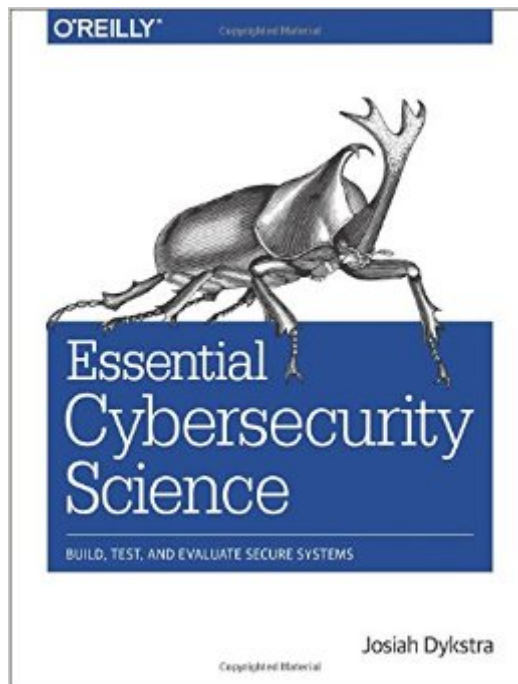# Essential Cybersecurity Science: Build, Test, And Evaluate Secure Systems

## Synopsis

If youâ ™re involved in cybersecurity as a software developer, forensic investigator, or network administrator, this practical guide shows you how to apply the scientific method when assessing techniques for protecting your information systems. Youâ ™ll learn how to conduct scientific experiments on everyday tools and procedures, whether youâ ™re evaluating corporate security systems, testing your own security product, or looking for bugs in a mobile game.Once author Josiah Dykstra gets you up to speed on the scientific method, he helps you focus on standalone, domain-specific topics, such as cryptography, malware analysis, and system security engineering. The latter chapters include practical case studies that demonstrate how to use available tools to conduct domain-specific scientific experiments.Learn the steps necessary to conduct scientific experiments in cybersecurityExplore fuzzing to test how your software handles various inputsMeasure the performance of the Snort intrusion detection systemLocate malicious â œneedles in a haystackâ • in your network and IT environmentEvaluate cryptography design and application in IoT productsConduct an experiment to identify relationships between similar malware binariesUnderstand system-level security requirements for enterprise networks and web services

## Book Information

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## Customer Reviews

Anyone who has spent time in the information security industry knows what while there is good data around; there is a lot to be desired in terms of empirical and measurable information security data. Thereâ ™s too much marketing hype, combined with firms who often donâ ™t know how to make

sense out of their own data.In Essential Cybersecurity Science: Build, Test, and Evaluate Secure Systems, author Dr. Josiah Dykstra has written an excellent book that attempts to rescue information security data from FUD, and bring it to the realm of good, scientific data.Wikipedia defines the scientific method as is a body of techniques for investigating phenomena, acquiring new knowledge, or correcting and integrating previous knowledge. To be termed scientific, a method of inquiry is commonly based on empirical or measurable evidence subject to specific principles of reasoning. Dykstra provides a reference in which the information security professional can start their journey on using the scientific method on their data.This title joins similarly recent valuable books on the topic such as Measuring and Managing Information Risk: A FAIR Approach by Dr. Jack Freund and Jack Jones, and Data-Driven Security: Analysis, Visualization and Dashboards by Jay Jacobs and Bob Rudis, which focus on empirical data, not the made up type.The book has value for nearly everyone within information security; from the CISO, to system administrators, software developers, auditors, forensic investigator and everyone in between. Since data is so pervasive, misusing it has the potential to detail meaningful security discussions.The book shows the reader how to investigate information security problems and conduct information security experiments using a formal scientific method.

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