



ritlug.com

Please sign in!

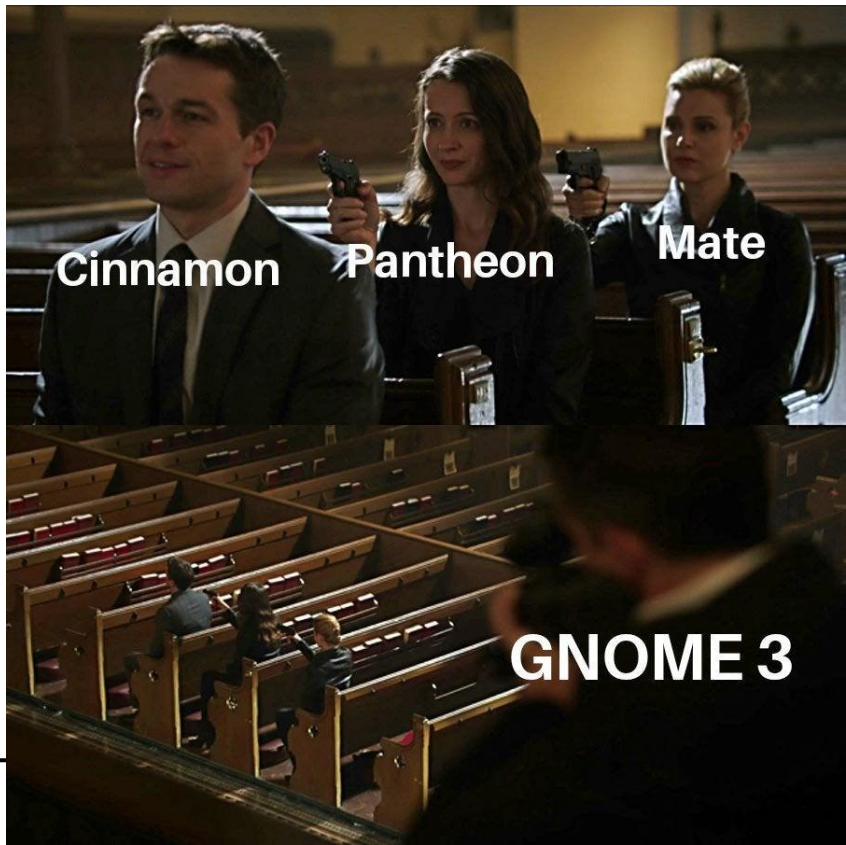
<http://bit.ly/ritlug-2020>

Keep up with RITlug outside of meetings:

[ritlug.com/get-involved](http://ritlug.com/get-involved), [rit-lug.slack.com](http://rit-lug.slack.com)

# Desktop Environments

Jeffery Russell and Tim Zabel



Cinnamon

Pantheon

Mate

GNOME 3



---

# What makes a desktop environment (DE)?



A desktop environment typically contains two major components:

- Window Manager

Manages windows, icons, menus, pointers

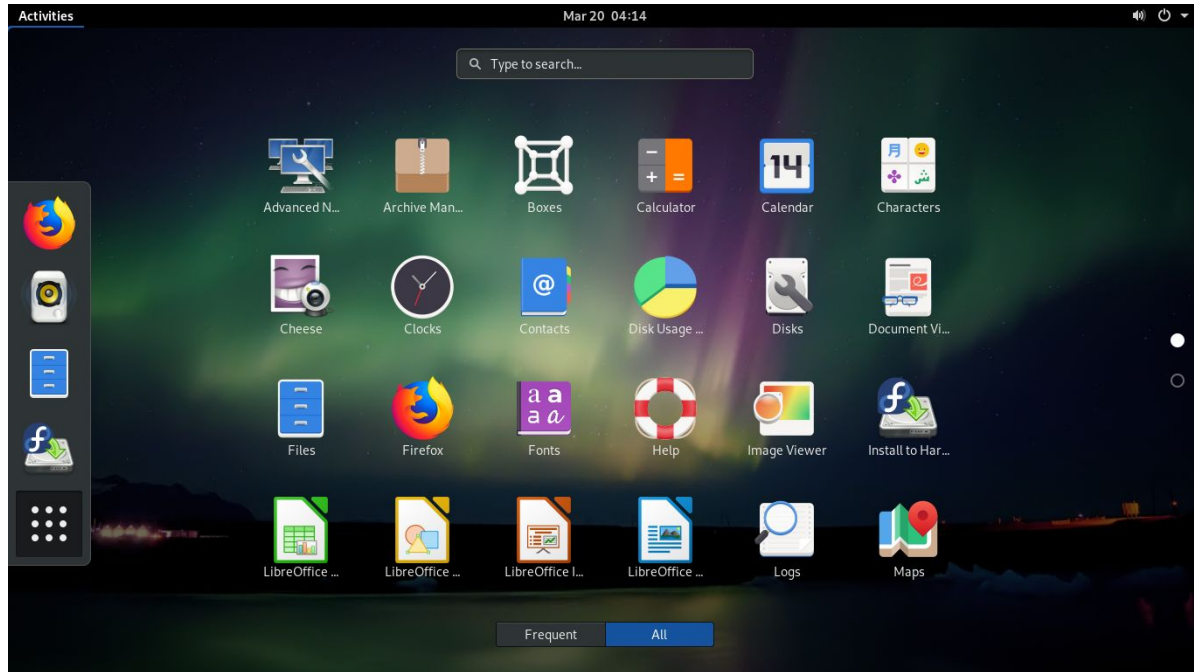
- Widget Toolkit

- Used to write applications with a unified look and behavior

---

# GNOME 3

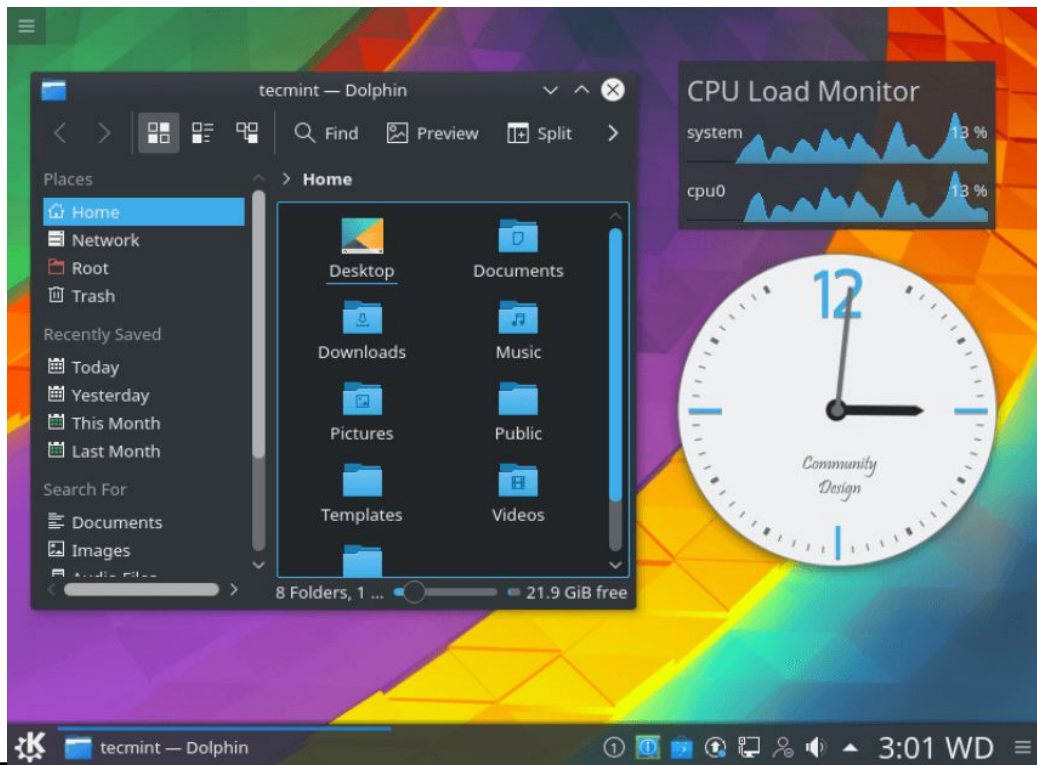
- Easy to use
- “Most” Popular
- Great Companability
- Nautilus as default file manager





# KDE Plasma

- Uses Dolphin file manager
- Easy to use
- Very uniform software stack like GNOME

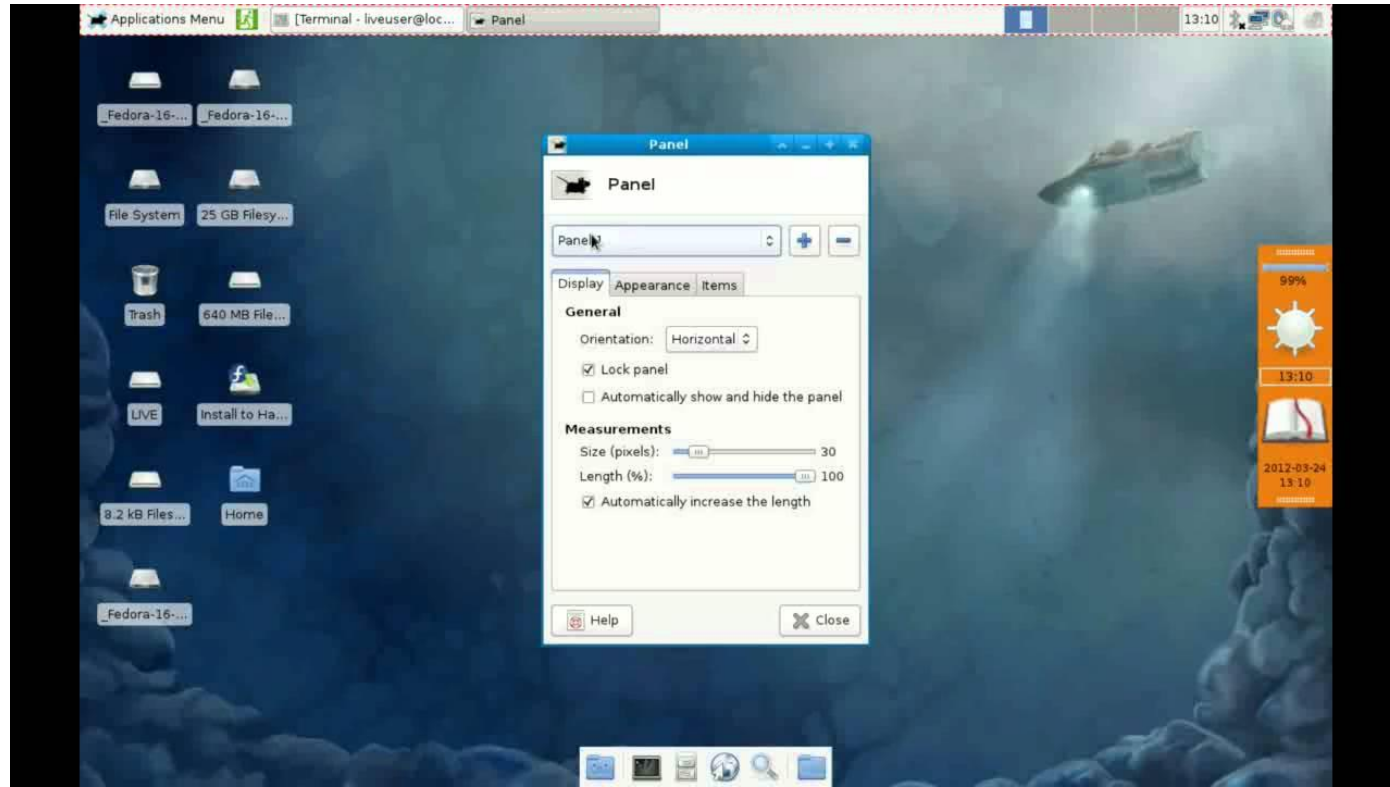






# Xfce

- Lightweight
- Easy to use
- Thunar file manager







Trash



File Sys...



Home

James Watson

Terminal Emulator  
Use the command line

File Manager  
Browse the file system

Web Browser  
Browse the web

Mail Reader  
Read your email

Add/Remove Software  
Add or remove software insta...

All

Accessories

Development

Education

Games

Graphics

Internet

Multimedia

Office

Settings

System

Manjaro Welcome





manjaro

16.06-rc2 Daniella  
64-bit

Welcome to Manjaro, and thank you for joining our community!

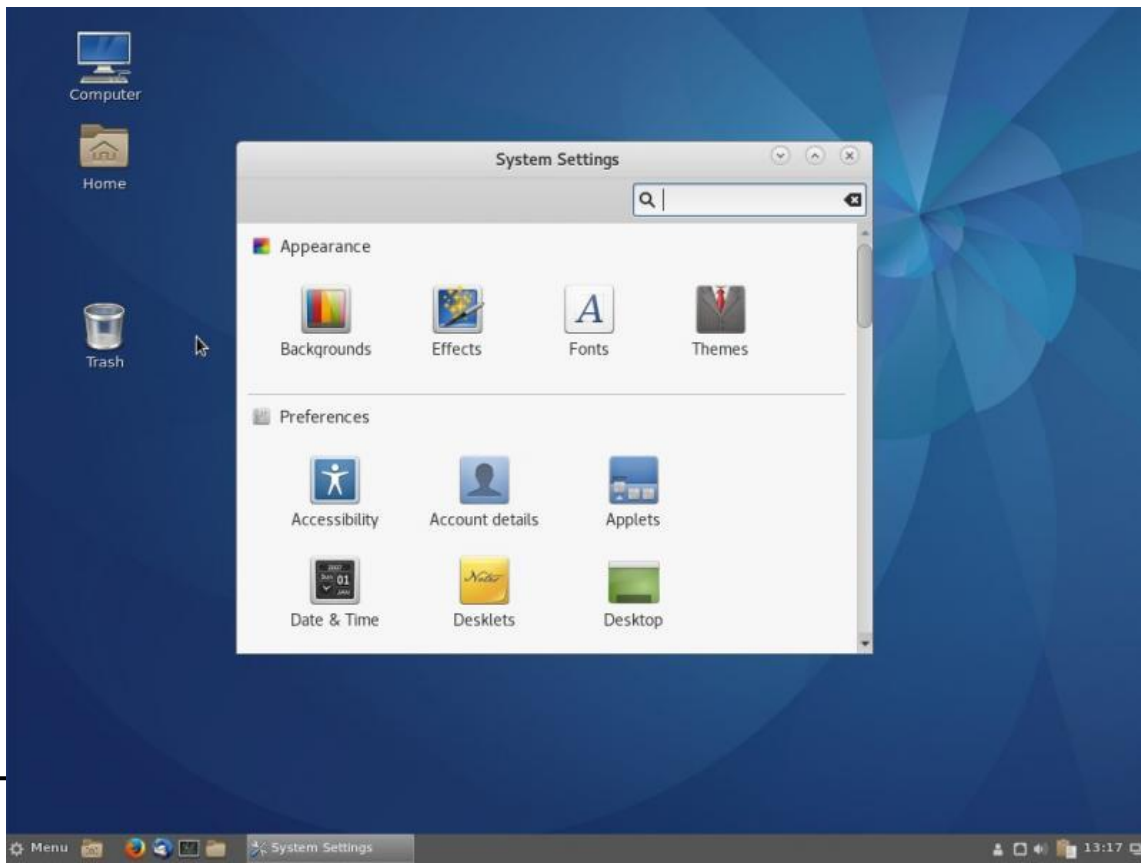
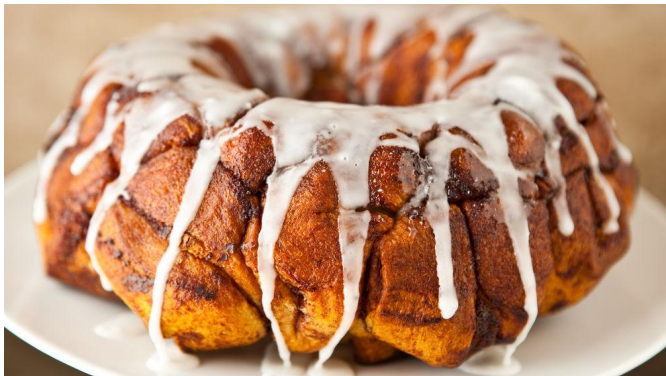
We, the Manjaro Developers, hope that you will enjoy using Manjaro as much as we enjoy building it. The links below will help you get started with your new operating system. So enjoy the experience, and don't hesitate to send us your feedback.

<p><b>Documentation</b></p> <ul style="list-style-type: none"> <li> <a href="#">Read Me</a></li> <li> <a href="#">Release Info</a></li> <li> <a href="#">Wiki</a></li> </ul>	<p><b>Support</b></p> <ul style="list-style-type: none"> <li> <a href="#">Forums</a></li> <li> <a href="#">Chat Room</a></li> <li> <a href="#">Mailing Lists</a></li> </ul>	<p><b>Project</b></p> <ul style="list-style-type: none"> <li> <a href="#">Get Involved</a></li> <li> <a href="#">Build Manjaro</a></li> <li> <a href="#">Donations</a></li> </ul>
---	--	--

  Show this dialog on startup? [Close](#)

# Cinnamon

- Fork of GNOME 3
- Nemo File Manager
- Crist look
- Tons of desklets
- Very stable



Application menu with search bar and categories:

- All Applications
- Accessories
- Education
- Games
- Graphics
- Internet
- Office
- Programming
- Sound & Video
- Administration
- Preferences
- Places
- Recent Files

Application list:

- AMD Catalyst Control Center
- AMD Catalyst Control Center (Administrative)
- Android Studio
- Applets
- Archive Manager
- Arista Transcoder
- Atom
- Audacious
- Audacity
- Audio Recorder
- Back In Time
- Back In Time (root)
- Backgrounds

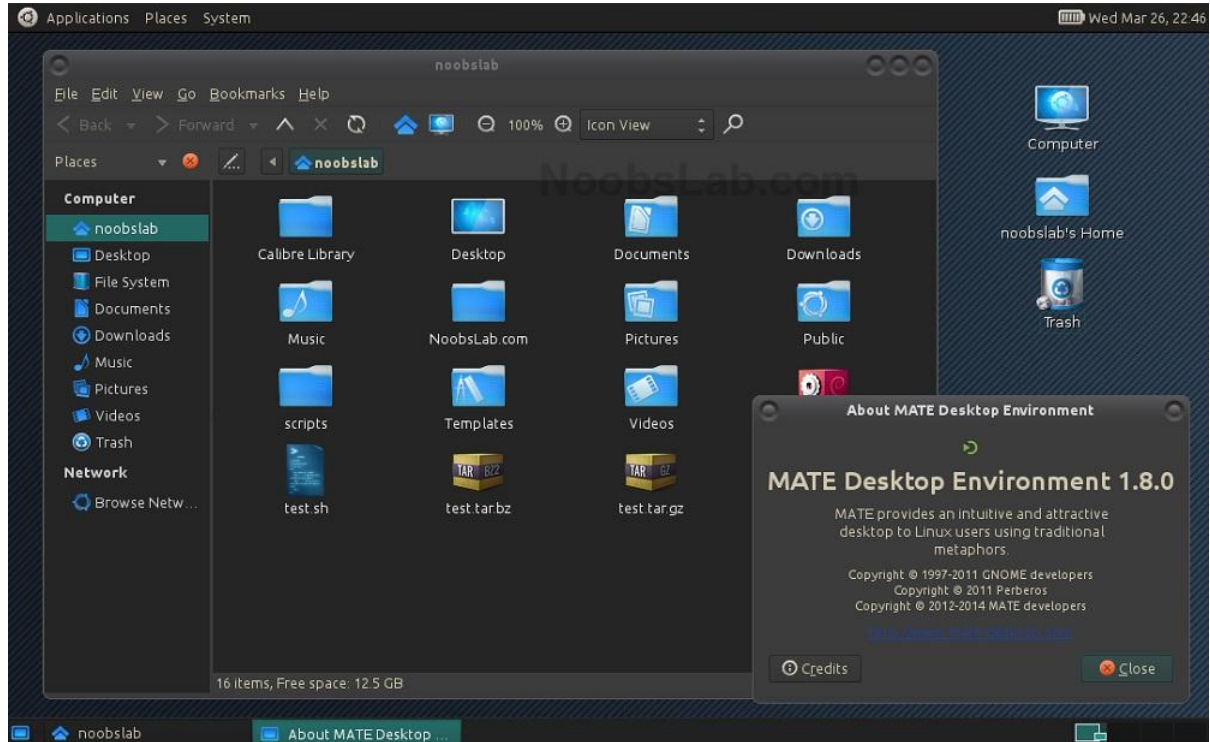


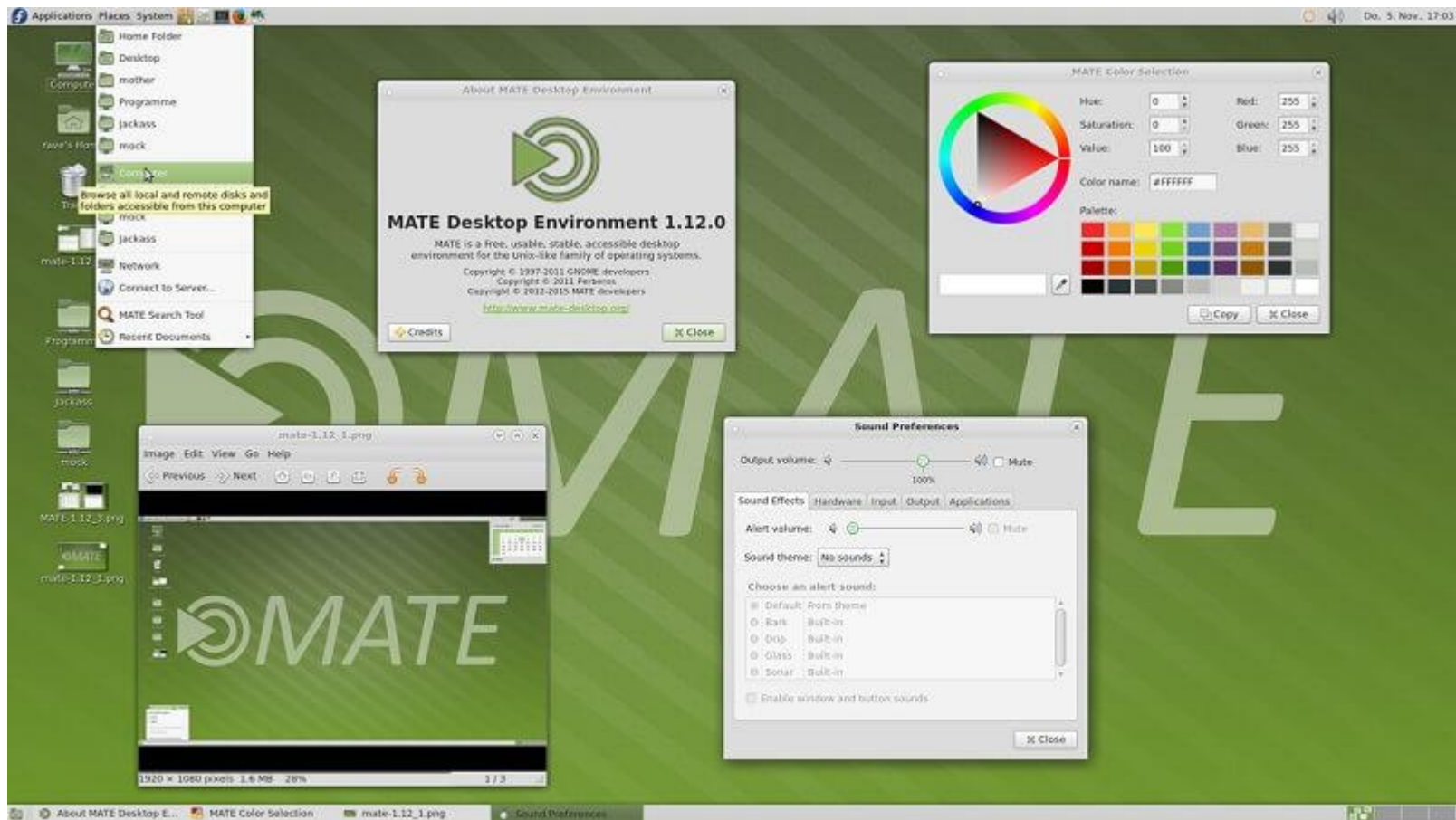
Offline RAM 2.32GiB / 3.27GiB CPU 13% DOWN 0B UP 0B



# MATE

- Extension of GNOME 2
- Caja File Manager







---

# Unity

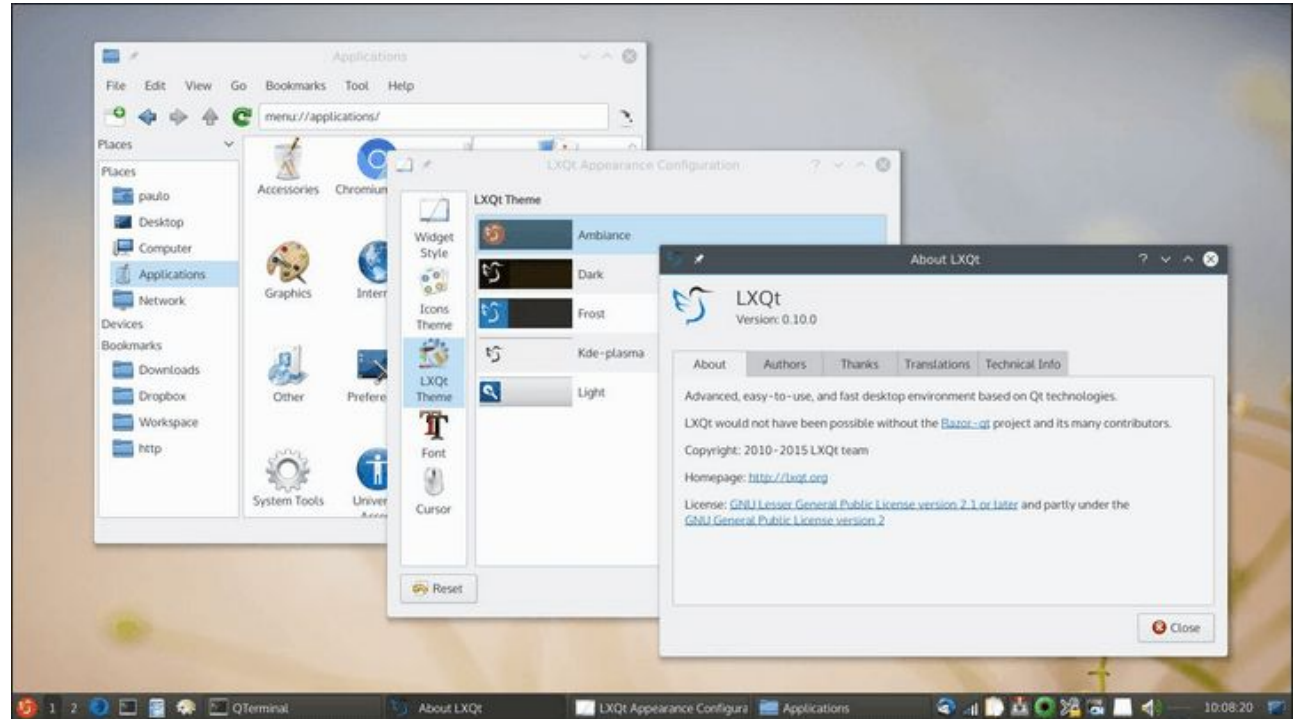
- Not technically its own DE but a shell extension for GNOME
- This is known for giving Ubuntu its iconic sidebar





# LXQt

- Very Lightweight
- Easy to use



alanm - File Manager

File Edit View Go Help

Open Parent Home /home/alanm/

**DEVICES**

- File System

**PLACES**

- alanm
- Desktop

**NETWORK**

- Browse Network

arch aui\_packages bin builds  
Desktop Downloads lxqt the-grid.png  
the-grid.xcf xorg.conf.new

10 items (6.3 MB), Free space: 58.2 GB

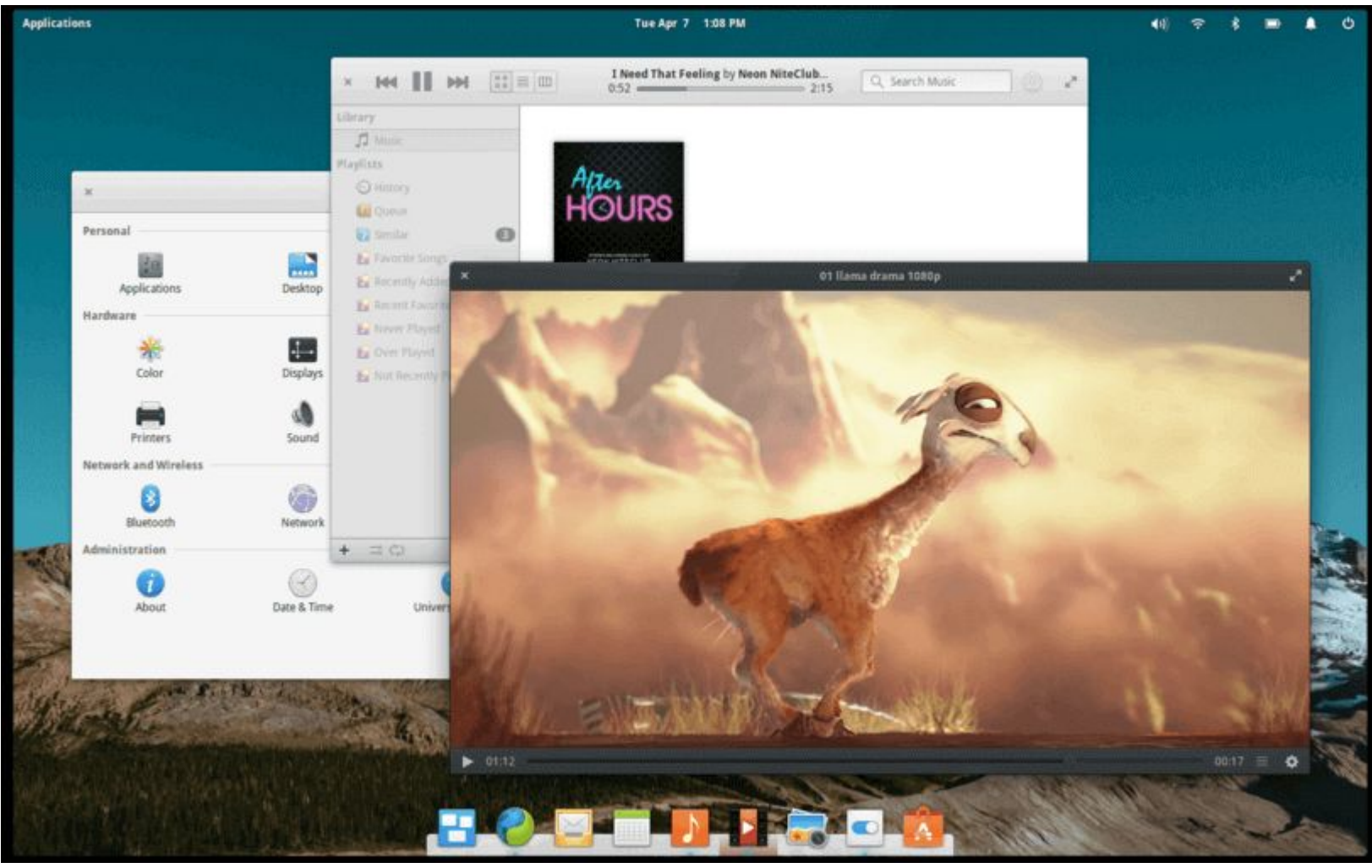
- Accessories
- Graphics
- Internet
- Office
  - Dictionary
  - ePDFViewer
- Other
- Programming
- Sound & Video
- System Tools
- Preferences
- Leave
- Lock Screen

---

# Pantheon

- DE designed for Elementary OS
- OSX like interface
- Looks amazing
- Due to simplicity, it is missing some things that are commonplace in other DEs (limited customizations)

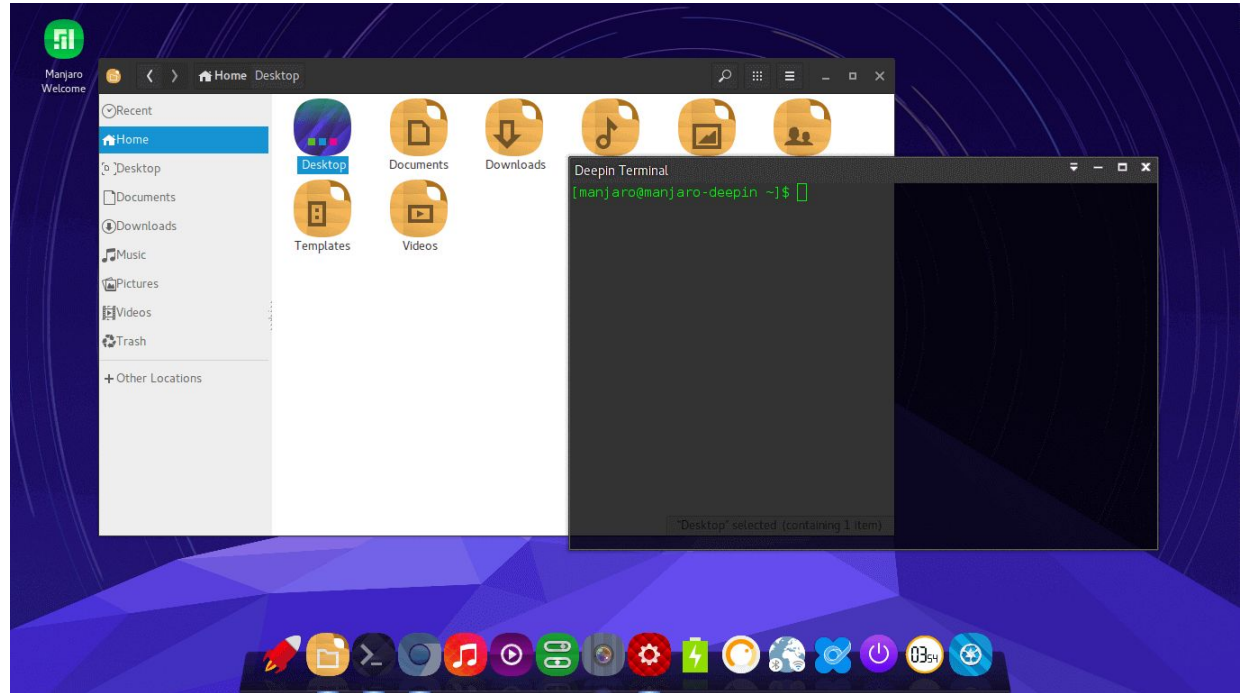




---

# Deepin

- Simple
- Very elegant
- Developed by a Chinese community



# Performance?

## Linux Desktop base memory usage

1. EDE - 104MB
2. CDE - 113MB
3. Moksha - 145MB
4. Enlightenment - 146MB
5. i3 - 174MB
6. Lumina - 179MB
7. Hawaii OS - 207MB \*
8. Sugar - 223MB †
9. Trinity - 226MB
10. Mezzo - 238MB
11. LXQt - 239MB
12. LXDE - 266MB
13. Vera - 268MB
14. XFCE - 283MB
15. Elokab - 316MB
16. Deepin - 363MB
17. Plasma 5 - 373MB
18. Cinnamon - 409MB
19. Budgie - 420MB
20. MATE - 441MB
21. Pantheon - 492MB
22. Gnome - 674MB
23. Unity - 788MB
24. Zorin - 910MB

Unless stated testing was carried out in Virtualbox with 4GB RAM and 38GB SSD in Ubuntu or Debian

\* Hawaii OS run as live CD on Qemu

† Sugar used Fedora 23

Source:

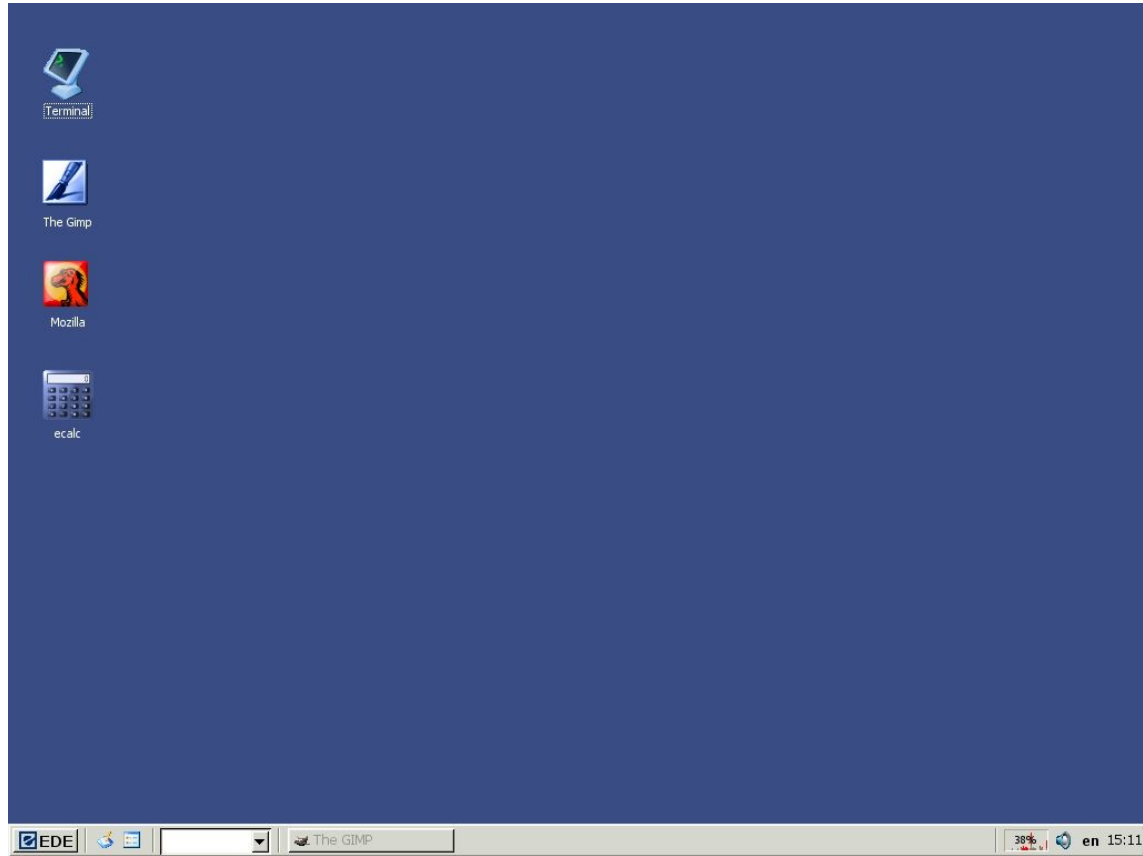
<https://itsfoss.com/linux-mint-vs-ubuntu/>



---

# Equinox (EDE)

- Very lightweight
- Last stable release was in 2014
- Reminiscent of windows 9x interface



---

# Questions?



`/bin/cat`

---

---

---

# Window Managers

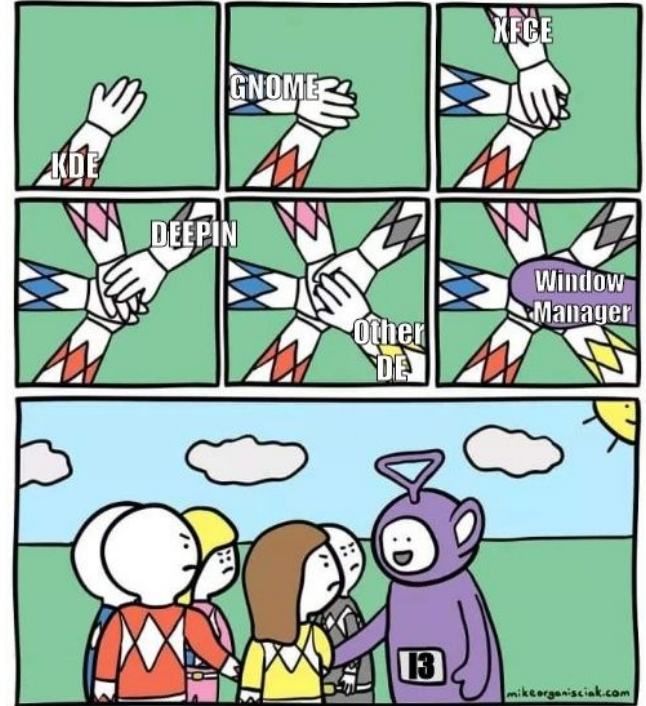
---

# WMs

- Specifically controls placement and appearance of windows
- Doesn't come with any other integrated tools

*Sponsored by: /r/unixporn*

Hey new to Linux, which DE should I pick?






```

rc.lua
1 --[[
2 ]]
3
4
5
6
7
8 --]]
9
10 local theme_collection = {
11     "mante",      -- 1 --
12     "lovelace",  -- 2 --
13     "skyfall",   -- 3 --
14 }
15
16 -- Change this number to use a different theme
17 local theme_name = theme_collection[3]
18
19 -----
20
21 local bar_theme_collection = {
22     "mante",      -- 1 -- Taglist, client counter, date, time, layout
23     "lovelace",  -- 2 -- Start button, taglist, layout
24     "skyfall",   -- 3 -- Weather, taglist, window buttons, pop-up tray
25 }
26
27 -- Change this number to use a different bar theme
28 N >>> rc.lua                               lua  8%  2:1

```

📶 awesome  
📶 4.28.10  
📶 zsh  
📶 3040x2160  
📶 FBI Surveillance Van #214

Dance With Me Nouvelle Vague  
Master And Servant Nouvelle Vague  
Kodama Nujabes  
Mystline Nujabes  
Roxanne The Police  
Glory Box Portishead  
Roads Portishead  
Street Spirit Radiohead  
Gimme Shelter The Rolling Stones  
Paint It Black The Rolling Stones  
Black Magic Woman Santana  
Parla Più Piano The Speakeasies' Swing  
Golden Brown The Stranglers  
Date Rape Sublime  
Summertime Sublime  
Twist In My Sobriety Tamita Tikaram  
Lebanese Blonde Thievery Corporation  
Until the Morning Thievery Corporation



**elena**  
@minifridge

19  
55

📶

📷

HOME

DOWNLOADS

MUSIC

PICTURES

WALLPAPERS

February 2019

Mo	Tu	We	Th	Fr	Sa	Su
					1	2 3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

4CHAN

REDDIT

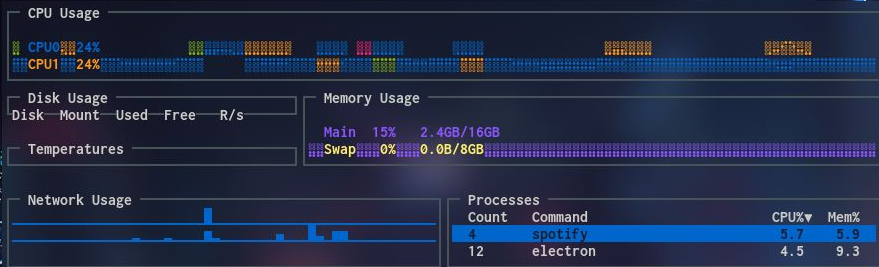
GITHUB

You might have mail.

Wednesday  
20

💡





```

vistanik@arch
-----
OS: Arch Linux x86_64
Kernel: 5.1.8-arch1-1-ARCH
Uptime: 19 mins
Packages: 466 (pacman), 10 (snap)
Shell: zsh 5.7.1
DE: i3
Theme: Adwaita [GTK2/3]
Icons: Adwaita [GTK2/3]
Terminal: kitty
Terminal Font: Inconsolata Bold for powerline 12.0
CPU: Intel i5-7400 (4) @ 3.500GHz
GPU: NVIDIA GeForce GTX 1060 3GB
Memory: 2054MiB / 15980MiB
  
```

vistanik@arch

```

File Edit Selection View Go Debug Terminal Help main.js - ThunderDocs - Code - OSS
main.js x
main.js > ...
1 // Modules to control application life and create native browser window
2 const {app, BrowserWindow} = require('electron')
3 const os = require('os');
4
5 if (os.platform() == 'linux') {
6   app.disableHardwareAcceleration()
7 }
8
9 // Keep a global reference of the window object, if you don't, the win
10 // will be closed automatically when the JavaScript object is garbage colle
11 let mainWindow
12
13 function createWindow () {
14   // Create the browser window.
15   mainWindow = new BrowserWindow({titleBarStyle: 'hiddenInset', width:
16
17   // and load the index.html of the app.
18   mainWindow.loadFile('index.html')
19
20   // Open the DevTools.6
21   // mainWindow.webContents.openDevTools()
22
23   // Emitted when the window is closed.
24   mainWindow.on('closed', function () {
25     // Dereference the window object, usually you would store windows
26     // in an array if your app supports multi windows, this is the tim
27     // when you should delete the corresponding element.
28     mainWindow = null
29   })
30 }
31
32 /*
33
34   popup function
35
36 */
37
38 // Export popup function to renderer.
  
```

Ln 1, Col 1 Spaces: 2 UTF-8 LF JavaScript ESLint







---

# WMs in Desktop Environments

- GNOME
  - Mutter/GNOME Shell
- KDE
  - KWin
- Xfce
  - Xfwm

---

# WM Types

- Stacking
    - Traditional desktop design
  - Tiling
    - Tile windows so nothing overlaps
    - Typically makes heavy use of keybinds
  - Dynamic
    - Dynamically switch between stacking and tiling
-

---

# Stacking Window Managers

- Traditional method of interacting with windows
- Act like pieces of paper, which can be stacked on top of each other

Most major Desktop Environments use stacking window managers

---



---

# Tiling Window Managers

- Tile windows automatically when opened
- Most commonly split screen space in half
- Made to maximize screen utility
- Generally no fancy animations
- Strong keybind support for minimal mouse usage

Examples: i3, Bspwm, Sway, Herbstluftwm

---

---

# Dynamic Window Managers

- Can dynamically switch between tiling and floating (stacking) window layout

Examples: awesome (lua), dwm (C), xmonad (haskell)

---

---

# Pros and Cons of WM's

## Pros

- Highly configurable
- Text-based configuration
- Light-weight
- Doesn't come with bells and whistles

## Cons

- Long time to set up
  - Still need to know how to handle power management, displays, etc
  - Doesn't come with bells and whistles
-

---

---

# Kahoot!!!

---