Better native tooling with Eclipse and Red Hat

Presenter
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Problems list

- How to get development tools onto developers machines?
- How to handle multiple/different tools version requirements?
- How can one use these shiny new tools without sacrificing compatibility?
- Why can't various tools speak to each other?
Sample problem

Reducing wake-ups, the 2013 edition

While doing work on UPower, trying to reduce its wake-ups when idle, I realised that a couple of applications on my desktop were waking up far more than should be necessary.

Detecting wake-ups

First, we need to detect wake-ups. This is a fairly well-known, and old, process, using the venerable PowerTop.

```bash
# powertop --html=./tmp/foo.html --time=60
```

You can increase the number of seconds to get a more realistic view of your machine’s idleness, but this is enough to show the main culprits.

In my case, evolution, gnome and devil help were all waking up about 30 times a second whilst mostly idle. Evolution might be an outlier, as it also talks to the network, and is a bigger application to debug, so I started with devil.help.

```
$ strace -vvv -p `pidof devilhelp`
Process 19069 attached
restart_syscall(.... resuming interrupted call ...) = 0
recvfrom(6, 0x23fce4, 4096, 0, 0, 0) = -1 EAGAIN (Resource temporarily unavailable)
poll([(fd=5, events=POLLIN), {fd=5, events=POLLIN}, {fd=3, events=POLLIN}], 3, 17) = 0 (Timeout)
recvfrom(6, 0x23fce4, 4096, 0, 0, 0) = -1 EAGAIN (Resource temporarily unavailable)
poll([(fd=5, events=POLLIN), {fd=6, events=POLLIN}, {fd=3, events=POLLIN}], 3, 17) = 0 (Timeout)
```

And the screen fills up with EAGAIN errors. This looks a lot like a a timeout being called too often.
Sample problem


What's needed:

- Powertop
- Strace
- GDB
- A lot of internal knowledge about GTK
Sample problem (cont.)

- Integration point is shell session, grep and co.
- Hard to parse tool output
- Magic configurations
Something that integrates the tools is needed.
Something that helps using the tools is needed.

We need an IDE.
We need an IDE that

- Guides me doing such analysis
- Gives easy access to documentation and other educational material
- Allows me to change what data is collected
- Why not even provide nice graphs?
Why Eclipse IDE?

- World leading tools platform
- Numerous tools already available
- Customers used to it
- Upstream involvement
What is in the Developer Toolset?

Recent versions of:

- GCC
- GDB
- Valgrind
- OProfile
- SystemTap
What is in the Developer Toolset (Eclipse)?

- Platform
- CDT
- Linux Tools
- Mylyn
- EGit/JGit
How does DTS help?

Generic and supported platform with unified installation and maintenance

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- ✗ Unsupported
- ✓ Supported
How does DTS help?

Tools collaboration.

- Valgrind
- Perf
- SystemTap
- OProfile
- GCC
- Libraries
- GDB
- Docs
- ALM
- OProfile
- SCM
How does DTS helps?

Other tools collaborate.

- CDT
- Platform
- LinuxTools
- Mylyn
How does DTS helps?

Let them all collaborate

Valgrind  GCC  Libraries  CDT

Perf  GDB  Docs  Platform

SystemTap

OProfile

DTS Eclipse

ALM  LinuxTools

SCM  Mylyn

Alexander Kurtakov
How does DTS helps? (summary)

- Multiple toolchain versions available in parallel
- Standard and predictable way for installation and updates
- Compatibility is taken seriously.
- Integration is the most important part.
- All FOSS
Help your, help me and your users

- Think about the whole stack.
- Fix the world.
- Make easy things easy, hard things possible.
- Change is here to stay – influence it.
Check out details:

https://access.redhat.com/site/documentation/Red_Hat_Developer_TOOLset/

http://eclipse.org/linuxtools/

http://fedoraproject.org/

http://eclipse.org/linuxtools/downloads.php - Introductionary screencasts

And contact me via email, irc, twitter, g+ or wherever else you find me for questions, ideas, problems, bugs or just to chat.
Submit Feedback

Session: *
Better native tooling with Eclipse and Red Hat (presented by Red Hat)

Overall evaluation of this session: *
× -1 0 +1

Additional comments and suggestions:

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