



IoT Security Technician Skill Zone – CSSIA.ORG

2. Information Communication Technologies

2.5 Data Management

1. Explain the purpose of data management systems and their application in IoT and industrial control systems (SCADA).
2. Describe data mining and data warehousing principles.
3. Describe the concepts of data validation and access control.
4. Describe types of tools and methods used to assure database integrity.
5. Explain how to validate collection and database data entries in IoT environments.
6. Describe the major types of database integrity requirements.

7. Describe the data acquisition process in IoT and industrial control systems.
8. Install, configure and maintain database management systems software.
9. Explain the purpose of data administration and data standardization policies and standards.

Data Management

Data Management can be defined as the concepts and practices needed to properly manage an organization's information. These practices include the data bases, data architecture, data handling policies and practices and procedures needed to properly manage the full data life cycle needs of an enterprise.

IoT security technicians must have a working knowledge of the supervisory control and data acquisition systems at the heart of industrial control and IoT systems. These systems can be found in consumer, manufacturing, production, power generation, water treatment, energy and transportation systems. Technicians are responsible for the installation, implementation, configuration, operation and troubleshooting of these systems.



Existing Course Cross Reference

Cisco Networking Academy Courses

[Introduction to Cybersecurity](#)

[CPA: Programming Essentials in C++](#)

[Cisco Security Essentials](#)

[ICS and SCADA Security \(CSSIA.ORG\)](#)

Cisco Partner Courses

[Security+ \(CSSIA.ORG\)](#)

[Python Programming for Security Technicians \(CSSIA.ORG\)](#)

[IoT and ICS Security Controls \(CSSIA.ORG\)](#)

[ICS and SCADA Security \(CSSIA.ORG\)](#)

[CISSP \(CSSIA.ORG\)](#)

Curriculum Resources

Videos

[YouTube.com – Database Fundamentals \(5 videos\)](#)

[YouTube.com – SQL Crash Course - Beginner to Intermediate](#)

[YouTube.com - MySQL Tutorial](#)

Textbooks

[Internet of Things, Chapter 8, 9](#)

[Internet of Things with Python IoT](#)

Chapter 7, 8, 9, 10

[Oracles Database 12c OU Courses](#)

Oracle Learning Library

[Oracle Database 12c Security Cookbook](#) By: Pavlovic, Veselica

Publisher:Packt June 2016, ISBN:978-1-78217-213-0, ISBN 10:1-78217-213-0

[Database Security, 1st Edition](#) by Basta, Zgola
Cengage 2012, ISBN-10: 1435453905, ISBN-13: 9781435453906

[NIST Special Publication 800-8](#)

Security Issues in the Database Language SQL
W. Timothy Polk and Lawrence E. Bassham

Assessment Resources

Labs

CSSIA Scripting for Security Tech Lab 02 - Variables, Conditionals, Operators, and Data Types in Windows PowerShell

CSSIA Scripting for Security Tech Lab 03 -I/O and Regular Expressions in Windows PowerShell

CSSIA Scripting for Security Tech Lab 04 - Scripting for Security in Windows PowerShell

Security Operations – Chapter Exam

Quizlet.com

[SQL Basics](#)

[Introduction to Databases flashcards](#)

[Designing Database Security](#)