

Desktop Environments

For when terminals just don't do it

DE's have two portions

- Window managers, which manage
 - windows
 - icons
 - menus
 - pointers
- widget toolkit
 - used to write applications with a unified look/behavior

Top 9 DEs

GNOME3

- easy to use
- “most” popular
- Nautilus is the default file manager
- uses more of the system (CPU, RAM, and storage)
- Not a ton of customizability
- Widgets built using JavaScript

KDE Plasma

- dolphin file manager
- easy to use
- uniform software stack
- efficient
- tons of widgets
- easy to customize

You can make KDE look like any other DE.

“If your KDE looks bad, you’re doing it wrong”

XFCE

- Lightweight
- doesn't eat battery
- easy to use
- Thunar file manager

Manjaro uses XFCE

Cinnamon

- Fork of GNOME3
- Nemo file manager
- “Christ look”
- tons of desklets
- very stable

Mint uses Cinnamon

MATE

- extension of GNOME2
- Caja file manager

essentially just GNOME2

Unity

- technically not a DE
- extension of GNOME
- desktop environment shell

This is where Ubuntu gets its sidebar. (Ubuntu used to use it, now uses base GNOME3)

LXQt

- extremely lightweight
- easy to use

Someone has used it... at some point... probably...

Pantheon

- DE designed for Elementary OS
- OSX like interface
- looks amazing
- due to its simplicity, its missing some thing that are commonplace in other DEs
 - prevents you from doing tons of customization
- good if you just want it to work, no modifications

Deepin

- Simple
- Elegant
 - “looks like a kids MacOS”
- Developed by a Chinese community
 - could be a security problem because the Chinese government
- All of the widgets use JavaScript

Would be amazing, if not for the Chinese.

club devolves into Chinese discussion and evidence of backdoors

Deepin outperforms gnome

Linux Desktop base memory usage

1. EDE - 104MB	11. LXQt - 239MB
2. CDE - 113MB	12. LXDE - 266MB
3. Moksha - 145MB	13. Vera - 268MB
4. Enlightenment - 146MB	14. XFCE - 283MB
5. i3 - 174MB	15. Elokab - 316MB
6. Lumina - 179MB	16. Deepin - 363MB
7. Hawaii OS - 207MB *	17. Plasma 5 - 373MB
8. Sugar - 223MB †	18. Cinnamon - 409MB
9. Trinity - 226MB	19. Budgie - 420MB
10. Mezzo - 238MB	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

EDE

- Looks like windows 95
- extremely lightweight
- last stable release was in 2014
- extreme efficiency

Window Managers

Specifically controls placement and appearance of windows

Doesn't come with ANY other tools

There's no apps, plugins, etc. etc.

- GNOME
 - mutter/gnomeshell
- KDE
 - KWin

3 forms of Window Managers

Stacking

Traditional desktop design.

Act like pieces of paper. Most major DEs use a stacking window manager

Tiling

- Nothing overlaps. heavily uses keybindings
- automatically tiles windows when opened
- most commonly split screen space in half
- made to maximize screen utility

- no fancy animations
- strong keyboard support for minimal mouse usage

Examples:

- i3
 - Fun fact: you can run i3 inside other window manager
 - technically can be stacking, if you force it to
- BSPWM
 - technically can be stacking, if you force it to
- Sway
- Herbstluftwm

Zephyr allows you to start an X session within an X session. This allows you to test out various DEs within your current one.

Dynamic

Switches between the above two on start

- Awesome
 - written in Lua
- dwm
 - written in C
 - Part of the suckless project
- xmonad
 - haskell

WM vs DE

Pros for WM

- highly configurable
- text-based config
- lightweight
- doesn't come with bells and whistles

Cons for WM

- long time to set up
- still need to handle
 - displays
 - power management
 - etc
- doesn't come with bells and whistles