2ND EDITION

HACKING

THE ART OF EXPLOITATION

JON ERICKSON

NO STARCH PRESS

San Francisco

Printed on recycled paper in the United States of America

11 10 09 08 07 1 2 3 4 5 6 7 8 9

ISBN-10: 1-59327-144-1
ISBN-13: 978-1-59327-144-2

Publisher: William Pollock
Production Editors: Christina Samuell and Megan Dunchak
Cover Design: Octopod Studios
Developmental Editor: Tyler Ortman
Technical Reviewer: Aaron Adams
Copyeditors: Dmitry Kirsanov and Megan Dunchak
Compositors: Christina Samuell and Kathleen Mish
Proofreader: Jim Brook
Indexer: Nancy Guenther

For information on book distributors or translations, please contact No Starch Press, Inc. directly:

No Starch Press, Inc.
555 De Haro Street, Suite 250, San Francisco, CA 94107
phone: 415.863.9900; fax: 415.863.9950; info@nostarch.com; www.nostarch.com

Library of Congress Cataloging-in-Publication Data

Erickson, Jon, 1977-
Hacking : the art of exploitation / Jon Erickson. -- 2nd ed.
p. cm.
ISBN-13: 978-1-59327-144-2
ISBN-10: 1-59327-144-1
1. Computer security. 2. Computer hackers. 3. Computer networks--Security measures. I. Title.
QA76.9.A25E75 2008
005.8--dc22
2007042910

BRIEF CONTENTS

This page intentionally left blank

CONTENTS IN DETAIL

0x300 EXPLOITATION 115

0x400 NETWORKING 195