OCaml Workshop 2012

Promoting OCaml in the Industry

Fabrice LE FESSANT

http://www.ocamlpro.com/
Spin-off of INRIA

Founded on April 2011

Located on the "Campus de Saclay", in the "Ecole Polytechnique", near Paris

Member of the Caml Consortium since 2011

Work funded by a few sponsors/customers

- Jane Street, Lexifi, Esterel Tech, Citrix
- ... we are looking for more!
Mission Statement

OCamlPro promotes the use of the OCaml functional programming language in the industry, as a solution to increase development productivity and software quality.

OCamlPro provides all the services and tools to help companies use OCaml to develop their products, with a particular emphasis on accessibility and perenity.
The Team

- A team of experts in OCaml development:
  - Thomas Gazagnaire (CTO, R&D)
  - Çagdas Bozman (PhD student)
  - Pierre Chambart (R&D)
  - Vincent Bernardoff & Guillem Rieu (short mission)
- In close collaboration with an INRIA group:
  - Frédéric Tuong (DORM project)
  - Michael Laporte (intern)
  - Luca Saiu (post-doc)
  - Fabrice Le Fessant (founder, consultant)
Training of developers
- Courses for beginners, and for experts (the type system, writing efficient code, the GC, etc.)

Consulting by OCaml experts
- Profiling and Optimizing code
- Providing OCaml specific solutions

Development in OCaml
- Generic open-source libraries and tools
- Specific components for customer
OCamlPro Products & Tools

- Development tools
  - TypeRex, development studio
  - Build Management tools (opam, ocp-build)
  - Memory Profiling tools
- OCaml 4 Windows
  - Easy to install and to use
  - Better integration
- OCaml with Long Term Support
  - Hot fixes, fast release cycle
  - Customer specific extensions
Serving the Community

- OCaml Cheat Sheets
  - www.ocamlpro.com/blog/2011/06/03/cheatsheets.html

- Try-OCaml and Try-js_of_ocaml
  - OCaml tutorial in a browser... even disconnected!
  - http://try.ocamlpro.com/ (4.00.0)

- OPAM package manager
  - http://opam.ocamlpro.com/

- Contribution to the ocamlweb project
  - http://www.ocaml-lang.org/ (→ github)
Contributions to 4.00.0

- New option `-bin-annot` for ocamlc/ocamlopt
  - Save the typedtree in .cmt files
    → auxiliary tools (dead code detect, ocaml-spotter)
- New options for ocamldep (`-all`, `-sort`)
  
  ```
  ocamlopt -o my_program `ocamldep -sort *.ml *.mli`
  ```
- CFI directives in x86/amd64 backends
  → correct backtraces in debugger (`bt` in gdb)
- Misc optimizations (partial funs, pipe operators)
  ```
  external (|>) : 'a -> ('a -> 'b) -> 'b = "%revapply"
  external (@@) : ('a -> 'b) -> 'a -> 'b = "%apply"
  ```
TypeRex

- Towards a Development Studio for OCaml
- v1 released in Feb 2012
  - Emacs, Tuareg-mode, 3.12.1
  - color, refactoring, go-to-definition, auto-completion
  - monolithic + needs its own compiler
- working now on v2
  - Emacs/VI, tuaereg-mode / caml-mode, 4.00.0
  - less powerful, but better accessibility
  - indep. tools + use -bin-annot of 4.00.0
begin library "mylib"
  link = ["-cclib"; "-lxycomp"]
  files = [ "x.ml" "y.ml" "stubs.c"]
  requires = [ "unix" ]
end

begin library "sndlib"
  files = [ "lex.mll" "a.ml"]
  requires = [ "mylib"]
  sort = true
end

begin program "myprog"
  files = [ "cc.ml" (asmcomp = [ "-inline"; "30”])
    "main.ml"]
  requires = [ "sndlib"]
end
What's next ?

- Big functors: functors packing compilation units
- Big blocks: more than 16MB on 32 bits
- Namespaces Proposal
- Frame pointers for Linux perf tools
- Builtins for binary operations (bswap)

What do you want ?

→ become a sponsor or customer of OCamlPro !
Contact

- Email: contact@ocamlpro.com
- Web: http://www.ocamlpro.com/
We are hiring!

We are looking for OCaml experts for:

- Post-docs
- R&D Engineers

(positions at INRIA or OCamlPro, Saclay)

With experience in compilation, typing, static analysis, etc.

And different systems (Unix, Windows)