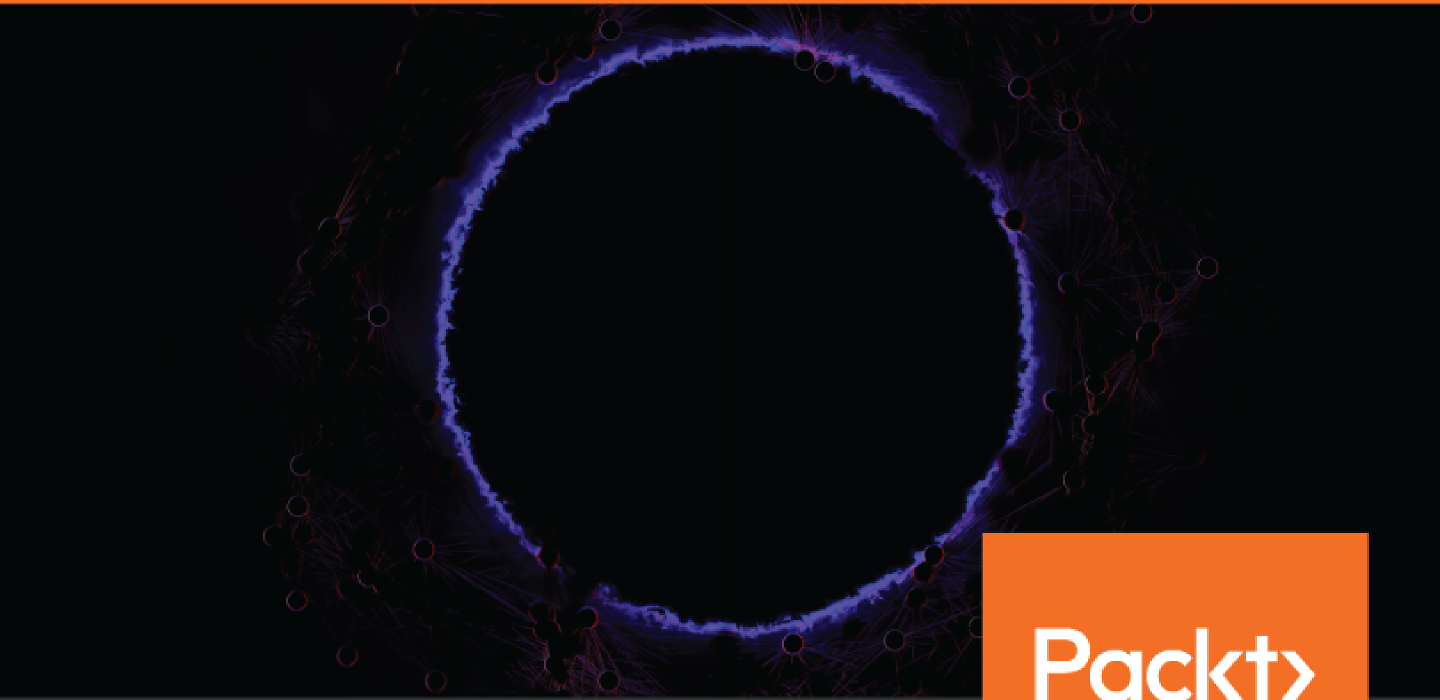
Hands-On Dark Web Analysis

Learn what goes on in the Dark Web, and how to work with it



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BIRMINGHAM - MUMBAI

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About the author

Sion Retzkin is an IT and security professional with over 20 years' experience in various technical and business roles. Sion was born in New York City, and has lived, studied, and worked internationally. Sion also delivers training to other professionals on the topics he's mastered, sharing his passion for security, ethical hacking, and information systems. With multiple certifications under his belt, Sion feels comfortable both in the boardroom, meeting customers, and working hands-on.

Today, he works at Pcysys, as director of customer success, which allows him to continue to do what he loves.

> *I would like to thank Meytal, my wife and love of my life, for putting up with long nights of writing and thinking (sometimes out loud) how I can make this book effective and interesting. To my sons, who loaned their father to this book, and for whom I wrote it, I love you. Also, thanks to my reviewer Rishalin Pillay for helping me, and to my editors in Packt, who offered ideas, improvements and encouragement, during my writing.*

About the reviewer

Rishalin Pillay, with in excess of 11 years of cybersecurity experience, has acquired a vast number of skills consulting for Fortune 500 companies while participating in projects performing tasks in network security design, implementation, and vulnerability analysis. He holds many certifications that demonstrate his knowledge and expertise in the cybersecurity field, such as CISSP, CCNP Security, CCSPA, MCSE, MCT, A+ and Network+

Rishalin currently works at a large-scale software company as a senior cybersecurity engineer.

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Preface

The World Wide Web is divided into three areas: the Surface Web, the Deep Web, and the Dark Web. The Deep Web and Dark Web are the two areas that are not accessible through general search engines or browsers. This provides several advantages, such as anonymity and privacy, but it also provides people performing illicit, illegal, or nefarious activities with the same benefits. IT and security professionals also gain benefits by accessing these areas.

This book will initially introduce you to the concept of the Deep Web and the Dark Web and will examine their significance. Then, we will deep dive into the recommended ways to access them, by using various operating systems and tools such as the Tor browser. We will also discuss what data can be obtained there, best practices for using the tools for the best effect, and who uses the Deep Web and the Dark Web.

By the end of this book, you will have hands-on experience of working with the Deep Web and the Dark Web.

Who this book is for

This book is aimed at IT and security professionals, security analysts, and any stakeholder interested in learning the concepts of the Deep Web and the Dark Web. Some technical acumen is necessary for the hands-on parts of this book, such as internet browsing, the concept and use of virtual machines, and installing operating systems. The book includes step-by-step instructions, with screenshots of all the hands-on chapters.

What this book covers

`Chapter 1`, *Understanding the Deep and Dark Web*, starts by looking at where it all started, and we will talk about the terminology—what is the Deep Web? What is the Dark Web? We will also talk about the difference between the Deep Web and the Dark Web, and examine the reason behind the names and what can be done there.

`Chapter 2`, *Working with the Deep Web*, discusses using the Deep Web and the Dark Web. For example, how to access the Deep Web and the Dark Web, and what really goes on there? How can there be so many sites out there? In this chapter, we'll discuss how the Deep Web and Dark Web are used.

`Chapter 3`, *The Future of the Dark Web*, covers the usage trends in the Dark Web. We will also talk about how it is used today and where will it go from here. We will learn about what to expect in the future from the Deep Web and the Dark Web. We will learn about the future benefits (or dangers) we can gain from the uncharted territory of the Dark Web.

`Chapter 4`, *Installing a Linux Virtual Machine (VM)*, explains how to install a Linux virtual machine.

`Chapter 5`, *Accessing the Dark Web with the Tor Browser*, will help you to learn about, install, and configure the Tor browser on a Linux distribution.

`Chapter 6`, *Installing Tails OS*, outlines another operating system that is useful for accessing the Deep Web—Tails OS. It is a live operating system that you can start on almost any computer from a USB stick or a DVD. In this chapter, we'll focus on installing Tails OS and accessing the Dark Web with it.

`Chapter 7`, *Installing Whonix*, covers another operating system that's worth mentioning: Whonix. Whonix is designed for advanced security and privacy. It's a heavily reconfigured Linux Debian that runs inside multiple virtual machines, providing a substantial layer of protection from malware and IP address leaks. Whonix is the only operating system designed to be run inside a VM and paired with Tor. In this chapter, we'll learn how to install and use Whonix to browse the Dark Web.

`Chapter 8`, *Installing Qubes OS*, covers a Xen-based operating system that is also considered extremely secure: Qubes OS, which will be the focus of this chapter. Qubes OS operates under the assumption that it has already been breached, so every application is run in its own virtual environment. In this chapter, we will learn how to install and use Qubes OS to access the Deep Web.

`Chapter 9`, *What Goes on in the Dark Web – Case Studies*, provides several examples of how the Dark Web is used in order to outline the dangers (and benefits) of going there. Anyone can access the Dark Web and, in this chapter, we will break down the types of people who access it, and why.

`Chapter 10`, *The Dangers of the Dark Web*, discusses the things that are lurking in the Dark Web. What are the dangers? How do we avoid them? These are probably the type of questions you've asked yourself when contemplating the Dark Web. Many people view the Dark Web as an evil place, teeming with malicious hooded hackers, just waiting for us to enter. In this chapter, we'll learn what the risks are in the Dark Web, and how to avoid them.

Chapter 11, *Using the Dark Web for Your Business*, moves on from who uses the Deep Web and Dark Web, and why. Now, let's learn how we can use them ourselves, to help us perform tasks, to help in our career, and more.

To get the most out of this book

You should have a USB stick and a computer you are willing to format, or a computer with enough resources to create virtual machines.

Download the color images

We also provide a PDF file that has color images of the screenshots/diagrams used in this book. You can download it here: https://www.packtpub.com/sites/default/files/downloads/9781789133363_ColorImages.pdf.

Conventions used

There are a number of text conventions used throughout this book.

CodeInText: Indicates code words in text, database table names, folder names, filenames, file extensions, pathnames, dummy URLs, user input, and Twitter handles. Here is an example: "Double-click on the Start-tor-browser.desktop file to launch Tor Browser"

A block of code is set as follows:

```
html, body, #map {
 height: 100%;
 margin: 0;
 padding: 0
}
```

Any command-line input or output is written as follows:

```
sudo apt install gnupg
```

Bold: Indicates a new term, an important word, or words that you see onscreen. For example, words in menus or dialog boxes appear in the text like this. Here is an example: "Now, plug in the second USB stick, go to **Applications** | **Tails** | **Tails Installer** (in Tails OS), and install Tails on it."

Warnings or important notes appear like this.

Tips and tricks appear like this.

Get in touch

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