The openSUSE Base System

Richard Günther

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Care for the core part of openSUSE.

Not colorful, not moving, no sounds.

Hard to “see” any benefit.
Motivation

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Motivation

Still needs to be done.
Identify and shrink the set of openSUSE packages that can build itself.

This is one core part of openSUSE.

We are interested in reducing the build time here.
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Overview

Base:build is what you need to (cross-)bootstrap if you want to port openSUSE to a new architecture.

LFS – Linux From Scratch

make that: openSUSE from scratch
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- 80 source packages
- 164 generated binary packages (i586)
- for some reasons for example tcl, gpm and less.

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More difficult to define than Base:build.

Basic requirement: fulfill all rpm dependencies.

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You do not need rpm itself here.

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Kernel and initrd might not be required in the image itself, nor does the initrd need to be built inside the image. The same is true for the bootloader.
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Base:install

kernel-default

mknitrd

aaa_base

module-init-tools

gawk

pciutils

pciutils-ids

file

gzip

108MB (+73MB)

Richard Günther (SUSE Labs)  GCC  Feb. 23th, 2008  13 / 21
What about software installation and network connectivity? Add things like rpm, openssh, dhcp-client and wget so you can start installing additional packages from the network.
Base:install

Libraries:
- openssh
- krb5
- pwdutils
- libopensc2
- tcpd
- dhcp-client
- dhcp
- bind-utils
- bind-libs
- libstdc++43
- libgcc43
- libnscd
- openldap2-client
- cyp-sasl
- openssl-certs
- libopenssl0_9_8
- libcom_err2
- keyutils-libs
- libopenssl1
- opensc
- pcsc-lite
- libusb
- libltdl-3
- openslp
- libssdl-certs
- libopenssl10_9_8

Other Packages:
- aaa_base

Size: 53MB
Add an X server and xdm to build a X terminal? Add a small window manager?
http://en.opensuse.org/Base-Project

Base:install/base-installer contains yet another image builder (->kiwi).

base-bootstrap: setup the filesystem of the target system (like debootstrap). Seeds the filesystem with all rpm dependencies of a specified set of packages (for example aaa-base). Usable also for QA of package (pre-)requires as it uses a single rpm transaction for setting up the system.

base-installer: in addition to base-bootstrap includes building a bootable image including initrd building and bootloader installing (support for QEMU is implemented).
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Packaging Rules

- Use file-requires to allow substitution with for example busybox.
- Prefer C and sh (maybe perl) for core functionality.
- Avoid %post scripts in core packages.
- Split packages appropriately.
- Follow the shared library policy.
- Do not provide excessive default configuration, but defer this to product policy packages.
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Questions?