System Configuration

fmci

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Today's Topics

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Introduction

Knowledge

- Various system parts needs to be configured

- Various admin knowledge of system configuration

- System configuration tools should make it easier (not only for former M$ users/admins ;-)

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System configuration

- Manual editing
  - Configuration files, services etc.
- System config tools
  - GUI tools (Gtk), some TUI, even CLI
  - Monolithic applications
- Gnome/KDE Plasma Workspaces settings
  - Mostly user session only
- Applications specific settings
  - Firefox, Thunderbird etc...

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Cleanup

Cleanup – The Idea

- Project started by Thomas Woerner
- Consistent Look & Feel
  - Follows Gnome Human Interface Guidelines (but not 100%)
  - http://library.gnome.org/devel/hig-book/stable/
- Eliminate tools not used any more
  - Outdated tools
  - Obsoleted by another tool
  - Autodetection

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Cleanup – The Idea

- More/better functionality/features
  - Augeas
  - Backend/frontend separation + PolicyKit
  - Troubleshooting
- See Red Hat's Bugzilla tracker bug
 - https://bugzilla.redhat.com/show_bug.cgi?id=480902

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DBus & PolicyKit

Separation, PolicyKit and Fedora

- Bugs like
  - S-c-tools cleanup: port to PolicyKit
  - Deprecate consolehelper and switch apps to use PolicyKit 1
  - port XXX to PolicyKit 1.0
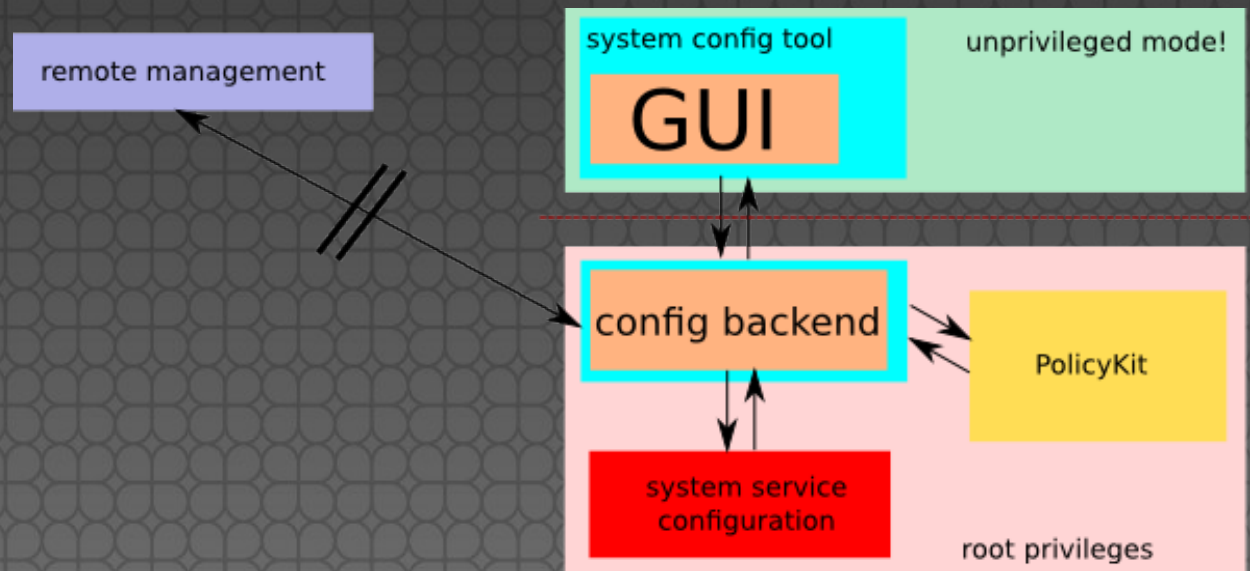- Targeted release
  - Originaly Fedora 12 but you know...

Current state

- Runs under root account
  - Privileges!
- Inconsistent
- Monolithic application, not reusable
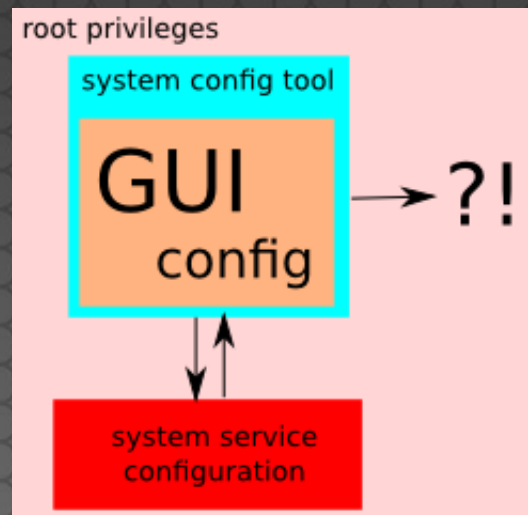
Separation + PolicyKit

- Split out root part (helper) and UI
- DBus for communication
  - Reusable interface!!!
- PolicyKit for authorization

remote management

system config tool   unprivileged mode!

GUI

config backend

PolicyKit

system service
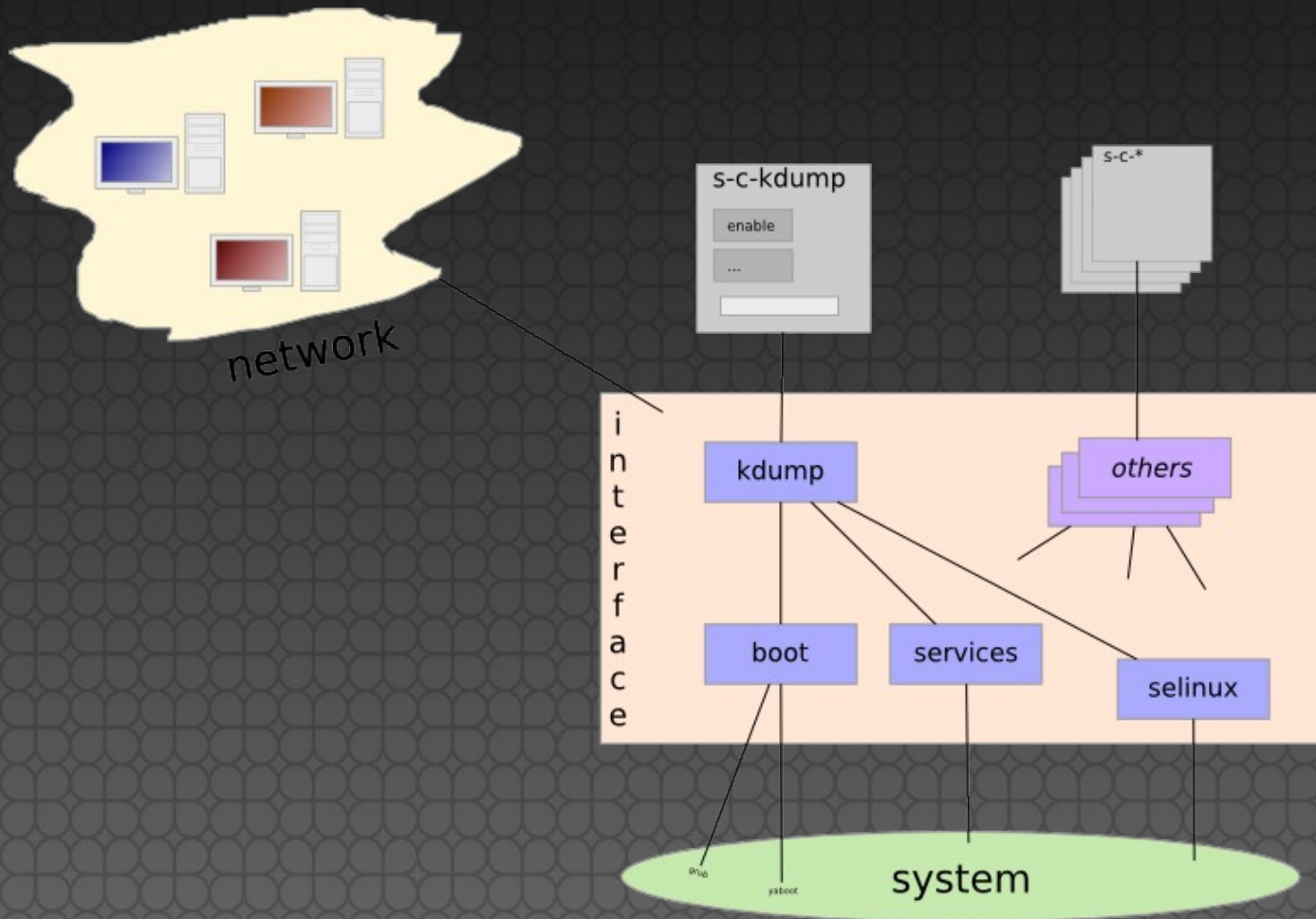configuration

root privileges

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FMCI

- Fedora Management and Configuration Infrastructure
  - Why infrastructure? It's just an interface!
  - But it's not a code only!
    - DBus interface
    - Documentation
- https://fedorahosted.org/fmci/

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The Plan

- Review current system configuration tools
  - Use cases (scenarios based)
  - Contact and ask maintainers for help
- Define interface for selected use cases
- Implement it ;-)

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Architecture

network

s-c-kdump

enable

...

s-c-*

interface

kdump

others

boot

services

selinux

grub

yaboot

system

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Implementation

- No framework...
  - DBus
  - Polkit
  - Python-SLIP
  - PyGtk, PyQt4...
- But guidelines
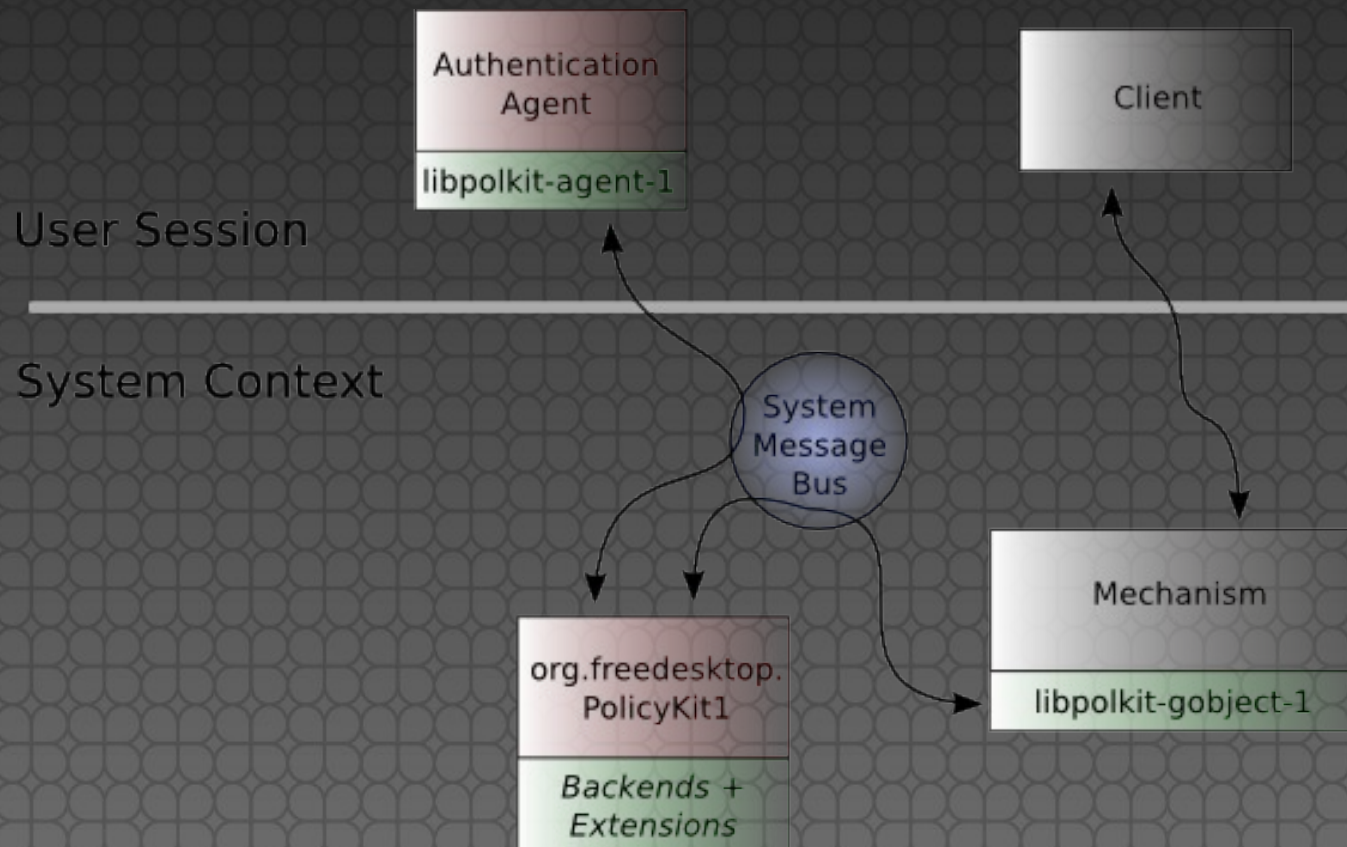 - same/similar behavior!

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Current state

- Only a few system config tools
  - For example s-c-services by Nils
  - Radek Novacek prepared date interface
  - Roman Rakus working on boot/kdump one
  - Some just a load/save configuration file (s-c-firewall)

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Polkit-1

Architecture

- Polkit daemon

- Authentication agent

Usage

- Backend / frontend separation
  - DBus preferred
- Backend runs in privileged mode
  - Helper, mechanisms
- Frontend runs in unprivileged mode
  - GUI, CLI, scripts...
- PolicyKit authentication in backend
  - Frontend does not care... (but could)

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Access

- DBus interface
  - Direct communication over Dbus
- GObject based library
- PolicyKitQt-1
- Python-SLIP
  - Uses decorators, easy to use, Fedora
- KAuth library with PolicyKit backend
  - Polkit-1 backend for Linux, multiplatform

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Authentication agent

- Takes care about authentication
  - org.freedesktop.PolicyKit1.AuthenticationAgent interface
- Authentication agent has to be registered
  - RegisterAuthenticationAgent in org.Freedesktop.PolicyKit1.Authority interface
  - Own authentication agent can be registered
  - Solves problem with choosing right agent in user session
- Several auth. agents in Fedora

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Example .policy file

- XML file, stored in /usr/share/polkit-1/actions

```xml
<policyconfig>
<vendor>Red Hat, Inc.</vendor>
<vendor_url>http://www.redhat.com</vendor_url>
<action id="com.redhat.devconf.examples.cry">
<description>Cry</description>
<message>Prevents me from crying</message>
<defaults>
<allow_inactive>no</allow_inactive>
<allow_active>no</allow_active>
</defaults>
</action>
```

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WebKit SIG & KDE

WebKit SIG

- Started last month

- Reasons
  - Several WebKit implementations in Fedora (WebKitGtk, QtWebKit, Chromium one, ½ KHTML)
    - Based on different WebKit snapshots
    - Security issues (SRT people are members)
  - Power – Firefox is default browser, fixed Firefox regression = regression in WebKit browsers
  - http://fedoraproject.org/wiki/SIGs/WebKit
  - webkit@lists.fedoraproject.org

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Plasma wonderland

- What's new?
  - KDE Plasma Desktop 4.5.x in Fedora 14 (on top of Qt 4.7)
  - Netbook interface (Plasma Netbook)
  - Rebranding!
  - Updates?

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K Desktop What?

- KDE is now group of people

- Plasma Workspaces are a products!!!
  - Like Macrohard Doors 7 -> KDE Plasma Desktop 4

- Do not use KDE Software Compilation (SC)!
  - Just internal release engineering terminology!

- KDE Applications & KDE Development Platform

- Fedora KDE Plasma Desktop spin
  - In time of Fedora 16 -> Fedora Plasma Desktop

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Plasma Desktop Updates

- Different target audience
  - Based on our survey, requests from community
  - More advanced users?
- Release dates does not align
- Exception? On the FESCo table...
- "One major update (4.x) for one major Fedora release (Fn)"
- AutoQA, extensive release update process

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Questions?
Discussion!

Contact:
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Links

- http://www.fedoraproject.org/wiki/Features/SystemConfigCleanup

- http://www.fedoraproject.org/wiki/SystemConfig

- http://hal.freedesktop.org/docs/polkit/

- https://fedorahosted.org/python-slip/