Defense Against the Dark Arts meets Embedded Systems

Bochum, Germany, January 19, 2018

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Open Challenges in Embedded Systems

Hacked Cameras, DVRs Powered
Today’s Massive Internet Outage
krebsonsecurity.com - Oct 2016

Millions of IoT devices enlisted into DDoS bots with Bashlite malware
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70 Prozent der Unternehmen sind von Produkt- oder Markenpiraterie betroffen. Der
geschätzte Schaden für den deutschen Maschinen- und Anlagenbau beträgt 7,3
Milliarden Euro jährlich.
vdma.org - Apr 2016

Wie haben sich die Plagiaturen das notwendige Wissen beschafft?
Reverse Engineering
69%
72%
vdma.org - Apr 2016
Solution - Obfuscation

Code Obfuscation

Transforms code that is difficult to understand for human reverse engineers
Solution - Obfuscation

Code Obfuscation

Transforms code that is difficult to understand for human reverse engineers

- Hamper reverse engineering
- Safeguard intellectual property
- Watermarking
- Exploit Mitigation
Your Task

- Improvements of obfuscation tools to ARM embedded firmware
- Improvements of reverse engineering tools
Your Task

- Improvements of obfuscation tools to arm embedded firmware
- Improvements of reverse engineering tools
- Technical details for obfuscation and reverse engineering at start of the project 😊
Requirements and What You Learn

**Requirements:**
- 2 - 3 students (Bachelor or Master)
- Background in C++
- Basic understanding of embedded systems and assembler
- Interest in reverse engineering, program analysis, and obfuscation

**What You Learn:**
- Embedded systems
- Reverse engineering and obfuscation techniques
- Compiler internals
- Software validation
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Contact

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