Engineer Platform

Automation & CI/CD

61 achievements

Connect the parts of your system

The work collected under “Automation & CI/CD” 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 GIS SaaS deployment with GitHub Actions

Automated GIS SaaS application deployment, data processing, and reporting system using GitHub Actions CI/CD, Python, Bash, and SQL.

Automated delivery of 20 GIS data pipelines

Automated delivery of 20 GIS data pipelines and app data ETL processes, streamlining infrastructure automation and reporting.

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.

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.

Improved team communication and collaboration

Improved team communication and collaboration by implementing Slack, Mattermost, 1Password, and Jira, saving 8,000 hours of labor.

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.

Streamlined CI/CD processes, saving 4,000 hours

Streamlined CI/CD processes, saving 4,000 hours by introducing automation in software development pipelines.

Saved 4,000 hours with GitHub and GitLab CI/CD

Streamlined data analysis and software development processes, saving 4,000 hours by introducing GitHub, GitLab, Bash, and Python CI/CD practices.

Automated data processing in Python and PL/pgSQL

Automated data processing tasks using Shell scripting, PL/pgSQL, Python, and Transact-SQL, increasing productivity and efficiency.

Generated the API contract from the database out

Generated the API contract outward from the database — OpenAPI, a 44,076-line typed TypeScript client, 61 mock handlers and the limits the UI enforces — with a guard at every hop that fails on drift.

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.

Built GitHub Actions CI/CD pipelines

Built GitHub Actions CI/CD pipelines with a distroless production frontend image and multi-environment promotion.

Authored 578 go-task automation targets

Authored 578 go-task automation targets spanning native, Docker and HTTPS dev modes, linting, testing, database and deployment.

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.

Set a zero-warnings bar across six languages

Set a zero-warnings quality bar across six languages — Go, TypeScript, SQL, Python, Shell and Markdown — enforced by pre-commit hooks.

Automated team collaboration

Automated team collaboration, password management, task and time management, and built a semi-automatic project-showcase system, raising team productivity.

Integrated a company-wide password manager

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

Built a test suite across Go, SQL and browser

Built a layered automated test suite — 981 Go tests, 543 frontend and browser specs, 494 SQL behavioural tests — with mutation testing, property-based tests and an accessibility gate.

Built a 268-check guard engine for the repo

Built the repository's guard engine — 268 registered commit checks, 277 lint rules and 15 custom ESLint rules — plus 146 tests of the guards themselves, so the build holds the standard, not review.

Moved slow work onto a River job queue

Moved slow work off the request path onto a River job queue — 15 worker modules, 8 scheduled tasks and 20 pg_cron jobs — so a request returns while the work behind it carries on.

Ran a continuous security scanning programme

Established a continuous security programme — code scanning, DAST, dependency and vulnerability checks, SBOM generation, secret scanning and SHA-pinned actions — alongside 21 written security audits.

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.

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.

Built a 22-linter commit gate

Built a commit gate of 22 one-line linters plus five that earn a paragraph, with no warning tier and no inline suppressions permitted, covering HTML, CSS, JavaScript, Python, YAML, Markdown, shell, links, spelling, secrets and typography.

A safety net that no longer costs half an hour

Cut the site's browser-driven quality gate from 1,636 seconds to 615 by scheduling its checks longest-first through a worker pool bounded to four lanes, after measuring that alphabetical order cost 320 seconds against 224.

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.

Fixed a sitemap with one shared timestamp

Fixed a sitemap where 172 of 176 URLs shared one modification timestamp, by taking the date from git history after establishing that the export rewrites every file on every run.

Linted the 10,242-line quality gate itself

Brought 10,242 lines of quality-gate JavaScript under a formatter and a linter after establishing it was the largest body of code in the repository and the only one nothing read, fixing 13 findings and suppressing none.

Held the generator to 981 tests and 92% coverage

Held the generator to 981 test cases at a 92% branch-coverage floor with warnings treated as failures, and asserted idempotence by running the whole build pipeline twice from an empty file and requiring the second pass to change nothing.

Enabled every linter rule as an error

Selected every rule the Python linter has as an error, working through 1,815 findings to reach zero, with each of the few exemptions carrying a written reason and two of them backed by a checker instead of a comment.

Wrote tests for the checkers themselves

Wrote tests for the checkers themselves after establishing that a checker fed only clean input will one day report clean because it read nothing — planting a misspelling to confirm the spell-check finds it, and taking an id range from the database rather than from a number in the test.

Found the hooks and the gate disagreeing

Found the commit hooks and the quality gate running different checks while a document promised they were the same, by comparing the two lists in a test — the five that only ever ran by hand were the ones reading the CV prose.

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.

Wrote a parser verifying every FFI call

Wrote a parser that reads the real 7,308-line C header and verifies every call site, every enum constant and that every pointer-owning class is final, after a hand-written placeholder header let calls to three removed functions compile, link and crash.

Took the test suite to 8.9 seconds

Took the test suite from six tests over a sixty-second limit to 135 passing in 8.9 seconds by profiling the main thread and removing the two calls it sat inside for 3,989 samples out of 4,017.

Reached the unused half of the core

Reached the half of the messaging core the application had never used — backup transfer, disappearing messages, message editing and resending, verified invitations, proxies and encryption policy — driving every test against the real library with no mocks.

Know the licence of everything you ship

Audited 644 Rust crates for licence compatibility on every build, and proved the check fires by rewriting one crate's licence and by moving the pinned core revision without regenerating.

Held 4 repositories to one history standard

Held four repositories to one history standard — conventional, emoji-free, no attribution trailers, enforced by a commit-message hook — alongside 48 instruction documents that govern how the work is done.

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.

Made six collectors state what they skipped

Made six reporting collectors state the part of their input they never read — files that stayed shut, probes not installed, journal lines unrecognised — and fitted thresholds to 116 measured samples, after establishing that a blind collection and a healthy host render the same page.

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 “Automation & CI/CD” 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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