OSCTool:
Learning C# and Mono by Doing

Jo Shields
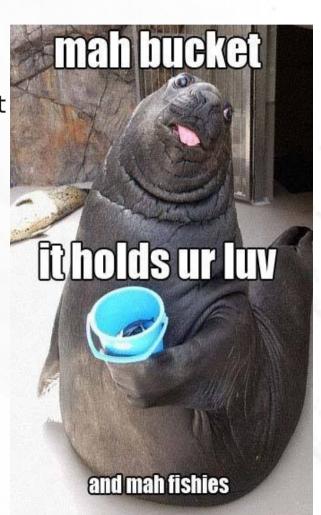directhex@apebox.org

Obligatory self-aggrandisement

- I'm a Debian Developer

- I'm an Ubuntu MOTU

- I'm a systems manager for the Oxford Supercomputing Centre, a central High Performance Computing facility at the University of Oxford

Aim of this talk
(i.e. if it sounds boring, leave now)

- "We don't need MONO"
  - Countless "evangelists" on the internest

- Technical term for this:

    "bollocks"

Exciting back-story and filthy government money

- In 2004, £1bn invested by UK government in university science kit

- OSC scored about £3m

- Actual computing budget ~£1.3m

- Planned spend: 3 compute resources, plus shared infrastructure (disks, etc)

Mo' money mo' problems

- Infrastructure means no more per-resource auth

- And a chance to dump NIS for a central LDAP system with bells & whistles

- But not all standard *NIX tools like LDAP

The plan

- Write/find "something" to do account management in place of old tools

- When in doubt…

Perl isn't *always* the answer

- Perl-based version a disaster – rapidly became unmaintainable

- New, "tighter" set of requirements emerged

The plan, Part Deux

- Write a tool, since everything else sucks

- Pluggable GUI (console, X-Forwardable, others in future)

- Pluggable functions (email management, password maintenance, etc)

- Save effort: one tool for users AND sysadmins (since so many core requirements are shared)

Constraints to worry about

- Small developer team – 1ish person part-time (me)
  - Malloc banned – fight requirements, not language
- Target platform unknown – almost certainly AMD64, but possibly also POWER, IA64, or who knows.
  - Nothing tied to x86/AMD64 if possible
- Ditto for OS (almost certainly Linux, but possibly also Windows, Mac OS X, HP-UX, AIX, or who knows)
  - Cross-platform ideal, source level if not binary
- Requirements may change drastically – ability to use existing C libs vital
  - JNI. HAHAHAHAHAHAHAHAHAHAHAHAHAHAHAHAHAHAHA

Exhaustive shortlisting process

- Search for IDEs in Aptitude (it's not the 70's, fuck Vi/Emacs)

- Read a bit on languages with nice IDEs on the Googletron

- Try basic tutorials for the ones that don't sound shit

- Try protot... wait, only MonoDevelop is left

Ticking boxes with Mono & C#

- Nice, high level & garbage collected – no memory manglement required

- All major CPU arches supported

- Major OSes supported – UNIX (HP-UX etc) not so hot though

- P/Invoke works, unlike JNI

- Bonus: C# language similar enough to Java to re-use existing Java knowledge

The result

- Unknown machine ended up as Itanium with SLES (with Mono preinstalled, woo)

- Multiple GUIs now implemented – GTK+ and ncurses (Web-based GUI pending)

- Multiple features via Mono.Addins

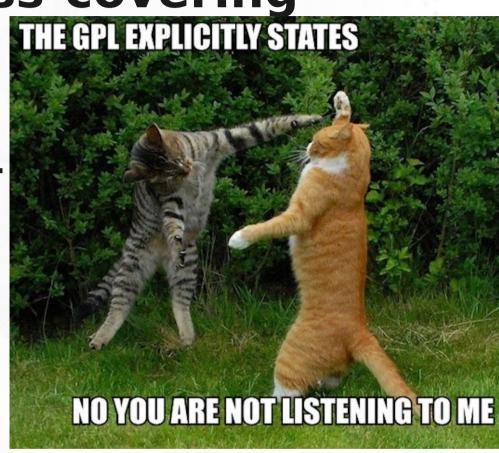- Everything sitting on Novell.Directory.Ldap

- Terrifying live demo time

So, why show it at FOSDEM?

- Everything I do is © University of Oxford

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- There IS a process (never before used) for releasing new stuff as Free Software, but it's sloooooooooooooooooooooooooow

- Process started – but won't be finished in time between writing this slide & presenting it.

Preemptive ass-covering

THE GPL EXPLICITLY STATES
NO YOU ARE NOT LISTENING TO ME

- Why not Qt?
  - Licensing, mostly.
- Python?
  - Bad experiences.

SNAKECAT HAS BITED BEFORE
SNAKECAT WILL BITE AGAIN

Obligatory final slide

Any questions?

(image credits)

- GPL argument cats – trollcats.com

- Snakecat – icanhascheezburger.com

- Camel – Wikimedia Commons

- Minazo the elephant seal – Google Images (sorry, can't find a better source than that)