

## DARK WEB AND APPLICATIONS

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### ABSTRACT

Dark web is the enclosed within the internet which can accessed only by some special software, allowing users and website operators to remain untraceable throughout their activities by providing a number of varying IP addresses by hiding the actual IP address of the user. It just likes a grapevine which acts as an informal channel in communication. Dark web is used for keeping all the activities done on internet as private and anonymous. By this private nature it can be drawn on both legal and illegal applications. It was an interesting factor of WWW.

**Keywords:** World Wide Web, Internet, Grapevine, TOR, Warehouse, Deep web.

### I. INTRODUCTION

Now a days we cannot live in the earth without the usage of Internet. The impact of internet highly influences every ones day to day activities. It's integrated with our daily activities and lifestyles. Internet became more popular in early 1990's by providing instant communication. As years goes internet comes with lot of attracting features and facilities. But the only problem is that everything that done on it are traced or tracked. During mid 1990's people focuses on privacy. Based on this demand an assembly of computer scientists from US build out one innovative practice called the Onion Routing which allows anonymous two directional communications. Dark web come about as an encrypted warehouse of websites, which act as a hidden layer of World Wide Web that commonly used for storing and retrieving secret information. They cannot be accessed directly through conventional software and ordinary search engines like Google, Bing, and Yahoo etc. They need specific browsers like The Onion Router (TOR) for its access. Another name for dark web is known as Dark net which consists of small peer-to-peer networks as well as large TOR, I2P networks which are controlled and handled by some large public organizations. As the technology became simpler people shows a tendency to use Dark web for several criminal activities by misusing its hidden properties.

### II. ACCESS TO DARK WEB

The contents of dark web are not visible to normal search engines. Because there is no indexing between them. So we must use any of the following two anonymous browsers called TOR Browser and Onion Browser in order to operate dark web. In TOR the data is in encrypted format. The encryption facility in TOR provides untraceable internet access to all of its users by keeping the original Internet Protocol (IP) addresses as surreptitious and allocating them an anonymous IP address for their activities. The TOR browser covers up the identity of the user by accommodating a routing traffic through various IP locations. It routes the web page through a set of proxy servers controlled by hundreds of volunteers in the world by rendering IP addresses as unidentifiable. There is a large collection of web sites available on the Dark Web having a property is that they can be accessed by anyone without any risk, but it is difficult to analyse who is behind a particular site and what his actions on the site was. The steps to access TOR Browser is given as follows.

- Download and install the TOR browser.
- Buy a premium VPN (Virtual Private Network)
- Be familiar with Duck Duck Go
- Sign up for a secure Email address
- Search engines

Accessing dark web is much more dangerous than what we think. There are risks arising while just entering to the dark web. The following precautions are necessary to control such risks.

- Always remember to keep the TOR up to date

- For extra protection use VPN
- Stop using macros
- Keep eyes on the contents that you download.

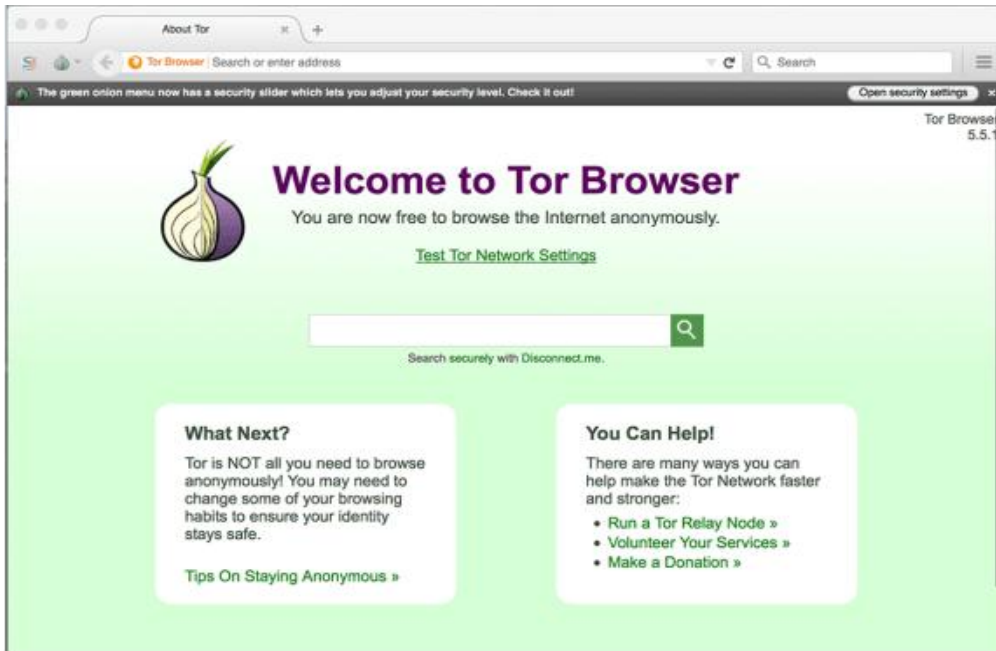


Fig.-1: Tor Browser

### III. INTERNET LAYERS

Internet mainly consists of three layers or levels namely Surface Web (clean web), Deep web and Dark Web (invisible Web). Among them all are perform separate tasks.

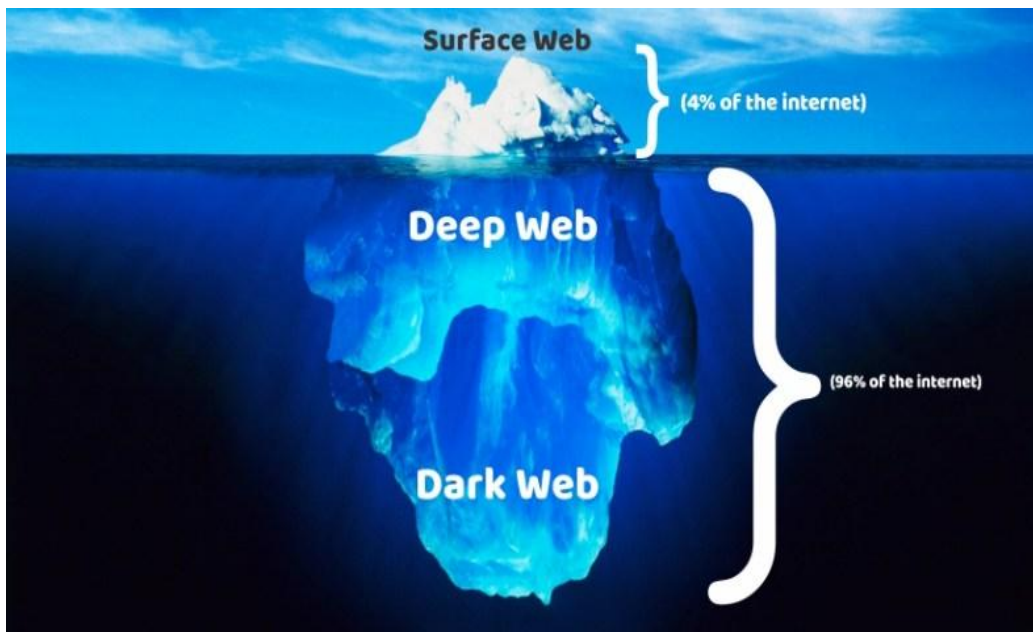


Fig.-2: Layers of Internet

#### 3.1 Surface Web

This is the default and basic level of the internet, from where normally most of us enters. This is the primary level of the internet which is visible to all who access the internet. This platform includes websites which are filled with data that can be always indexed by any search engine. This is actually what user's access in their daily

activities through Google, Yahoo, Bing, Mozilla Firefox etc. It never depends on any special configuration to make them available on standard search engines and search browsers. It is also named as "Visible Web". This layer is always available for public use.

### 3.2 Deep Web

The deep web level contains the data that are not fully visible for standard search engines. Most of the internet data are relays under this layer. The accessing is possible through URL. Here by much of data kept is related to personal information such as medical and financial records, academic data bases, Legal documents, some scientific and government reports, subscription-only information etc. It is also named as hidden web or invisible web. The main components of this level are Private databases, Fee-for service sites and dark web. Deep web provides privacy to the users by means of encryption.

### 3.3 Dark Web

Web Dark web is the most invisible and less accessible layer of the internet. In order to enter dark web we need special tools called Tor and I2P. These tools are mainly used for providing user anonymity. These tools enable us to connect to an overlay network which is responsible for keeping this anonymity among users by masking our IP address behind the layers of other IP address. There by no one can trace us. Most of the websites in this layer relate to some kind of Violence like retail of Weapons, Hacking, Illicit links and Pornography, Extremism, Illicit Finance and Drugs as well as Crypto Services commonly referred as illegal activities.

## IV. APPLICATIONS

Dark web can be considered as a double-sided- weapon, because it has both good as well as bad uses. It has a lot of advantages and also risks. One of the positive aspects is that people used it for just maintaining their privacy and the other hand is associated with crimes

Good Uses:-

- Eliminates physical boundaries between countries and provides instant communication.
- TOR browser is used for avoiding of censorship in countries where regulations have been imposed by governments.
- It is used for sensitive communications by individuals and businesses.
- Used for keeping all the activities on the internet as anonymous.
- Maintaining extreme online Privacy.
- Freedom of speech
- Political Activism
- Knowledge
- Sense of community and freedom

Bad Uses:-

- Stealing of personal as well as public information
- Spoofing
- Spamming
- Social Engineering.
- SQL Injection
- Child Pornography
- Proxying
- Information Leakage
- Arms trafficking
- Contract Killers

## V. CONCLUSION

Dark web is the deeper layer of world's largest communication network -Internet; people generally make use of this to do some activity on internet in an anonymous environment by hiding their original IP address without a wane or remarks which resembles them. Day by day there is a growth in the no. of users accessing dark web, which shows that the future may be dark due to this anonymous actions. Anything can be possible on dark web depends on your personal needs. Now a days this leads to a centre of criminal activities like uploading child sexual abuse images, stealing of arms, black market etc, by providing protection to the users from surveillance. It was the most discussed topic with regards to cyber security circles. The basic cause behind all these commotion is the confidentiality which is presuming over this plat-form.

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It can be concluded that the pros and cons of Dark Web depend upon the intentions of the user

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