

OCamlot : OCaml Online Testing

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Introduction

OCamlot provides a distributed, continuous testing service for OPAM package quality and compatibility. Using signals from GitHub, OCamlot ensures that, before being merged, patches submitted to the OPAM repository are thoroughly tested on the variety of supported configurations, architectures, and systems. The resulting improved build and metadata quality in turn speeds up development on other aspects of the Platform through earlier error feedback. A high-quality package repository is also very important for new user retention.

GitHub also forms an important part of the toolchain and, as OPAM has shown, it is a fine tool for collaborative, open source projects. Developers submitting packages to the OPAM repository benefit from regular and extensive tests on every update of their package. In time, we plan to incorporate benchmarking and package constraint exploration to mechanically improve the quality of the OPAM metadata.

OCamlot is currently testing weekly pull requests from Jane Street (for their Core library suite) and Citrix (for their Xen open source releases). Each of these pull requests typically affects hundreds of other packages and is difficult to test by hand.

Topic

This talk is intended to be a follow-on to the OCaml Platform talk proposal but it is focussed on the details of building a community-driven distributed system.

This talk will focus on

- the design and implementation of the OCamlot system. We wrote two versions, one in LWT and one in Async using the Jenga dynamic build system. This approach is one of the few ways to evaluate the two libraries and we will address that in this talk.
- semi-automated error classification of common build problems to reduce human-load and help crowd-source volunteer resources.
- Ancillary libraries and novel features will also be discussed including GitHub integration, lightweight

web programming, experimental compiler branch testing, and support for exotic targets e.g. Java, JavaScript.