IoT: Client Devices

Testing the QEMU Image

QEMU VM is Up

Our VM is running

- Excellent!
- Slightly different - running in terminal
- Go ahead and log in
  - root user has no password (we can set this in Buildroot)

We need to add a user

- adduser to the rescue
- $ adduser -h /<username> -s /bin/sh <username>

Test SSH

Now test SSH

- from your Linux host, attempt to SSH to QEMU image
  - $ ssh -p 2222 <username>@localhost
  - Remember the line -redir tcp:2222:22

Failed!

- It keeps asking to change my password, then won't let me in!

Configuration Details

…/ETC/SHADOW PROBLEMS

- the /etc/shadow file is not updated, and we're not running password management services
- we'll need to update manually
- as root edit /etc/shadow so the last line looks like this:

<username>:$1$7UvOizz/$SOcRUgT9PVcpyaQ9O3E9I0:10933:0:99999:7:::

This was 0, now 10933

Test Cross-Compilation

Now test cross-compilation

- Simple test program in C:

```
#include <stdio.h>
int main(void) {
  printf("running.\n");
  return 0;
}
```

- $ arm-linux-gnueabi-gcc -static -o test main.c
- $ scp -P 2222 ./test cclamb@localhost:~/
- …run test program on ARM image

Solid!

Congrats!

- Embedded linux system on emulated ARM processor
- Cross-compiled a C program
- Moved program to ARM host
- Ran program

We can FINALLY get started with code