INTERNAL TOOLING

Bulk edits in a vendor SaaS with no API

Spreadsheet-driven browser automation over an existing sign-on session, with dry runs and per-item verification.

Sytze P.
Solution Engineer

The problem

An internal operations team at a mid-size organisation had hundreds of records to change across four vendor systems: a records platform, a permissions console, a document library and a forms tool. None of them exposes a usable API on the licensed tier, and IT will not issue a service account, so the only route to the data is the web interface a person clicks through behind single sign-on.

By hand that is a week of repetitive form filling per system. A week of form filling also produces mistakes that nobody can find afterwards, because there is no record of what was actually changed.

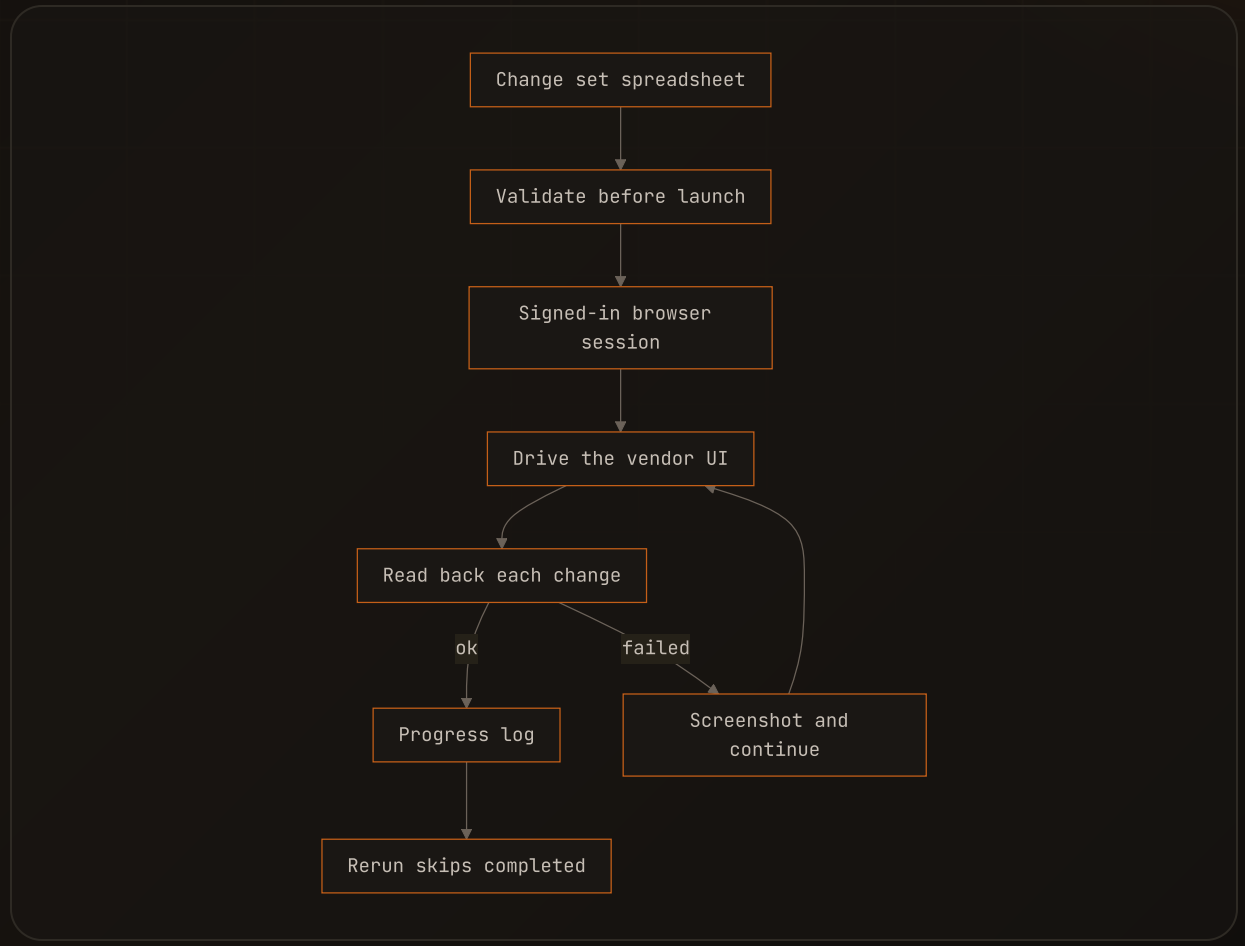
APPROACH

Spreadsheet to verified change

The change set lives in a spreadsheet, so the people who own the data edit rows instead of asking a developer to edit code.

Two session strategies, chosen per deployment. Interactive runs copy the operator's signed-in browser profile into a throwaway directory and drive it from there, so no credential lives in the repository. Scheduled runs sign in headlessly with a one-time code from a secret in the runner's vault.

Each item is read back after it is applied, and completed items go to a progress log so a rerun resumes.



HIGHLIGHTS

How it works

THE SPREADSHEET IS THE CONTROL SURFACE

Headers and every value are checked before the browser launches. An invalid row is skipped by its row number and reported, rather than taking the run down with it.

RERUNS SKIP WHAT ALREADY LANDED

Checkbox state is read before it is toggled, and completed items are appended to a progress log. A crash costs the current item, not the run.

EVERY SAVE IS READ BACK

After each write the page is scanned for the vendor's error text, and the save control is guarded against a second click. A silent failure gets recorded as a failure.

BUILT FOR A UI THAT LAGS

Dependent dropdowns are polled with backoff until their options actually exist, aborted navigations are retried, and a file is re-read until the download has finished landing on disk. These are the races that make naive UI automation flaky.

RESULTS

Results & impact

no credential in the repo

interactive runs borrow the signed-in session

dry run before any write

the whole change set validates with the browser closed

resumes after a crash

progress log skips items already applied

one failed item, not one failed run

failures logged by spreadsheet row, run continues

STACK

Tech stack

Python
automation scripts and CLI

Playwright
drives the real UI

openpyxl and pandas
spreadsheet input and dedup

TypeScript
browser extension variant

Chrome extension MV3
runs in the user's session

GitHub Actions
scheduled unattended runs

pytest and Jest
end-to-end and unit tests

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