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 whether you want to use package management 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 its own.

- Handhelds.org bugzilla handles Familiar and GPE
- OE bugzilla handles OE itself and OpenZaurus
- Nslu2-linux have their own bugtracker
- Opie has its own bugtracker
- Matchbox has its own bugtracker

Where do you file a bug?
Links

Links:

- [http://familiar.handhelds.org](http://familiar.handhelds.org)
- [http://oe.handhelds.org](http://oe.handhelds.org)
- [http://www.openzaurus.org](http://www.openzaurus.org)
- [http://www.nslu2-linux.org](http://www.nslu2-linux.org)