IoT Security Technician Skill Zone – CSSIA.ORG

1. Device Management

1.3 Hardware/Device Management

1. Describe the type of devices and sensors used in IoT and industrial control systems.
2. Demonstrate basic understanding of electric and electronic devices (circuit boards, processors, chips, etc.).
3. Configure IoT and industrial controls devices.
4. Describe the possible points of failure in hardware IoT devices and industrial controls.
5. Troubleshoot basic hardware issues in IoT devices and industrial controls.

Hardware/Device Management

The Internet of Things consist of environments of smart devices. These devices include sensors, actuators, cameras, micro controllers and micro or credit card size computers. The proper management of these devices is a critical responsibility for IoT security technicians. Effective device management starts with testing and evaluation of hardware components. Device management includes establishing standardization, proper testing and screening of the security related features and vulnerabilities.

Device management also includes evaluation of devices in an integrated environment. Devices must be tested to ensure they meet critical performance requirements, have acceptable fail state conditions and do not pose single points of failure risk.

Existing Course Cross Reference

Cisco Networking Academy Courses

IT Essentials
Introduction to IoT
NDG Linux Essentials
CCNA Security

Cisco Partner Courses

IoT and ICS Security Controls (CSSIA.ORG)
ICS and SCADA Security (CSSIA.ORG)

Non-Cisco Partner Courses

Internet of Things - Innovation Labs -
Wyliodrin IoT Summer School

Curriculum Resources

Videos

YouTube.com – ITIL Fundamentals

YouTube.com – ITIL explained in 3 minutes

YouTube.com – Basic Concepts (MotionWorks
IEC Hardware Configuration)

YouTube.com – HSM 101: What is a Hardware
Security Module?

Web Links

Network of Things – NIST Special Publications
80-183

Internet of Things – Wireless Sensor networks
International Electronics Commission

Internet of Things Reference Architecture (IoT
RA) – ISO/IEC CD 30141

Textbooks

Raspberry Pi Networking Cookbook
Chapter 1, 2, 3, 4, 5, 6, 7

Getting Started with Arduino Chapters 1-60

Assessment Resources

Labs

IoT Innovation Labs

Arduino/Genino Projects

Packet Tracer 2.5.2.6 - Exploring File and Data
Encryption
Packet Tracer 2.5.2.7 - Using File and Data
Integrity Checks
Lab 3.3.1.9 - Detecting Threats and
Vulnerabilities
Packet Tracer 3.3.2.7 - WEP WPA2 PSK WPA2
RADIUS
Packet Tracer 4.3.3.3 - Configuring VPN
Transport Mode
Lab 5.1.2.4 - Password Cracking

Quizlet.com

ITIL Basics

Hardware and IOS Licensing

IoT Devices