Engineer Platform

Infrastructure

48 achievements

Connect the parts of your system

The work collected under “Infrastructure” shows one part of a working system. We can help connect that part to the rest of your operation. Monitoring and alerts that speak up while a fault is still small, and the figures that show how often it stays that way.

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Find a comparable challenge

Follow an example that resembles your situation. Its review describes the decisions behind the result, beyond the technology label. Built the company's first observability dashboard — the company's first view of its own systems

Built the company's first observability dashboard Get in touch →

Built the company's first observability dashboard

Developed and launched the company's first observability dashboard, providing real-time system performance insights and data visualization on the large office TV.

Ran 10 PostgreSQL and MS SQL servers on Ubuntu

Designed, deployed, and maintained 10 PostgreSQL and MS SQL servers on Ubuntu Linux VPS, ensuring optimal server performance and reliability.

Wrote 1,000 RBAC rules to secure Linux servers

Enhanced data security by implementing 1,000 RBAC rules for developers, application instances, PostgreSQL, MS SQL, and other Linux servers, preventing unauthorized access; documented with Ansible automation.

Automated 100 critical data backups using Barman

Automated 100 critical data backups using Barman, Google Cloud, Bash, and Python, ensuring data integrity across databases.

Ran 20 Docker apps on Google Cloud and AWS

Deployed and maintained 20 Docker containerized applications, troubleshooting with Podman and Kubernetes, and managing R-based apps on Google Cloud and AWS.

Managed 30 Ubuntu Linux VPS instances

Managed 30 Ubuntu Linux VPS instances, implementing disaster recovery strategies and ensuring optimal network configurations.

Led access management across M365 and SSO

Prevented security breaches by leading access management initiatives, utilizing M365, 1Password, Red Hat SSO, and OKTA SSO.

Cut operational risk with Grafana and Prometheus

Mitigated operational risks by implementing a monitoring dashboard using Grafana and Prometheus, improving system reliability.

Managed 8 WireGuard and IPsec VPN connections

Managed and troubleshot 8 WireGuard VPN and IPsec VPN connections, ensuring secure communication across Google Cloud and Linux systems.

Overhauled internal processes, saving 8,000 hours

Overhauled internal processes, saving 8,000 hours by improving software architecture, systems, and scheduling efficiency.

Administered network infrastructure

Administered network infrastructure for over 1,000 servers, ensuring optimal system deployment, security, and troubleshooting.

Automated SSL/TLS certs for 100 Docker apps

Automated SSL/TLS certificate creation for 100 Docker applications, ensuring secure connections across Ubuntu Linux hosts.

Configured and deployed 1,000 Wi-Fi routers

Configured and deployed 1,000 Wi-Fi routers, improving network accessibility and performance for clients.

Administered 100 Bare Bone servers

Administered 100 Bare Bone servers, physical networks, and IP telephony systems, ensuring robust infrastructure for company growth.

Administered 40 websites on Apache and Nginx

Administered 40 websites on Ubuntu Linux hosting servers with Apache and Nginx, ensuring high availability and performance.

A mapping product, carried end to end

Architected, developed and supported infrastructure, data processing and a map application over 2 years, covering both software delivery and operational maintenance.

Infrastructure simplified beyond AWS

Reworked an international client's infrastructure by removing unused services, adjusting capacity and moving workloads away from AWS. The founder reports a 10x reduction in cloud costs with no loss of productivity.

Provisioned Azure infrastructure as code

Provisioned Azure infrastructure as code with Bicep — Container Apps, PostgreSQL Flexible Server, Front Door/WAF and networking — across the development, staging and production environments.

Owned end-to-end platform deployments to Azure

Owned end-to-end deployments of the platform to Azure, managing releases across development, staging and production environments.

Implemented backups and disaster recovery as code

Configured database backup retention as infrastructure-as-code, then audited the recovery position and documented the restore procedure — naming the remaining gaps rather than leaving them to be found during an incident.

Ran 24/7 support for ~1,000 IPTV/OTT servers

Provided round-the-clock 24/7 infrastructure support for an IPTV/OTT streaming platform, administering ~1,000 servers plus client-owned systems for global customers in China, the US and Germany.

Kept IPTV streaming signals running non-stop

Ensured uninterrupted delivery of IPTV streaming signals between suppliers and clients, monitoring and maintaining the streaming network and IP telephony around the clock.

Built infrastructure that still runs years later

Planned and implemented new infrastructure functionality for internal and external systems, building solutions durable enough to still run years later with minimal change.

Built the entire core infrastructure from scratch

As one of the first hires, designed and built the entire core infrastructure and supporting processes from scratch for a green-energy SaaS startup, laying the foundation for rapid growth.

Integrated a company-wide password manager

Integrated a company-wide password-management system, strengthening security and streamlining access control.

Built first-party error monitoring and tracing

Built first-party error monitoring and OpenTelemetry tracing rather than buying them — payload sanitising, spike and regression detection, symbolication and a synthetic heartbeat — behind 11 operator views.

Infrastructure defined in a repository

Built the company's own infrastructure as 19 Ansible playbooks and 34 roles across 12,065 lines of YAML, converging a live host to a declared state with every play idempotent.

Public services on a small server

Hosted the company’s public services on a single-core 512 MB host — a git forge, a web server for seven domains, Tor, two alternative-protocol servers and intrusion banning — treating 464 MB of usable memory as the design constraint; backup automation is a separate implementation.

Three locks on the door, none of them locked

Found and closed three SSH brute-force protections that had never worked: a ban jail watching port 22 while the daemon listened on 1986, a rate limit shadowed by a broader rule above it, and a ban action whose binary never resolved, so no ban had ever applied.

Hardened SSH to 24 validated directives

Hardened SSH to 24 asserted directives with three-stage validation — the candidate file, the assembled config, then the daemon's own read-back — after the read-back caught the running server silently overriding two of the twenty-four.

Proved the intrusion ban works every run

Proved the intrusion-banning path end to end on every hardening run by banning a reserved test address, reading the resulting kernel rule and unbanning in a guaranteed cleanup block, so a jail that stops working fails a run instead of reporting healthy.

Verified firewall rules by position

Verified firewall rules by position rather than presence, reading the numbered rule list and the live packet-filter chain, because a rule that exists is not a rule any packet reaches.

Backup automation with an explicit restore method

Implemented restic backup automation with retention, integrity checks and a monthly restore-test workflow; documented storage activation and live-restore verification as separate operational steps.

Built dead-man's-switch host monitoring

Built dead-man's-switch monitoring that pings only while memory and disk are healthy, so a degraded host raises an alert by going silent — and caught six variable names saying "free" where the check correctly measured "available", an order of magnitude apart on a 464 MB box.

Made Ansible check mode tell the truth

Made check mode tell the truth across the whole platform after finding six probes deciding on a value the host never gave, because Ansible's command module reports success under --check while skipping the command entirely.

Added a one-second preflight for secrets

Added a preflight play that runs the same code as the converge against operator-local secrets in about a second, after a half-applied production run died on its ninth task with the swap settings already written to the live host.

Reconciled a 20-record DNS zone as code

Reconciled a 20-record DNS zone declaratively against the Cloudflare API with separate audit and BIND-export entry points, and turned the CDN proxy back off on privacy grounds after building it.

Cut systemd sandbox exposure on every unit

Cut systemd sandbox exposure across every unit this platform installs — a dead-man's-switch service from 9.6 UNSAFE to 1.5, an internet-facing git forge from 8.3 EXPOSED to 1.5 — and added a converge-time parser check after finding a misspelled directive silently ignored in three unit templates.

Built 7 read-only host reporting roles

Built seven read-only reporting roles that render a live host to Markdown — facts, access, git, metrics, traffic, security and provider inventory — under a rule that no number is printed the run did not measure.

Your code on your own server

Deployed the company's own git forge on Soft Serve, private by default with no web panel and its SSH port bound to loopback behind a jump host, and made the landing page in front of it a build artefact of the main site rather than a hand-kept copy.

Ran containers on Podman and Quadlet

Deployed a container plane on Podman and Quadlet under systemd rather than Docker, because Docker's default bridge-port publishing can bypass UFW rules — and gave deploys an unprivileged user with one fixed command instead of root.

Provisioned a second server from code

Automated the provisioning of a second server on a second cloud provider, creating the firewall before the machine so it is born behind one, with both providers' firewalls written directly against their REST APIs to avoid a third-party collection.

Wrote a scope rule after a credential leak

Wrote a scope rule into the repository after a restructure carried another company's inventory, firewall allowances and prose into it — and kept the quarantined residue under the secret scanner rather than excluding it.

Split every operational secret per host

Split the four per-host operational secrets after establishing that two hosts sharing one dead-man's switch alert less than two switches, not more, and that a shared backup passphrase can expose both hosts' backups, even in separate repositories, if someone obtains it and can read both repositories' encrypted data and key files.

Mirrored the site to Gemini and Gopher

Built Gemini and Gopher outputs from the same website source; the achievement records 777 documents in each format at that stage, with zero HTML bytes changed by adding the formats.

Rehearsed the forge CI hook, found 2 defects

Rehearsed the forge-side CI hook and found two defects unreachable by reading the file: a fallback that put an unresolvable argument on the hook's input, and git's own environment variable following the gate into the checkout and turning 19 tests red.

Measured 13 addresses with no tracking

Measured thirteen addresses from the web server's own access log alone — no cookie, no tracker and no third-party service — masking the client network as each line is written, and folding the result into a permanent archive of 21 daily counts and 20 monthly facets.

Published a readable Tor onion mirror

Published the site as a Tor onion mirror on a readable address beginning engineer, with the key generated off the host so it never reached this repository or a laptop, and left it the one front door of four that is never counted.

Focus the engineering effort

Bring the deployment path, the operational risks and the people on call. We can scope a change with checks, a recovery route and clear ownership.

See what it costs Get in touch →

Put the subject in your context

Tell us how “Infrastructure” appears in your own system. We can help choose the relevant service and define the work around it.

Explore our services

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