Engineer

Testing & QA

44 achievements

Connect the parts of your system

The work collected under “Testing & QA” shows one part of a working system. We can help connect that part to the rest of your operation. The part users never see: where the data lives, what the rules are, and how other systems are allowed to talk to it.

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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. Designed and ran 6 ETL/ELT pipelines — 6 ETL pipelines across three database engines

Designed and ran 6 ETL/ELT pipelines Get in touch →

Streamlined CI/CD processes, saving 4,000 hours

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

Migrated the API to Huma v2 at 100% parity

Migrated the HTTP API from Fiber to Huma v2 — 649 paths and 760 operations — reaching and holding 100% parity between the routes the server registers and the OpenAPI description it publishes.

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.

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.

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.

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.

1,022 migrations behind a schema drift gate

Kept the schema honest across 1,022 migrations with a CI gate that builds the database both ways — a fresh install, and an install plus every migration — and fails when the two disagree.

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.

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.

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 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.

Replaced 27 font sizes with a 6-step scale

Replaced 27 rendered font sizes whose nearest neighbours were 0.6% apart with a six-step Major Third scale, and wrote the linter that fails the twenty-eighth.

Accessibility checks across 32 pages and both themes

Implemented WCAG 2.2 Level AA checks across 32 representative pages in both colour themes, with a conformance record, one AAA criterion checked and the partial result for criterion 1.4.13 stated explicitly.

The accessibility faults your checker misses

Found and fixed 11 accessibility defects the browser reported as healthy — eight footer links still in tab order behind pointer-events, a scroll timeline clipping the colophon off three pages, and a rule engine running 70 of its 105 rules.

Closed the colour system at 28 colours

Closed the colour system at 28 documented colours with a linter that fails a value painted but undocumented, documented but unpainted, mis-measured, respelled as a literal, or within a perceptual distance of 0.02 of one already there.

Found the light theme missing a whole layer

Found that the light theme had been missing a full-page overlay layer since the day it was written, by asserting that both themes paint every layered surface with the same number of layers.

Made the reduced-motion setting honest

Made reduced-motion honest after finding eleven selectors still animating under the preference, because a universal transition-none rule loses on specificity to any rule carrying a class.

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.

Put the documentation under its own linter

Put the documentation under its own linter — a per-file line budget that only ratchets down, an index requirement and a real-path check — which found six of nine plans marked done while carrying unchecked boxes, and fourteen commit-gating tasks named in no document.

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.

Passed 106 of 106 PDF/UA-1 profile checks

Recorded PDF/UA-1 validation across nine documents with 106 of 106 configured accessibility-profile checks passing, while the archival variant failed one of 146 rules.

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.

Vendored a QR encoder in 522 lines

Vendored a QR encoder — Reed-Solomon over GF(256), fixed module layout, eight mask patterns — in 522 lines rather than take a third runtime dependency, and verified it by reading the finished matrix back with an independently written decoder.

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.

Built a cross-language figure check

Built a cross-language content check that fails when a translation drops a figure the English states, and when a language uses notation it does not use — finding two Danish descriptions missing a metric and sixteen Ukrainian spans quoting in the English style.

A bounded event pipeline for a macOS app

Bounded event buffers and logging after a recorded macOS incident with 41 MB per second growth and 111 GB of compressed pages on a 36 GB machine; a recorded full test run reduced core log lines from 610,996 to 1,411.

Adopted Swift 6 strict concurrency over C

Adopted Swift 6 complete strict concurrency with no actors, bridging a blocking C event loop to the main actor through one producer, one consumer and one ordering — after establishing that a task per event loses the ordering the interface depends on.

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.

Named all 17 icons for screen readers

Named every icon-only control in the interface for screen readers after finding the send button announced as "arrow up circle, button", and wrote the linter that requires the label within eight lines of the icon.

Built a 48-token macOS design system

Built a 48-token design system on the platform's own glass material and wrote the linter that rejects a magic number, a hardcoded font size, or an animation that ignores the reduce-motion preference.

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.

Rewrote error messages to stop blaming users

Rewrote the application's error messages against a written tone standard after a refused sign-in blamed the user for mistyping when the provider actually required an app-specific password, and covered it with a test that names the provider.

Built the visual identity from 2 drawings

Built the company's icon and favicon sets from two hand-made drawings, with every derived asset regenerated by script and a check that fails when a derived file was committed before its source.

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

Describe the workflow, the existing interfaces and the users who need the change. We can define a testable delivery and a handover that lets your team maintain it.

See what it costs Get in touch →

Put the subject in your context

Tell us how “Testing & QA” 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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