IoT: Client Devices

Project (I)

Remainder of Course

Large project

- You'll develop parts over the course of the module

One piece at a time

- This way you can test and integrate

Development, Technology

- Rest of the course will have practical talks on developing your client and theoretical talks on system structure

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IoT client on ARM

- Not actual hardware
- QEMU Client

Written in C or C++ (this is up to you)

- Examples will be in C
- I will discuss program design in C too
- I won't go into C++, nor how to install C++ runtimes

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Bi-directional communication

- We'll use HTTPS
- You can run on local system

Simple command, reporting protocols

- You'll design this too
- Run over HTTPS

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Evaluate each other

- I'll supply rubrics for evaluation
- You'll evaluate your peers

Four categories

- Design, development, function, security

Remember you'll be evaluated on the system

- You will deliver the filesystem, kernel, and run script
- Bad passwords? unprotected accounts? don't do it!
- The system is the OS, filesystem, libraries, and your code

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Design

- You'll be evaluated on overall design
- Design of code, not design on paper
- Ease of use and evaluation are important too

Development

- How has the client been developed is important
- Did you use tests? did you use modular programming? is the application inappropriately monolithic?
- Is the code commented and clear? No obfuscated C please!

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Security

- You system should be secure
- Strong passwords, good programming practice, understood attack surface
- Kernel should be recent, libraries shouldn’t have known, unprotected flaws

Function

- It should work!