From GIT to a custom OS image in a few click
OS image made easy

Frédéric Crozat
Senior Software Engineer
SUSE – fcrozet@suse.com
Goals

• Create ISO live image to ease testing
• Automate image creation as much as possible
• No need to wait for various software release to create an image
• No more “I installed your devel version and it broke my system”
• Help discover bugs when applications are run in a clean environment before release, not only in developer environment
Tools used

- Open Build Service (OBS)
- SUSE Studio (optional)
- Kiwi
- A lot of disk space ;}
Open Build Service
Open Build Service
(previously known as openSUSE Build Service)

• Allow to create packages for many distributions at the same time:
  - RPM based distros (openSUSE, Fedora, CentOS, MeeGo, Mdv)
  - DEB based distros (Debian, Ubuntu)
  - Soon, other targets (ArchLinux)

• Automated, repeatable and consistent:
  - Clean chroot
  - Handle build dependencies and autorebuild if needed
  - Take care of publishing consistent repositories
Open Build Service (cont.)

- Generate packages or full OS images / appliances
- Source services can
  - pull data from SCM (SVN / GIT / BZR / HG) and use it like a regular tarball
  - Download / verify files at build time
- Can be controlled either by CLI or WebUI (or even REST)
SUSE Studio
SUSE Studio

- Web interface to create appliances
- Can pull packages from OBS projects
- Create an appliance in less than 10 mouse clicks
- Testdrive appliance before downloading them
- Can export appliance configuration to be use with Kiwi
- You can test it on susestudio.com
KIWI
KIWI

• Create full OS images, based on packages

• End result:
  - Appliances (name your VM :)
  - Live CD / DVD / USB images (can be hybrid)
  - Disk / USB preload images
  - PXE images

• Image configuration:
  - XML file (package list, image settings)
  - Optional Shell script run after installing packages
  - Tarball with additional files
KIWI (cont.)

• To create initial image configuration:
  - Your favorite text editor to write XML (templates available)
  - SUSE Studio and export the appliance as KIWI format
  - Install a system, customize it and run kiwi on it to generate KIWI files based on system configuration

• Run kiwi:
  - On a local system (usually for test purpose)
  - From OBS:
    - Put kiwi configuration in a project
    - Create an image repository
    - Wait for images to be generated
    - Automatically regenerated when packages are updated
Example

• GNOME 3 Live image:
  - 14 images created in 4 months during GNOME 3.0 development
  - Download stats:
    - On GNOME 3 release day: 4526
    - April (after release): 141378
    - May: 42997
References

• Open Build Service:
  - http://openbuildservice.org/
  - openSUSE instance: http://build.opensuse.org/
  - Documentation portal: http://en.opensuse.org/Portal:Build_Service

• SUSE Studio:
  - http://susestudio.com/

• KIWI:
  - http://kiwi.berlios.de/
  - Documentation: http://isny.homelinux.com/data/kiwi.html
Now, it is your turn to build your own custom distro

Questions?

Thank you.
General Disclaimer
This document is not to be construed as a promise by any participating company to develop, deliver, or market a product. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. SUSE makes no representations or warranties with respect to the contents of this document, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. The development, release, and timing of features or functionality described for SUSE products remains at the sole discretion of SUSE. Further, SUSE reserves the right to revise this document and to make changes to its content, at any time, without obligation to notify any person or entity of such revisions or changes. All SUSE marks referenced in this presentation are trademarks or registered trademarks of Novell, Inc. in the United States and other countries. All third-party trademarks are the property of their respective owners.