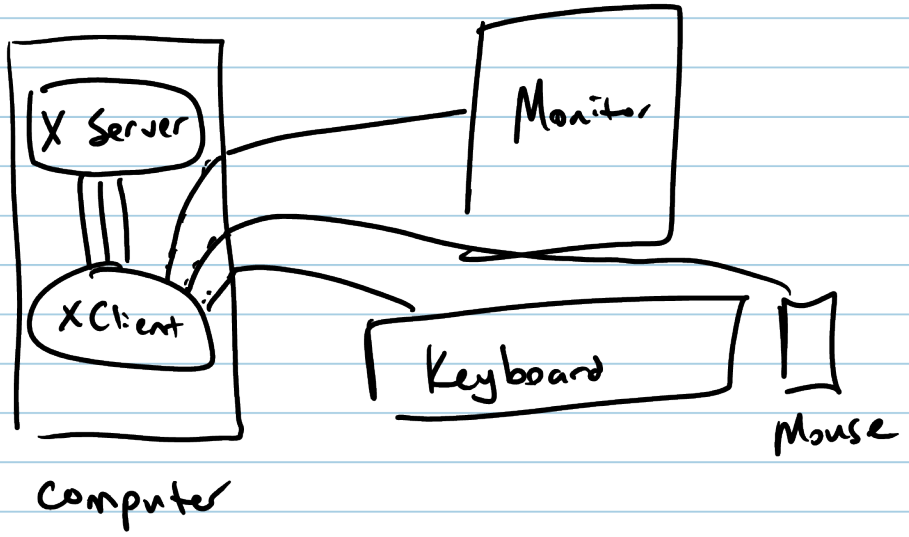
GUIs & Security

Thursday, August 01, 2013
9:25 AM

Unix / Linux use X Windows
client / server design over TCP/IP

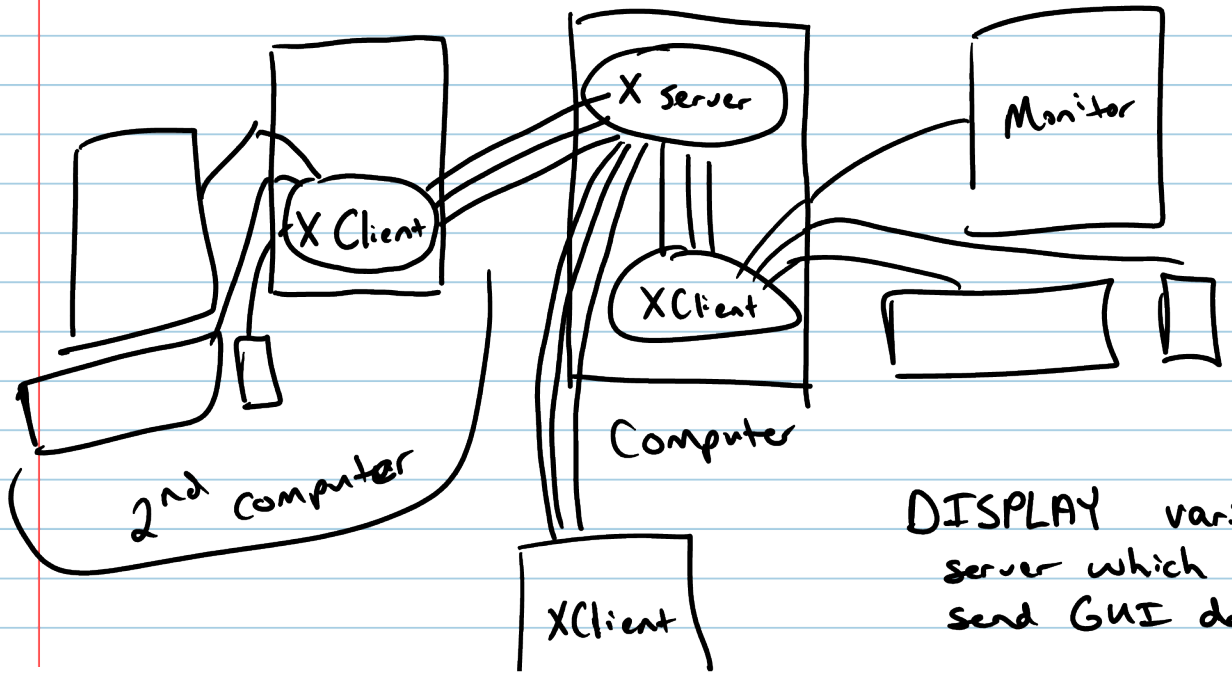
Normal Config
Single user mode or Networked mode

Single User Mode

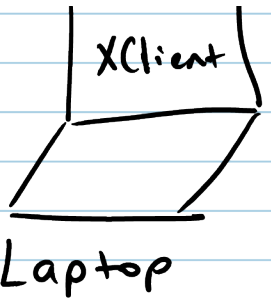


network access is blocked

Networked Mode



DISPLAY variable tells server which client to send GUI data to / from



send GUI data to/from

:0.0 is the native monitor

host:num.sub are remote monitors

localhost:10.0 for example

Using ssh to do X11 forwarding

ssh -Y username@host

-Y enables full X11 forwarding
-X does old X11 forwarding (old systems)

echo $DISPLAY

DISPLAY = :0.0

DISPLAY = localhost:10.0

Processes & Linux

PID every process has a numeric identifier
Command command-line used to start process

kill needs PID
killall needs command

TTY terminal associated with process
all logins are given a unique terminal

w
who] shows all current logins

Protecting Info on the Internet

Encryption
Bad encryption → no encryption

WEP, WPA1, anything based on RC4 can be broken if the initial exchange & sufficient packets are seen

AES, Serpent, Twofish

Bad keys / key exchange → no encryption

Good key exchange is Diffie-Hellman

Anyone intercepting traffic cannot recover key

New key generated for every session

Used by:

SSH

SSL with Perfect Forward Security

Regular SSL uses a key exchange that could be broken if someone retrieves the server's private key

Cryptanalysis is a whole area focused on analyzing encryption & finding weaknesses