Kalyxo

Linking the worlds of KDE and Debian

Kévin Ottens & Peter Ročkai

KDE Community World Summit 2004, aKademy
Kalyxo history

- UserLinux
  - Bruce Perens effort
  - Creating an enterprise desktop based on Debian

Deathly Frozenness

After UserLinux excitement

Lot of ideas...

... few working hands

Resurrection

Renamed the project, KDE-Debian

Kalyxo: Linking the worlds – p.2/22
Kalyxo history

- UserLinux
  - Bruce Perens effort
  - Creating an enterprise desktop based on Debian
- Strategy paper
  - Navindra Umanee proposed to join
  - Some KDE developers and sponsors on board
Kalyxo history

- UserLinux
  - Bruce Perens effort
  - Creating an enterprise desktop based on Debian
- Strategy paper
  - Navindra Umanee proposed to join
  - Some KDE developers and sponsors on board
  - UserLinux supports only GNOME
Kalyxox history

- UserLinux
  - Bruce Perens effort
  - Creating an enterprise desktop based on Debian

- Strategy paper
  - Navindra Umanee proposed to join
  - Some KDE developers and sponsors on board
  - UserLinux supports only GNOME

- Deathly Frozenness
  - After UserLinux excitement
  - Lot of ideas...
  - ... few working hands
Kalyxo history

- UserLinux
  - Bruce Perens effort
  - Creating an enterprise desktop based on Debian

- Strategy paper
  - Navindra Umanee proposed to join
  - Some KDE developers and sponsors on board
  - UserLinux supports only GNOME

- Deathly Frozenness
  - After UserLinux excitement
  - Lot of ideas...
  - ... few working hands

- Resurrection
  - Renamed the project, KDE-Debian → Kalyxo
  - Work in progress
  - Contributors are coming
Kalyxo mission

- Debian integration
- Develop missing GUI administration tools
Kalyxo mission

- Debian integration
  - Develop missing GUI administration tools
  - Improve the communication with the Desktop Environment

- KDE integration
  - Take care of foreign applications
  - Provide missing integrative technologies
    - kde.openoffice.org technologies (Jan Holesovsky)
    - Fuse-KIO (Alexander Neundorf & Kévin Ottens)
    - Qt-GTK-Engine (David Sansome)

- Smooth desktop user experience

- Promotion
  - Finding potential partner projects
  - FreeNX packaging for Debian
Kalyxo mission

- Debian integration
  - Develop missing GUI administration tools
  - Improve the communication with the Desktop Environment
- KDE integration
  - Take care of foreign applications
  - Provide missing integrative technologies
Kalyxox mission

- Debian integration
  - Develop missing GUI administration tools
  - Improve the communication with the Desktop Environment
- KDE integration
  - Take care of foreign applications
  - Provide missing integrative technologies
    - kde.openoffice.org technologies (Jan Holesovsky)
Kalyxo mission

- Debian integration
  - Develop missing GUI administration tools
  - Improve the communication with the Desktop Environment
- KDE integration
  - Take care of foreign applications
  - Provide missing integrative technologies
    - kde.openoffice.org technologies (Jan Holesovsky)
    - Fuse-KIO (Alexander Neundorf & Kévin Ottens)
Kalyxo mission

- Debian integration
  - Develop missing GUI administration tools
  - Improve the communication with the Desktop Environment
- KDE integration
  - Take care of foreign applications
  - Provide missing integrative technologies
    - kde.openoffice.org technologies (Jan Holesovsky)
    - Fuse-KIO (Alexander Neundorf & Kévin Ottens)
    - Qt-GTK-Engine (David Sansome)
Kalyxo mission

- Debian integration
  - Develop missing GUI administration tools
  - Improve the communication with the Desktop Environment
- KDE integration
  - Take care of foreign applications
  - Provide missing integrative technologies
    - kde.openoffice.org technologies (Jan Holesovsky)
    - Fuse-KIO (Alexander Neundorf & Kévin Ottens)
    - Qt-GTK-Engine (David Sansome)
- Smooth desktop user experience
Kalyxo mission

- Debian integration
  - Develop missing GUI administration tools
  - Improve the communication with the Desktop Environment

- KDE integration
  - Take care of foreign applications
  - Provide missing integrative technologies
    - kde.openoffice.org technologies (Jan Holesovsky)
    - Fuse-KIO (Alexander Neundorf & Kévin Ottens)
    - Qt-GTK-Engine (David Sansome)

- Smooth desktop user experience

- Promotion
  - Finding potential partner projects
  - FreeNX packaging for Debian
Goals and Achievements
What is done?
Staging Archive

- Management policy
  - Ensure KDE based applications are well supported in Debian

Kalyxo : Linking the worlds – p.5/22
Staging Archive

- Management policy
  - Ensure KDE based applications are well supported in Debian
  - Integrate as many packages as possible in Debian
Management policy

- Ensure KDE based applications are well supported in Debian
- Integrate as many packages as possible in Debian

Two branches used
Staging Archive

- Management policy
  - Ensure KDE based applications are well supported in Debian
  - Integrate as many packages as possible in Debian
- Two branches used
  - Unstable
    - Qt-GTK-Engine
    - amaroK
    - aKregator
    - some admin tools...
Staging Archive

- Management policy
  - Ensure KDE based applications are well supported in Debian
  - Integrate as many packages as possible in Debian
- Two branches used
  - Unstable
    - Qt-GTK-Engine
    - amaroK
    - aKregator
    - some admin tools...
  - Experimental
    - Kapture
    - NoMachine NX libraries
    - FreeNX (soon)
Staging Archive

Management policy
- Ensure KDE based applications are well supported in Debian
- Integrate as many packages as possible in Debian

Two branches used
- Unstable
  - Qt-GTK-Engine
  - amaroK
  - aKregator
  - some admin tools...
- Experimental
  - Kapture
  - NoMachine NX libraries
  - FreeNX (soon)

Central point for not-yet-in-Debian KDE related packages
Quick hack in the early KDE-Debian days
KDebconf

- Quick hack in the early KDE-Debian days
- Fully integrated into Debconf in Debian
KDebconf

- Quick hack in the early KDE-Debian days
- Fully integrated into Debconf in Debian

- Some more work needed
  - Facelifting
  - Code cleaning
KDebconf

- Quick hack in the early KDE-Debian days
- Fully integrated into Debconf in Debian
- Some more work needed
  - Facelifting
  - Code cleaning
- No impact for the user he can start using it out of the box
Goals and Achievements
What is being worked on?
Pakager / Quickpackage

- GUI frontend / CLI tool

![Screenshot of Pakager interface]

Kalyxo : Linking the worlds – p.8/22
Pakager / Quickpackage

- GUI frontend / CLI tool
- Make the package process easy
- Packagers can win time for the first packaging

Interaction with KDevelop is planned

Easy for regular users too, tailored packages made easy
Pakager / Quickpackage

- GUI frontend / CLI tool
- Make the package process easy
- Packagers can win time for the first packaging
  - Mostly for packaging applications...
  - ... but provides a good foundation for more complex packaging
Pakager / Quickpackage

- GUI frontend / CLI tool
- Make the package process easy
- Packagers can win time for the first packaging
  - Mostly for packaging applications...
  - ... but provides a good foundation for more complex packaging
- Interaction with KDevelop is planned

Kalyxo : Linking the worlds – p.8/22
Pakager / Quickpackage

- GUI frontend / CLI tool
- Make the package process easy
- Packagers can win time for the first packaging
  - Mostly for packaging applications...
  - ... but provides a good foundation for more complex packaging
- Interaction with KDevelop is planned
- Easy for regular users too, tailored packages made easy
Kapture overview

- The package management system with assorted libraries
Kapture overview

- The package management system with assorted libraries
- libcapture: frontend-building toolkit
Kapture overview

- The package management system with assorted libraries
- libcapture: frontend-building toolkit
- libkapture: set of KDE widgets based on libcapture
Kapture overview

- The package management system with assorted libraries
- libcapture: frontend-building toolkit
- libkapture: set of KDE widgets based on libcapture
- The KDE frontends:
  - Kapture
  - Kurrent
Kapture overview

- The package management system with assorted libraries
- libcapture: frontend-building toolkit
- libkapture: set of KDE widgets based on libcapture
- The KDE frontends:
  - Kapture
  - Kurrent
- More frontends planned:
  - CLI for command-line freaks and cron magic
Kapture overview

- The package management system with assorted libraries
- libcapture: frontend-building toolkit
- libkapture: set of KDE widgets based on libcapture
- The KDE frontends:
  - Kapture
  - Kurrent
- More frontends planned:
  - CLI for command-line freaks and cron magic
  - More specialized single-task KDE frontends:
    - Single package installer part
    - Minimalistic group-based manager
Kapture: libcapture

Builds on top of libapt-pkg
Kapture: libcapture

- Builds on top of libapt-pkg
- Toolkit-neutral frontend extensions
Kapture: libcapture

- Builds on top of libapt-pkg
- Toolkit-neutral frontend extensions
- Powerful package sorting and filtering
Kapture: libcapture

- Builds on top of libapt-pkg
- Toolkit-neutral frontend extensions
- Powerful package sorting and filtering
- Debtags support
  - Multi-faceted package categorization
  - Rich searching semantics
  - Intuitive package searching

Preference tracking system under construction
Highly-reliable and robust
Multi-agent algorithm employed
Utility classes for easy UI frontend building:
libkapture has less than 2000 LOC
Kapture: libcapture

- Builds on top of libapt-pkg
- Toolkit-neutral frontend extensions
- Powerful package sorting and filtering
- Debtags support
  - Multi-faceted package categorization
  - Rich searching semantics
  - Intuitive package searching
- Preference tracking system under construction
  - Highly-reliable and robust
  - Multi-agent algorithm employed
Kapture: libcapture

- Builds on top of libapt-pkg
- Toolkit-neutral frontend extensions
- Powerful package sorting and filtering
- Debtags support
  - Multi-faceted package categorization
  - Rich searching semantics
  - Intuitive package searching
- Preference tracking system under construction
  - Highly-reliable and robust
  - Multi-agent algorithm employed
- Utility classes for easy UI frontend building:
  - libkapture has less than 2000 LOC
Kapture: libkapture

- Builds on top of libcapture
Kapture: libkapture

- Builds on top of libcapture
- Qt/KDE-specific adaptors for libcapture classes
  - Convenience signal/slot-based interfaces over libcapture
Kapture: libkapture

- Builds on top of libcapture
- Qt/KDE-specific adaptors for libcapture classes
  - Convenience signal/slot-based interfaces over libcapture
  - Ready-made, easily pluggable components
Kapture: libkapture

- Builds on top of libcapture
- Qt/KDE-specific adaptors for libcapture classes
  - Convenience signal/slot-based interfaces over libcapture
  - Ready-made, easily pluggable components
- Complete suite of widgets
  - Package tree views
Kapture: libkapture

- Builds on top of libcapture
- Qt/KDE-specific adaptors for libcapture classes
  - Convenience signal/slot-based interfaces over libcapture
  - Ready-made, easily pluggable components
- Complete suite of widgets
  - Package tree views
  - Various detailed widgets for single package
  - An aggregate package widget
Kapture: libkapture

- Builds on top of libcapture
- Qt/KDE-specific adaptors for libcapture classes
  - Convenience signal/slot-based interfaces over libcapture
  - Ready-made, easily pluggable components
- Complete suite of widgets
  - Package tree views
  - Various detailed widgets for single package
  - An aggregate package widget
  - A cache summary/statistic view
Kapture: libkapture

- Builds on top of libcapture
- Qt/KDE-specific adaptors for libcapture classes
  - Convenience signal-slot-based interfaces over libcapture
  - Ready-made, easily pluggable components
- Complete suite of widgets
  - Package tree views
  - Various detailed widgets for single package
  - An aggregate package widget
  - A cache summary/statistic view
  - Download and operation progress widgets
**Kapture frontends**

- **Kapture**
  - The tool of power with a comprehensive interface
Kapture frontends

- Kapture
  - The tool of power with a comprehensive interface
  - Large feature set, designed for power users
Kapture frontends

- **Kapture**
  - The tool of power with a comprehensive interface
  - Large feature set, designed for power users

- **Kurrent**
  - A simple, robust system upgrader
Kapture frontends

- **Kapture**
  - The tool of power with a comprehensive interface
  - Large feature set, designed for power users

- **Kurrent**
  - A simple, robust system upgrader
  - Easy to use and quick to handle

![Kurrent - System Upgrader](image)
Kapture frontends

- **Kapture**
  - The tool of power with a comprehensive interface
  - Large feature set, designed for power users

- **Kurrent**
  - A simple, robust system upgrader
  - Easy to use and quick to handle
  - Written in under 200 LOC
Goals and Achievements
What is being planned?
KaST: Overview

Requirements and expectations:
KaST: Overview

Requirements and expectations:
- Reduce work for both Debian and Kalyxo/KaST developers
KaST: Overview

Requirements and expectations:
- Reduce work for both Debian and Kalyxo/KaST developers
- Do not annoy power-administrator
KaST: Overview

Requirements and expectations:
- Reduce work for both Debian and Kalyxo/KaST developers
- Do not annoy power-administrator
- Be cross-desktop, but avoid some of the trade-offs
KaST: Overview

Requirements and expectations:
- Reduce work for both Debian and Kalyxo/KaST developers
- Do not annoy power-administrator
- Be cross-desktop, but avoid some of the trade-offs
- Debconf as a communication and answer-caching layer
KaST: Overview

Requirements and expectations:
- Reduce work for both Debian and Kalyxo/KaST developers
- Do not annoy power-administrator
- Be cross-desktop, but avoid some of the trade-offs
- Debconf as a communication and answer-caching layer
- Two frontends
  - Debconf - familiar debconf wizards
KaST: Overview

- Requirements and expectations:
  - Reduce work for both Debian and Kalyxo/KaST developers
  - Do not annoy power-administrator
  - Be cross-desktop, but avoid some of the trade-offs
- Debconf as a communication and answer-caching layer
- Two frontends
  - Debconf - familiar debconf wizards
  - Kastconf - configlet-like custom UIs
KaST: Overview

Requirements and expectations:
- Reduce work for both Debian and Kalyxo/KaST developers
- Do not annoy power-administrator
- Be cross-desktop, but avoid some of the trade-offs

Debconf as a communication and answer-caching layer

Two frontends
- Debconf - familiar debconf wizards
- Kastconf - configlet-like custom UIs

Backend system
- Bridge config files to frontends
- Semi-bidirectional
KaST: Frontends

- Debconf
  - The familiar wizard
Debconf

- The familiar wizard
- Invoked at package install time
KaST: Frontends

- **Debconf**
  - The familiar wizard
  - Invoked at package install time
  - Runs in terminal, KDE or Gnome
KaST: Frontends

- Debconf
  - The familiar wizard
  - Invoked at package install time
  - Runs in terminal, KDE or Gnome

- Kastconf
  - Resembles configlets
KaST: Frontends

Debconf
- The familiar wizard
- Invoked at package install time
- Runs in terminal, KDE or Gnome

Kastconf
- Resembles configlets
- KDE frontend uses Qt-Designer .ui files
KaST: Frontends

- **Debconf**
  - The familiar wizard
  - Invoked at package install time
  - Runs in terminal, KDE or Gnome

- **Kastconf**
  - Resembles configlets
  - KDE frontend uses Qt-Designer .ui files
  - Gnome or curses frontends possible
KaST: Frontends

- **Debconf**
  - The familiar wizard
  - Invoked at package install time
  - Runs in terminal, KDE or Gnome

- **Kastconf**
  - Resembles configlets
  - KDE frontend uses Qt-Designer .ui files
  - Gnome or curses frontends possible
  - Driven by extended debconf-like protocol
KaST: Frontend logic

Requirements:
- Make writing the logic easy
KaST: Frontend logic

Requirements:
- Make writing the logic easy
- Shared among different frontends
KaST: Frontend logic

Requirements:
- Make writing the logic easy
- Shared among different frontends

Solution: Simple declarative language
KaST: Frontend logic

- **Requirements:**
  - Make writing the logic easy
  - Shared among different frontends

- **Solution:** Simple declarative language
  - High-level UI abstractions
KaST: Frontend logic

Requirements:
- Make writing the logic easy
- Shared among different frontends

Solution: Simple declarative language
- High-level UI abstractions
- Handles both Debconf and Kastconf transparently
  - Speaks standard debconf protocol to Debconf
  - Extended debconf-like protocol for Kastconf

Compiled into perl or a shell script
Result resides in the package .config file
KaST: Frontend logic

Requirements:
- Make writing the logic easy
- Shared among different frontends

Solution: Simple declarative language
- High-level UI abstractions
- Handles both Debconf and Kastconf transparently
  - Speaks standard debconf protocol to Debconf
  - Extended debconf-like protocol for Kastconf
- Compiled into perl or a shell script
- Result resides in the package .config file
KaST: Backends

- Generic backend library provided

- Helps with parsing config files
- Collection of rewrite and matching algorithms
- Convenient utilities for backend writers
- Makes backend writing reasonably easy
- Parses config file as good as it can
- Rewrites (parts of) the config file using the data from the user
- Part of respective package
- Will be able to reconfigure package safely
- Guards against stomping over user changes possibly by comparing checksum with a stored one
KaST: Backends

- Generic backend library provided
  - Help with parsing conffiles
  - Collection of rewrite and matching algorithms
KaST: Backends

- Generic backend library provided
  - Help with parsing conffiles
  - Collection of rewrite and matching algorithms
  - Convenient utilities for backend writers
  - Make backend writing reasonably easy

Kalyxo : Linking the worlds – p.17/22
KaST: Backends

- Generic backend library provided
  - Help with parsing config files
  - Collection of rewrite and matching algorithms
  - Convenient utilities for backend writers
  - Make backend writing reasonably easy
- Parses config file as good as it can
KaST: Backends

- Generic backend library provided
  - Help with parsing conffiles
  - Collection of rewrite and matching algorithms
  - Convenient utilities for backend writers
  - Make backend writing reasonably easy
- Parses conffile as good as it can
- Rewrites (parts of) the conffile
  - Using the data from user
KaST: Backends

- Generic backend library provided
  - Help with parsing conffiles
  - Collection of rewrite and matching algorithms
  - Convenient utilities for backend writers
  - Make backend writing reasonably easy
- Parses conffile as good as it can
- Rewrites (parts of) the conffile
  - Using the data from user
- Part of respective package
KaST: Backends

- Generic backend library provided
  - Help with parsing conffiles
  - Collection of rewrite and matching algorithms
  - Convenient utilities for backend writers
  - Make backend writing reasonably easy
- Parses conffile as good as it can
- Rewrites (parts of) the conffile
  - Using the data from user
- Part of respective package
- Will be able to reconfigure package safely
KaST: Backends

- Generic backend library provided
  - Help with parsing conf files
  - Collection of rewrite and matching algorithms
  - Convenient utilities for backend writers
  - Make backend writing reasonably easy
- Parses conf file as good as it can
- Rewrites (parts of) the conf file
  - Using the data from user
- Part of respective package
- Will be able to reconfigure package safely
  - Guard against stomping over user changes
  - Possibly by comparing checksum with a stored one
More cooperation

- Finding more sponsors for packages
More cooperation

- Finding more sponsors for packages
- More of Kalyxo developers becoming Debian Developers
More cooperation

- Finding more sponsors for packages
- More of Kalyxo developers becoming Debian Developers
- Working with others ...
  - Debian Developers
More cooperation

- Finding more sponsors for packages
- More of Kalyxo developers becoming Debian Developers
- Working with others ...
  - Debian Developers
  - Qt/KDE Maintainers
  - X strike force
More cooperation

- Finding more sponsors for packages
- More of Kalyxo developers becoming Debian Developers
- Working with others ...
  - Debian Developers
  - Qt/KDE Maintainers
  - X strike force
- Knoppix - well-known Live-CD
- Skolelinux - custom distribution for schools
More cooperation

- Finding more sponsors for packages
- More of Kalyxo developers becoming Debian Developers
- Working with others ...
  - Debian Developers
  - Qt/KDE Maintainers
  - X strike force
  - Knoppix - well-known Live-CD
  - Skolelinux - custom distribution for schools
  - Other projects using KDE and Debian
More cooperation

- Finding more sponsors for packages
- More of Kalyxo developers becoming Debian Developers
- Working with others ...
  - Debian Developers
  - Qt/KDE Maintainers
  - X strike force
- Knoppix - well-known Live-CD
- Skolelinux - custom distribution for schools
- Other projects using KDE and Debian
- ... towards a common KDE/Debian desktop platform
Kalyxo releases

Could be a base for the desktop platform
Kalyxo releases

- Could be a base for the desktop platform
- Based on testing snapshots
  - Time based releases
Kalyxo releases

- Could be a base for the desktop platform
- Based on testing snapshots
  - Time based releases
  - Maintained between two snapshots
    - Bugfixing
    - Security fixes
Kalyxo releases

- Could be a base for the desktop platform
- Based on testing snapshots
  - Time based releases
  - Maintained between two snapshots
    - Bugfixing
    - Security fixes
- Naturally improved by the staging archive work
Advantages
**Users and Administrators**

- Better desktop experience
  - Handle Hotplug and system events
  - Improve KIO-Slaves accessibility
Users and Administrators

- Better desktop experience
  - Handle Hotplug and system events
  - Improve KIO-Slaves accessibility
- Easy administration
  - Central third-party archive for KDE applications
  - Graphical tools for common tasks
Users and Administrators

- Better desktop experience
  - Handle Hotplug and system events
  - Improve KIO-Slaves accessibility
- Easy administration
  - Central third-party archive for KDE applications
  - Graphical tools for common tasks
- Power of Debian beneath the surface
  - Rock solid upgrades
  - High quality packages
Developers and Packagers

- Common KDE/Debian platform to develop for
Developers and Packagers

- Common KDE/Debian platform to develop for
- Comprehensive set of tools
  - Easier Debian packaging
  - Full power of KDE development tool chain
Developers and Packagers

- Common KDE/Debian platform to develop for
- Comprehensive set of tools
  - Easier Debian packaging
  - Full power of KDE development tool chain
- First-class system integration
  - Transparent when possible (KDebconf)
  - Easier third-party developments