

Chapter 5

Introduction to Dark Web

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ABSTRACT

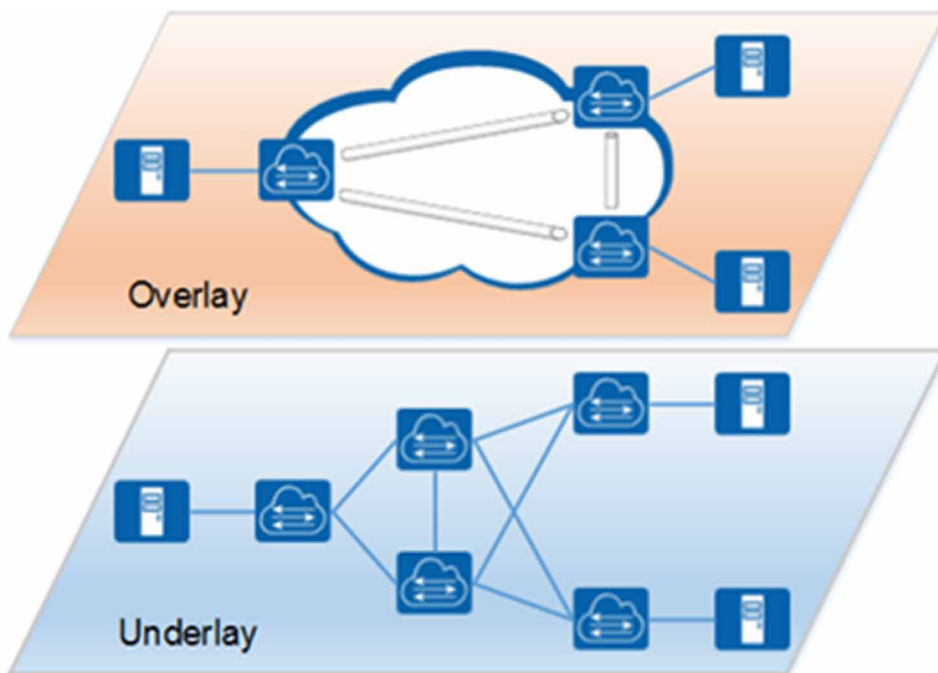
Darknet is an overlay portion of the Internet network that can only be accessed using specific authorization using distinctively tailored communication protocols. Attackers usually exploit the darknet to threaten several world-wide users with different types of attack/intrusion vectors. In this chapter, we shed the light on the darknet network, concepts, elements, structure, and other aspects of darknet utilization. Specifically, this chapter will extend the elaboration on the darknet, the dark web components, the dark web access methods, the anonymity and confidentiality of the dark web, the dark web crimes, the cyber-attacks on the dark web, the malware on the dark web, the internet governance of dark web, the payment on the dark web, and the impacts of the dark web. This chapter will profound the knowledge of the dark web and provides more insights to readers about darknet attacks, malware, and their counter-measures.

1. INTRODUCTION

As a result of technological developments brought on by digitalization, a wide variety of assault types have emerged. As more people rely on the internet to satisfy their needs, web security has become a significant concern. In the late 1990s, Cyberspace flourished, and it arose to transform many aspects of life globally. You

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Figure 1. The overly network



can communicate with anyone online if you have an Internet connection. The main issue is that privacy and anonymity should have been considered when designing the Internet. Therefore, everything can be traced or tracked. One of them is the US Federal Government, which had serious privacy concerns in the middle of the 1990s.

For the US Navy’s Naval Research Laboratory, a consortium of statisticians and computer researchers developed the novel technique known as “Onion Routing” (NRL). To enable anonymous, two-way communication, it is possible to build an overlay network (Ibrahim et al., 2022) built over another network, as shown in Figure 7.1. A darknet is a network that employs onion routing. The Dark Web was created by fusing these various darknets. The NRL staff quickly understood that everyone, not just the US government, needed access to the network to be completely anonymous. The Onion Router (TOR) was developed due to the NRL’s forced release of its onion routing technology under an Open-Source License (Ciancaglini et al., n.d).

1.1 Internet Structure

Figure 7.1.1 shows the three components of the World Wide Web (www): the dark web, the deep web, and the surface web. Popular web search engines make it simple

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