

Frederyck Baleiro Espinheiro Sales

Site Reliability Engineer (SRE) | Observability Engineer - English Fluent (B2/C1)

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Summary

Site Reliability Engineer (SRE) with **2 years of specialized experience in Observability and reliability practices**, building a solid foundation in distributed systems and high-performance monitoring. Responsible for implementing and operating the complete monitoring stack (Prometheus, Grafana, Loki, Zabbix, Elasticsearch), with focus on **automation (Ansible, Terraform)**, **IaC**, **GitOps**, and reliability metrics (SLIs/SLOs). Background of **7 years in IT** provides broad perspective on support, troubleshooting, and impact on user experience.

Achievements and Learning:

- Successful implementation of **SLI/SLO-based alerts** that resulted in **80%+ reduction in alert noise** in an environment with **400+ monitored hosts**, applying Event Management Process.
 - Contribution to **99% availability** of monitoring services **supporting 24/7 users**, through application of IaC practices, staging environments, and GitOps.
 - Development of **Ansible automation** that accelerated server provisioning from hours to minutes, applying infrastructure as code concepts and eliminating manual configuration errors.
 - Practical learning in **reducing critical incidents** through automated compliance assessments and building remediation playbooks/runbooks.
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Education

Specialization in Site Reliability Engineering (SRE) | PUC Minas | 2025 – 2026 (In Progress)

Bachelor's Degree in Electrical Engineering | Universidade Estácio de Sá | 2020 – 2024 (Completed)

Emphasis on Signals and Systems, Statistics, and Computational Modeling. Thesis on Machine Learning applied to electrical systems.

Professional Experience

NOC Lead - Observability | Sea Telecom

Jul 2023 – Present (2 years 4 months) | Castanhal, PA | On-site

Responsible for implementing and operating the monitoring stack and observability practices, working autonomously on technical development and administration of related infrastructure. Reporting directly to NOC management, I have applied and expanded SRE knowledge through practical projects and real-world implementations.

OBSERVABILITY IMPLEMENTATION AND SRE PRACTICES Monitoring & Observability Stack:

- Implemented and operate observability stack: **Prometheus** (Mimir as TSDB), **Grafana**, **Loki**, **Zabbix**, **Elasticsearch**, and **Rsyslog**.
- Administer supporting infrastructure: dedicated **PostgreSQL** and **MySQL** databases, **custom exporters** (Node Exporter, internally developed fping-exporter), **Nginx** as reverse proxy.
- Zabbix Server Performance Optimization:** Application of tuning in configuration parameters (**zabbix_server.conf**), adjustment of internal processes (pollers, trappers, history syncers), and database query optimization to support 400+ monitored hosts.
- Prometheus Exporters Development:** Creation of custom fping-exporter for collecting large-scale network latency metrics.
- Built dashboards focused on **SLIs/SLOs** based on **Golden Signals** (Latency, Traffic, Errors, Saturation), learning to translate technical metrics into business indicators.
- Contributed to **80%+ reduction in alert noise**, enabling the team to focus on high-impact incidents.
- Participated in **40%+ improvement in MTTD** (Mean Time to Detect) for critical incidents through implementation of more precise alerts.

Reliability Practices & Incident Management:

- Perform **RCA (Root Cause Analysis)** and participate in **Blameless Post-mortems** for continuous learning and recurrence prevention.
- Apply concepts of **SLIs, SLOs, and SLAs** to measure and improve service reliability.
- Capacity Planning:** Conducted TSDB growth analysis with usage projection until 2026 using statistical modeling, implementing remote write strategy to Mimir that resulted in 80% reduction in local storage.
- Dashboard Design:** Creation of SLI-oriented dashboards for L1/L2 infrastructure, optimizing incident visibility for NOC operating in home office model.
- Implementation of observability for multi-vendor network (Huawei, Datacom, Fiberhome, ZTE) via **SNMP**.
- Contributed to **99% availability** and reduction of annual critical incidents through application of reliability practices and automation.

AUTOMATION AND INFRASTRUCTURE AS CODE (IaC) Ansible Automation:

- Developed **automation framework with 10+ reusable roles** (PostgreSQL, MariaDB, MongoDB, Zabbix, GLPI, MinIO) applying Jinja2 templates, handlers, and systemd service management.
- Creation of **15+ playbooks** for deployment, troubleshooting, and automated remediation (fix-readonly-filesystem, diagnose-filesystem, deploy-observability-stack).
- Achieved **server provisioning reduction from hours to minutes**, eliminating most manual configuration errors through structured inventories and state validation.
- Implementation of **IaC** practices with **Terraform** and **Ansible** for environment versioning and reproducibility.

Python Tool Development:

- **NetBox-Zabbix Comparator:** CLI tool for inventory auditing between NetBox (Source of Truth) and Zabbix, with discrepancy analysis (IP conflicts, status), ICMP connectivity tests, and executive Excel report export. Layered architecture with 15 decoupled components, build automation (PyInstaller), and code quality (Black, Ruff).
- **CPE Onboarding/Offboarding Automation:** Automation system for CPE lifecycle management between NetBox and Zabbix, with data normalization (DBML schema), compliance validations, operation backup/rollback, and traceability via structured logs.
- **Grafana CLI Tool:** Application for dashboard backup management with professional structure (pyproject.toml, automated tests).
- **SSH Orchestrator:** Tool for multi-host command orchestration with structured logging and modular configuration.
- **Backup Automation:** System for Wiki.js (PostgreSQL dump + MinIO upload) with retry logic and notifications.
- **Prometheus Exporters:** Development of custom fping-exporter for network latency metrics.
- **Zabbix Log Analyzer:** Troubleshooting tool for SNMP error analysis with KPI dashboards (Rich library), statistical analysis, and temporal pattern identification.
- Security hardening automation on Linux servers: patch application, access auditing, and control implementation.

Infrastructure:

- Administration of **on-premise infrastructure (OpenStack)**: provisioning, configuration, monitoring, and maintenance of Linux VMs.
- **Service Containerization:** Deployment and orchestration of stacks with Docker Compose (LGMT stack, Observability stack with Loki+Mimir+MinIO+Grafana Alloy). Studying migration to Kubernetes in staging environment (ConfigMaps, Secrets, Ingress controllers).
- **Reverse Proxy:** Nginx configuration for multiple services with SSL/TLS, rate limiting, and load balancing.
- Configuration and script versioning with **Git/Gitea**.
- Administration of **Wiki.js** as central technical documentation platform (including automated backups and disaster recovery).

LEARNING AND TECHNICAL DEVELOPMENT

- Active participation in continuous improvement initiatives and adoption of modern SRE practices in the NOC team.
- **SRE Technical Proposal:** Development of technical proposal in LaTeX (ABNT standard) with C4 diagrams (PlantUML) for solution architecture, implementation planning, ROI indicators, and SLIs/SLOs/Error Budgets strategy.
- Feasibility studies for migration to public cloud (**AWS**, GCP) and SaaS adoption (Grafana Cloud, Netdata), including cost analysis with AWS Pricing Calculator and TCO (Total Cost of Ownership) comparisons.
- Planning implementation of **ITIL**-based processes with **GLPI**.
- Application of performance metrics (**MTTD**, **MTTR**) to guide improvements and technical decisions.

Technologies: Prometheus (Mimir) • Grafana • Loki • Zabbix • Elasticsearch • Rsyslog • OpenStack • Docker • Linux (Debian/Ubuntu) • PostgreSQL • MySQL • Nginx • Python • Ansible • Terraform • Bash • Git/Gitea • GLPI • Wiki.js • Jenkins

Customer Support Lead | Sea Telecom

Sep 2022 – Jul 2023 (11 months) | Castanhal, PA | On-site

Coordination of technical support teams, evolving from general management to coordination of specialists focused on critical cases. Experience that provided understanding of incident management and end-user impact, fundamental for transition to SRE.

Key Achievements:

- Active participation during **service incidents**, coordinating response and minimizing customer impact.
- Implementation of **KPI**-based data analysis (**Power BI**) to optimize processes, contributing to **25% reduction in resolution time**.
- Application of **Lean** and **Kanban** principles to manage demand flow.
- Use of analytical tools (**5 Whys**, **Priority Matrix**, **SWOT Analysis**) to identify and eliminate bottlenecks.

Technologies: Power BI • Excel • Lean (Kanban, 5 Whys) • Incident Management • ITIL

Customer Support Assistant | Sea Telecom

Feb 2022 – Dec 2022 (11 months) | Castanhal, PA | On-site

Diagnosis and resolution of connectivity issues in FTTH networks, deepening understanding of stability impact on user experience.

Key Achievements:

- Customer service data analysis with **Power BI** and **Python** (Pandas, NumPy, Jupyter Notebook) to identify trends and failure patterns.
- Provision of insights for continuous service improvement.
- Technical training for new employees.

Technologies: Power BI • Python (Pandas, NumPy, Jupyter Notebook) • FTTH • Troubleshooting

Telemarketing Operator | Sea Telecom

Sep 2020 – Feb 2022 (1 year 6 months) | Castanhal, PA | On-site

Technical support for FTTH broadband services, building technical foundation in networking and diagnostics.

Key Achievements:

- Network diagnosis: latency analysis, disconnections, DNS, DHCP using Ping, Traceroute, and log analysis.
- Use of NMS: **NETNUMEN (ZTE)** and **UNM (FiberHome)** for device configuration, performance and health analysis.
- Network equipment configuration (ZTE, FiberHome, TP-Link routers): SSID, WPA2, QoS, VLANs.

Technologies: FTTH • NETNUMEN/UNM • DNS/DHCP • QoS/VLANs • Network Troubleshooting

Residential Electrical Designer | Freelance

Jan 2018 – Sep 2020 (2 years 9 months) | Belém, PA | On-site

Autonomous management of residential electrical projects, developing skills in technical documentation (AutoCAD), project management, and autonomy later applied to IT infrastructure and automation.

Technologies: AutoCAD • Project Management • Technical Documentation

IT Intern | Federal University of Pará

May 2016 – Apr 2018 (2 years) | Belém, PA | On-site

Fundamental technical foundation in networking, Linux/Windows systems, and troubleshooting, developing skills in LAN/Wi-Fi network administration, connectivity diagnosis, and infrastructure support applied throughout IT career.

Technologies: Linux (Ubuntu) • Windows • LAN/Wi-Fi Networks • DNS/DHCP • FTP/Proxy

Home Lab & Continuous Learning

I maintain an active home lab for practical learning and experimentation with modern SRE technologies, with documented projects on GitHub demonstrating concept application:

- **Kubernetes & Orchestration:** High-availability **k3s** cluster on **Proxmox** applying **GitOps** practices and ArgoCD. Zabbix deployment using Terraform + Ansible + Helm (end-to-end IaC). Implementation of ConfigMaps, Secrets, and Ingress controllers.
- **Terraform & IaC:** Provisioning automation on Proxmox with cloud-init templates, networking (NAT, iptables), and dynamic Ansible inventory generation. Reusable modules for declarative infrastructure.
- **CI/CD Pipelines:** Experimentation with **ArgoCD** for declarative deployments, **GitHub Actions** for automation workflows, custom Docker images with multi-stage builds.
- **Public Cloud:** Studies and practical projects in **AWS** (advancing from Cloud Fundamentals to Cloud Architect). Experience with AWS Pricing Calculator for cost sizing.
- **Complete Observability:** LGTM stack (Loki, Grafana, Tempo, Mimir) with **Grafana Alloy** for telemetry, MinIO for long-term storage.
- **Infrastructure as Code:** Terraform modules (Proxmox provider), 10+ reusable **Ansible** roles, automation scripts.
- **Programming:** CLI tools in **Python** with advanced design patterns (Singleton, Factory, Async/Await) - grafana-cli-tool, ssh-orchestrator, netbox-zabbix-sync, P2P network monitor with asynccssh. Studies in **Go**, **Bash** scripts.

Technical Skills

SRE & Observability

Complete Stack: Prometheus (Mimir) • Grafana • Loki • Promtail • Zabbix • Elasticsearch • Rsyslog • Node Exporter • fping Exporter (customized)

Practices: SLIs • SLOs • SLAs • Error Budget • Golden Signals • RCA • Blameless Post-mortem • MTTD/MTTR

Integrations: NetBox (Source of Truth) • API-driven monitoring

Infrastructure & Cloud

Private Cloud: OpenStack • MinIO • Docker • Docker Compose

Systems: Linux (Debian, Ubuntu - administration, hardening, systemd) • Nginx (reverse proxy, SSL/TLS)

Orchestration: Kubernetes (Home Lab - k3s, Proxmox)

Public Cloud: AWS (Cloud Fundamentals, studying for Cloud Architect)

Automation & IaC

IaC: Ansible (10+ roles, 15+ playbooks) • Terraform (Proxmox provider, cloud-init automation)

Languages: Python (APIs, CLI tools with design patterns, async programming) • Bash Scripting • Go (learning)

Version Control: Git • Gitea

Databases

Administration: PostgreSQL • MySQL • MariaDB • MongoDB (automated deployment via Ansible)

Time Series: Prometheus (Mimir, remote write, capacity planning) • VictoriaMetrics (basic knowledge)

CI/CD

In Use: Jenkins

Home Lab: GitHub Actions • ArgoCD • Git Hooks

Networking

FTTH: Troubleshooting • Connectivity diagnosis • DNS/DHCP • QoS/VLANs

Equipment: ZTE • FiberHome • TP-Link • Mikrotik

Monitoring: NETNUMEN • UNM • SNMP

Security

Security Patches • Access Auditing • Access Controls • Linux Hardening

Data Analysis

Power BI • Excel • Python (Pandas, NumPy, Jupyter Notebook)

Processes & Management

ITSM: ITIL • GLPI • Wiki.js (administration)

Methodologies: Lean • Kanban • 5 Whys • Priority Matrix • SWOT Analysis

Documentation: C4 Model • AutoCAD

Soft Skills

Problem Solving • Analytical Thinking • Autonomy • Fast Learning • Adaptability • Technical Communication • Teamwork
• Continuous Improvement Mindset

Languages

- **English:** Fluent (B2) - Reading, writing, and conversation

- **Portuguese:** Native
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Key Certifications

SRE, Cloud & DevOps (2024-2025)

- **Cloud Basics: Development and Basic Concepts (CRA Training Program)** - Huawei | Aug 2025
- **DevOps: exploring concepts, commands and scripts in Linux CLI** - Alura | Jun 2024
- **Getting Started with Linux Track** - Alura | May 2024
- **Linux LPI Essentials Certification (Complete Series)** - Linux Professional Institute | Jun-Aug 2024

Technical Leadership (2023-2025)

- **Tech Lead Track** - Alura | Apr 2025
- **Digital mindset: techniques and skills for remote leadership** - Alura | Oct 2023
- **Leadership habits: best practices** - Alura | Mar 2023

Networking & Infrastructure (2023)

- Networks: building a project with VLANs, access policies and internet connection - Alura | Aug 2023
- Networks: from initial concepts to intranet creation - Alura | Aug 2023
- MikroTik Course for Beginners - Redes Brasil | Jul 2023

Complementary Training

- Industrial Control and Automation - Estácio | Jun 2024
- Systems and Programming Applied to Electrical Systems - Estácio | Jun 2024
- Python for Data Science - Alura | Jun 2022

Complete list of certifications and verifiable credentials available on LinkedIn