**Muthamizhselvi Ayyappan**

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**SUMMARY**

* DevOps Engineer with 9 years of IT experience exposed to public clouds like AWS/Azure/Openstack Cloud platform, implementing the best practices of IT industry using the CI/CD tools.
* Experience on AWS platform and its dimensions of scalability including EC2, S3, EBS, VPC, ELB, AMI, SNS, RDS, IAM, Route 53, Auto scaling, Cloud Front, Cloud Watch, Cloud Trail, Cloud Formation, Security Groups.
* Configured AWS IAM and Security Groups in Public and Private Subnets in VPC Managed IAM accounts (with MFA) and IAM policies to meet security audit & compliance requirements and worked as Admin.
* Expertise in building the infrastructure using Cloud formation as an Infrastructure as a Code tools.
* Expertise in configuration management using Ansible (Ansible Tower enterprise version)
* Working experience in designing end to end automation of infrastructure and continuous delivery of the applications by integrating terraform, cloud formation scripts, Jenkins, AWS, OSP, AWX, Ansible Playbooks, Gitaction, Concourse Pipelines, Python scripts, Bash scripts.
* Experience in creating a Network stack for VPC, Subnets, Security groups, IAM Roles using the CFN Templates.
* Expertise in deploying applications on the docker containerization and Kubernetes orchestration.
* Experience using MAVEN, Packer, Docker, Podman as build tools for the building of deployable artifacts.
* Experience in writing scripts (BASH, SHELL, Groovy and PYTHON) for Continuous Deployment.
* Skilled in setting up the Jfrog/nexus artifactory and Octopus deployment as a Continuous deployment tool.
* Wrote Ansible Playbooks with Python SSH as the Wrapper to Manage Configurations of AWS nodes and Tested Playbooks on AWS instances using Python. Run Ansible Scripts to Provide Dev Servers.
* Build a CI/CD pipeline to automate the process using the python script.
* Configured and maintained Jenkins to implement the CI process and integrated the tool with maven to schedule the builds.
* Designed Concourse pipelines End-to-End automation with webhook based triggers to test and deploy.
* Experienced in branching, tagging and maintaining the version across the Environments using SCM tools like Git, GitLab, GitHub and Subversion (SVN) on Linux and windows platforms.
* Expertise in using build tools like MAVEN for the building of deployable artifacts such as jar, war & ear from source code.
* Configuration Management and source code repository management using tools like GIT, Git Desktop and CLI.
* Experience in using Tomcat, JBOSS, Web logic, WebSphere, Cisco, Broadworks Application servers for deployment.
* Understanding of Cloud Environment like AWS, Azure, Openstack.

# TECHNICAL SKILLS

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| --- | --- |
| **Cloud computing** | Amazon web services (AWS), AZURE, OpenStack Platform. |
| **Scripting Languages** | Python, Bash, Shell, YAML. |
| **Iaas Tools** | CloudFormation. |
| **Configuration Management Tools** | Ansible Tower, AWX |
| **Version control** | GITHUB |
| **Build Technologies** | Maven, Docker, Podman, Packer. |
| **Containerization Tools** | Docker, Kubernetes. |
| **Continuous Integration** | Jenkins, Gitaction, Concourse. |
| **Artifactory** | Jfrog, Nexus. |
| **Application servers** | Tomcat, Nginix, Apache. |
| **Monitoring Tools** | CloudWatch, Splunk, Prometheus and Grafana. |
| **Operating System** | Windows, Linux (Ubuntu, Red Hat, CentOS). |
| **Methodologies** | Agile and scrum. |

**EDUCATION**

**Bachelor of Engineering from Anna University.**

# PROFESSIONAL EXPERIENCE

**Client: Comcast, PA Jun 2022 – Present**

**Role: DevOps Automation Engineer**

**Responsibilities:**

* Extensively worked with Ansible Tower (enterprise version) and AWX, implemented workflows, Job templates, Projects to automate IT processes. Successfully implemented and maintained Role-Based Access Control (RBAC) for all environments, ensuring precise control over user permissions and access, and maintaining the highest levels of security and compliance.
* Developed a disaster recovery playbook in AWX, automating workflows, job templates, and projects to ensure rapid recovery in the event of a disaster. This playbook demonstrates expertise in AWX automation and orchestration, ensuring business continuity and IT service availability.
* Extensively worked on automating infrastructure in OSP. Leveraged Packer to build a customized Packer image in OSP (OpenStack Platform) and utilize the built image to render and provide OSP instance with ansible playbooks. Participated in enhancing OSP Security Groups which acted as virtual firewalls that controlled the traffic allowed one or more OSP instances.
* I specialized in Red Hat Enterprise Linux RHEL7 & RHEL8, including installation, configuration, network and storage management. Supported Rhel7 to Rhel8 In-Place upgrades and it adopted its service level changes with in our upgrades.
* Upgraded and maintained 100’s of Linux servers quarterly with OS Security Patch upgrades and every 1st and 4th quarter upgraded 100’s of Linux servers with Cisco patch upgrades.
* Implemented End-to-End scheduled automation using Concourse CI/CD pipelines, Integrated with notification to slack team channel upon failure. Webhook based trigger Pull-request pipelines to trigger on any new pull request created on git-hub repository for continue testing and validations.
* Utilized build tools like Docker and Podman to create a docker image (docker and podman) to manage constantly changing OS, python and ansible packages, ensuring consistent deployment with RHV automation. Managed docker registry for wider team. And, collaborated with the team to assist in the development of packer image and utilized the packer image to create OSP instance and provisioning the instance.
* Implemented and configured Fail2Ban to prevent brute-force attacks and unauthorized access to network resources. Configured Fail2Ban to integrate with firewalls in rhel8 and Iptables in rhel7 to block malicious IP addresses.
* Configured and managed firewall rules, including Mangle rules, to ensure network security and compliance. Utilized Wireshark to analyze network traffic, troubleshoot issues, and identify potential security threats. Implemented DSCP marking ensuring prioritized network traffic and optimized quality of service (QoS) for critical applications. Utilized Wireshark to capture and analyze network (TCP, DNS, DHCP) to optimize performance.
* Worked in HashiCorp vault to secure and manage sensitive data including Encrypting and storing sensitive data such as passwords, tokens and certificates. Worked with internal vault team to define and configure role-based access control and its policies using HashiCorp configuration language HCL.
* Written vault policies to define capabilities and used Vault cli tool to update cidr range and tokens for vault access to our cloud platform.
* Successfully integrated AWX with Hashi Corp Vault to securely manage and pass secrets throughout the infrastructure, ensuring sensitive data is protected and access is controlled.
* Implemented AppRole authentication mechanism to securely integrate Concourse CI/CD with Hashi Corp Vault, enabling seamless and secure access to sensitive data and secrets.
* Utilized Postman to test, debug, and optimize RESTful APIs, ensuring seamless integration with front-end applications.
* Well versed with Git-Hub versions, tagging, merging. Implemented release management process and policies and procedures. Maintained repositories and promoted to all environments.
* Responsible to release git-hub based tag release to create workflows to support test cycles.
* Utilized Postman to test, debug, and optimize RESTful APIs, ensuring seamless integration with front-end applications
* Configured Ansible role to use firewall to enforce DSCP marking for UDP Packets traffic, in Rhel8. Resolved blocking out of servers due to misconfiguration of firewall by configuring firewall conf. Also used Wireshark network protocol analyzer to capture and fix RTP interfering with https traffic to specific internal URL. Supported team to move from iptables to firewall service and rules during rhel8 support.
* Developed an alternative solution to bypass Docker image limitations, allowing for command execution without root user privileges, and ensuring security best practices were met, resulting in successful image creation.
* Migrated concourse ci pipeline to GitAction workflows.

**Client: Honeywell, Morris Plains, NJ Nov 2021 – May 2022**

**Role: DevOps AWS Engineer**

**Responsibilities:**

* Extensively worked on automating infrastructure in AWS using amazon web services, deploying through ansible to completely provision and manage AWS EC2 instances, volumes, DNS, and S3.
* Launching and configuring of Amazon EC2(AWS) Cloud Servers using AMI’s and configuring the servers for specified applications.
* Implemented AWS solutions using EC2, S3, RDS, EBS, Elastic Load Balancer, Auto scaling groups, and Route 53.
* Defined AWS Security Groups which acted as virtual firewalls that controlled the traffic allowed to reach one or more AWS EC2 instances.
* Integrated Hashicorp vault to pass the secrets through terraform enterprise.
* Was responsible for migrating and maintaining build and test environments into the cloud infrastructure.
* Involved in designing and implementing CI (Continuous Integration) system, configuring GitLabnodes, crating required scripts and creating/configuring VMs (Windows/Linux).
* Build and implement build pipeline using Azure DevOps
* Extensively worked on developing Ansible scripts for windows environment and involved in creating packer images to create AMI’s.
* Integrated Jenkins with various DevOps tools such as Packer, terraform, consul, SonarQube, ansible.
* Followed agile principles and used JIRA for maintenance and Bug development tasks.
* Reduced build and deployment times by designing and implementing Docker workflow and configured Docker container for branching purposes.
* Actively involved in architecture of DevOps platform and cloud solutions.
* Experience in building .net based applications using MS build.
* Supported build and release processes and tools (MS Build, MS Release Management, GIT).
* Automated deployment using MS Build,dotnet, PowerShell.
* Experience in Nexus and Artifactory - repository managers for managing artifacts for java applications.
* Integrated GitLab into Jenkins to automate the code checkout process.
* Skilled in monitoring servers using Splunk, Cloud watch and Prometheus on windows environment.
* In-depth experience in operations support and meeting the business expectations for projects pertaining to Azure Cloud (PaaS and IaaS) infrastructure.
* Expertise in Amazon AWS Cloud Administration which includes services: EC2, S3, EBS, VPC, ELB, Route 53, Auto scaling, Security Groups, Redshift, and Cloud Formation.
* Installed the application on AWS EC2 AMI Instances and configured the storage on S3 Buckets.
* Also has hands on experience on working with AWS IAM to create new accounts, roles, and groups.
* Migrating a production infrastructure into an Amazon Web Services utilizing AWS Cloud-Formation, Code Deploy, EBS, and Ops Works.
* Configured local Maven repositories with Nexus repositories and scheduled projects in Jenkins for continuous integration.
* Established Queuing mechanism using AWS SQS with SNS and Cloud Watch.
* Deployed and configured GIT repositories with branching, forks, tagging, merge requests, and notifications.
* Responsible for encryption and decryption of configuration files using AWS KMS.
* Set up and managed Jenkins’s build farm of mixed Linux, Mac OS, and Windows slaves.
* Designed and implemented complete CI process with Jenkins and Nexus
* Configured Maven POMs to automate the build procedures and added plugins by referring them in the xml.
* Involved in designing, deploying AWS Solutions using EC2, S3, EBS, Elastic Load balancer (ELB).
* Configured Jenkins Pipeline to implement CI & CD process for major releases and integrated the tool with Maven to schedule the builds.
* Worked on Build definitions in Jenkins to perform builds and deployed Builds to various Environments like QA, Stage, UAT and Productions Environments.
* Responsible for maintenance of GIT Repositories, views, and access control strategies & resolved all the conflicts raised during the merges.
* Created release branches in GIT by GIT Administration including branching, reporting, and assisting with project and end user support.
* Used Nagios as a monitoring tool to identify and resolve infrastructure problems before they affect critical processes and worked on Nagios Event handlers in case of automatic restart of failed applications and services.
* Involved Designed, configured, and managed public/private cloud infrastructures utilizing Amazon Web Services (AWS), including EC2, Virtual Private Cloud (VPC), Public and Private Subnets, Security Groups, Route Tables, Elastic Load Balancer, Cloud Watch, IAM for the Dev/Production Environments.
* Configured AWS IAM and Security Group in Public and Private Subnets in VPC and worked as Admin for AWS in managing the user using IAM for the AWS access.
* Written Templates for AWS infrastructure as a code using Terraform and CloudFormation to build staging and production environments.
* Designed roles and groups for users and resources using cloud permission systems AWS Identify Access Management (IAM)
* Worked with Docker and Kubernetes on multiple cloud providers, from helping developers build and containerize their application (CI/CD) to deploying either on public or private cloud.
* Build available content distribution sites by using CI/CD tools like Ansible, Docker, Maven, Jenkins, Kubernetes etc.
* Created Docker images using a Docker file, worked on Docker container snapshots, removing images, and managing Docker volumes.
* Worked in AWS cloud environment and familiar with EC2, Cloud watch and Elastic IP's and managing security groups on AWS.
* Defined and Implemented Release Management Processes, Policies and Procedures.
* Maintained the Source code in GIT and deployed them to DEV, QA, UAT and PROD Environments.
* Wrote shell scripts to manage server processing Migrating applications from .Net to Python monitoring applications/server's performance with Jenkins.
* Performed unit tests and debugging Python applications reviewing and enhancing existing code, fix bugs and create system documentation.
* Involved in editing the existing ant/maven files in case of errors or changes in the project requirement Work with development/testing, deployment, systems/infrastructure, and project teams to ensure continuous operation of build and test systems.
* Automate the builds and deployment of java projects using maven
* Implement, maintain, and support reliable, timely and reproducible builds for project teams.
* Interact with developers and Enterprise Configuration Management Team for changes to best practices and tools to eliminate non-efficient practices and bottlenecks. Managed the repositories using artifact.
* Knowledge of concepts in code lines, branching, merging, integration, versioning, etc.

**Environment:** AWS, EC2, S3, Route53, EBS, IAM, ELB, Elastic Bean stack, VPC, Cloud watch, AWS Auto Scaling, MySQL 5.6.1, Linux, Git version Control, ANT, Maven, Jenkins, shell scripting, Azure, Python3x, bash, Docker,

Kubernetes,Ansible, Maven ,Packer, Podman, Postman, Wireshark, Hashicorp Vault, Ansible, Packer.

**Client: Sunera Technologies, NJ Jan 2020 – Oct 2021**

**Role: Build and Release Engineer**

**Responsibilities:**

* Hands on Experience working with the Microsoft Azure Cloud Services and deployed the servers through Azure Resource Manager Templates or Azure Portal.
* Replicated the production environment in Azure that serves as sandbox environment. Copy the data over from production to Sandbox.
* Planning and implementing Disaster Recovery solutions, capacity planning, data archiving, backup/recovery strategies, Performance Analysis, and optimization.
* Strong Experience on Administration and Troubleshooting of Azure IAAS Components to develop code for the business logics with C#, .Net. (VM, VNET, Site to Site VPN).
* Experience in Creating the CI/CD Azure DevOps Pipeline for the .Net, C#, Java & UI based Web Applications.
* Experienced in Setting up High availability clusters for WebSphere MQ and WebSphere Message Broker servers using HACMP & VERITAS.
* Good Exposure in Azure Site Recovery and Azure Backup and Configuring Azure Backup vault for protecting required VMs to take the VM level backups for Azure and On Premises Environment.
* Working knowledge on Azure Cloud IaaS and PaaS Services. Having Experience of Creating and Managing the users and groups in Azure AD.
* Experience in managing Microsoft Windows server infrastructure and data-center operations by effectively planning, installing, configuring and optimize the IT infrastructure to achieve high availability and performance.
* Replaced existing manual deployment and management processes with Chef, Ansible and AWS OpsWorks Dynamo dB, Mongo dB, Microsoft AZURE, OpenStack across multiple product platforms.
* Designed Network Security Groups (NSGs) to control inbound and outbound access to network interfaces (NICs), VMs and subnets.
* Worked on the PowerShell Script to automate the Windows patching and created the release in Azure DevOps pipelines
* Worked on GIT repository as Distributed Version Control System. Also, on TFS repository as Centralized Control System.
* Installed and configured GIT to implement branching strategy which is suitable for agile development also provided continuous support and maintenance of software builds.
* Worked on integrating Git into the continuous Integration (CI) environment along with Jenkins and Open Shift Configured the services using modern DevOps tools.
* Re-deploy of Jenkins and Open Shift using Docker Services to take the latest changes into effect.
* Implemented CI pipelines for project branches so that the job triggered from TFS upon commits to the branches.
* Experience in Micro services development using spring boot and deployment in Pivotal Cloud Foundry (PCF).
* Designed and built highly available private cloud and migrating large production systems on PCF.
* Used Docker to virtualized deployment containers and push the code to instances cloud using PCF.
* Used Jenkins as Continuous Integration tools to deploy the Spring Boot Microservices to Pivotal Cloud Foundry (PCF) using build pack.
* Actively worked with Kafka Admin team to set up Kafka cluster setup on the QA and Production environments.
* Built a new CI pipeline, Testing and deployment automation with Docker, Jenkins and Ansible.
* Query the Jenkins changes and figure out the list of engineers who checked in changes and determine their email addresses.
* Initiated responsibility for administering the SVN and GIT servers which included install, upgrade, backup, adding users, creating repository/branches, writing hooks scripts, performance tuning, troubleshooting issues and maintenance.
* Automated the deployment process by writing Shell (bash), Python scripts in Jenkins.
* Designed and created multiple deployment strategies using CI/CD Pipelines using Jenkins and Open Shift. Installed multiple plugins to Jenkins, Configured Proxy to get auto updates.
* Extensively worked on Jenkins CI/CD pipeline jobs for end-to-end automation to build, test and deliver artifacts and troubleshoot the build issue during the Jenkins build process.

**Environment:** Azure, Jenkins, TFS, GIT, Gradle, Docker, Chef, SonarQube, Tomcat, Microservices, Java, C++, C#, .Net, Shell, Groovy, SQL Server, Ansible, Kafka, PowerShell, Python.

**Client: Marsh & McLennan Companies- Hoboken, NJ Feb 2017 – Dec 2019**

**Role: Build and Release Engineer**

**Responsibilities:**

* Administer and Maintain Source Code Repositories including GIT and GitHub Support concurrent development process with standard Branching and Merge of application source code.
* Created and maintained several build definitions and publish profiles to manage automated builds in an Agile/SCRUM environment.
* Implemented a CD pipeline involving Jenkins, Chef to complete the Automation from commit to Deployment.
* Responsible for managing and maintaining the DevOps CD/CI pipeline using DevOps suite which includes Continuous Integration of GitHub, Jenkins, JFrog Artifactory.
* Configured and monitored distributed and multi-platform servers using Nagios Edit the Nagios host file to include 100+ node in the hosts by use of chef automation Nagios as a tool to monitor the health check of nodes. Implemented Shell and Python scripts for CD/CI pipeline and deployment of artifacts on application environments.
* Responsible for on boarding applications on to DevOps suite and creating Git Lab groups for development teams and setting up access control strategies. Automated and connected the Jenkins jobs with SonarQube to generate and publish the unit tests.
* Implemented and maintained maven builds for generating artifacts required by java and windows-based applications.
* Experience in DevOps principles and methodologies using SCRUM, Agile and related rapid application development approaches.
* Responsible for creating and maintaining the repositories in JFrog Artifactory to secure the generated artifacts from Jenkins.
* Build scripts using MAVEN build tools in Jenkins to move from one environment to other environments. Working on Manage Chef and SAP Hybris application.
* Written custom Chef cook books for handing prerequisites to set up new environment for pricing application.
* Automated the process of deployment of pricing application.
* Worked on Chef Cook books to install tools like new relic and Sumo logic for both instrumentation and enabling and disabling logs.
* Working on various tasks on Apache Https server like Enabling/Disabling Nodes, Draining Nodes, Apache Operational Commands, Cookbook, Certificate Management etc.
* Performing user management like SSH, SFTP and Jenkins access or revoke through Chef.
* Designed and Developed Jenkins builds deployments.

**Environment:** Azure, Jenkins, TFS, GIT, Gradle, Docker, Chef, SonarQube, Tomcat, Microservices, Java, C++, C#, .Net, Shell, Groovy, SQL Server, Ansible, Kafka, PowerShell, Python.

**Client: Softsol technologies - India Nov 2010 – Sep 2011**

**Role: Linux Administrator**

**Responsibilities:**

* Experience in designing and deploying a multitude application utilizing almost all of the AWS stack.
* Experience with assessing tools and processes and developing strategic plans and roadmaps for IT Strategies and Roadmaps.
* Experience with AWS Ops Works to automate configuration, deployment, scaling and monitoring of systems.
* Maintain Rapid and fluid deployment of infrastructure via Cloud Formation Template. Authored Templates to describe infrastructure to be deployed.
* Configured CI/CD tools Jenkins, Maven, Ant, and GitHub repository for the continuous smooth build process.
* Worked with GitHub private repositories and plugin it to Jenkins.
* Configured Chef into the environment for quickly deploy and maintain environment such as apache configuration, file level permissions.
* Created and maintained Jenkins jobs that execute Shell scripts for automation.
* Verified if the methods used to create and recreate software builds are consistent and repeatable.
* Involved in Research of the project application architecture to support/resolve build, compile, and test issues/problems.
* Releasing code to testing regions or staging areas according to the schedule published.
* Developed Shell/Perl Scripts for automation purpose.
* Resolved merging issues during rebasing and re-integrating branches by conducting meetings with Development Team Leads.
* Responsible for designing and deploying best SCM processes and procedures.
* Maintained and coordinated environment configuration, controls, code integrity, and code conflict resolution.
* Designed a CM solution that used Clear Case UCM integrated with Rational Clear Quest.
* Perform administration of users, supported team for parallel development. Wrote Shell/Perl/Ant files to automate certain processes for the smooth process of use of build tools like Build Forge.

**Environment:** EC2Instances, VPC, ELB, Autoscaling, CloudFormation, MYSQL, S3, SNS, Jenkins, GIT, GitHub, Maven, Ant, Chef, Cloud Watch, Shell script.