for deployment of applications across multiple cloud providers.
* Designed, configured and deployed Microsoft Azure for a multitude of applications utilizing the Azure stack (Including Compute, Web & Mobile, Blobs, Resource Groups, Azure SQL, Cloud Services, and ARM), focusing on high-availability, fault tolerance, and auto-scaling.
* Designed and configured Azure Virtual Networks (VNets), subnets, Azure network settings, DHCP address blocks, DNS settings, security policies and routing. Exposed Virtual machines and cloud services in the VNets to the Internet using Azure External Load Balancer.
* Setup Azure Virtual Appliances (VMs) to meet security requirements as software-based appliance functions (firewall, WAN optimization, and intrusion detections). Utilized NSGs for layer 4 Access Control List (ACLs) for incoming and outgoing packets.
* Worked with Kubernetes to provide a platform for automating deployment, scaling, and operations of application containers across clusters of hosts and managed containerized applications using its nodes, Config maps, selectors, and services.
* Responsible for provisioning Kubernetes environment and deploying the dockerized applications by developing manifests and Configured Kubernetes, for quick and efficient response to changes in demand. Deployed our applications quickly and predictably.
* 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 using Docker and setting up ELK with Docker and Docker-Compose. Actively involved in deployments on Docker using Kubernetes.
* Implemented Docker to provision slaves dynamically as needed. Created and Maintained Docker files in Source Code Repository build images and ran containers for applications and testing purposes. Creating and handling multiple Docker images primarily for middleware installations and domain configurations.
* Designed Continuous Delivery platform using Docker, Jenkins. Used GIT to keep track of all changes in source code.

**Accel Frontline, Chennai, India. Sep 2011 – Dec 2012**

**Linux Administrator**

**Responsibilities:**

* Administration of Centos/RHEL, SUSE Linux Enterprise Server nodes both bare metal and VMware.
* Administered DNS, NIS, NIS+, and NFS, Send Mail and involved in troubleshooting. Experience in building servers using kickstart and jumpstart process.
* Package management using Red Hat RPM, YUM used in several Linux distributions such as Red Hat Enterprise Linux, SUSE Linux Enterprise, and Fedora.
* Administered DHCP, DNS and NFS services in Linux.
* Written scripts in python to automate log rotation of multiple logs from web servers.
* Responsible for installing and configuring MySQL which includes creating database tables, updating table entries.
* Maintained all LDAP services and administration to perform LDAP directory upgrades, enhancements, and revisions.
* Having production experience supporting and deploying to web application servers such as Web logic, Red Hat Jboss, Apache Tomcat, and Apache HTTPD servers.

**Environment***:* Red hat Linux Enterprise, Oracle, WebLogic, Tomcat, Bash, VERITAS volume manager 5.x, SUSE Linux, Dell PowerEdge servers, X86/X64 platform.

**Accel Transmatic Ltd. Trivandrum, India March 2010 – Aug 2011**

**Unix Administrator**

**Responsibilities:**

* Installation and administration of RHEL 4.0/5.0 and SUSE 10.x.
* Installation, Configuration & Administration of AIX 5.3/6.1 on p595, p615, p630 servers.
* Handling HBA card replacement and reconfiguring the disk.
* Designing and managing disk space using AIX Logical Volume management.
* Installation of APARs, updating the maintenance levels.
* Developed automated processes that run daily to check disk usage and perform cleanup of file systems on Linux environments using shell scripting.
* Perform new builds and decommissions of both physical and VMware servers.
* Deployed the Java applications into web application servers like Web logic.
* Monitoring system performances using Nagios and managing network issues.
* Created and modified users and groups with SUDO permission.

**Environments:** Red Hat Linux (RHEL 4/5), UNIX, Python, Logical Volume Manager, Global File System, Red Hat Cluster Servers, Nagios, Oracle, MySQL, SAN, SUSE, VMware.

**Education:**

**Masters in engineering management (2016-2018) – Trine University, Angola, Indianapolis**

**Bachler’s of Electronics and communication Engineering - Lakshmi Ammal College,**