Introduction to Termux

(and other linux environments on Android & Chrome OS in non-rooted environments)

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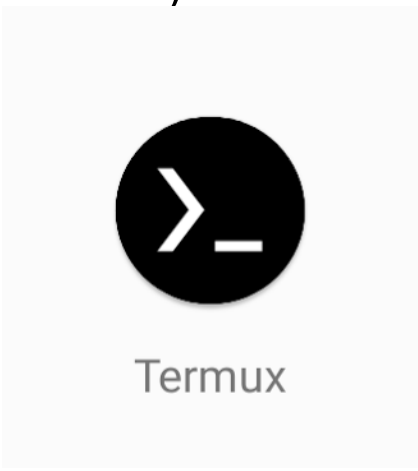
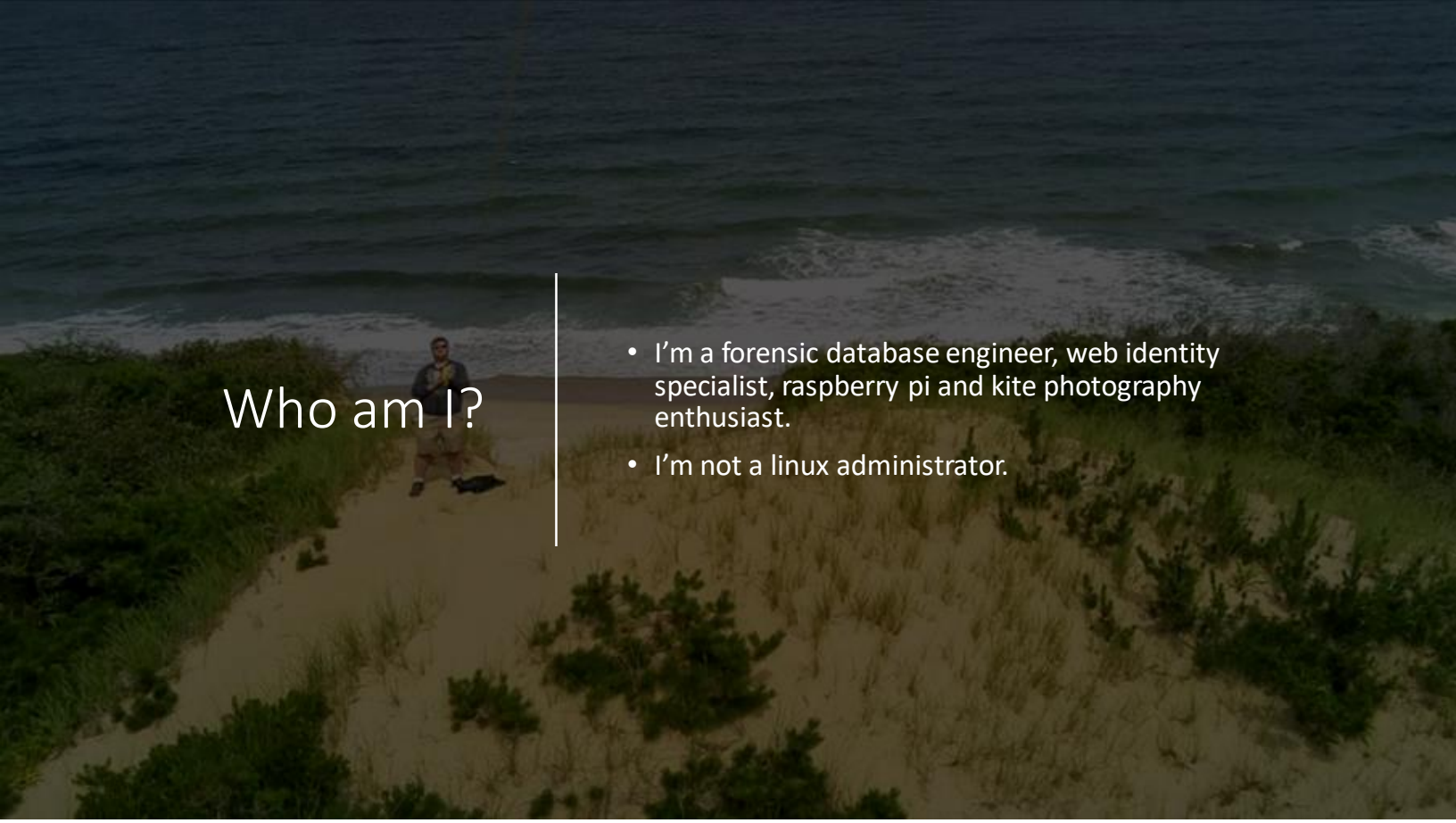


FYI

- We will discuss:
  - about:me
  - Termux
  - F-droid (alternative android marketplace for open source software)
    - Userland via f-droid
  - Chromium OS “linux experiment”

- Kindly hold questions till I ask, which will generally be at the end of the slide or demo.
- Guessing this will take about an hour ish to discuss / have demos.

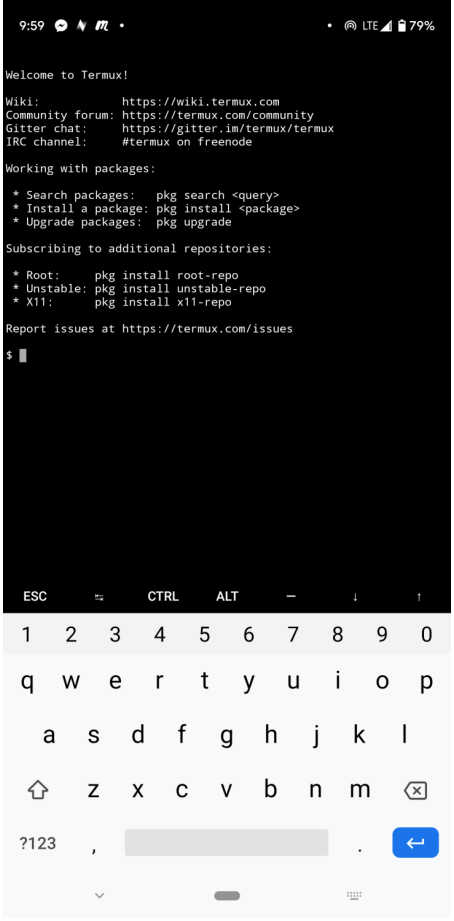


Who am I?

- I’m a forensic database engineer, web identity specialist, raspberry pi and kite photography enthusiast.
- I’m not a linux administrator.

What is termux?

- Termux is a user land android application that allows you to run linux comands on an android device. It's essentially an app that allows console access into the linux environment.
- Termux is available in the Android Play environment, as well as F-Droid.
  - F-Droid will be discussed later.
- No root is required.
- Loosely based upon debian, but it's not exactly debian.
- ** Browse to termux.com for info. ☺



Immediate Demo!

- “Pinch” the screen to increase font size. ☺

Minimum Requirements

- Android 4+… so minimal.
  - (Android KitKat or newer)… released in October 31, **2013**.
  - Even my cheap / disposable phone which I recently purchased on amazon for $50 was running android 7.
    - With 1gb internal storage, add a sd card, then you have a very cheap server.

Environment Details

- There are a bunch of differences.
  - Important things:
    - Non-standard paths
    - Most dev tools not installed. Need to install build-essential via unstable-repo
    - Single user mode only for permissions. Unable to chroot, etc.
      - Why – android has one user that is not an administrator…
  - See http://termux.com/wiki/Differences_from_linux

But my system froze…

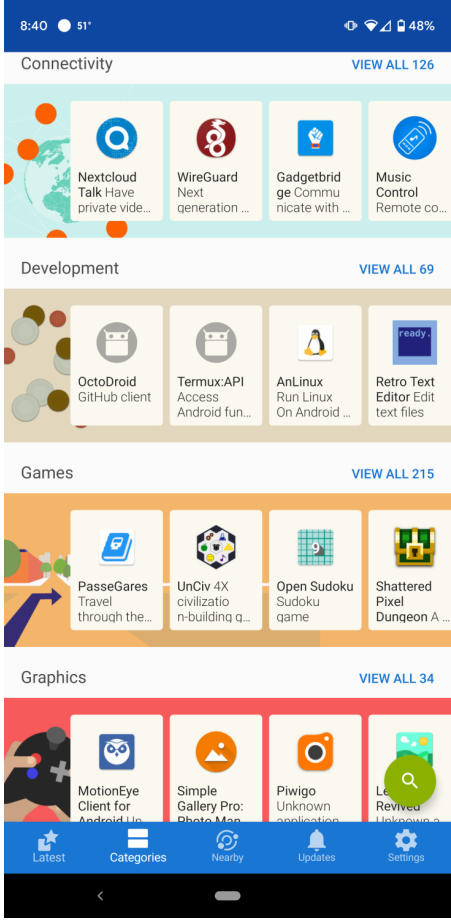
- Yeah, sometimes, termux freezes into an unrecoverable state.
- Just re-install.
- Note that termux can access outside it's most immediate environment, via
  - https://wiki.termux.com/wiki/Internal_and_external_storage

How to install

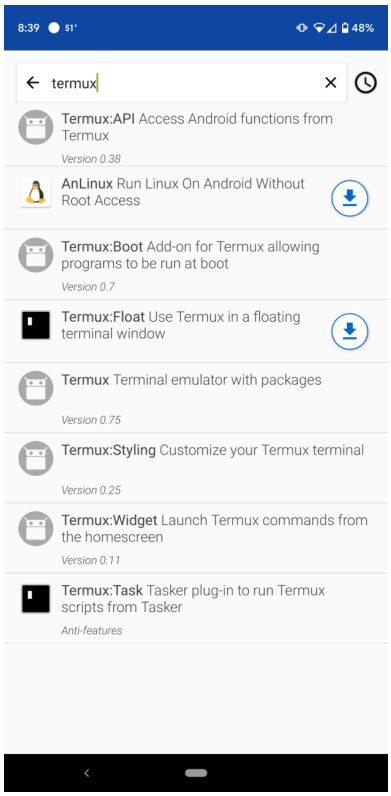
- There are *two* ways.
  - The first is google's play store marketplace. There is a $1.99 charge for this.
  - The second way is via the open source f-droid marketplace. Browse to https://f-droid.org/ . Free.

Tangent – f-droid

- Browse to f-droid.org
- F-droid is a repository of free and open source projects that run on android.
- Requires you to install packages from unauthorized sources, so you will have to do a security dance to make it work. :-/



Termux offerings on f-droid



There are additional add ons in the store

- Termux-api – allows termux to access other aspects of the android device.
- Termux-styling
- Termux-boot – boot a script at startup. (SSH, httpd, etc)
- Termux-widget – run termux as a on screen widget.
- Termux-task – run a script from the task menu.
- Termux—float – allows it to be floated instead of a window
- Termux-tutorials *unofficial tutorials*.

Connecting over ssh

- Determine your user
  - whoami
  - # returns u0_a465 for me
- Set a passwd for yourself
- Install ssh
  - pkg install openssh
  - sshd
  - ssh u0_465@localhost –p 8022

And there are additional options for running linux, again as a non-root user

- Anlinux – custom scripts to setup termux to run ubuntu, fedora, centos, openSUSE, etc. on your device, as a layer above termux.
- Userland – separate from termux, allows for devices to run complete installs of linux. Graphical sessions available, via vnc.
  - Even on fios, it takes about 20 minutes to download everything needed to get it to work, and still slightly unstable.

Chrome os linux experiment

- It’s a debian container, that runs on chrome os devices
  - Mostly el-cheapo tablets type machines.
  - (Reminder zaz - <control>+ to increase screen size. ☺)
  - CAUTION : slightly non-standard system.
    - There are some folders you can’t create or use… even as uid 0, such as /usr/local/bin/

Conclusion

- It’s possible!
- It’s different!
- It’s more unstable than we would like, but usable!