

18 – More Package Management, and some distros

CS 2043: Unix Tools and Scripting, Spring 2019 [1]

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Back to desktop environments

Option 1: KDE



Figure 1: KDE

Option 2: GNOME



Figure 2: GNOME

Option 3: XFCE4

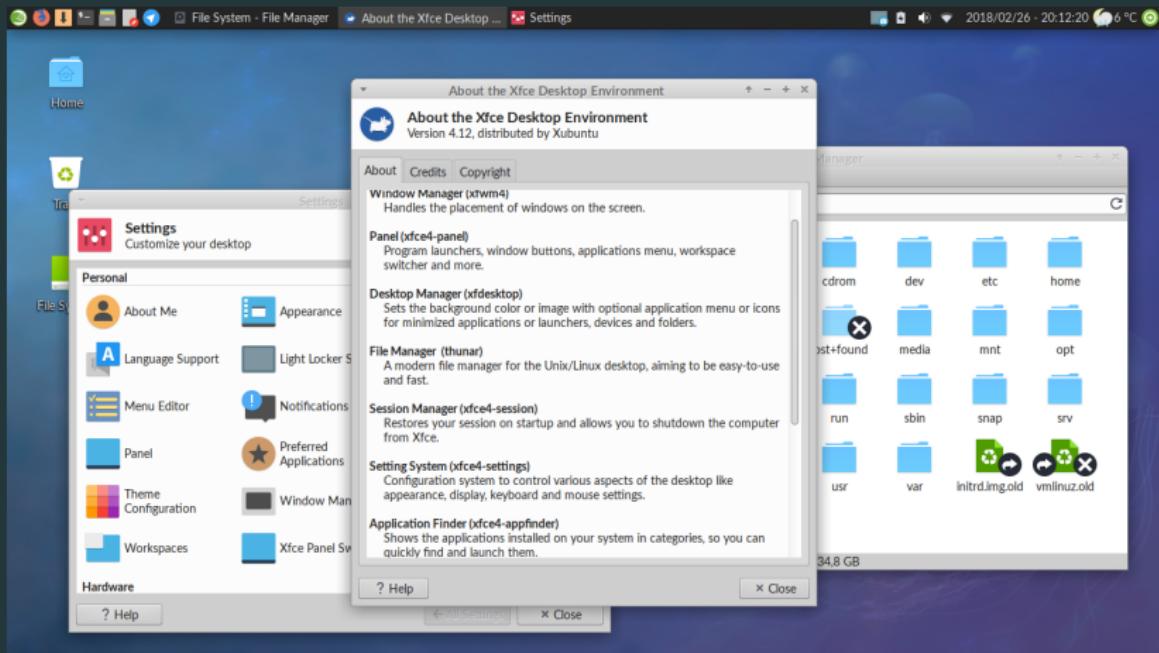


Figure 3: XFCE4

Tiling window managers

- Basic concept: windows don't "float" or "resize"; they always take all available area
- Can sub-divide screen into smaller regions (in half, in quarters, etc).
- Applications automatically resize to snap to your new "grid"
- don't move things with the mouse; change "splits" your screen with keyboard shortcuts
- some developers swear by these
- basically unused outside of serious developer circles.

XMonad

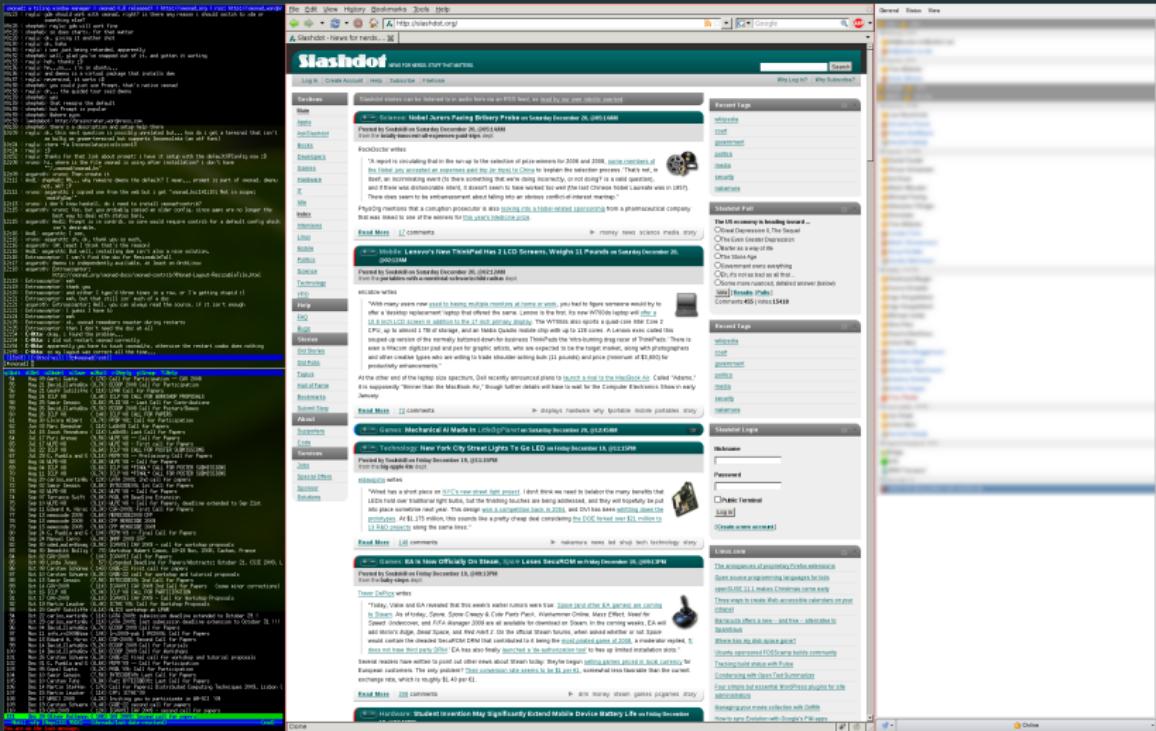


Figure 4: xmonad

Awesome

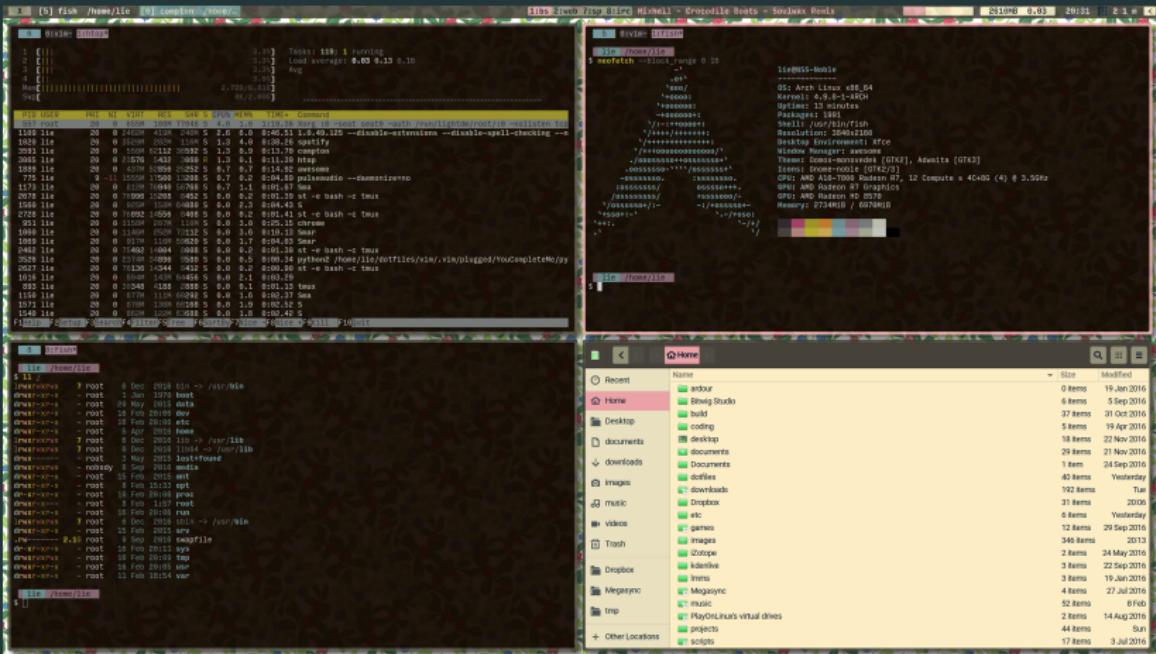


Figure 5: Awesome

Linux everywhere

Linux on windows: the old

- Git Bash uses MinGW / Cygwin
- Demo (I'm supposed to go to the cygwin website, and the git bash installer, then install git bash)

Linux on windows: the new

- A brief aside: Windows kernel is a federation of components called a *hybrid kernel*
 - Windows' normal runtime is win32, built atop a core kernel layer
 - We won't really get into what that means
- The Windows Subsystem for Linux is *magic*
 - new subsystem like win32
 - provides commands/API calls/syscalls from the Linux Kernel
 - **isn't actually Linux**, but is close enough for all your userspace programs to not know the difference
 - You **definitely** want to install `VcXsrv`
- Demo: let's look at WSL.
- There are lots and lots of guides to install online; google it!

Package management on windows: what for?

- You like automatic dependency management
- You like unified “app store style” auto-updating apps
- You want to install small, linux-like utilities or programs
- Three programs for three roles
 - Normal applications: Chocolatey
 - Libraries for C/C++/.NET software development: VCPkg or NuGet
 - Source-based package manager (from the folks at KDE): Craft
- Rapidly evolving space: there might be alternatives
 - google 'em!
- Demo time, I hope

Linux everywhere

What level of Linux do you want?

- Installing Linux on raw hardware best way to learn *GNU/Linux*
 - but easiest way to get stuck
 - simple things – like wifi, network, graphics – might not work at first
 - probably best not to do this in the middle of the semester
- Using **your OS's** built-in Linux/Unix/Posix functionality often easier
 - A good alternative unless you're doing really esoteric stuff
 - WSL on Windows / Terminal on Mac
 - If you're on ChromeOS, then you *already have* Linux! Good choice.
- Integrating your “daily driver” OS with your shell is essential
 - Automatic on Linux – in fact hard to avoid
 - Not automatic on Windows, but not hard to do for modern apps
 - Mostly automatic on Mac, but you have to *want* it.
- VSCode demo on Windows

References

- [1] Stephen McDowell, Bruno Abrahao, Hussam Abu-Libdeh, Nicolas Savva, David Slater, and others over the years.
“Previous Cornell CS 2043 Course Slides”.