



Building Better PowerShell Code

Applying Proven Practices One Tip
at a Time

—
Adam Bertram

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Printed on acid-free paper

This book is dedicated to all of the tech professionals out there that have been intrigued by PowerShell and have taken the time to dig in, learn, and better themselves with knowledge.

Table of Contents

- About the Authorxi**
- About the Technical Reviewerxiii**
- Acknowledgmentsxv**
- Introductionxvii**

- Chapter 1: Do the Basics 1**
 - Plan Before You Code 1
 - Don't Reinvent the Wheel..... 2
 - Build Functions As Building Blocks 2
 - Build Reusable Tools 3
 - Don't Focus Purely on Performance..... 3
 - Build Pester Tests..... 4
 - Implement Error Handling..... 4
 - Build Manageable Code 5
 - Don't Skimp on Security 5
 - Log Script Activity 6
 - Parameterize Everything..... 6
 - Limit Script and Function Input..... 7
 - Maintain Coding Standards..... 7
 - Code in Context..... 8
 - Return Informational Output 8
 - Understand Your Code..... 9

TABLE OF CONTENTS

- Use Version Control9
- Write for Cross-Platform 10
- Write for the Next Person..... 10
- Use Visual Studio Code 11
- Chapter 2: Don't Reinvent the Wheel 13**
 - Use Community Modules 13
 - Leverage Others' Work..... 14
- Chapter 3: Use Visual Studio Code..... 17**
 - Install the PowerShell Extension..... 19
 - Integrate VS Code with Git 19
- Chapter 4: Plan Before You Code 21**
 - Write Comments Before Coding..... 21
 - Use Your Code As a Todo List 23
- Chapter 5: Create Building Blocks with Functions 25**
 - Write Functions with One, Single Goal 25
 - Build Functions with Pipeline Support 27
 - Save Commonly Used, Interactive Functions to Your User Profile..... 30
- Chapter 6: Parameterize Everything 33**
 - Don't Hardcode. Always Use Parameters 33
 - Use Parameter Sets When All Parameters Should Not Be Used at Once 36
 - Use a PSCredential Object Rather Than a Separate Username and Password 40
- Chapter 7: Log Script Activity 43**
 - Use a Logging Function..... 43
 - Clean Up Verbose Messages 46

Chapter 8: Build with Manageability in Mind	49
DRY: Don't Repeat Yourself.....	49
Don't Store Configuration Items in Code.....	51
Always Remove Dead Code.....	53
Chapter 9: Be Specific	55
Explicitly Type All Parameters	55
Always Use Parameter Validation When Possible	57
Always Define a Function's OutputType	59
Write Specific Regular Expressions	61
Chapter 10: Write for the Next Person	63
Give Your Variables Meaningful Names.....	63
String Substitution	65
Keep Aliases to the Console Only, Not in Scripts.....	66
Put Functions in Alphabetical Order in a Module	67
Explain Regular Expressions with Comments.....	68
Write Comment-Based Help.....	69
Weigh the Difference Between Performance and Readability	71
Chapter 11: Handle Errors Gracefully	73
Force Hard-Terminating Errors	73
Avoid Using \$?	76
Chapter 12: Don't Skimp on Security	79
Sign Scripts.....	79
Use Scriptblock Logging	81
Never Store Sensitive Information in Clear Text in Code.....	82
Don't Use Invoke-Expression	84
Use PowerShell Constrained Language Mode	86

TABLE OF CONTENTS

- Chapter 13: Stick to PowerShell87**
 - Use Native PowerShell Where Possible87
 - Use Approved, Standard Function Names.....89
- Chapter 14: Build Tools.....91**
 - Think Ahead and Build Abstraction “Layers”91
 - Wrap Command-Line Utilities in Functions.....97
 - Make Module Functions Return Common Object Types.....98
 - Ensure Module Functions Cover All the Verbs..... 100
- Chapter 15: Return Standardized, Informational Output101**
 - Use Progress Bars Wisely 101
 - Leave the Format Cmdlets to the Console 103
 - Use Write-Verbose 105
 - Use Write-Information 107
 - Ensure a Command Returns One Type of Object..... 108
 - Only Return Necessary Information to the Pipeline 110
- Chapter 16: Build Scripts for Speed 113**
 - Don’t Use Write-Host in Bulk..... 113
 - Don’t Use the Pipeline..... 114
 - Use the foreach Statement in PowerShell Core..... 115
 - Use Parallel Processing 117
 - Use the .NET StreamReader Class When Reading Large Text Files 119
- Chapter 17: Use Version Control 121**
 - Create Repositories Based on a Purpose 121
 - Commit Code Changes Based on Small Goals 122
 - Create a Branch Based on a Feature 122
 - Use a Distributed Version Control Service..... 123

Chapter 18: Build and Run Tests	125
Learn the Pester Basics	125
Leverage Infrastructure Tests	126
Automate Pester Tests	127
Use PSScriptAnalyzer.....	128
Chapter 19: Miscellaneous Tips	131
Write for Cross-Platform	131
Don't Query the Win32_Product CIM Class	133
Create a Shortcut to Run PowerShell As Administrator	134
Store "Formattable" Strings for Later Use	136
Use Out-GridView for GUI-Based Sorting and Filtering	137
Don't Make Automation Scripts Interactive.....	139
Chapter 20: Summary	141
Index	143

About the Author



Adam Bertram is a 22-year veteran of IT and experienced online business professional. He's an entrepreneur, Microsoft MVP, blogger at adamtheautomator.com, trainer, and writer for multiple technology companies. Catch up on Adam's articles at adamtheautomator.com, connect on [linkedin.com/in/AdamBertram/](https://www.linkedin.com/in/AdamBertram/), or follow him on twitter.com/adbertram.

About the Technical Reviewer



Vikas Sukhija has over 16 years of IT infrastructure experience. He is certified/ worked on various Microsoft and related technologies.

He has been awarded five times with Microsoft Most Valuable Professional title (thrice in Cloud and Datacenter management (PowerShell) and twice in the Office 365 category).

With his experience on messaging and collaboration technologies, he has assisted clients in migrating from one messaging platform to another.

He has utilized PowerShell for automation of various monotonous tasks as well as created self-service solutions for users.

He has been recognized many times by clients for automations that resulted in direct/indirect cost avoidance.

He is playing key roles with various large clients in the implementation and adoption of Office 365.

He is the owner and author of the <http://TechWizard.cloud>, <http://SysCloudPro.comblog> site.

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This book, along with all of my other career projects, could not have been possible without my wife, Miranda. She's the rock of our household and has allowed me to pursue projects regardless of how crazy they have been and has supported me for nearly 20 years now.

I also want to acknowledge all of those that have reached out and let me know how much my work means to you. It may mean a lot to you, but trust me, it means more to me to hear stories of how I've helped throughout your career.

Introduction

This book was created out of necessity. There are many books out there on how to learn PowerShell. You'll also find thousands of articles and blog posts on PowerShell best practices. But there wasn't an entire collection of PowerShell learning and best practices brought together before.

Each chapter in this book is broken down by chapter with multiple "tips" inside. Each chapter is a bucket for the kinds of tips you can expect to read about. Each tip is a best practice. Tips are short, actionable steps you can take today to help you improve your PowerShell scripts.

Tips do not go into major detail. There are other resources out there for that. The tips in this book are not meant to be exhaustive how-tos but to rather act as a checklist for actions to take. With each tip, you will typically find an example to solidify your understanding of the tip.

All tips within this book should be treated as universal across all PowerShell versions and platforms from Windows PowerShell 5.1 and later including all PowerShell Core versions. If you see an example using code, assume that it will work in your PowerShell version of choice. All examples were written to be as generic as possible.

All tips in this book were written by me, but many were contributed by the PowerShell community. If a tip did come from the community, the community member will be referenced.

Who Is This Book For?

This book is for anyone wanting to learn how to write better PowerShell code. The book's examples are primarily targeted to the IT professional, although anyone writing PowerShell for any purpose can get a lot from this book.

INTRODUCTION

This book is not meant to be “training,” per se. It’s not specifically targeted at any level of PowerShell expertise. You will find tips in this book ranging from the basic level all the way up to the advanced level. It’s up to you to skip those tips that don’t apply to you and soak up the ones that do.

Read over this book periodically throughout your career. You’ll find that each tip will vary based on specific contexts, use cases, and expertise levels. Once you find yourself at that level, you’ll be able to understand and get more out of those tips.

Book Resources

You will find all code referenced in this book in the (a) GitHub repository called [PowerShellTipsToWriteBy](#).

CHAPTER 1

Do the Basics

When it comes to code, there are *a lot* of opinions out there about “best practices.” What one developer thinks is a must, another will refute it. But these disagreements typically happen around specific, nuanced situations like tabs vs. spaces and if a curly brace should go on a new line.

There are larger categories of tips and best practices that are universal. Everyone can agree on broad tips like “write tests,” “make code reusable,” and “don’t store passwords in clear text.”

In this chapter, we’re going to hit those broad strokes. We’re going to cover the basic truths that *almost* everyone can agree on.

In the later chapters, we’ll dive deeper into each of these areas to provide more specific tips the community and I have come up with.

Without further ado, let’s get to the tips!

Plan Before You Code

Don’t automatically jump into coding. Instead, take a little bit of time to do a “back of the napkin” plan on what your code will do. Scaffold out code in comments briefly outlining what the code will do in those spots.

Write pseudocode. The practice of writing pseudocode will take your brain through the mental steps of what you need to do.

Further Learning

- [How to Write a Pseudocode?](#)