

Practical Cybersecurity for Space

Exploitation, Analysis, and Mitigation

While space system cybersecurity literature is expanding to address needs of an expanding space-cyber convergence, this book is a first-of-its-kind technical resource acting as a practical introduction to readers with a background in space operations as well as those in both offensive and defensive cybersecurity, introducing the unique constraints, challenges, and methodologies performing space system cybersecurity. This book will prime the reader with the knowledge needed to understand space operations and foundational knowledge of what impacts cyber threats can have on space systems and how cybersecurity must rise to meet them.

The book will then introduce readers to resources and processes necessary to establish best-practices in applying cybersecurity services and solutions to space system attack surfaces. The Space Attack Research & Tactic Analysis framework will be leveraged as a foundation for developing requisite knowledge on the art of the possible regarding space system cyber threat actors and mitigation.

Case studies and methodologies will be presented to build on the introductory space-cyber convergence information and frameworks, enabling readers to perform their own cybersecurity activities on space systems. Readers will then follow-along and/or perform the applied exercises and labs contained within the book to develop practical space system cybersecurity skills.

What You Will Learn:

- How space systems and their components operate as cyber domain attack surface.
- Processes and resources necessary to perform safe, secure, and effective cybersecurity practices on space systems and understand the challenges to implementing space system cybersecurity solutions and mitigations.
- Hands on experience covering various cybersecurity services that one might perform on space systems such as adversarial assessment, forensics, and defense.

Who This Book is for:

This book is written for anyone curious about learning practical and applied methods and tradecraft for conducting cybersecurity activities such as penetration testing or red teaming, threat hunting, defensive and protective measures, or forensics and analysis on space systems such as satellites.

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