CISSP®

Certified Information Systems Security Professional

Study Guide

Fifth Edition

James Michael Stewart

Ed Tittel

Mike Chapple

WILEY

Wiley Publishing, Inc.

Acknowledgments

I hope our efforts to improve this study guide will lend themselves handily to your understanding and comprehension of the wide berth of CISSP concepts. I'd like to express my thanks to Sybex for continuing to support this project. Thanks to Ed Tittel and Mike Chapple for continuing to contribute to this project. Also thanks to all my CISSP course students who have provided their insight and input to improve my training courseware and ultimately this tome. Extra thanks to the 5th Edition Technical Editor, Darril Gibson, who performed amazing feats in guiding us to improve this book.

To my wonderful wife, Cathy, our life together is just getting started. To my son, Xzavier Slayde, and daughter, Remington Annaliese, may you grow to be more than we could imagine. To my parents, Dave and Sue, thanks for your love and consistent support. To Mark, as best friends go, it could've been worse. And finally, as always, to Elvis—all hail the King!

—James Michael Stewart

Thanks to both Michael Stewart and Mike Chapple for continuing to keep me involved in this project. Michael continues to teach CISSP courses with amazing frequency, which provides us with a lifeline to the hard-working professionals in the trenches for whom this credential means so much. Congrats again to Michael on another addition to his family; my son, Gregory, is now in first grade and the time just keeps flying by. May the months and years slip by as pleasantly and painlessly for you as they have for us. Next, thanks to the folks at Sybex, especially Jeff Kellum for rounding us all up and keeping us headed in the same direction and for his excellent view of where we need to take this book. Finally, I'd like to thank my loving and lovely wife, Dina, for all the great things she does to make family life so comfortable, clean, interesting and fun.

—Ed Tittel

Special thanks go to the information security team at the University of Notre Dame. Gary Dobbins, Bob Winding, David Seidl, and Robert Riley provided hours of interesting conversation and debate on security issues that inspired and informed much of the material in this book.

I would like to thank the team at Wiley who provided invaluable assistance throughout the book development process. I also owe a debt of gratitude to my literary agent, Carole Jelen of Waterside Productions. My coauthors, Ed Tittel and James Michael Stewart, have worked with me ever since we published the first edition of this book together eight years ago. I'd also like to thank the many people who participated in the production of this book but whom I never had the chance to meet: the graphics team, the production staff, and all of those involved in bringing this book to press.

—Mike Chapple

About the Authors

James Michael Stewart,CISSP, has been writing and training for more than 16 years, with a current focus on security. He has been teaching CISSP training courses since 2002, not to mention other courses on Windows security and ethical hacking/penetration testing. He is the author of several books and courseware sets on security certification, Microsoft topics, and network administration. More information about Michael can be found at his website: `www.impactonline.com`.

Ed Tittel is a full-time freelance writer, trainer, and consultant specializing in matters related to information security, markup languages, and networking technologies. He is a regular contributor to numerous TechTarget websites (and keeps updating his security certification survey for SearchSecurity.com), teaches online security and technology courses for HP, and enjoys his occasional gigs as an expert witness on Web technologies from the mid-1990s when he was lucky enough to write a raft of books in that arena. Ed's professional bio and other information are available at `www.edtittel.com`.

Mike Chapple,CISSP, PhD, is an IT professional with the University of Notre Dame. In the past, he was chief information officer of Brand Institute and an information security researcher with the National Security Agency and the U.S. Air Force. His primary areas of expertise include network intrusion detection and access controls. Mike is a frequent contributor to TechTarget's SearchSecurity site and the author of several information security titles including *The GSEC Prep Guide* from Wiley and *Information Security Illuminated* from Jones and Bartlett Publishers.

Contents at a Glance

Contents