MANOJ SHUNMUGAM

Senior Site Reliability Engineer

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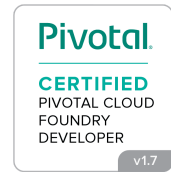
PROFESSIONAL SUMMARY

- **Certified Kubernetes Application Developer (CKAD) & Cloud Foundry Certified Developer (CFCD)**
- 10+ years of experience in IT/ Computer Science, major contribution in DevOps Technologies & Monitoring using **Google Cloud, AWS Services & Pivotal Cloud Foundry** with **Terraform, Docker, Jenkins CI,** Shell, **NodeJS**, Python, Go, and also administrating & supporting JAVA Middleware platform like **Apache Kafka**, JBoss, Tomcat and Web Servers like Apache HTTP, Nginx running on AWS, Linux, Unix, Docker Containers.
- Extensively worked in **Observability & Analysis** with hands-on experiences in tools like Prometheus, AppDynamics, Graphite, Grafana & DataDog in **Monitoring**, Elastic & Splunk in **Logging**, and Working on Jaeger in **Tracing**
- **Supported Mission Critical** and **Business Critical applications**, involved in troubleshooting, fixing issues in Command Center bridges to meet appropriate SLA.
- Implemented fully automated **Kubernetes Cluster** in Google with multiple environments, Service account creation & binding with GCP and restrictions based on pod security Policy.
- **Deployed** fully automated **Istio**, a Service Mesh for distributed microservices in GKE and configured appropriate Gateway & Virtual Services for multiple environments in the same cluster.
- Fully **automated** set-up for **SIEM Logging** in GCP which includes an automated way of creating Pub/Sub topic & Logging router to push to enterprise for security team.
- **Streamlined development team** environment configuration management and guided team on complete Kubernetes on-boarding, this enabled the team to migrate to different environments in ease.
- **Production implementation** of **Apache Kafka** for **entire Organization** on-prem and also implemented in **Amazon Cloud** with EC2 instance. Created process, trained developers and Vendors, implemented CI/CD setup for all Applications on-boarding to cluster in all environments including Production.
- Brought current Infrastructure into **Terraform** as part of **IaaC (Infrastructure as a Code).**
- **Presented expertise** in implementing modern DevOps transformation using **Kubernetes** to orchestrate **docker** containers which serve various API's of Data Platform which built on **GCP** completely.
- **Mentor** team to tackle various levels of issues. Involves explaining the architecture of various technologies and using expertise to narrow down the issues. Involves understanding of various levels of systems architecture.
- Extensively worked on **migrating on-premise** environment to **AWS** for **Mission Critical** and **Business Critical** applications**.**
- **DevOps** expert in Release and Deployment management activities and procedures in various system environments.
- **Expert at scripting and Automation** for various tasks to modify / update server configurations, Production support and changes and regular maintenance tasks using **shell, nodejs, and golang**
- **Expertise in troubleshooting** which involves knowledge of application technologies, network topologies and applications architecture.
- Involved and contributed to decouple monolithic applications as **microservice architecture.**
- Installation, configuration and maintenance of application monitoring tools like **Grafana, Prometheus** and **AppDynamics**

EDUCATION

- **Bachelors of Electronics & Communication Engineering** in **National Engineering College** affiliated to **Anna University**, Chennai, India.
  Academic Year: 2006 – 2010.

TECHNICAL SKILLS

App Definition	:	Apache Kafka, HELM, Packer, docker Compose, Jenkins, Concourse CI
Platform	:	Pivotal Cloud Foundry, Amazon Web Services, Google Cloud Platform
Orchestration & Management	:	Kubernetes, Apache Zookeeper, Nginx, Istio, Zuul
Provisioning	:	Terraform, RunDeck, Puppet , Amazon ECR, Google Container Registry, Sonatype Nexus, Vault
Development	:	NodeJs, golang, Shell, python, sql, JavaScript
Observability and Analysis	:	Prometheus. Graphite, AppDynamics, Amazon Cloudwatch, Google Stackdriver, elastic, Splunk, Grafana & Datadog

OPERATIONAL TOOLS

Grafana on Cloud	:	Grafana, previously hosted only on traditional virtual machines but improvised that by hosting it in Cloud Foundry and paved a new path for existing monitoring infrastructure.
CheckStore	:	Backed by Redis and NodeJS, a real-time store health status tool evaluating all 2000 Home Depot stores. It' was instantly adopted across enterprise and it's actively used to evaluate the health of systems.
Funnel Dashboard	:	Designed one of a kind dashboard in AppDynamics, which formulated Business level metrics to Engineering level through scoping.
Json Object Comparer	:	Created a JavaScript tool to compare two JSON objects stacks.
Get Git	:	A Python app to put the latest configuration from Git repo to application server.

PROFESSIONAL EXPERIENCE

Lead Site Reliability Engineer
Employer: Equifax Inc, Alpharetta , GA   **Aug 2019 – Present**

Responsible for architect DevOps platform for Workflow & Event Tribes using automation tools like Kubernetes, Istio, Dataflow, Terraform, & Jenkins on Google Cloud Platform. Point of contact for DevOps tools like Istio, K8s, Jenkins, Build and Release management. Define DevOps culture for the tribes and communicate with all related parties to follow process.

Responsibilities

- **Deep Dive** into Google Cloud Platform to analyze various services that are useful for a reliable Infrastructure, later implement the useful services like Compute Instance Group managers, Regional replicated disks for HA, **HA** solutions.
- Lead Dev teams to create appropriate configurations for **ISTIO**, which is used to expose part of internal services to external clients.
- Imported current infrastructure in **Google Cloud** to use **terraform** and **Helm**, created **IaaC**.
- Mentor Infrastructure teams (Vendors) to use **IaaC** for further changes to Infrastructure in Google Cloud.
- Created Non-Prod Google Cloud Infrastructure from scratch using terraform including **Private Kubernetes Cluster**
- Taken lead of creating **POC's** for migrating monolithic applications to **microservices**
- Developed CI/CD system with Jenkins on **Kubernetes** container environment, utilizing Kubernetes and **Docker** for the microservices environment to build, deploy and test cycles.
- Worked closely with various teams for applications to migrate to **GKE / Tech Refresh** environments
- Always working on re-mediating security vulnerabilities, product issues, technical issues, product updates etc.. to comply with **infrastructure resilience and security**.
- Extensively worked on creating **Jenkins** (**CI**) jobs to **templates for** infrastructure provisioning and deployment to be used by squads.
- Creating **metrics** to monitor performance and understand how the application is being utilized

Environment

Google Cloud services: Kubernetes, Compute Instances, Dataflow, Cloud DNS, GCS, StackDriver, Helm, Terraform, Shell, Jenkins, Atlassian Jira, Bitbucket, Confluence & Service Now.

Site Reliability Engineer
Employer: Equifax Inc, Alpharetta , GA   **Apr 2018 – Jul 2019**

Responsible for rebuilding and migrating Collections & Recovery Platform which was built for on-prem using modern technologies like Terraform, Jenkins CI on AWS Services: EC2, VPC, S3, ALB, ECS, Lamda, Secrets Manager etc.. Orchestrated using ECS, Docker etc.. DevOps tools: Jenkins CI, Bitbucket (git) version control, Artifactory, JIRA, Confluence. Software technology stack also used Kafka, NodeJs etc.. Monitoring solution: Grafana, DataDog & Cloudwatch

Responsibilities

- Perform Infrastructure build and rebuild using **Terraform** and Involved in modifying existing code, writing new components and worked through ideas to make Infrastructure as Code secure, stable and bug fixes.
- Identify, Analyze and **mentor** the team while identifying the problem and provide right directions to mitigate infrastructure issues.
- Involved in **Services Migration to AWS** which involved planning, managing from the middleware perspective.
- Implemented Jenkins on AWS with EFS & ECS for caching and slave configuration for better quicker job build time.
- Outlined the monitoring and alerting solutions for teams and defined the key VALUE metrics for application.
- Coordinate **cross-functional & regional teams** while taking approaches for best solutions available.
- Implemented VPC validation tools to evaluate newly created VPC for on-boarding application faster.
- Procured, installed and maintained SSL certs for web servers and AWS ALB.
- Worked on fixing the security vulnerabilities for web servers hosted in data centers.
- Maintenance of DevOps suite includes **Jenkins, CloudWatch Subscriptions**. Includes planning, performing required configuration updates, upgrades to software within them.
- **Mentor** team to provide appropriate directions on how to tackle, identify, troubleshoot issues about monitoring stack and alerts from monitoring.

Environment:

AWS EC2, S3, ALB, ASG, Launch Configs, Lamda, Centos 7 Linux, DNS, Terraform, Artifactory, Jenkins, Bitbucket, JIRA, Confluence, Docker, ECS, Kafka, Elastic Search, Grafana, DataDog, shell, NodeJs.

DevOps Engineer
Client: The Home Depot, Atlanta, GA   **May 2015 – Mar 2018**
Employer: Tata Consultancy Services

Responsible to Support Mission Critical and Business Critical applications that used Order Management and Retail stores, but not limited to these. Supporting applications are heterogeneous like IBM Sterling, Messaging platform like IBM Messaging Queue, Apache Kafka various internal tools. My work involves supporting any kind of outage and responding 24/7 in on-call period. Worked on projects to take complete responsibility from gathering requirements to prod roll-out and required maintenance / support later. Involved in suggesting new architecture amendments on IAAS / DevOps Perspective. Contributed extensively in automation.

Responsibilities

- Fully automated Set-up of **Apache Kafka** as service to product teams and provided end to end support.
- Identified and deployed **Kafka Manager**, a key tool that opens the details available in Kafka and hosted it in **Cloud Foundry.**
- Developed significantly in **NodeJS and Express framework** to interact with other web services.
- Dockerized **Prometheus & Nginx** to provide monitoring solutions on applications hosted in Cloud Foundry.

- SME for **AppDynamics**, expertized in controller configuration, agent instrumentation and troubleshooting through APM tool.
- Implemented **Black Box monitor** and Kafka **consumer lag monitor** for Kafka using Express.
- Contributed extensively in design and enhancement of existing **Operation Tools** developed using **AngularJS** backend with Java and Oracle Database.
- Constructed **Grafana Data Visualization** to provide system visibility with both engineering and business backgrounds.
- **Standardized alerts** across various product experience teams with new naming conversation, plain SOP's and refined thresholds to generate only actionable pages.
- Developed a tool for **Slack integration** hosted in PCF for AppDynamics and it is being used across enterprise **serving over 4000 requests per day**.
- Created and maintained **service documentation as Code** in Github.
- Planned production changes according to Change Management (**Service Now**), used **JIRA** ticketing tool for issues reported, tracking issues, worked on Incident Management while operational issues, aligned various teams to properly address issues.
- Responsible for day-to-day support, maintenance and security of critical web infrastructure. This includes code promotions, problem determination and resolution, infrastructure capacity planning, infrastructure deployment, testing, maintenance, system automation and on-call support.
- Involved in preparing Root Cause Analysis (**RCA**) documentation for unexpected critical issues.

Environment

Java, NodeJS, Shell Scripting, Apache Kafka, Pivotal Cloud Foundry, IBM Sterling, CentOS, Prometheus, Grafana, Graphite, AppDynamics, Github, Jenkins

Lead Mobile Engineer
Client: The Home Depot, Chennai, India   **Jan 2013 – Apr 2015**
Employer: Tata Consultancy Services

Responsibilities

- Led the development and adoption to **Hybrid web application** from the traditional .net mobile framework using **BackboneJs & AngularJs**
- Reviewing other developers code and **continuously discovering,** evaluating, and implementing new technologies to maximize development efficiency.
- Addressing outstanding bug issues and **implementing robust fixes**.
- Strong knowledge of **mobile UI design principles**, patterns, and best practices
- Used internet technologies like **HTML, XML, XPATH and XSD**.
- Understand **Android & Hybrid** interface components and differences between those platforms
- **Full stack development** using Backbone.js, Java web services and Oracle database.
- Worked on Motorola MC75 **Windows phone** and TC70 **Android Phone**
- Worked in developing Order Management App developed using **C# & .Net Compact Framework 3.5.** For Window Mobile OS.

Environment

JavaScript, AngularJS, Grunt, Cordova, Android SDK, C#, .NET Compact Framework, Visual Studio IDE, Window Mobile 6.5 SDL, Team Foundation Server

System Engineer
Client: Nokia, Chennai, India   **Dec 2010 – Dec 2012**
Employer: Tata Consultancy Services

Primary responsibilities include creating / supporting Lotus Notes Domino Server and creating workflows according to application team requirements. On Call support for mail server related issues and work with vendors until issues resolve.

Responsibilities

- Strong knowledge of the **Lotus Notes Domino Messaging System**.
- Manage the migration of a large number of users from **Notes to Sharepoint**
- **Troubleshoot** migration issues including phone support Work with Global Lotus Notes and Sharepoint teams
- Created **documentation and communications** for migrating user
- Worked on **Reservation System** and approval workflow mainly with IBM Notes and IBM Domino Server
- Goog knowledge of **HTML, CSS, PHP** and web development standards.
- Familiarity with Lotus Notes development and Lotus Script.
- Developed a prototype of **Online Booking System** using ASP.NET & MySQL

Environment

Lotus Notes Designer, Lotus Script Formula Language, JavaScript, HTML, CSS, Ajax, Jquery

CONFERENCES AND TRAININGS

• Presentation on **Apache Kafka in Developer's. Forum**, an enterprise wide technical forum in The Home Depot - June 2017

• **AppSphere**, AppDynamics annual conference - Nov 2016

• **Connect.TECH**, Southeast's premier Web & Mobile Dev. Conference – Oct 2015

• **Cloud Foundry Meet-up**, a technical training for members across different application team in company's portfolio - July 2015

• **Microsoft TechDay**s, technical learning event for IT professionals and developers – Nov 2014