**Venkat IYER**

AWS Certified Solutions Architect, AWS Certified Developer

OCI Certified Architect

IBM Certified IT Architect, Open Group Master Certified IT Architect

Masters Degree in Computer Science

US Citizen

**PROFESSIONAL PROFILE**

**Summary:** I have a master’s degree in Computer Science and 22 years of experience in the IT industry. I am an AWS Certified Solutions Architect & Developer, OCI Certified Architect, IBM Certified IT Architect and Open Group Master Certified IT Architect. For the past 12 years of my career, I hands-on specialize in delivering highly resilient and secure mission-critical cloud solutions using Open Source technologies on the Amazon Web Services (AWS) Cloud using Agile and DevOps automation techniques. Prior to that I was a subject matter expert in Application Development in a SOA and BPM environment.

**AWS Cloud:** I have 13 years of experience in leveraging Amazon Cloud’s security-hardened, elastic and scalable components for rapidly delivering geographically diverse, computationally intensive, mission-critical enterprise applications.

* Migration: Experience assessing the readiness and maturity of new or legacy on-premise applications and establish their migration, onboarding and continuous deployment roadmaps to AWS
* Infrastructure as Code: Use CloudFormation or Terraform and Ansible or Salt to provision and configure resource stacks. Disaster Recovery and Business Continuity requirements of RTO and RPO are satisfied
* Web: AWS Cognito provides SSO, IAM provides authentication and integrated with ADFS provides authorization, Angular/Bootstrap layer is hosted on S3 secured with CloudFront, services layer is implemented with APIGateway, AWS Lambda and Sprint Boot microservices are deployed in Docker containers on ECS, data layer is provided by DynamoDB and RDS. Route53, ELB and Auto-scaling ASG provide additional scalability, availability and security.
* Big Data: Experience in building Data Lake solutions - Data Pipeline to ingest into S3, Glue crawls S3 to catalog and index the data,Athena allows interactive SQL queries against S3 data, Quicksight for visualizations. Experience in provisioning and configuring EMR clusters
* Networking: Created VPCs, VPC Peering, subnets, route tables, ACLs, VPG, CG, IG, SG, NAT, VPN networking components

**AWS Cloud Security:**

I have been the application security design authority on my projects for securing data at rest, data in motion and data in use by applying credential management, access provisioning, authentication and authorization, application security, infrastructure security, data security, security monitoring, and operation security. I have experience in assessing security threats, identifying and tailoring security requirements, implementing and integrating security controls into the SDLC as well as tracking security development activities. I have performed static code reviews, automatic code scans, security architecture reviews, penetration testing, and mitigated application level vulnerabilities.

* Experienced in compliance for financial (PCI), pharmaceutical and public sectors (FedRAMP)
* Used best practices and design principles of the Security pillar in AWS Well-Architected solutions
* Encryption for data at rest of EBS, S3, RDS using KMS. Authentication using Cognito, AWS SSO, AD. Authorization and Governance using AWS Landing Zones
* Logging using CloudWatch, CloudTrail, syslog and application logs
* Monitoring using ELK (Elastic stack - Elasticsearch, Logstash and Kibana) and Filebeat
* Used Config, Trusted Advisor, Inspector, SNS, GuardDuty, security groups, NACL, VPC Flow Logs, WAF
* Used Secrets Manager to protect credentials for RDS, ssh and API keys in application code via API calls
* Used Secrets Manager and SSM Parameter Store to store secrets for use in CloudFormation
* Deployed Hashicorp Vault clusters with Ansible playbooks with roles and policies for access from containerized environments. Designed and implemented highly available Vault clusters using Terraform for the infrastructure and Ansible playbooks for the automated deployment solution on AWS and on-prem. Assist application teams with onboarding secrets to Vault. Assist in developing compliance reporting, policy review/enforcement, end to end lifecycle management activities for non-compliant secrets. Produce a customer guide that can be reused by the application team for future onboarding actions. Work with team to expand services and visibility after initial Pilot and Go Live by continuing to review offering, speaking with stakeholders and assisting new application teams to adopt and automate.
* Use Security Hub, Orca, Prisma or Wiz for reviewing security findings and compliance, as well as implement remediations to improve posture. Created rego Policy as Code using Terraform, deployed from source code repo via Jenkins to a policy framework in Wiz.
* Experienced in CloudFormation, Ansible, Docker, Jenkins, DevSecOps with SonarQube, Aqua, Xray

**Open Source:** Using Open Source technologies and accelerators, I rapidly deliver mission-critical solutions. For example - AngularJS/Bootstrap on Apache HTTP server for the UI, OpenLDAP/JWT/JWE for IAM, Java/J2EE Spring Boot REST on Tomcat/jBoss implements the services layer, Drools implements business rules, Cassandra/Alfresco for document management, jBPM/ActiveMQ implements business workflow, MySQL/Hibernate provides the database, Linux/VMs/shellscripts for OS management.

**Agile:** I have experience using Agile Scrum processes and tools for stakeholders and project members to actively participate in the development process which consists of the following:

Requirements Management, Software Development Plan, Software Project Management, Release Planning, Software Development Iterations, Product Testing, Product Fielding, Security and Information Assurance. As a result, the product objectives are clearly defined and its release quality is measurable.

**DevOps:** I have used DevOps optimally such that the release product’s quality is visible to government stakeholders and project team members in all phases of its SDLC. This includes functional objectives of the release as well as non-functional requirements and Cloud PaaS/IaaS assertions. My experience includes

Rally/VersionOne/JIRA for requirements management, git/svn for source code repository, Configuration Management using git/svn, Shell scripts and Ant/Maven builds using Jenkins, Continuous Integration using CruiseControl/Nexus/Artifactory, Fagan/CodeCollaborator/FxCop/Sonarqube for code reviews, Automated Testing using SmartBear QA Complete, soapUI, jUnit, TestComplete, Fortify for security findings. Ansible/Amazon CloudFormation for Infrastructure as code, Docker for containerization.

**Elasticsearch:** I have experience with ELK Elasticsearch stack (Elasticsearch, Logstash, Beats, Kibana) in production. I have used data ingest, Extract, Transform, and Load (ETL) techniques using Logstash and Beats, as well as custom maintenance jobs using the Python API and Airflow Python operators. I have used multi-node clustering, architecture, development, implementation, and health monitoring of the indexes.  I understand hot/warm/cold data/index lifecycle management implementations. I have used reindexing methods, JSON and KQL searches, created Kibana dashboards and visualizations, uses CloudFormation and Ansible to provision ELK clusters.

**Terraform**: I have experience setting up Terraform configured with a source code repo such as GitLab or Bitbucket, and triggered from Jenkins pipeline. I use Terraform in conjunction to other DevOps tools such as Packer and Ansible, so I understand the role of each of the DevOps tools and the best practices in its integration. I manage terraform state remotely in S3 buckets or HTTP backends so that team can collaborate and still maintain state integrity. I isolate deployment environments of dev, test and prod using mature well thought out folder and file layouts. I create production grade IaC using small, composable and testable Terraform modules that are highly parameterized and creates a reusable infrastructure as code. I have experience using built-in functions of Terraform to make it flexible and expressive.

**Ansible:** Experience in developing Ansible artifacts, troubleshooting issues, integrating the Ansible scripts with existing automation tools. Worked on implementing configuration management roadmap. Developed Ansible playbooks and modules. Administered Ansible infrastructure, performed maintenance and configuration and provide SME level support. Experience with installing and configuring Ansible Tower setup with authentication, RBAC, dynamic inventories for multiple Cloud Providers and playbook repository configuration

**CONSULTING EXPERIENCE:**

**Banking:** FICO - Fair, Isaac and Company, SMBC - Sumitomo Mitsui Banking Corporation, Broadridge Financial Solutions, Investment Bank (IB), Swift

**Insurance:** CIGNA

**Investment and Real Estate:** CBRE

**Pharmaceutical:** Bristol-Myers Squibb, Amwell

**Federal:** Department of Homeland Security (DHS HQ), Customs and Border Protection, Domestic Nuclear Detection Office, Immigration and Customs Enforcement, US Patent and Trademark Office, Department of Veterans Affairs, Food and Drug Administration

**Retail:** Neiman Marcus, Lowe’s Companies

**Energy:** Xcel Energy, Duke Energy

**Transportation:** SouthWest Airlines

**Telecommunications:** Qwest (CenturyLink)

**Large IT Services Company:** IBM Services, AWS PSA, HPE, SAP

**WORK EXPERIENCE:**

**AWS and DevOps Platform Engineer - Jan 2024 to present (Contractor) -** SAP North America

Tools used: GitHub Actions, Nodejs/Angular, Python, AWS - Cognito, APIGateway, Lambda, Cloudfront, S3, ASG, multiple supporting AWS services,, Keycloak, Vault, SecurityHub, Prisma, AD/ADFS, Packer, Wiz, Linux, shell scripts, Elastic, Logstash, Kibana, Docker, Ansible

Created FedRAMP and PCI compliant infrastructure and automated deployments for SAP’s commercial SaaS components in AWS Cloud and GovCloud. Use Beats agents installed on ec2 and docker containers to send app logs, sys logs and overall monitoring metrics to Logstash. Implement standard and custom grok filters to ingest log data to Elastic. Application teams and SOC use Kibana for application troubleshooting and SIEM.

Using Terraform's Wiz provider, create Cloud Configuration Rules containing rego for CSPM, Cloudformation and Terraform IaC policy as code via GitHub Actions and Jenkins for out of the box and custom rules. Rego evaluates IaC for applications, written in Cloudformation or Terraform, against compliance framework policies when code is pushed to branches and during merge requests, in a step of the CICD pipeline applying a shift-left method to determine non compliance.

**AWS and DevOps Platform Engineer - Dec 2022 to Jan 2024 (Contractor) -** McKinsey & Co.

Tools used: GitHub Actions, Nodejs/Angular, Python, AWS - Cognito, APIGateway, Lambda, Cloudfront, S3, ASG, multiple supporting AWS services,, Keycloak, Vault, SecurityHub, Prisma, AD/ADFS, Packer, Wiz, Linux, shell scripts, Elastic, Docker, Ansible

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**AWS/DevOps Engineer - Apr 2022 to Dec 2022 (Contractor) -** Swift

Tools used: CodePipeline, CodeCommit, CodeBuild, Cloudformation, Terraform, Vault, Python, AWS - VPC, ec2, SecurityHub, Wiz, Inspector, Macie, ControlTower, Ansible

Implemented security controls in AWS sandbox and lab Organizations to maintain compliance

posture. For example, monitored Cloudtrail logs to trigger corrective actions on overly permissive

security groups, unencrypted block volumes or snapshots.

Implemented CICD processes for deployment of security products like Protegrity and Vault as well as

custom AWS Lambda functions.

Provided perimeter policies for firewall, proxy, IP whitelisting, network routing in order to right size

deployments while ensuring optimal functionality. Experienced in internal and industry policies, procedures and governance for obtaining required approvals.

Tasks - AWS Account, VPC and common infrastructure resources maintained through IaC/CICD and monitored with Wiz

**AWS/DevOps Engineer - Oct 2021 to Apr 2022 (Contractor) -** Southwest Airlines

Tools used: CodePipeline, CodeCommit, CodeBuild, Cloudformation, Terraform, Vault, Python, AWS - VPC, ec2, SecurityHub, Wiz, Inspector, Macie, ControlTower, GitLab CICD

Created infrastructure and automated deployments for application team microservices - API, UI and DB in a containerized environment providing high availability and scalability

**CyberSecurity and IAM Engineer - Mar 2021 to Oct 2021 (Contractor) -** CBRE

Tools used: GitHub Actions, Nodejs/Angular, Python, AWS - Cognito, Vault, APIGateway, Lambda, Cloudfront, S3, DynamoDB, Keycloak, SecurityHub, Prisma, AD/ADFS, Azure DevOps

Tasks - Create UI and API for user management. Create client software for legacy applications. Monitor and mitigate for compliance AWS OU of accounts

**Principal Consultant - Jun 2020 to Mar 2021 -** Mythics, Inc.

Consultant delivering hands-on end-to-end solutions in AWS Professional Services teams or APN Consulting Partner teams.

Experience in Banking/Financial Services, Pharmaceutical/HealthCare and Federal/Public sectors

Implemented migration paths for infrastructure, technology and application components for over 100 applications as part of Cloud Migration efforts from traditional on-premise data center as well as onboarding modernized Cloud based applications.

Use Beats agents installed on ec2 and docker containers to send app logs, sys logs and overall monitoring metrics to Logstash. Implement standard and custom grok filters to ingest log data to Elastic. Application teams and SOC use Kibana for application troubleshooting and SIEM.

Worked hands-on with Terraform, Ansible, Jenkins, AWS, ELK/Elasticsearch, Vault, Airflow, docker, python, nodejs, shell scripts, Linux

**AWS Engineer - May 2019 to Jun 2020 (Contractor) -** Department of Veterans Affairs

Large datasets of sensitive information in both structured and unstructured form are obtained from Federal Intelligence and Civilian agencies, mined for business analytics and optimization, tagged with meta-data and then consumed by various enterprise applications for analyzing and reporting on national security threats. Provisioned AWS EMR Spark Clusters, Data Pipelines for installing and configuring Analytical, Graphical and Data Quality tools.

Worked hands-on with AWS GovCloud, Ansible, Jenkins, ELK/Elasticsearch, Vault, docker, python, nodejs, shell scripts, Linux

**AWS Engineer - May 2017 to May 2019 (Contractor) -** Customs and Border Protection

Created infrastructure and automated deployments for application team microservices - API, UI and DB in a containerized environment providing high availability and scalability

Worked hands-on with AWS GovCloud, Salt, Jenkins, ELK/Elasticsearch, Vault, docker, python, nodejs, shell scripts, Linux

**DevOps/AWS Engineer - Jan 2017 to Apr 2017 (Contractor) -** Domestic Nuclear Detection Office

Conducted detailed security analysis and assessment of controls for authentication, authorization,

auditing, encryption, confidentiality, integrity, authenticity and non-repudiation for mission critical applications. Contributed to the security controls matrix to determine Authority To Operate.

Worked hands-on with AWS GovCloud, Jenkins, Python, shell scripts, Linux

**Platform Engineer - Jan 2016 to Dec 2016 (Contractor) -** Department of Homeland Security (DHS HQ)

Large datasets of sensitive information in both structured and unstructured form are obtained from Federal Intelligence and Civilian agencies, mined for business analytics and optimization, tagged with meta-data and then consumed by various enterprise applications for analyzing and reporting on national security threats. Provisioned AWS EMR Spark Clusters, Data Pipelines for installing and configuring Analytical, Graphical and Data Quality tools.

Worked hands-on with AWS, Ansible, Jenkins, ELK/Elasticsearch, Vault, docker, python, nodejs, shell scripts, Linux

**Cloud Engineer - Nov 2015 to Dec 2016 (Contractor) -** Bristol-Myers Squibb

* Large datasets of sensitive information in both structured and unstructured form are obtained from Federal Intelligence and Civilian agencies, mined for business analytics and optimization, tagged with meta-data and then consumed by various enterprise applications for analyzing and reporting on national security threats. Provisioned AWS EMR Spark Clusters, Data Pipelines for installing and configuring Analytical, Graphical and Data Quality tools.
* Worked hands-on with AWS, Ansible, ELK/Elasticsearch, docker, Python, shell scripts, Linux

**AWS and DevOps - Sep 2013 – Nov 2015 (Contractor) -** US Patent and Trademark Office

* Technical Lead directly reporting to Branch Chiefs providing expertise and advisory direction for the success of legacy, stabilization and next generation projects. Advising on strategic technology, architecture and solution roadmap in meetings with business and technical team stakeholders and product owners. Recommendations aligned to established industry best practices and standards. Conduct status meetings with vendor teams to ensure progress and quality assurance of products delivered.
* Worked hands-on with Cloudformation, AWS, Python, shell scripts, Linux, Jenkins

**Chief Architect and Subject Matter Expert - Apr 2010 – Aug 2013 (Contractor) -** Immigration and Customs Enforcement (ICE)

* Experience in designing and developing highly scalable and available cloud web services. Designed the application and tuned the environment for high performance and throughput. Created redundancy in cloud services to provide load balancing and fail over concepts of high availability with vertical and horizontal scaling.
* Worked with IBM middleware products and AWS Cloud

**Jan 2006 – Apr 2010, IBM, Sr. Solutions Architect**

*Federal Defense Agency*

* Led the infrastructure deployment activities by analyzing functional, non-functional and capacity requirements against application and implementation design. Improved response time by analyzing percent latency across various tiers of the application and reducing application latency
* AWS EC2, VPC, ELB, CloudWatch and Auto-Scaling for scalable architecture. Java/J2EE, IBM WAS for business logic. IBM WPS, WMB and DataPower for BPM, BAM. RSA, RAD for design artifacts. CVS, Ant, Linux shell scripts and python scripts for configuration management. HTML/CSS/JavaScript for web applications.

*Oncor Energy*

* Designed schemas, interfaces and process flows for integrating energy services systems, retailer systems and customer applications. Designed process flows to provide real time meter usage information for billing and to manage appliances within a Home Area Network (HAN) for energy conservation. All integration artifacts conformed to CIM Energy model and were compatible with existing legacy and enterprise systems
* webMethods for BPM, BAM, ESB. Blaze Advisor Rules for business and process flow rules.

*Lowes*

* Led development of a Catalog Management Tool to implement the go-to-market business process flow to enhance process efficiency, generate reports on KPIs measured and metrics produced for process refinement.
* Catalog management provided by WebSphere Product Center, InfoSphere MDM, BPM provided by IBM BPM (WebSphere Process Server, WebSphere ESB, WebSphere Message Broker).

*Nieman Marcus*

* Delivered an Item Workflow Management (IWM) solution. Implemented workflows for New Item Introduction, PO Management and Offer Management from components in the enterprise to form a SOA solution.
* Item management provided by WebSphere Product Center, InfoSphere MDM, BPM provided by IBM BPM (WebSphere Process Server, WebSphere ESB, WebSphere Message Broker).

**Enterprise Architect - Feb 2004 – Dec 2005 -** Cendant Corporation

* Designed and implemented an asynchronous message broker towards creating composite applications from the different computing systems, thus ensuring a Real Time Enterprise. The computing systems were hosted in Mainframe, Unix, J2EE, .NET platforms.
* Java/J2EE components on IBM WAS for business logic . webMethods for BPM, BAM, ESB. Blaze Advisor Rules for business and process flow rules.

**Enterprise Solutions Architect - May 2003 – Jan 2004 -** SunCruz Casinos

* Designed and developed an asynchronous message broker/data bridge to synchronize in real time/near real time the Player Tracking System profiles at the various casino locations. Proposed, designed and implemented messaging systems to eliminate embezzlement of gaming points by casino players due to disconnected remote databases of gaming systems and other casino enterprise systems, and providing increased customer service by allowing players to redeem points that were earned earlier in real time.
* Java/J2EE components on IBM WAS for business logic . webMethods for BPM, BAM, ESB. Blaze Advisor Rules for business and process flow rules.

**Sr. Software Engineer - Aug 2002 – Apr 2003 -** IT Consulting Company

* Designed and developed n-tiered applications. Implemented solutions to facilitate data translation and integration of processes in web applications as a B2B solution.
* Microsoft BizTalk Server for business process flow. VB for user interface. SQL Server for database.

**Mar 2001 – Aug 2002 State University, Ohio, Teaching Assistant**

* Responsible for providing assistance to object oriented analysis, design in UML using Rational Rose and implementation of solutions to assignments on simulation analysis, exception handling, sorting techniques, recursive calls and OOP in general.
* C++/Visual C++ with STL for program development. UML design with Rational Rose. OOP programming concepts and design patterns.

**Sep 2000 – Jan 2001 State University, Ohio, Research Assistant**

* Worked on implementing and documenting a distributed version of an AI planner interface for dynamic goal transformations. Worked as part of a team implementing and documenting a distributed version of an AI planner interface for dynamic goal transformations.
* Implementations using Lisp, Prodigy and Java.

**Jan 1996 – Jan 2000 IT Consulting Company, India, Sr. Software Engineer**

* Converted legacy applications to next-generation systems. Worked extensively on all four areas of the software development cycle: analyzed software requirements; designed software solutions; developed and implemented programs; performed maintenance.
* C, C++, Java, Visual Basic/SQL Server for program development. ASP/SQL Server, HTML, CSS and JavaScript for web application development.