

KaNaPi

YALD 2012-2016

Jacek Danecki

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- I've started with Linux in 1996
- TLUG started in 1999
- I'm working on Linux since 1999
- I've prepared small mini Linux distributions
- BSP - board support package for Intel CPU's
- Communication software on Linux
- Support for JFFS2 in Linux kernel
- Software RAID support, dmraid, mdadm
- SCU kernel driver
- OpenCL support for Intel GPU's
- KaNaPi

Agenda

- Assumptions
- Internet
- Releases
- Hardware
- Emulations
- Phases
- Architecture
 - FBS, SBS, KBS
 - Binary packages
 - Linux distributions
 - KS

Assumptions

- Educational distribution for usage at home
- Linux kernel and Open Source software
- Applications
 - Different versions for the same package available
 - Directories structure different than FHS
 - Each package installed in separate directory
 - Packages built from sources
- GUI - XFCE
- No users, passwords, all executed as root
 - User "user" (id 2) - for specific apps
- No systemd, runlevels, just simple init bash script
- KISS (keep it simple, stupid)

- WWW: <http://kanapi.tk> (<http://kanapi.strefa.pl>)
- FB
- G+
- Source Forge
- github
- Blog

- Source code on Source Forge and github
- Binary images on Source Forge

Tested on hardware

- Laptop Levovo G510, G580, HP 8560, IBM T60, IBM T43
- Tablet/Laptop Asus T100TA
- Netbook Wondermedia WM8650
- Raspberry Pi B+
- Tablet Lenovo S8-50F
- Samsung S3 smartphone

Emulations

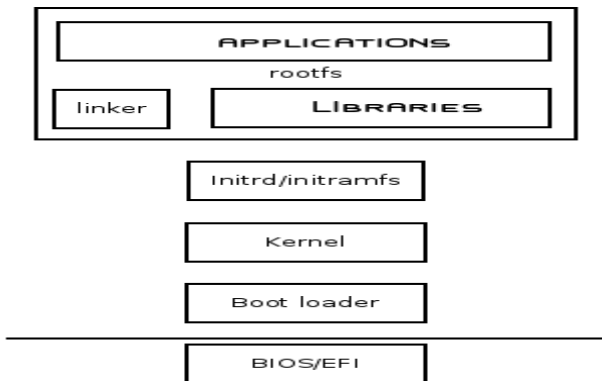
- qemu
- dosbox
- wine
- atari800

- Prealpha, x86
- Alpha
 - x86 (> 600 packages)
 - x86_64 (> 100 new packages)
- Beta
 - New build system
 - Support for ARM architecture

Linux distributions

- Debian
- Slackware
- Red Hat
- SuSe
- Arch
- Gentoo
- LFS

Architecture



Linux root filesystem

```
/
|-/bin
|-/boot
|-/dev
|-/etc
|-/home
|-/lib
|-/proc
|-/root
|-/sbin
|-/sys
|-/tmp
|-/usr
|-/var
```

- syslinux
- First partition as VFAT
- Second partition as ext*
- grub EFI

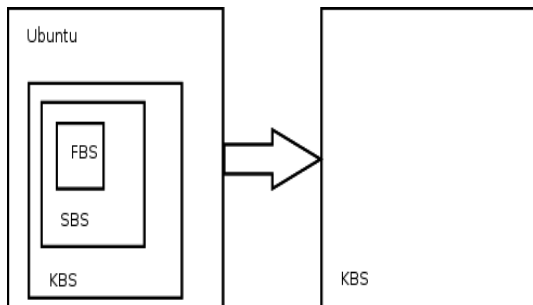
- FBS - First build system
 - Compile compilers
- SBS - Second build system
 - Compile base packages
- KBS - KaNaPi base system
 - Compile other packages
- KS - KaNaPi system
 - Script to build automatically

- chroot
- 90 packages needed for compilation
- Scripts to compile eglibc, binutils, gcc
- Packages in /kanapi_packages directory
- Applications to run in /kanapi_packages/bin
- Libraries in /kanapi_packages/libs

```
ldd /bin/bc
linux-gate.so.1 (0xb7744000)
librt.so.1 => /kanapi_packages/libs/librt.so.1 (0xb772c000)
libdl.so.2 => /kanapi_packages/gcc-4.7.1-a/lib/libdl.so.2 (0xb7709000)
libm.so.6 => /kanapi_packages/libs/libm.so.6 (0xb76c8000)
libpthread.so.0 => /kanapi_packages/libs/libpthread.so.0 (0xb76ac000)
libc.so.6 => /kanapi_packages/gcc-4.7.1-a/lib/libc.so.6 (0xb7501000)
/kanapi_packages/eglibc-20133/lib/ld-linux.so.2 (0xb7745000)
```

- chroot
- Results from FBS
- Scripts to compile 35 packages

- chroot
- Scripts to compile 600 packages

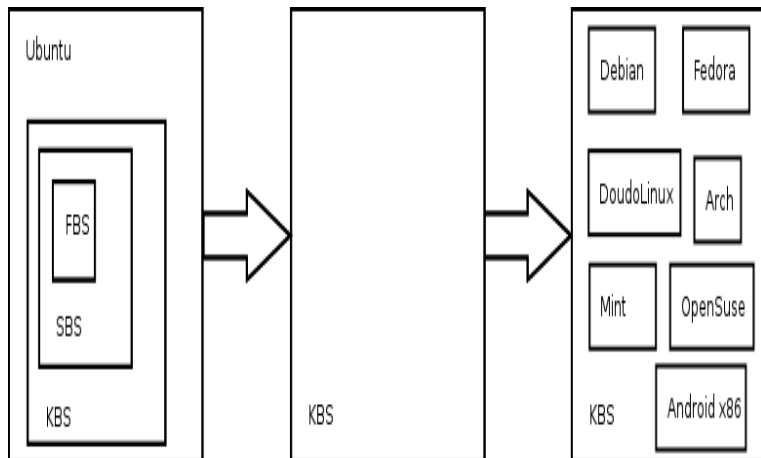


- initrd
- syslinux

Binary packages

- rpm, rpm2cpio
- dpkg, dpkg-deb
- smart
- tarballs

Linux distributions



- `distro-name-game` command
- `distro-name-start`

Linux distributions under KaNapi

- Fedora 24
- Debian testing
- DoudoLinux 2.0
- Mint 18
- OpenSuse 13.2
- Arch 2016.02.01
- Android 4.4

- Automatically build for i686/x86_64/arm
- 2 Makefile's, and few scripts in bash
- Sources downloaded during build
- Dependencies system base on Makefile rules
- One command to build all packages

Thanks!

Ka_{mil} Na_{talia} Pi_{otr}

Y_{et} A_{nother} L_{inux} D_{istribution}