Product Creation in the Build Service

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SUSE Linux Products GmbH - Build Service Team

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Creating Products in the openSUSE Build Service

1. kiwi
   - General
   - The Buildhost
   - Procedures

2. kiwi-instsource
   - Installation Source Overview
   - Workflow

3. Product Definition
   - Appetiser
   - Main Course

4. Perspectives

5. Closing
North Star

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What is **kiwi**?

A brief overview

**kiwi** is...

- a command line based toolkit
- usable as part of a process chain
- usable as base tool for a high level application

...to create system images in various formats
kiwi history

- originated by Marcus Schäfer
- original purpose was creating “system on a stick”
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- James Willcox (snorp) joins development for Thin Client (SLETC)
- Jigish Gohil (CyberOrg) joins development for LTSP project
- Jan-Christoph Bornschlegel (helcaraxe) starts implementing kiwi-instsource
Project Status

Where kiwi is used

- Preloads
- Live DVDs (KDE, openSUSE, …)
- installation sources

Since openSUSE 11.1 used as mastering backend in the Build Service.
Documentation is available through the web in various places

- [http://www.suse.de/~jcborn/kiwi-links.html](http://www.suse.de/~jcborn/kiwi-links.html)
- official documentation delivered with kiwi-doc package
- instsource documentation is WIP
Buildhost Requirements

Live Images

- Install **kiwi**, **kiwi-tools** and **kiwi-desc-*** packages
- create an image description file `config.xml`
- tweak system configuration (root/) directory

*caveat*: You must subscribe to the openSUSE:Tools repository first!
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Invoking kiwi for creating a live disc

- `<docdir>/examples/<dist-flavor>`
- `(prepare:) kiwi -p <path> -r <basedir>`
- `(create:) kiwi -c <basedir> -t <type> -d <imagedir>`
Invoking kiwi

explanation of used terms

docdir /usr/share/doc/packages/kiwi
dist-flavor one of suse-VERSION.RELEASE
path the directory containing config.xml
basedir directory created by kiwi containing the root tree
imagedir where the images shall be put
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What is kiwi-instsource

kiwi-instsource is a subpackage for installation source creation

- disk media
- FTP trees
- update repositories
Installable Media
Differences to Live Media

Live media are preinstalled systems that are ready to boot

- package selection done
- system configuration done
Installable Media
Differences to Live Media

- plain RPM files on media
- boots to installation system
- installation metadata
- Choice between conflicting alternatives
- multi-arch capable
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Using **kiwi-instsource** directly

What kind of information is necessary?

- RPM file list
- metapackages
- YaST2 metadata
- architecture list
- customisation through plugins

*Show an example: examples/is-config.xml*
Workflow

Buildhost Requirements

Installation Sources

- Space. More is better.
- Install `kiwi-instsource`
- Install `kiwi-instsource-plugins-<flavor>`
- create an image description file `config.xml`
- customise plugins

Plugins can coexist for different platforms (target specific)

*caveat*: You must subscribe to the openSUSE:Tools repository first!

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Product Creation in the Build Service
Invoking kiwi
for creating an installation source

install kiwi-instsource
config from BS (demo)
  tree acquire base trees (there’s work to do)
  run kiwi -r <root> –create-instsource <path> –instsource-local
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Product Creation in the Build Service
What is a “Product”? 

“A product is a defined set of packages plus extra information”

(see openSUSE Wiki)

So basically a product consists of:

- a set of packages
- a set of metadata
Product Definition

Advantages for the Release Managers and Product Managers

- a “product definition file” was specified
- used to create kiwi config files in the Build Service automatically
- easy to maintain
- product can be maintained directly by the product manager
- good reusability, base groups need to be specified only once
- simple add on products based on main line
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Product Creation in the Build Service
An Example Product: openSUSE
This is how openSUSE looks like for the release manager

preparations

- zypper in obs-server
- osc co openSUSE:Factory _product

- Now products can be modified and recreated
- Example: show product definition file
Required Files

minimum set of files necessary for product creation

- productname.product
- groupname.group

Now products can be modified and recreated

Example: show recreation
Expectations and Visions
what this will become

- All our products will be created in the Build Service that way
- Thousands of interconnected BS instances handle millions of products
- Addon products are so easy to create (based on existing work)
- Imaging for other platforms
Thank you for your attention
see you on FOSDEM 2010

You can contact me in various places:

- irc.freenode.net #opensuse-kiwi, user jcborn
- BuildService mailing list at
  <opensuse-buildservice@opensuse.org>
- kiwi-users mailing list at
  <kiwi-users@lists.berlios.de>
- jcborn@suse.de
- helcaraxe@opensuse.org
Thank you for your attention
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R E M E M B E R  T O  H A V E  F U N!