

Beyond Linux

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Why Linux?

- Web servers
- Chromebooks
- Raspberry Pi
- Used by astrophysicists!



Layers of Linux

Distros (Ubuntu, Mint, Fedora, CentOS, etc.)

Package Managers (RPM, DEB)

Desktop Environment (GNOME, KDE)

Toolkit Libraries (GTK+, Qt)

Window Managers (XFCE)

Display Server (X11)

Linux Kernel



Anatomy of a Distro



			
Packages	Debian based	Debian based	RPM based
Desktop	Cinnamon, KDE, MATE	GNOME, KDE	GNOME
Window	Muffin	Mutter	Mutter
Display	X11	Wayland	Wayland



Linux Standards

- freedesktop.org
 - DnD protocols, MIME types, menu categories, etc.
- x.org
- Linux Standard Base
 - Minimum set of APIs for distros

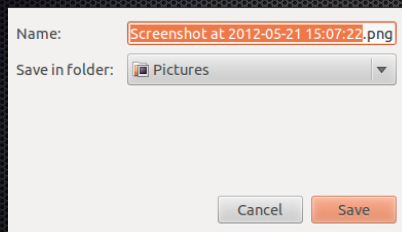
GNOME vs. KDE

- Both are popular desktop environments
- GNOME uses GTK+, KDE uses Qt
- GNOME more macOS-like features
- KDE more Windows-like features

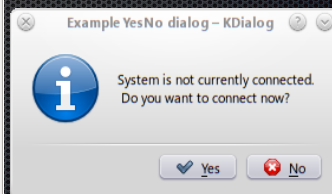
GNOME vs. KDE

- Button placements

Gnome



KDE



- `gtk_alternative_dialog_button_order` is deprecated

Xojo on Linux



Free vs. Royalty

Xojo on Linux



- Uses GTK+ 3 (Since 2017r2)
- Requires libunwind8 for 64-bit or ARM apps
- Console/Web apps have slightly lower requirements
- GStreamer for movies/sound
- WebKit2 for HTMLViewer (Since 2018r2)
- Requires libsoup for URLConnection
- Support for Pi (Jessie or later)
 - ARMv7, QEMU raspi2

GTK+ 3 features



- Integral HiDPI support
 - Fractional support for Text
- Support for Wayland and Mir backends
- Ability to customize/style controls
- Easier to determine natural control sizes
- Controls clip to parent w/o Transparent hack
- RectControl.DrawInto accuracy
- GtkInspector

Styling with GTK+ 3



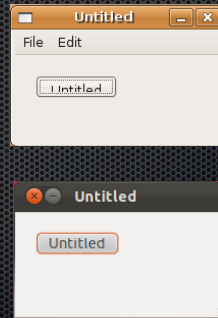
- Customizable via CSS
 - ~/.config/gtk-3.0/gtk.css
- GtkStyleContext
 - Programmatically style all or single controls

GTK+ 3 Demos



Linux best practices

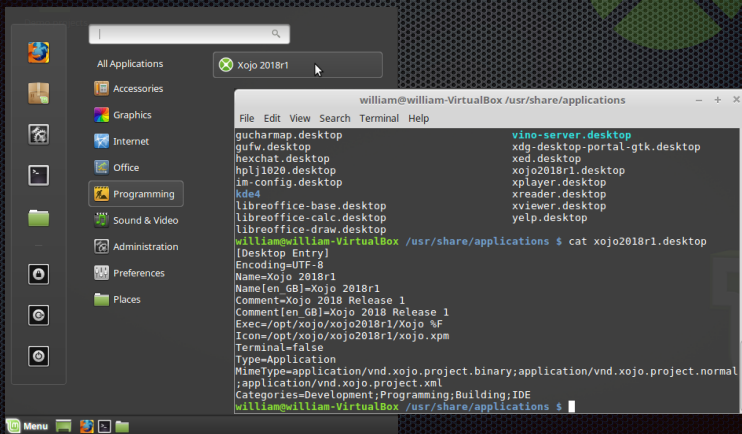
- Control sizes
 - Depends on theme



Linux best practices

- Adding your app to the Start Menu
 - Include 128, 48, 32 sized icons
 - Create a .desktop file
 - Use Registered Categories
 - <https://standards.freedesktop.org/menu-spec/latest/apa.html>

Linux best practices



Linux Best Practices Demos

Linux tips



- Preferences
 - `/etc/.myapp`
 - `/home/user/.myapp`
- Clipboard
- Specific Ubuntu features
 - Clicking on global menu will deactivate app
 - `UBUNTU_MENUPROXY=0`
 - `LIBOVERLAY_SCROLLBAR=0`

Future of GTK



- GTK+ 4 prepping for release this year
- Updated/New layout managers
- New widgets like `GtkVideo`

Q & A



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Give us feedback on this session in the XDC app!