Securing IoT Networks

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Project Description

- Make IoT more secure
- Provide an architecture for deployment

Moving Target Defense

- What is Moving Target Defense?
- How can it help us?

State of the Art

Key Design Principles:

- What ...to move
- When ...to move
- How ...to move

State of the Art

Already used MTD security mechanisms:

- ASLR
- ISR
- MUTE
- MSSD

IoT Security I

Challenges in securing IoT Networks:

- Low power consumption end devices
- Limited computing power
- Diversity of Devices

IoT Security II

MTD benefits in an IoT Network

- Shifting the security challenge to a dedicated device
- Implementing honeypots and honeynetworks
- Shuffling the physical medium
- Dynamically changing encryption algorithms and/or keys

Project Objectives I

Project status:

- Researched SoA solutions
- Study the possibility of a standardized framework

Project Objectives II

Next semester planning:

- Focus on Software Defined Networks (SDN) and external servers
- Experiment on a physical network with proposed frameworks