Building and supporting distributions with OpenEmbedded

A short look into the craft of release management

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Distributions for embedded devices are a bit different
from the big boys like Debian and SuSE. They tend to be
more customized to each device and more monolithic in
their install process.
This presentations will show you the differences and how
OE can help you to handle them.

When starting a new distro you need to make some
decisions first. One of the most important ones is wether
you want to use package manangement or not.
For now we'll focus on the case where you do have a
package manager.
There is some other stuff to consider:

- debian-style naming for packages
- C library: uclibc vs glibc

In OE the basics are handled in <distroname>.conf:

- familiar.conf + familiar-<version>.conf
- openzaurus.conf + openzaurus-<version>.conf
- slugos.conf + nslu2.conf + slugos-packages.conf

INHERIT += "package_ipk debian"
TARGET_OS = "linux"
PARALLEL_INSTALL_MODULES = "1"

Building binaries is where OE really shines:

- ▶ bitbake bootstrap-image gpe-image opie-image
- ▶ bitbake world -k

Every distro has it's own way of using OE:

- ▶ Buildscripts for OpenZaurus + Familiar
- ▶ nslu2-linux has a build-daemon to populate the feeds, but hardly distributes images.

With over 2500 packages generating over 8000 ipkgs it's
wise to split them into different feeds.

- ▶ Familiar looks at dependencies and sorts them in
  base/, x11/ and opie/ subdirs.
- ▶ OpenZaurus used to split by the Section field present
  in the .ipk, but is now using a hybrid
  section/dependency approach.
- ▶ Slugos only has packages in the feeds that users
  have requested and split those in native/ and cross/
  feeds.

Presenting Joe User with a .jffs2 file is destined to fail, so
one needs to fluff it up a bit

- ▶ Familiar has tarballs containing WinCe flasher,
  bootloader and target image
- ▶ OpenZaurus has directories containing necessary
  stuff for which only need renaming
- ▶ SlugOs has images which upslug can flash to the
  slug via ethernet

Since OE is used by a lot of projects, so bugs can get
resolved pretty quick.

- chatting with other OE based distros

For people that are scared of OE, or just want to compile a 'hello world' style application an SDK is a nice thing to have.

- ▶ Familiar and OpenZaurus: 'bitbake meta-sdk'
- ▶ Slugos has a metapackage to natively compile stuff

One of the problems with handling bugs is the amount of bugtrackers: every project has it's own....

- ▶ Handhelds.org bugzilla handles Familiar and GPE
- ▶ OE bugzilla handles OE itself and OpenZaurus
- ▶ Nslu2-linux have their own bugtracker
- ▶ Opie has it's own bugtracker
- ▶ Matchbox has it's own bugtracker
  Where do you file a bug?

Links

Links:

- http://familiar.handhelds.org
- http://oe.handhelds.org
- http://www.openzaurus.org
- http://www.nslu2-linux.org