

Francis Garcia

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Backend and DevOps Engineer

I am a Back-End and DevOps Engineer with over 17 years of experience, specializing in Backend development, DevOps practices, and IT infrastructure for government, pharmaceutical, and business sectors. I am proficient in technologies such as Programming Languages (Rust, Python, JS), Cloud (AWS, Google Cloud), Kubernetes (Baremetal, EKS and GKE), Linux, and networking, and I have a proven track record of deploying scalable solutions and optimizing IT operations. With a Bachelor's degree in Business Administration and Management, I combine technical expertise with strategic planning and business intelligence to deliver robust IT services. My experience spans cloud solutions, containerization, end to end solutions design, and automation, while I consistently ensure system reliability and security. I am adept at leading teams, managing complex projects, and providing end-to-end IT solutions for diverse organizations.

Work Experience

• BairesDev

2024 – Present

Backend and DevOps Engineer

- Working as Backend and DevOps Engineer.
- Design, provision, and manage scalable cloud infrastructure in AWS using Terraform, ensuring reliable and reproducible environments.
- Migrated an authentication solution from Cognito to Auth0 using lazy migration for more than 50,000 customers, for a platform based on React and FastAPI.
- Working on implementing a streaming service solution for several microservices using Apache Kafka and AWS Managed Streaming for Kafka, for a 600 events per second platform.
- Architected and maintained CI/CD pipelines to automate software delivery, integrating Docker for application containerization using Gitlab, Github actions, EKS Runners, Terraform Pipelines and Buildkite.
- Implemented Claude and Cursor Agent for PR reviews and Agentic workflows.
- Manage and deploy EKS clusters for more than 40 microservices in different environments.
- Implemented ARM Graviton in AWS for RDS, EC2, kube-components, RabbitMQ and some of the app servers, reducing by 20% the computation cost.
- Migrated the Classic FSX to FXS Ontap for some large TB filesystems, which reduced the storage bill by more than 30% (More than 8,000 dollars monthly due to the amount of data stored).

- Implemented Karpenter with Spot instances for EKS node provisioning. With this, we have moved from cluster auto-scaler and reserved instances, having a predictable number of nodes running and decreasing cost dramatically.
- Managed observability using Datadog and its Operator for EKS for most of the apps such as SQL Monitoring (Deadlocks), Microservices monitoring, app state, pod counting, OS monitoring (disk, cpu, ram), etc.
- Managing and deploying some microservices using ArgoCD GitOPS solution.
- Manage Windows Active Directory for maintaining the SSO solution for Gitlab, Jenkins and Octopus; Split DNS for VPN connectivity and certificate generation for the deployed Windows Apps.
- Implement, deploy and maintain Ansible playbooks for different resources in the environment.
- Migrated app and pipelines secrets from Gitlab to AWS Secret Manager.
- Migrated from Kubernetes Ingress to Kubernetes Envoy Gateway API to comply with the new requirements.
- FINOps by always improving billing based on Cost Explorer recommendations and cost anomalies alarms.
- Manage other AWS services such as IAM, S3, RDS, API Gateway, Route53, VPC, Cloudfront, ACM, AWS Cloudtrail, MSK and others.

● Upwork

2022 – Present

Back-End and DevOps Engineer

- Working as on demand Backend and DevOps Engineer for different customers around the world.
- I worked as an Asterisk developer for a VoIP service provider, where I deployed an Asterisk PjSIP based calling solution with over 50 servers, for serving more than 100 calls per second with an integration with Kamailio. Also for the same customer I deployed a kubernetes based Redis clustered solution for caching details of the calls to be consumed by their backend. This reduced the query times from 30 sec in MySQL to milliseconds in Redis.
- I worked for a customer as DNS administrator for more than 19,000 zones using PowerDNS, clusterized with MySQL. Part of my work was related to maintaining the PowerDNS cluster, zones and MySQL stability for high replication. Also maintaining a FastAPI based backend for interacting with PowerDNS and nginx.
- I worked as a Backend Rust Developer for a client where I developed an Rsync like app for OSX with a M1 processor, allowing them to sync thousands of files over SSH.
- Worked as SRE on demand for a client for maintaining their Proxmox based Infra and using Ansible.
- I worked as a Cloud Engineer for Migrating 100+ users from one tenant to another with all its mailboxes, sharepoint sites and Onedrive files.
- I worked as an advisor for many other customers before the AI takeover.

- BairesDev

2022 – 2023

Back-End Engineer

- Worked as a Backend Engineer and built a solution for integrating a CRM with Twilio for VoIP calling .
- Used GraphQL in NodeJS for the creation of the communication endpoint.
- Implemented socket.io for the realtime communication between the React Frontend and the Backend.
- Implemented NodeJS libraries for communicating with Twilio API and maintaining a point to point call synchronization.
- Implemented the Queue System for incoming calls using Redis.
- Implemented the Call Detail Record of the calls using Postgres.

- National Treasury

2020 – 2024

IT Director

- Working at an organization that performs all government payments nationally while coordinating and deploying IT infrastructure including IPv4 routing, switching, firewalls, WAFs, server virtualization, DNS, load balancers, VoIP, Wi-Fi, infrastructure automation, and email and cloud services with MS Office.
- Coordinating tasks and deploying solutions based on the software development life cycle while planning and optimizing front-end and back-end architectures, designing and versioning APIs, and performing DevOps activities related to CI/CD and version control.
- Coordinating and controlling daily support tickets while being responsible for strategic planning, BI, documentation, and backups.
- We deployed the first fingerprint based authentication service for check payments in the National Treasury, with interoperability with the Central Electoral Board. Currently, the tool is used by the Ministry of Finance of the Dominican Republic to ensure the integrity of check payment processes.
- In 2022 we were recognized with “Golden NORTIC” for reflecting quality in the cross-cutting indicators of ICT and implementation of e-Government, as well as Government Transparency, and the provision of fast and efficient services.

- Suiphar – S.R.L.

2009 – 2018

IT Support and Network Engineer

- Worked for an international pharmaceutical corporation providing services in manufacturing, logistics, distribution, and healthcare management across multiple Latin American locations, and served as the network administrator for an organization with more than one hundred and ten employers, three national branches, and more than five hundred employees across Colombia, Ecuador, Bolivia, and the United States.
- Designed and deployed physical network infrastructure including two hundred and forty Cat6 network points at the national headquarters and more than forty-eight across two remote offices, deployed Cisco switches, and implemented STP, Portfast, port security, 802.1X, and VLAN segmentation while managing network switches and creating logical VLAN segments for

services such as Windows domain services, DHCP and NAS servers, IP cameras, public web servers, web proxies, end-user VLANs, and management services.

- Managed routing and network architecture by deploying VLANs from the national headquarters, creating matching IPv4 prefixes with summarized ranges, utilizing a layer-three Cisco switch for IPv4 and IPv6 inter-VLAN routing, implementing IPv6 through Hurricane Electric's IPv6 Tunnel Broker service using a GRE tunnel with a NGFW, and enabling dual-stack and pure IPv6 routing for selected VLANs.
- Connected remote branches through VPN tunnels and deployed scalable, summarizable IPv4 prefix ranges for each site, assigning structured address ranges representing branch, region, country, and continent while deploying site-to-site and remote-access VPN connectivity across Latin American locations and maintaining redundant NGFW infrastructure with redundant Internet providers.
- Enabled enterprise communication and connectivity services across the network by implementing VoIP connectivity, domain services, and intranet access through VPN infrastructure while supporting remote-access VoIP users utilizing softphones and internal services.
- Deployed VoIP services across seventy percent of Latin American branches, connecting more than two hundred and fifty IP phones through Asterisk PBX across five sites and Avaya IP Office across three sites, implementing SIP trunks for PSTN connectivity and inter-branch communications, and configuring internal SIP call routing through a central SIP gateway using PJSIP while supporting a telephone network processing thousands of calls daily.
- Administered enterprise email and identity infrastructure including daily mail service tasks such as account creation, suspension, and deletion, and migrated the organization's domain to Google Apps.
- Led infrastructure virtualization and server modernization by initially deploying VMware ESXi and later migrating all virtual machines to Linux containers and KVM within a Proxmox VE cluster, implementing a fully virtualized infrastructure supported by centralized NFS storage.
- Designed, deployed, and maintained Windows Server infrastructure from scratch including multi-domain controller forests, DNS for the internal domain and two Internet domains, and GPO management across all users and national sites in Colombia while performing daily administration tasks such as account management, domain joins, DNS management, and domain controller backups.
- Powered approximately 80% of the server infrastructure using Linux Debian and CentOS while deploying services including Bash scripting, cron-based automation, backups, CIFS and NFS storage, web hosting, databases, IP telephony systems, and server virtualization services.
- Deployed and managed enterprise Wi-Fi infrastructure including eighteen Ubiquiti access points across four branches using the Ubiquiti UniFi Controller hosted on Linux, implementing four SSIDs mapped to different VLANs, guest network access, fast roaming, and bandwidth policies while supporting more than three hundred daily wireless users across multiple SSIDs based on device type and network privilege levels.
- Managed building access control across national sites using RFID-based systems, implementing software to manage user access permissions, card inventories, and automated door access schedules across multiple facilities.
- Delivered internal intranet services through web platforms powered by Apache, PHP, and MySQL on Linux while implementing automated MySQL data and configuration backups using Bash scripts, cron jobs, Rsync, and NFS storage.

- Amov IT

IT Help Desk

2007 – 2009

- Worked as IT Help Desk for the Puerto Rico Telephone Company.
- I worked as a Bilingual Agent providing first level support to ADSL/Frame-Relay Customers.
- Basic Operation and troubleshooting of ADSL DSLAMS.
- Customer Support.

Projects

- Independent Experience

Independent Cloud & DevOps Consultant

2012 – Present

- Architected and delivered end-to-end Enterprise IT and Cloud solutions for over 185 businesses, specializing in high-availability infrastructure, DevOps practices, and secure networking.
- Cloud & Containerization: Led seamless cloud migrations from on-premises infrastructure to AWS and Azure. Architected scalable containerized environments utilizing Docker and Kubernetes for high-availability workloads and microservices.
- Backend & Event-Driven Architecture (EDA): Developed high-performance backend systems and RESTful APIs for data consumption. Optimized backend workflows and implemented Event-Driven Architectures utilizing message brokers (RabbitMQ, Kafka) for asynchronous processing.
- Infrastructure & Virtualization: Designed and implemented robust virtualization clusters using Proxmox VE, VMware ESXi, and Hyper-V, supported by centralized storage solutions.
- Network Security & Edge: Deployed enterprise-grade security and routing solutions utilizing Cisco, Fortinet, Checkpoint, and pfSense. Managed Edge compute and DNS/WAF services via Cloudflare.
- Telecommunications & VoIP: Consulted on and deployed over 3,000 IP endpoints using Asterisk. Architected large-scale Call Center solutions with SIP/WebSockets (Vicidial) and high-volume SIP routing via Kamailio integrating international VoIP carriers.
- Identity & Access Management: Implemented Active Directory environments ensuring SSO integration, DNS reliability, and strict Computer Policy Compliance across enterprise domains.

Education

Bachelor's Degree in Business Administration and Management, General
Universidad Abierta para Adultos

Courses & Trainings

Cisco Certified Network Associate
Cisco

Cisco Certified Design Associate
Cisco

AWS Certified Cloud Practitioner
AWS

Digium Certified Asterisk Administrator
Digium

Completed 30+ specialized courses and seminars from industry-leading brands including Dell, HP, VMware, Fortinet, Udemy, Skilljar, Lacnic, and others.

Skills

Cloud & DevOps: AWS, Azure, Google Cloud, Kubernetes, Docker, Terraform, Ansible, GitLab CI/CD, Jenkins, ArgoCD, Karpenter, Datadog.

Backend & Data: Python, Rust, Node.js, Express.js, FastAPI, GraphQL, REST, MongoDB, PostgreSQL, Redis, MySQL.

Event Streaming & Queues: Apache Kafka, RabbitMQ.

Networking & Security: Cisco, Fortinet/FortiGate, Checkpoint, pfSense, Cloudflare, Wireguard, IPv4/IPv6, VPN, VLAN.

Telecommunications (VoIP): Asterisk, Kamailio, Vicidial, SIP, PJSIP, Twilio, Socket.io.

Infrastructure & Virtualization: Linux (Ubuntu, Debian, CentOS), Proxmox VE, VMware ESXi, Hyper-V.