

How DHL Parcel reduced test execution time by 50%

Leading logistics company DHL relies on DHL Parcel software to serve 150,000 packages daily around the world. Here's how their Parcel team uses Cypress in combination with Jenkins and Docker to dramatically speed up their deployments—and assure quality and confidence every time.

Software that has to deliver

DHL Parcel provides standard domestic and international parcel pick-up, delivery and return solutions for business customers and consumers around the world. These services are powered by an extensive software infrastructure, which relies on automated testing to guarantee uninterrupted service to clients and customers.

DHL Parcel's software team is continuously releasing to production, with over 400 deployments every year. The division's applications include a labeling tool which generates 100,000-150,000 shipping labels for customers every day—making testing a critical part of the deployment process.

Testing had to be faster

DHL Parcel's software team often found themselves needing to deploy quick fixes to their code. Although their Cypress tests were efficient and reliable, test runs often took longer than the builds—10 minutes for the pull request and another 10 minutes for the master build.

Additional issues surfaced as the test codebase grew: frustrated by the amount of time it took to run tests, engineers started writing fewer of them. This caused the team to look into more efficient test practices, such as running tests in parallel.

Their first step was running DHL Parcel's four different websites (two consumer sites, one business site, and one admin console) in parallel via Jenkins. The team managed to reduce their build time from 10 minutes to 7 minutes by splitting their test suites in two. Though promising, their test run times were still taking longer than the builds. Additionally, a new problem surfaced: developers were adding tests to the first test suite and ignoring the second—making the first suite too large.

Results & Impact



65% faster
run time
(10 minutes to
3.5 minutes)



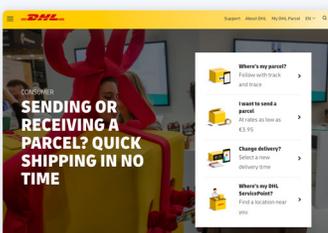
test increases
more tests
being written



improved culture
improved
front-end
testing culture

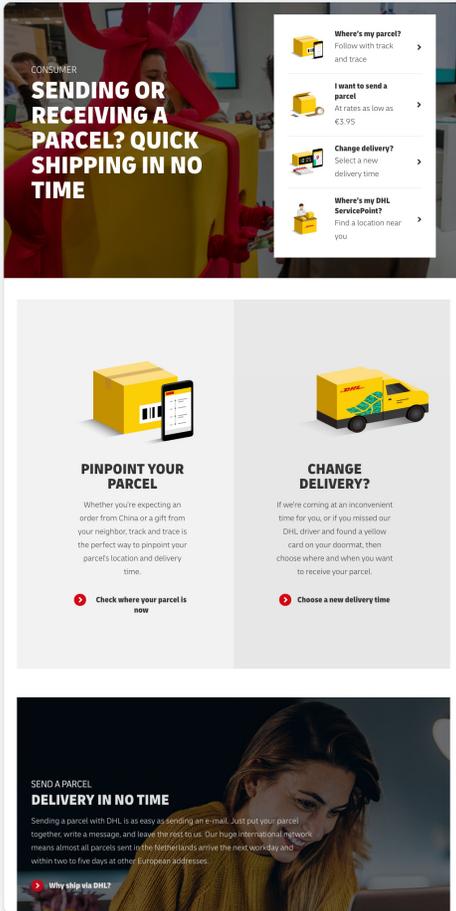


increased coverage
increased test
execution and
coverage



“Cypress is so easy that even back-end developers understand what’s going on.”

Rick Fleuren
Software Developer, DHL Parcel



How DHL Parcel optimized development with the Cypress Dashboard

In the midst of this, DHL Parcel software developer Rick Fleuren spotted a banner on the Cypress Dashboard that suggested speeding up test runs by adding four more machines. He configured Jenkins to add these machines, which immediately reduced test run duration from 7 minutes to 6 minutes.

Next, he used Cypress's automatic test time monitoring feature to identify other improvement areas. By analyzing this data, the Cypress Dashboard was able to recommend which tests to run and how to parallelize them. When incorporated by the team, these recommendations shaved off another 30 seconds from their test run time, reducing runs to 5.5 minutes.

Afterwards, a review of the CPU showed a big load up front when all four projects were being executed simultaneously. But when two had finished, wasted CPU capacity could be used to run extra tests. Communication between the Cypress Dashboard and the machines ensured that no machine was idle—further reducing test run time to 4.5 minutes.

Finally, the team used Docker Compose with a Cypress image to spin up even more machines. Integration with Cypress was smooth and easy with the Dashboard managing what to run and when to run. The final result? A test run time of an impressive 3.5 minutes.

Speed achieved!

Thanks to Cypress, the DHL Parcel team was able to configure the Dashboard with both Docker containers and Jenkins' built-in parallelization to achieve faster, more dependable end-to-end tests. Their clever setup facilitates parallelization in multiple ways with minimal effort. This also eliminated their previous problem of having two unbalanced test suites, and the need to divide them.

Test runs have been reduced by 65%, and feature coverage has improved dramatically. For DHL Parcel's software team, unacceptably slow build times are a thing of the past—and team members are *a lot* happier when writing tests.

About Cypress

With millions of downloads and users in over 90 countries, Cypress is the leader in browser-based test automation for the modern web. Cypress enables developers and enterprises to easily, quickly and accurately test anything that runs in a browser - empowering developers to build web applications faster and better.

Using the Test Runner, developers can quickly create and run live end-to-end tests for complex user workflows and interactions, and complex scenarios in applications including e-commerce. The Dashboard service provides collaboration and sharing between teams and records screenshots, video, and test runs - while seamlessly integrating with existing tools and processes. For more information, visit cypress.io