Hardening Windows

Second Edition

Jonathan Hassell

Hardening Windows, Second Edition

Copyright © 2006 by Jonathan Hassell

All rights reserved. No part of this work may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage or retrieval system, without the prior written permission of the copyright owner and the publisher.

ISBN (pbk): 1-59059-539-4

Printed and bound in the United States of America 9 8 7 6 5 4 3 2 1

Trademarked names may appear in this book. Rather than use a trademark symbol with every occurrence of a trademarked name, we use the names only in an editorial fashion and to the benefit of the trademark owner, with no intention of infringement of the trademark.

Lead Editor: Jim Sumser

Technical Reviewer: Oris Orlando

Editorial Board: Steve Anglin, Dan Appleman, Ewan Buckingham, Gary Cornell, Tony Davis, Jason Gilmore, Jonathan Hassell, Chris Mills, Dominic Shakeshaft, Jim Sumser

Associate Publisher: Grace Wong Project Manager: Kylie Johnston Copy Edit Manager: Nicole LeClerc

Copy Editor: Liz Welch

Assistant Production Director: Kari Brooks-Copony

Production Editor: Katie Stence Compositor: Pat Christenson Proofreader: Elizabeth Berry Indexer: Toma Mulligan

Interior Designer: Van Winkle Design Group

Cover Designer: Kurt Krames

Manufacturing Director: Tom Debolski

Distributed to the book trade worldwide by Springer-Verlag New York, Inc., 233 Spring Street, 6th Floor, New York, NY 10013. Phone 1-800-SPRINGER, fax 201-348-4505, e-mail orders-ny@springer-sbm.com, or visit http://www.springeronline.com.

For information on translations, please contact Apress directly at 2560 Ninth Street, Suite 219, Berkeley, CA 94710. Phone 510-549-5930, fax 510-549-5939, e-mail info@apress.com, or visit http://www.apress.com.

The information in this book is distributed on an "as is" basis, without warranty. Although every precaution has been taken in the preparation of this work, neither the author(s) nor Apress shall have any liability to any person or entity with respect to any loss or damage caused or alleged to be caused directly or indirectly by the information contained in this work.

The source code for this book is available to readers at http://www.apress.com in the Source Code section.

Contents

)	
About the Techni	cal Reviewerxi	ii
Acknowledgmen	tsx	٧
Introduction	xv	ii
CHAPTER 1	Some Words About Hardening	1
	What Is Security?	2
	The Security Dilemma	3
	Enemies of Security	4
	What Windows Is Lacking	4
	Some General Hardening Suggestions	5
	Software Considerations	6
	Hardware and Network Considerations	7
	Checkpoints	9
CHAPTER 2	Windows NT Security	1
	Windows NT System Policy Editor	1
	Customizing and Applying Policies to Multiple Computers	2
	Resolving Conflicts Between Multiple Policies	
	Recommended User Policy Settings	4
	Extending Policies	9
	Passwords	9
	Password Policies	0
	Password Cracking	1
	Protecting User Accounts	2
	Registry Procedures	2
	Protecting the File System	3
	Locking Down Local Directories	3
	Search Paths 24	4
	Guarding Against Internet Threats	5
	Windows NT Port Filtering	5
	Protecting Against Viruses	6

	Assigning Rights to Users	. 27
	Granting and Revoking User Rights	. 27
	Remote Access Server Configuration	
	Selecting Appropriate Communications Protocols and Methods .	
	Security Implications of Domains	
	Checkpoints	
CHAPTER 3	Windows 2000 Security	. 35
	System Updates	. 35
	The "Slipstreaming" Process	. 36
	Critical Updates and Security Hotfixes	. 37
	Managing Critical Updates Across Multiple Computers	. 37
	Security Templates	
	Creating a Custom Security Template	
	Recommended Security Policy Settings	
	User Accounts	
	Local Options	
	Other Security Considerations	
	Windows Component Selection and Installation	
	Tightening Running Services	
	Checkpoints	
CHAPTER 4	Windows XP Security	. 49
	•	
	Implementing the Built-In Windows XP Firewall	
	Profiles	
	Configuring Through Group Policy	. 51
	The Internet Connection Firewall in XP Gold and	
	Service Pack 1	. 51
	Disabling Unnecessary Services	. 53
	Providing a Secure Configuration for Services	. 62
	Microsoft Baseline Security Analyzer Patch Check and	
	Security Tests	
	Installing Microsoft Baseline Security Analyzer	. 63
	Penetration Tests	
	File System Security	. 64
	Disable Automated Logins	

	Hardening Default Accounts	
	Use Runas for Administrative Work 6	6
	Disable Infrared Transfers	7
	Using Forensic Analysis Techniques 6	7
	Checkpoints6	9
CHAPTER 5	Windows Server 2003 Security	1
	Enhancements to Security in Service Pack 1 7	1
	The Security Configuration Wizard	2
	Installing the SCW7	3
	Creating a Security Policy with the SCW	3
	The Rollback Feature 8	0
	SCW Best Practices 8	
	Using SCW from the Command Line 8	1
	Checkpoints	
CHAPTER 6	Deploying Enterprise Security Policies 8	5
	System Policies, Group Policies, and Interaction 8	5
	Mixing Policies and Operating Systems 8	7
	Security and the Group Policy Framework8	9
	Organized Layout of Policies	0
	Policy Application Precedence 9	2
	Creating Security Configuration Files9	2
	Default Domain Policy	4
	Default Domain Controller Security Policies	4
	Troubleshooting Group Policy9	5
	Checkpoints9	6
CHAPTER 7	Patch Management 9	9
	About Windows Server Update Services	
	Management Server 10	
	Using Windows Server Update Services: On the Server Side 10	
	Using WSUS: On the Client Side	4
	Chackpoints 11	_

CHAPTER 8	Network Access Quarantine Control	. 119
	How Network Access Quarantine Works	
	Quarantine Control	
	Deploying NAQC	
	Creating Quarantined Resources	
	Writing the Baseline Script	
	Installing the Listening Components	
	Creating a Quarantined Connection Profile	
	Distributing the Profile to Remote Users	
	Configuring the Quarantine Policy	
	Checkpoints	. 135
CHAPTER 9	Internet Information Services Security	. 137
	Completely Disable IIS	. 138
	Keeping IIS Updated	. 138
	Using Windows Update	. 139
	Using Network-Based Hotfix Installation	. 139
	Securing Files, Folders, and Scripts	. 140
	The Microsoft Indexing Service	. 142
	TCP/IP Port Evaluation	. 144
	Administrative and Default Pages	. 145
	The Ins and Outs of Internet Services Application Programming	
	Interface	. 146
	Looking at Apache as an Alternative	. 146
	Checkpoints	. 147
CHAPTER 10	Exchange Server 2003 Security	. 149
	Installation Security	149
	Security Policy Modifications	
	For Exchange Server Machines	
	For Domain Controller Machines	
	Service Security	
	Patch Management	
	Protecting Against Address Spoofing	
	Protecting Against Denial-of-Service Attacks	

	Restricting SMTP Access. Controlling Access Checkpoints.	160
CHAPTER 11	Security Auditing and Event Logs	163
	For Windows 2000, XP, and Server 2003 Recommended Items to Audit Event Logs The Event Viewer. For Windows NT 4.0. Recommended Items to Audit The Event Log Filtering Events What Might Be Missing	165 165 166 167 168 169 169 170
- A DDEALDLY	Checkpoints	
APPENDIX	Quick-Reference Checklists	173
	Chapter 1: Some Words About Hardening Chapter 2: Windows NT Security Chapter 3: Windows 2000 Security Chapter 4: Windows XP Security Chapter 5: Windows Server 2003 Security Chapter 6: Deploying Enterprise Security Policies Chapter 7: Patch Management. Chapter 8: Network Access Quarantine Control Chapter 9: Internet Information Services Security Chapter 10: Exchange Server 2003 Security. Chapter 11: Security Auditing and Event Logs	174 176 177 178 179 180 180 181 181
INDEX		185