A GUIDE TO SECURE HOME AUTOMATION

AGENDA

- What is Home Automation?
- Architectures
- Hub types
- Protocols
- Use Cases
- Security

ABOUT ME

- Chris Marshall
  - InfoSec Analyst
  - Home Automation hobbyist

WHAT IS HOME AUTOMATION?

- Collection/network of “smart devices”
  - Sense or detect movement, temperature, light, or sound
  - Process information
  - Respond to an input, situation, or command

ARCHITECTURES

- Smart devices that communicate with a local hub
- Smart devices that communicate with a cloud service
- Individual smart devices. (Not networked.)

PRODUCT vs PROTOCOL CENTRIC

- Some solutions are product specific. (Supports exclusive products.)
- Some solutions are more protocol specific. (Supports any product that works with x,y,z protocols.)

USE CASES

- Lights and appliances on/off based on criteria. (time of day, your location etc...)
- Play media based on a trigger.
- Security system
- HVAC control based on conditions
- Garden irrigation

PROTOCOLS

- WIFI
- Zigbee
- Z-wave
- Bluetooth
- X10

SECURITY CONCERNS

- IOT (The “s” is for security)
- Nothing is perfect
- Weak points
  - Protocol
  - Login credentials
  - Easy exploitation

DETERMINING RISK

- Likelihood
- Possible impact
- Required effort

ADDITIONAL CONSIDERATIONS

- Determine your use cases
- Protocols to choose
- Manufacturer lock
- Acquisitions & product sunsets. (Lowes Iris, Revolv, Sonos, Works with Nest, etc...)

MY SMART HOME

- Openhab hub (https://www.openhab.org/)
- Z-wave for most use-cases
  - Lighting
  - Garage
  - Garden irrigation

LINKS

- Smartthings: https://www.smartthings.com/
- Openhab: https://www.openhab.org/
- Wink Hub: https://www.wink.com/products/wink-hub/
- Alexa: https://www.amazon.com/Amazon-Echo-And-Alexa-Devices/b?ie=UTF8&node=9818047011
- Google home: https://store.google.com/us/product/google_home