



Akademy 2010

Chakra Project Presentation

Chakra, a user friendly distribution using the KDE desktop

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Agenda

- Introduction
- KDEmod
- Half-rolling release model
- Live CD development
- Tool development
- Community
- Questions and Comments



Introduction 1/2

- **Who am I?**
 - **USB kernel developer (Image Processing, Passport Reader, Fingerprint scanner devices) and dealing with Qt framework**
 - **Hobbyist Qt/KDE developer**
- **Why do I care about Chakra?**
 - **Develop a KDE desktop distribution with KISS principles**
 - **Learn Qt programming**

Introduction 2/2

- **Founder: Jan Mette, 2006**
- **On the Internet by KDEmod developers**
- **Not fork of KDE, it's still KDE**
- **Archlinux distrolet Live CD, KDEmod in the beginning**
- **Free operating system**
- **Main focus: KDE users and developers**
- **KISS principle**

Chakra repositories 1/3

- **Repository independent from Archlinux**
- **Modular package set for efficiency**
- **Almost vanilla apart from some minor fixes**
- **Sophistication, stability and feature rich**
- **Completely customized default theme with minor icon changes**

Chakra repositories 2/3

- **Core**
 - **The base of the system**
 - **bash, gettext, kernel26 and so on**
- **Platform:**
 - **Additional packages and KDE Software compilation dependencies**
 - **bluez, dbus, fontconfig, glib and so on**
- **Desktop:**
 - **KDE Software compilation dependencies and our tools**
 - **kdebase, kdelibs, kdesdk, kdeutils, etc.**

Chakra repositories 3/3

- **Apps:**
 - **Additional software**
 - **K3b, konversation, opera, qtcreator and so on**
- **Apps unstable:**
 - **Development versions of additional software**
 - **Related apps packages**
- **Testing:**
 - **Testing versions of additional software**
 - **All in testing, core-testing, platform-testing and so on**
- **GIT: <http://gitorious.org/chakra-packages/>**

Half-rolling release model 1/2

- **Updates can break the system and extra manual interventation is needed**
- **Rolling release model of Archlinux is not suitable**
- **More core stable packages; frozen from time to time**

Half-rolling release model 2/2

- **Periodic releases (like Archserver Project)**
- **Independent of any external repositories**
- **Chakra became a separate distribution**
- **Synchronization possibility with Archlinux binaries**

Live CD Development 1/3

- **2009.09.30 - chakra-alpha3 [test] (Minimal-Edition only)**
- **2009.10.21 - development rls [fuzzy] (Minimal and DVD)**
- **2009.10.30 - development rls [crush] (Minimal-Edition only)**
- **2009.11.17 - chakra-alpha4 rls [newage] (Minimal and DVD)**
- **2010.01.05 - development rls [geryon] (Minimal-Edition i686 only)**
- **2010.01.21 - development rls [capua] (Minimal-Edition only)**

Live CD development 2/3

- **2010.03.12 - development rls [panora-preview6] (Minimal-Edition only)**
- **2010.03.15 - development rls [panora-testbuild1] (xdelta only)**
- **2010.03.21 - development rls [panora-testbuild2] (Minimal-Edition only)**
- **2010.03.29 - chakra-alpha5 [panora] (Minimal-Edition only)**
- **2010.04.12 - development rls [0.6.04.33.2] (Minimal-Edition only)**

Live CD development 3/3

- **2010.04.12 - chakra-micro-alpha1 [aronap] (i686 only)**
- **2010.05.14 - development rls [0.6.08-kde443] (Minimal-Edition only)**
- **2010.06.XX - beta1 [E.D.N.] (Minimal and DVD)**
- **2010.10.XX - rc1 (Minimal and DVD)**
- **2010.11.XX - final [chakra-2010.11] (Minimal and DVD)**

Tool Development

- **Shaman**
- **Aqpm**
- **Chase**
- **Arxin**
- **Tribe**
- **Cinstall**
- **Chakra BuildEnv**

Tool Development - Shaman 1/4

- **Package manager: installing, upgrading and removing packages**
- **There was no good KDE package manager**
- **Searching/filtering packages**
- **Package information, installed files, dependencies, conflicts**
- **Process package queue from source (ABS integration)**
- **Database maintenance tasks**
- **Time based database update**

Tool Development - Shaman 2/4

- **Editing pacman configuration files**
- **No backwards compatible with shaman1**
- **Available in kdemod-shaman2-svn**
- **Based on aqpm, libshaman**
- **Extensible to other package management systems**
- **Simple and modular with a vast array of plugins**
- **Completely asynchronous to provide the user with the best experience**
- **RSS-feed reader for package news**

Tool Development - Shaman 3/4

- **Scriptable: lowers the barrier for contributors and opens up more possibilities to backends that are not in the C realm**
- **Detailed while still remaining beautiful**
- **Non modal UI when it's possible**
- **Based on backends (like aqpm)**
- **Queue is retained on exit (last status is preserved)**
- **Transaction logger**
- **PolicyKit and KAuth for granting authorizations**

Tool Development - Shaman 4/4

The screenshot shows the Shaman package manager window. The title bar reads "Shaman". The menu bar includes "File", "Actions", "Tools", and "Help". Below the menu bar are three buttons: "Update Database", "Upgrade System", and "Process Queue". A status bar at the top right says "Please choose an action to start maintenance...".

The main area is divided into two panes. The left pane, titled "Repositories", lists several repositories: "All Repositories", "larch5", "kdemod-core", "kdemod-extragear", "kdemod-playground", "core", "extra", "community", and "Local Packages". The right pane, titled "All packages", displays a table of installed and available packages.

Name	Version	Size	Repository	Groups
3ddesktop	0.2.9-2	63 KiB	extra	
6tunnel	0.11rc2-3	9 KiB	community	
9base	2-3	5.21 MiB	community	
a2ps	4.13c-1	661 KiB	extra	
a52dec	0.7.4-4	51 KiB	extra	
aalib	1.4rc5-6	173 KiB	extra	
abcde	2.3.3-3	42 KiB	extra	
abcm2ps	4.12.30-1	101 KiB	extra	
abcm2ps-devel	5.5.2-1	107 KiB	extra	
abiword	2.6.5-1	3.42 MiB	extra	
abiword-plug...	2.6.5-1	1.19 MiB	extra	
abook	0.5.6-2	50 KiB	extra	
abs	2.3-1	9 KiB	extra	
abuse	0.7.1-1	5.54 MiB	extra	
abyssws	2.5-2	707 KiB	community	
acct	6.3.2-1	31 KiB	extra	
acerhk	0.5.35-11	19 KiB	community	
acetoneiso2	2.0.3rc1-1	615 KiB	community	

At the bottom of the window, there are buttons for "Mark for Installation", "Mark for Removal", "Mark for complete removal", and "Cancel Action". Below these buttons are tabs for "Package Information", "Files", and "Dependencies". The status bar at the very bottom reads: "4561 Available Packages, 777 Installed Packages, 0 Upgradeable Packages (0 to be Installed, 0 to be Removed)".

Tool Development - Aqpm

- **Written in Qt**
- **Wrapper around alpm (Archlinux Package Management Library)**
- **Backend of Shaman**

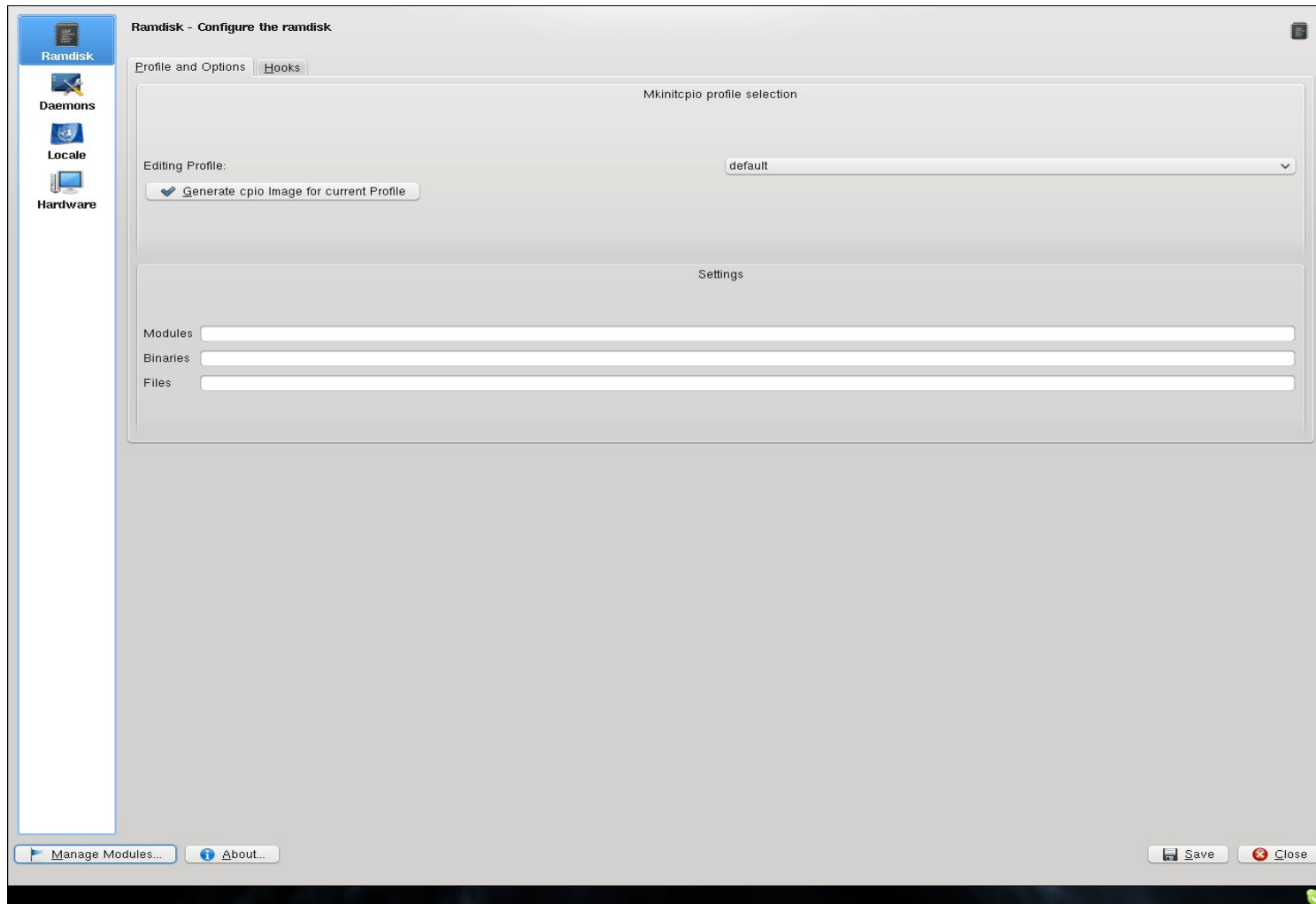
Tool Development - Chase

- **Automatic updater**
- **Relies on Shaman for installing and removing packages**
- **Lightweight**
- **KDED module, daemon**
- **Downloads and installs packages**
- **Port to libshaman soon to be better integrated**

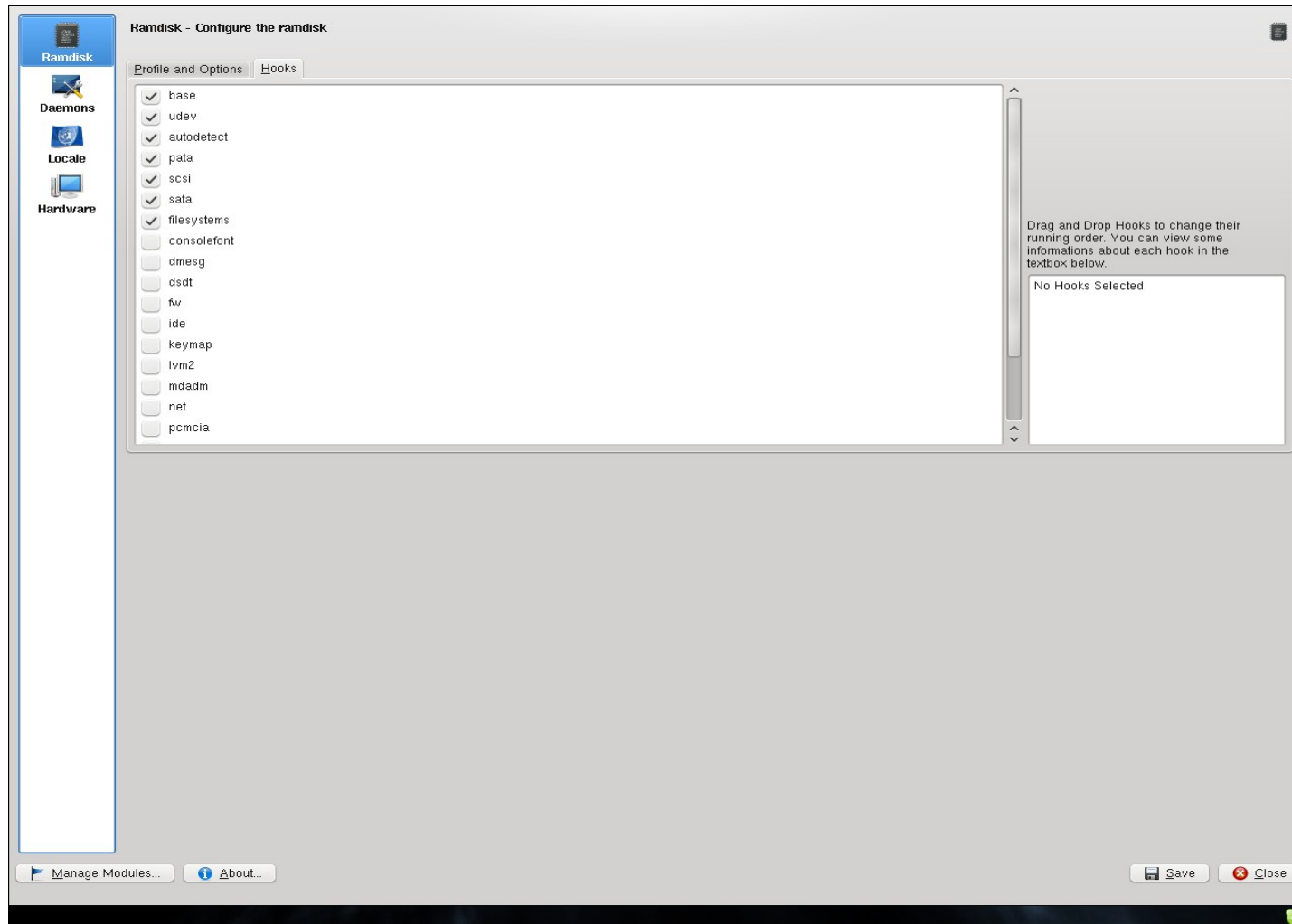
Tool Development - Arxin 1/3

- **Graphical system configuration utility**
- **Different views for different properties**
- **Locale, keymap, timezone and much more**
- **Some hardware options**
- **Kernel module loading configuration**
- **Abandoned right now (help is needed!)**
- **`git://git.chakra-project.org/tools/arxin.git`**

Tool Development - Arxin 2/3



Tool Development - Arxin 3/3



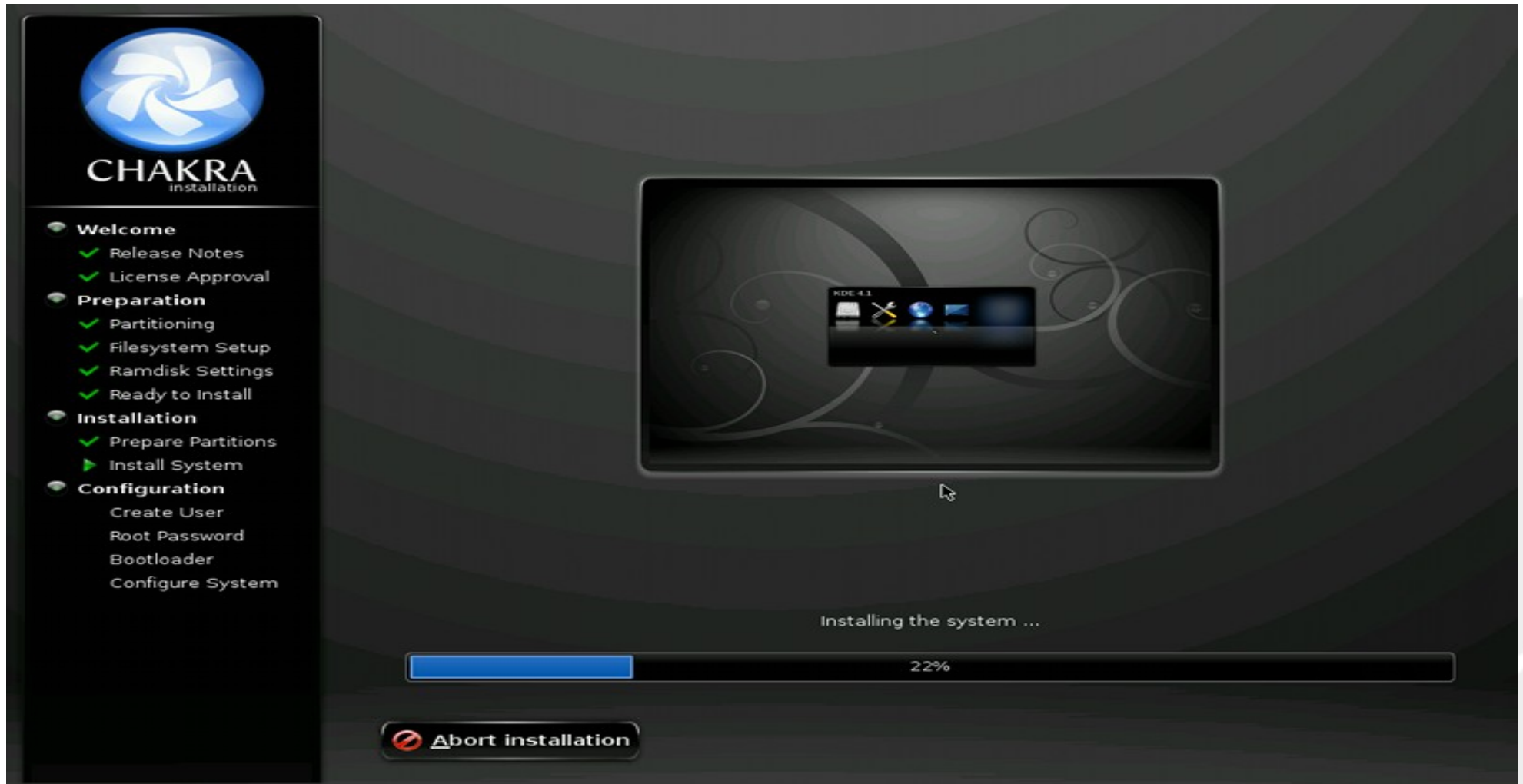
Tool Development - Tribe 1/3

- **Qt based installer for our Live CD**
- **Integrated self-updating**
 - **Update itself to the latest version before updating any other package**
- **Date, time, timezone configuration**
- **Locale, keymap configuration**

Tool Development - Tribe 2/3

- **Graphical partitioning with PartitionManager**
- **Easy and advanced partitioning opportunities**
- **System configuration**
- **Fancy and provides a lot of eye candy! :)**

Tool Development - Tribe 3/3



The screenshot shows the CHAKRA installation progress window. On the left, there is a sidebar with the CHAKRA logo and a list of installation steps. The main area displays a progress bar and a preview of the KDE 4.3 desktop environment.

CHAKRA installation

- Welcome
 - Release Notes
 - License Approval
- Preparation
 - Partitioning
 - Filesystem Setup
 - Ramdisk Settings
 - Ready to Install
- Installation
 - Prepare Partitions
 - Install System
- Configuration
 - Create User
 - Root Password
 - Bootloader
 - Configure System

Installing the system ...

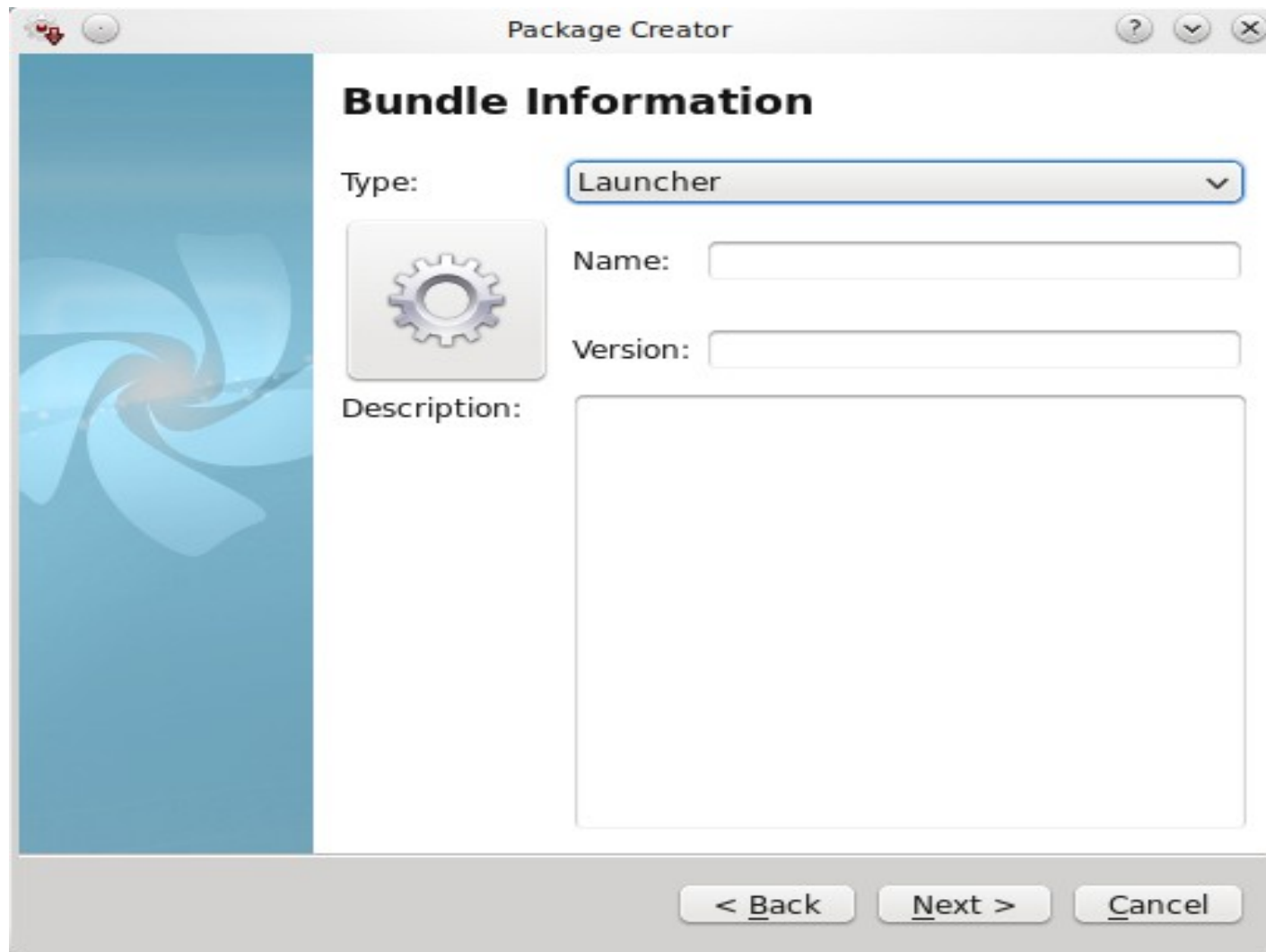
22%

Abort installation

Tool Development - Cinstall 1/3

- **'.cb' mimetype (Chakra Bundle)**
- **Launcher**
- **Installer (.cinstall/repo)**
- **Setup**
 - **entries to kicker**
 - **special mount group with root rights**

Tool development - Cinstall 2/3

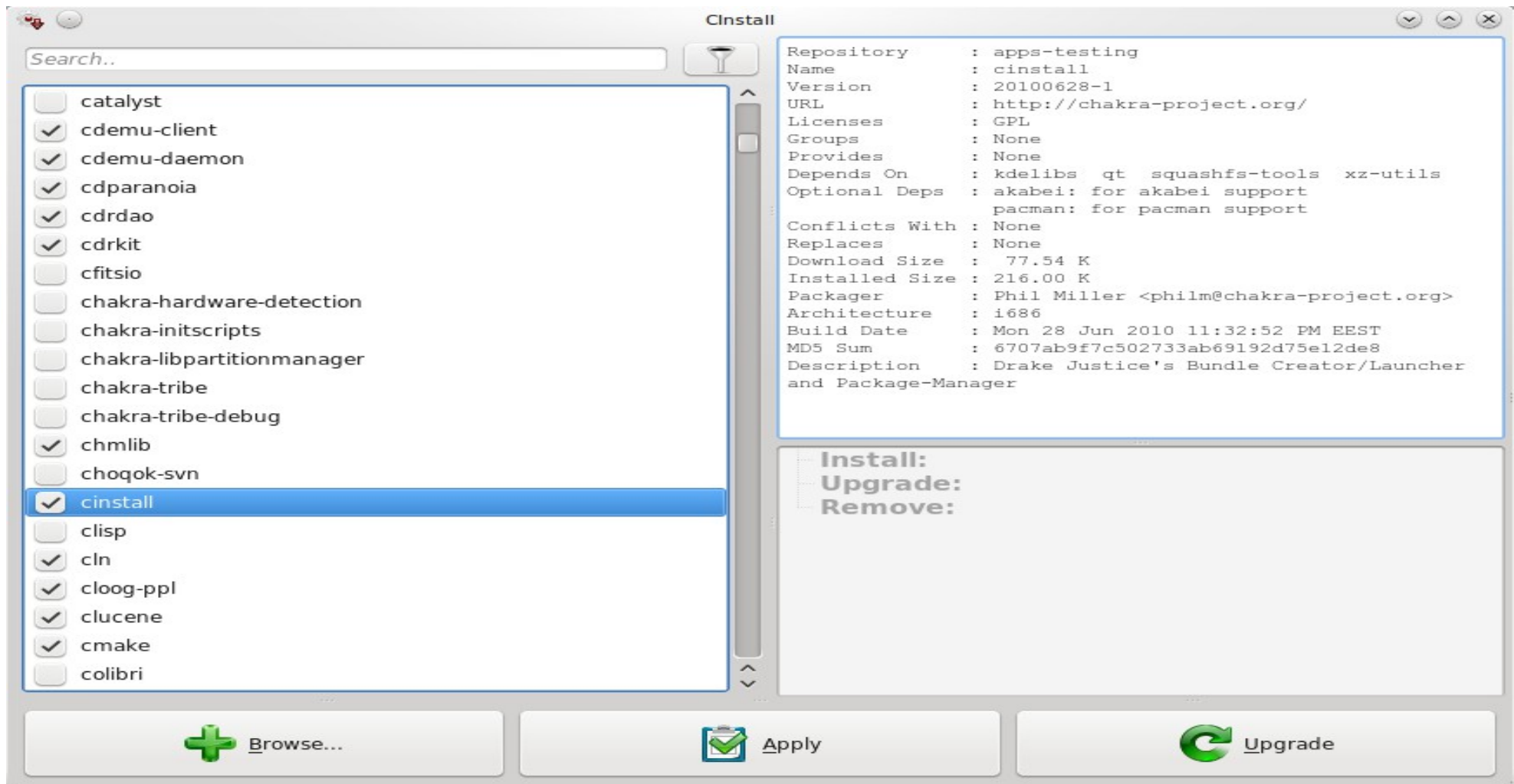


The screenshot shows a window titled "Package Creator" with a standard Mac OS X title bar. The main content area is titled "Bundle Information" and contains the following fields:

- Type:** A dropdown menu currently set to "Launcher".
- Name:** An empty text input field.
- Version:** An empty text input field.
- Description:** A large empty text area.

On the left side of the dialog, there is a vertical blue bar with a white Chakra logo. Below the logo is a gear icon. At the bottom of the dialog, there are three buttons: "< Back", "Next >", and "Cancel".

Tool development - Cinstall 3/3



The screenshot shows the Cinstall application window. On the left, a list of packages is displayed with checkboxes. The 'cinstall' package is selected and highlighted in blue. On the right, the details for the selected package are shown, including repository, name, version, URL, licenses, groups, provides, depends on, optional dependencies, conflicts with, replaces, download size, installed size, packager, architecture, build date, MD5 sum, and description. At the bottom, there are three buttons: 'Browse...' (with a green plus icon), 'Apply' (with a green checkmark icon), and 'Upgrade' (with a green circular arrow icon).

Search..

- catalyst
- cdemu-client
- cdemu-daemon
- cdparanoia
- cdrdao
- cdrkit
- cfitsio
- chakra-hardware-detection
- chakra-initscripts
- chakra-libpartitionmanager
- chakra-tribe
- chakra-tribe-debug
- chmlib
- choqok-svn
- cinstall
- clisp
- cln
- cloog-ppl
- clucene
- cmake
- colibri

Cinstall

Repository : apps-testing
Name : cinstall
Version : 20100628-1
URL : http://chakra-project.org/
Licenses : GPL
Groups : None
Provides : None
Depends On : kdelibs qt squashfs-tools xz-utils
Optional Deps : akabei: for akabei support
pacman: for pacman support
Conflicts With : None
Replaces : None
Download Size : 77.54 K
Installed Size : 216.00 K
Packager : Phil Miller <philm@chakra-project.org>
Architecture : i686
Build Date : Mon 28 Jun 2010 11:32:52 PM EEST
MD5 Sum : 6707ab9f7c502733ab69192d75e12de8
Description : Drake Justice's Bundle Creator/Launcher and Package-Manager

Install:
Upgrade:
Remove:

Browse... **Apply** **Upgrade**

Tool Development - Chakra BuildEnv 1/3

- **Create the GNU/Linux CD/DVD/USB images**
- **Wrapper around a patched version of the most basic functions of larch scripts (bash/python)**
- **Create LZMA compressed media (squashfs)**
 - **Better compression**
 - **Smaller images (2200MB/CD)**
- **Small and easy hardware autoconfig**

Tool Development - Chakra BuildEnv 2/3

- **Nice GUI**
 - **Architecture (i686/x86_64)**
 - **Booting mode (grub/syslinux)**
 - **Profile**
- **Automated packaging**
 - **Clean chroot environmen**
 - **Static pacman needed only (Can be done on other distributions)**
 - **2 simple scripts (update/upload)**



Tool Development - Chakra BuildEnv 3/3

```

chakra-buildenv : bash
Datei  Bearbeiten  Ansicht  Verlauf  Lesezeichen  Einstellungen  Hilfe
[chakra-buildenv]$
[chakra-buildenv]$
[chakra-buildenv]$
[chakra-buildenv]$
[chakra-buildenv]$
[chakra-buildenv]$
[chakra-buildenv]$
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[chakra-buildenv]$
[chakra-buildenv]$
[chakra-buildenv]$
[chakra-buildenv]$
[chakra-buildenv]$
[chakra-buildenv]$
[chakra-buildenv]$ ./1-clean.sh

This will clean the build environment, except kernel26 and its
dependencies. If you want to recreate the media with a new kernel,
run 1-fullclean.sh

Do you want to proceed? (y/n) y

> Cleaning up ...
> removing stale configs and stuff... done
> cleaning /abs done
> cleaning overlay done
> cleaning /repository done
> cleaning /system done

> All done !

[chakra-buildenv]$ _

```



Comparison to other distributions 1/2

- **Faster**
 - **Booting**
 - **Installing**
 - **Launching**
- **More stable**
 - **Crash free**
 - **Updates**





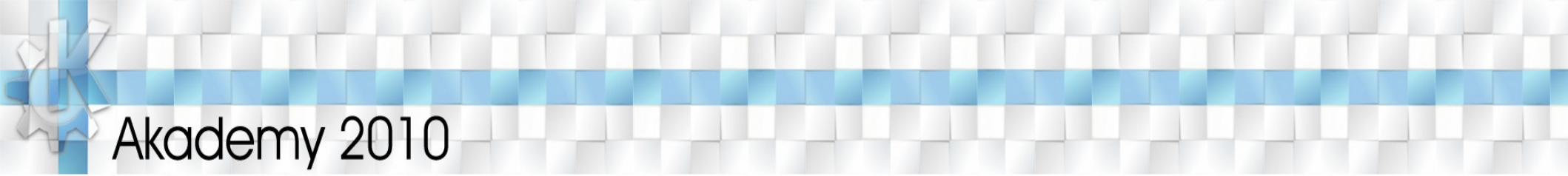
Comparison to other distributions 2/2

- **Cleaner**
 - **Fewer userhelper daemon/programs**
- **Simpler**
 - **No GTK apps/libraries installed by default**
 - **Good bundle system**
 - **Smarter package manager**



Community

- **Forum:** <http://chakra-project.org/bbs>
- **Bug tracker:** <http://chakra-project.org/bugs>
- **Wiki:** <http://chakra-project.org/wiki>
- **IRC:** #chakra and #chakra-devel on freenode
- **Mailing lists:** chakra, chakra-devel on google group
- **New packagers, developers and volunteers are welcome :-)**



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Questions? Comments?

