

NATNAEL MENGESHA

Lead / Principal Cloud & AWS Architect

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PROFESSIONAL SUMMARY

Lead/Principal AWS Architect driving multi-account platforms, governance, and GenAI at enterprise scale. Built AWS Organizations/Control Tower landing zones, Terraform account vending, and secure network foundations; delivered Bedrock-based RAG with Guardrails and Knowledge Bases. Known for accelerating environment delivery, improving resilience and cost, and turning architecture standards into reusable modules and paved paths.

EXPERIENCE

Associate Principal Architect (AWS Platform) — Guidehouse

Oct 2024 – Present

- Launched Guidehouse's AWS platform foundation: AWS Organizations and Control Tower with SCP guardrails, account vending blueprints, and Terraform modules for standardized, compliant environments across programs.
- Built an enterprise GenAI capability on Amazon Bedrock: standardized access to foundation models (e.g., Claude, Llama, Titan); established RAG patterns with Knowledge Bases (OpenSearch Serverless / Aurora PostgreSQL-pgvector); implemented Bedrock Guardrails for safety/PII; created a prompt and response logging/evaluation framework and golden examples to improve answer quality over time.
- Designed Bedrock Agent workflows to call internal APIs/tools via secure service integrations; orchestrated multi-step tasks with Step Functions and events through EventBridge; delivered CI/CD patterns for Bedrock apps and prompt assets.
- Integrated GenAI with enterprise data: S3 + Glue ingestion pipelines, Lake Formation governance, and scoped access policies; encryption with KMS, centralized auditing with CloudTrail, and private network paths that avoid direct internet egress.
- End-User Compute for innovation: engineered Amazon WorkSpaces (Windows/Linux and pooled) for hackathons and internal training; integrated Entra ID (SSO/MFA/SCIM), image management, cost controls (scheduling/auto-stop), and runbooks to operate events at scale.
- Multi-tenant (project-based) org and network design: isolated project VPCs and shared-services cores, consistent routing/inspection patterns, and per-program guardrails enabling autonomy with central governance.
- Network foundation for a \$32M program: segmented VPCs, routing, security baselines, and landing zone integration to meet schedule, compliance, and resilience objectives.
- Platform operations and guardrails: Security Hub/GuardDuty/Config baselines, tagging strategy for showback/chargeback, budgets/alerts, and Well-Architected reviews; authored standards, reference architectures, and reusable Terraform stacks.

Lead Cloud Architect — Accenture Federal Services

Mar 2019 – Oct 2024

- Directed a TIC 3.0 zero-trust pilot using Zscaler to modernize remote access.
- Engineered a secure AWS landing zone (multi-account) with centralized governance, identity integration with Entra ID, automated provisioning, and multi-Region DR; aligned with NIST SP 800-53/CIS.
- Built serverless, event-driven workloads (payments, document pipelines) using Lambda, API Gateway, S3, DynamoDB, SQS/SNS.
- Designed and operated containerized microservices on EKS/ECS fronted by API Gateway/CloudFront.
- Integrated external root CA with AWS Private CA for automated certificate issuance/rotation across accounts/regions.
- Implemented IaC at scale (Terraform, CDK, CloudFormation, Ansible) and enforced guardrails via Control Tower/SCPs.
- Automated Route 53 subdomain delegation and cross-account access for self-service.
- Delivered S3-backed secure file transfer using CloudFront, Lambda@Edge, and JWT authorization.
- Led Well-Architected reviews and continuous cost/performance optimization (rightsizing, Savings Plans, Spot).

Cloud Consultant — Capgemini

Jun 2018 – Feb 2019

- Implemented a secure, scalable AWS foundation for a SaaS platform, improving uptime and response times.
- Orchestrated migration of 50+ applications to AWS with measurable cost and performance benefits.
- Drove multi-tenant reference architecture and Well-Architected reviews across engagements.
- Advanced container adoption (ECS/EKS) and release frequency.

Cloud Developer — Cognizant

Dec 2017 – Jun 2018

- Built AWS networking (VPCs, subnets, VPN) and centralized logging/monitoring with CloudWatch/CloudTrail + SIEM.
- Championed Infrastructure as Code (CloudFormation/Terraform) and internal AWS training.

- Automated operations via Ansible; supported Oracle performance enhancements.

Ground Truth Engineer — Duostech

Jun 2017 – Dec 2017

- Implemented AWS best practices for access control and early migrations.
- Collaborated on Windows/Linux automation; delivered knowledge transfer (KT) sessions.
- Prepared ML training datasets and validated algorithm accuracy.

EDUCATION

Doctor of Engineering, Artificial Intelligence & Machine Learning — George Washington University (in progress)

Master of Science, Cloud Computing Architecture — University of Maryland Global Campus

Bachelor of Science, Computer Science — University of North Florida

CERTIFICATIONS

• AWS Certified DevOps Engineer – Professional	Issued Aug 2026
• AWS Certified Generative AI Developer – Professional	Issued Jul 2026
• AWS Certified Solutions Architect – Professional	Issued Sep 2025
• Claude Certified Architect – Professional	Issued Jul 2026
• AWS Certified Security – Specialty	Issued Jul 2026
• AWS Certified Advanced Networking – Specialty	Issued Jul 2026
• AWS Certified Data Engineer – Associate	Issued Jul 2026
• HashiCorp Certified: Terraform Associate	Issued Jul 2026
• AWS Certified Developer – Associate	Issued Mar 2024
• AWS Certified Solutions Architect – Associate	Issued Jan 2024
• Claude Certified Developer – Foundations	Issued Aug 2026
• Microsoft Certified: Azure Fundamentals	Issued Sep 2023
• API Design using Python	Issued Jun 2023
• ICAgile Certified Professional	Issued Mar 2019

CORE SKILLS

- **GenAI & ML on AWS:** Amazon Bedrock (Agents, Knowledge Bases, Guardrails), RAG patterns, embeddings, prompt evaluation, SageMaker (pipelines, registry, batch/real-time), vector stores (OpenSearch Serverless, Aurora PostgreSQL/pgvector); data prep with Glue/Lambda/Step Functions; safety/PII with Guardrails & Comprehend.
- **Cloud Platform & Governance:** AWS Organizations, Control Tower, SCPs, account vending, IAM Identity Center (Entra ID) with SAML/SCIM, Service Catalog, AWS Config, CloudTrail, Security Hub, GuardDuty; Well-Architected alignment.
- **Networking & Security:** Hub-and-spoke and multi-tenant designs, VPC/Transit Gateway, VPN/Direct Connect, VPC endpoints/PrivateLink, Route 53, ALB/NLB, WAF/Shield, inspection/segmentation, KMS, Secrets Manager, AWS Private CA; NIST 800-53/CIS/FedRAMP-aligned controls.
- **Data & Integration:** S3 data lakes, Lake Formation, Glue/Athena, Kinesis/MSK, SQS/SNS, EventBridge, API Gateway/AppSync (GraphQL); event-driven and streaming integrations; ETL/ELT orchestration.
- **Compute & Containers:** EKS, ECS/Fargate, EC2, Lambda; ECR; resilience (multi-AZ, multi-Region DR); blue/green and canary deployments.
- **End-User Compute & Dev Experience:** Amazon WorkSpaces (Windows/Linux, pooled), Entra ID SSO/MFA/SCIM; image lifecycle and cost controls for training/hackathons; golden paths and templates.
- **IaC & DevOps:** Terraform (modular/workspaces), CloudFormation/CDK, Jenkins/GitHub Actions/CodePipeline; policy-as-code, drift detection, release orchestration.
- **Observability & FinOps:** CloudWatch/X-Ray/OpenTelemetry; centralized logging, CUR/Cost Explorer/Athena/QuickSight; rightsizing, Savings Plans, Graviton adoption.
- **Languages:** Python, Java, C/C++/C#, Bash; JSON/YAML.

AWARDS

• People Developer	May 2022
• Above and Beyond Award Recipient	May 2020