Tux-on-a-Box
Straight through a web browser!

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Today's Menu

- An Embedded Linux shot!
- Collaborative and OTG development
- Shell through a browser - Ajaxterm
- How the hell did they do it?
- A board for the masses
- An idea applied for education
- Questions/Suggestions
Anatomy

Handheld Device

Embedded Linux

Root FS

Applications

Libraries

Kernel

Device Drivers

Bootloader
Development Setup

- **HANDHELD DEVICE**
- **SBC**
- **RS232**
- **ETHERNET**
- **HOST TERMINAL**
- **TARGET TERMINAL**
- **TERMINAL EMULATOR**
- **SERIAL PORT COMMUNICATION PROGRAM**

Diagram showing connections between these components.
Collaboration

HOST TERMINAL

TARGET TERMINAL

BOOTLOADER

ROOT FS

KERNEL

TFTP/NFS SERVER

LAN/WAN

SSH

WORKSTATION #1

RS232
I'm “On The Go”

- Carry hardware and related accessories. Duh!
- Make sure the stuff remains unhurt
- Set-up a development environment or have a VM ready
- Use technique we discussed a while ago
- I just wish it was as easy as checking my mail :(
Shell Through a Browser
What's that?

- Possible but not so popular
- Mainly used for local admin tasks
- Solutions available:
  - PHPTerm
  - Anyterm
  - Ajaxterm
  - Shell In A Box
- Ajaxterm is quite easy to setup.
Dissecting Ajaxterm

BROWSER

- Key Activity
- Terminal
- Sarissa Library
- XmlHttp Request

CLIENT

SERVER

- Request Handling
- mod_ssl
- Polling/HTML Conversion/Difference Check
- Session State
  - Key fifo
  - Current Screen
  - Previous Screen
  - Dirty Flag

SERVER

- PTY
- bash
Board for the Masses

- Connect board to host through RS232
- Setup apache/httpd/boa on host
- Setup Ajaxterm on host
  - If outside local network, more config needed
- Setup serial communication tool
  - minicom/picocom
- Get on the client and fire-up the shell in a browser.
An Idea for Education

- Virtual Labs Project (MHRD)
- Experiment to be performed remotely on the board
- It's required that:
  - Just a web browser to be the maximum requirement on client
  - To be compatible with non UNIX based OS also :(
  - Web infrastructure for project: Open Source!
Questions/Suggestions?

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