Aldebaran and open source
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Aldebaran Robotics in a nutshell

- 200 experts: Engineers, PHDs, Sales & Marketing
- 3000+ robots around the globe
Hello, I'm NAO
A Robot story
Who is NAO?

**MOVE**
- 25 degrees of freedom
- smooth and precise coreless motors controlled by software
- complex movement capabilities

**INTERACT**
- 2 loudspeakers
- multiples LEDs
- tactile Sensors
- prehensile Hands
- infrared Sensors
- WIFI Connexion

**SENSE**
- 2 HD camera
- 4 microphones
- 8 Force Sensing Resistors (FSR)
- Inertial Center
- 2 bumpers, 2 sonars

**THINK**
- Intel Atom 1,6 GHz CPU
- 1GB RAM
- 8GB flash memory
- Software suite
The product

A dynamic User Community, with dedicated forums, updated documentation, NAO application sharing, support ...
Aldebaran Software: an overview

SDK
Documentation

Choregraphe
NAOSim
...

QIMessaging

Tools

Akinator
CheckMail

TTS
FaceReco
Motion

NAOqi
ALInfrared
ALMemory
ROSBridge

QIMessaging
HAL

Gentoo Linux

Embedded Software

Desktop Software
Not just NAO ....
The vision

Bring robots to people for the well being of mankind

Researchers

Aldabaran Robotics

Geeks

Companion Robot
Aldebaran and open sources: two stories
NAO and wifi

The dark ages:

Hackish shell scripts to configure wpa_supplicant

Buggy drivers
Now:

Nice kernel devs maintaining wireless_compat for us

Connman!

Active contributor at Aldebaran to conn

Autolink :)
A history of build systems
BuildRoot!

- the first real distribution we put on the robot;
- fine grain control over compilation;
- easy to use.

but... not enough packages at that time (2007)
A real distribution with
- still fine grain control over compilation;
- package manager (bitbake);
- embedded systems targeting;
- possibility to easily create our own packages.

Unfortunately...
- No support for binary packages
- No need for cross compilation... NAO runs on x86 :)

Some also considered WinCE...
Switched to gentoo.

- stage3 -> chroot: it's just what we need
- portage
- many many packages available (most of our dependencies)
- close to upstream

So far so good!
Towards open-source collaboration

The Open nao VM

Using third-party libraries has never been easier :)  

No cross-compilation required!
qiBuild: yet another build system for C++, but this one is better :)

- cross-platform: Visual Studio, mingw, Linux, Mac, cross-compilation
- produce redistributable packages
- allow usage of pre-compile binary package (ala maven)
- qibuild deploy: remote debugging made easy
Using open tools

We could not have done it without them:

Django
CMake
Python
Jenkins
Gerrit
crosstool-NG

…
Now,

- Aldebaran is officially sharing code since May 11th, 2011;
- a few projects are accessible on github;
- our linux kernel is available (with our modifications);
- qiBuild is released under 3-clause BSD license;
- more and more projects to come... ;)

2 [https://github.com/aldebaran](https://github.com/aldebaran)
Towards an open SDK

```python
@ui.timer("qibuild configure")
def do(args):
    """Main entry point"""
    if args.build_directory and not args.single:
        raise Exception("You should use --single "
                       "when specifying a build directory")
    if not args.cmake_flags:
        args.cmake_flags = list()
    if args.effective_cplusplus:
        args.cmake_flags.append("QI_EFFECTIVE_CPP=ON")
    if args.werror:
        args.cmake_flags.append("QI_WERROR=ON")
```
Our Developer Program

What you get with the program
The Developer Program is a privileged place for exchange between Aldebaran Robotics Developers and you! For a 3600 € fee sponsored by Aldebaran Robotic (instead of 12,000€), each participant receives:

**Products**
- NAO H25 (completely articulated)
- Choregraphe
- Simulator
- SDK

**Resources**
- Dedicated forum and project site
- Access to source code
- 2 years warranty / support
- Access to NAOstore
- Annual NAO Dev Days
Nao dev days
We're hiring

Go to:
http://shapetheworld.fr
Come and join us!
Work hard ...
Play hard!
Demo!

100% open source stuff this time!
Useful links

Documentation
  • http://www.aldebaran-robotics.com/documentation/

Github: all Aldebaran open source code will be here:
  • http://github.com/aldebaran

my e-mail: dmerejkowsky@aldebaran-robotics.com

Join us:
www.shapetheworld.fr

Come and see our stand: AW 8