Dark - Side of TORRENT

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Abstract— In today's world, Internet has become the most indispensable part of human life & it's impossible to deny the advantages of internet after its changing the whole globe. The benefits are introduced in facilitating communications, decreasing the distances around the globe, emerging an easier life and surely many other benefits that one cannot deny. With the new move, the human mind is more connected to its surroundings and what lays beyond. For instance, anyone can communicate with anybody anywhere whenever they want. The history of internet began in 1950s with the development of electronic computers. Initial concepts of packet networking were originated in United-States, Great Britain & France. Among them, the Department Of Defense of US awarded contracts for packet network systems in early 1960s, including the development of the ARPANET (which become the first network to use the Internet Protocol.) The first message was sent over the ARPANET from computer science Professor Leonard Kleinrock's laboratory at University of California, Los Angeles (UCLA) to the second network node at Stanford Research Institute (SRI). Access to the ARPANET was expanded in 1981 when the National Science Foundation (NSF) funded the Computer Science Network (CSNET). In the 1980s, the work of Tim Berners-Lee in the United Kingdom, on the World Wide Web, theorized the fact that protocols link hypertext documents into a working system,[4] marking the beginning the modern Internet. Since then, all the legal internetwork we use today is based on ARPANET (Advanced research Project Agency Network). But other then ARPANET, there lies another networking technological architecture which primarily uses the internet but not to a full extent. It's the **torrent network**.

Keywords— Programming language, Server, P2P, Torrenting, IP address, Hackers, program, download/upload

INTRODUCTION

   Torrent networking and its sharing feature was debuted in 2001. A Python-language programmer, **Bram Cohen**, who created this torrent - technology with the intent to share files with everyone across the globe by downloading it through the use of internet. Now what a **torrent-file** is? Basically, a **torrent file** is a computer file (*having extension .torrent*) that contains metadata about files and folders to be distributed, and usually in a list of the network locations of trackers; which are computers, that help participants in the system find each other and form efficient . These groups are called "swarms". Torrent files does not contain the content to be distributed but only contains information about those files, such as their names, sizes, folder structure, and cryptographic hash values for verifying file-integrity.
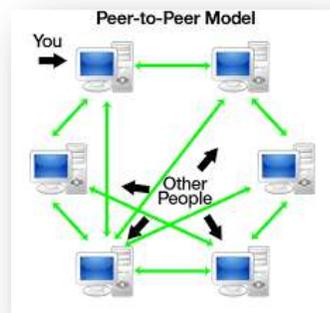

Figure :- (i)

Now, what **Torrenting** is basically a peer-to-peer (P2PP2P) or for easy understanding people-to-people file sharing system, where people upload and people download but from within the computer (& not from the server) via internet using a '.torrent' file. In case of Google Drive or Drop-box, the downloading is done from a single source, ie. where the files have been uploaded, only from that location (or we can say - single server) users can download the file and the speed is dependent on both single server's (DropBox's) and the ISP also. Torrenting is different method to solve sharing large data files from a single source or multiple sources. In the *figure (ii)*,we have uploaders (who could be any-one) who upload that single file/folder & the downloader's who is getting help from uploader to download that file directly as torrenting works on peer-to-peer file sharing system. If there are lots of people uploading the same file,it becomes helpful to those downloaders' (people who are downloading) to easily fetch those chunks and parts of the file from different pc from around the world at the same time, maintaining the speed.

Figure :- (ii)
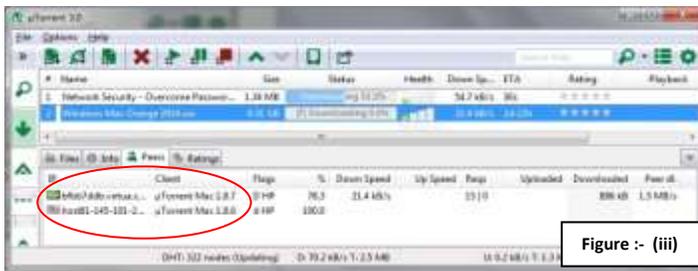
Figure :- (iii)

In the above *figure (iii)*, I'm downloading an OS(.iso file) which is getting downloaded from other two PCs residing one at Brazil and another at America also using uTorrent Mac with versions 1.8.7 & 1.8.6. This shows that the files which gets downloaded from torrent network are files residing at other's PCs. Now, with Torrent comes another two terms –

☐ *Seeders (Seeds)*
☐ *Leechers (Peers)*

Seeders are uploaders or those who have already downloaded the files & are currently uploading them, the more seeders a file have –
the faster file gets uploaded (each seeder uses a minimum of 10kbps to upload); & accordingly spend their bandwidth to help a file get downloaded to the downloaders. Leechers are downloaders who doesn't have the entire file & is using torrent network to download any specific file. During this file sharing procedure, you will be able to know people's IP-address and the same case happens with us too. Other torrent users are also getting my IP-address. In short, every torrent users on torrent network share their IPaddress
during the process called download.Unlike other download methods, Torrent maximizes transfer speed by gathering pieces of the file you want and downloading these pieces simultaneously from people/other torrent users who already have them. This process makes popular and very large files, such as videos and television programs, download much faster than is possible with other protocols. There is another term Pieces which refers to the torrented files being divided into equal specific sizes(eg. 64kB,128kB, 512kB, 1MB, 2MB, 4MB). The pieces are distributed in a random sequence among peers in order to optimize trading efficiency.

Is torrent legal? - Many of the torrent users think that it is not legal. But the truth is, "Torrent is Legal" which is simply sharing files from one device to another via internet where one person share files with other(or with the world) following the Peer-topeer
(P2P) architecture. But those files (songs, games, software) which are uploaded on the internet with cracks & patches are illegal, and downloading those cracked games & software (which costs money) using the torrent network is illegal. If we are sharing copyrighted content with other people,that is considered illegal. We can use torrent for legal purposes by sharing large Open-Source files faster & easier. No (Internet Service Providers) ISP will put you in jail for using torrents, but some Internet providers don't like torrents & hence they slower the speed while users browse torrent sites or sometimes block users from accessing those sites. In gist, the programs or technologies behind torrent based file-sharing are not illegal. It's the data being shared that may be illegal. Using Bit-Torrent or other file sharing programs to download software (trial), a game demo, movie trailer, or similar is legal. However, using that same program to download a new hit song or a movie still in theaters is illegal.

How is Torrent Dangerous? - There are many disadvantages while normal users do torrenting, but most of the torrent users are unaware of it. Firstly, as said earlier, while downloading any file using the torrent, your IP-address gets shared and others can track you using trackers (which keeps tracks of which seeds & peers are in the swarm) . Secondly, if someone (hackers) does social engineering or even get access to your system(s) using backdoors (trojans & botnets) or using other penetration technique, they may use those torrent programs (such as uTorrent, Bit-Torrent, Vuze etc),to create a torrent file (which could be your sensitive data, project, personal photos and videos).The steps for doing this are :-
(i) Search in victim's PC the directory where his/her sensitive files are stored.
(ii) We can create our own torrent using any of the torrent downloader program (such as : uTorrent, Bit-Torrent, Vuze).

(iii)
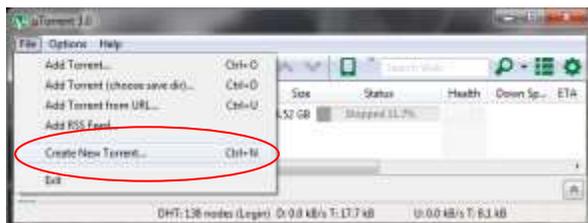
(iv) "Add File" is for selecting any specific file & "Add Directory" is for selecting

an entire folder.
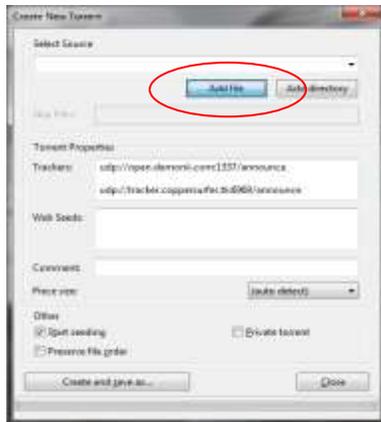
(v) After clicking "Add File" button , select the file you want to make as torrent.
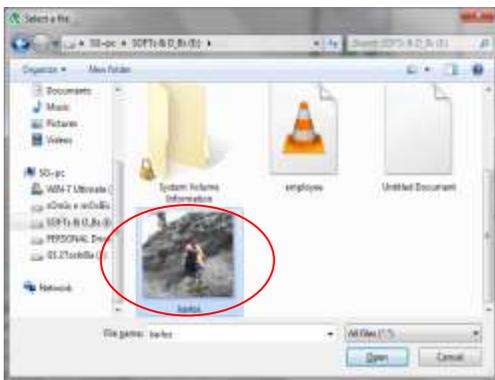
(vi) Click on "Create & Save As" button
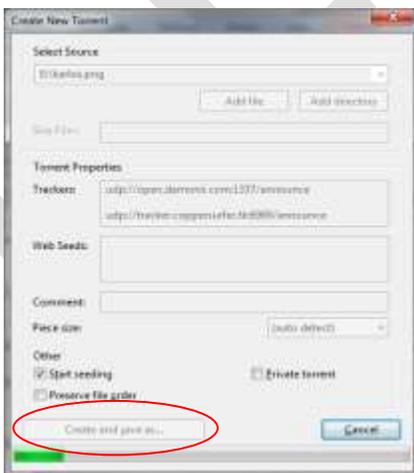
(vii) Give the .torrent file a name (here : KARLOS-personal) and file type as – 'Torrent files' give the file a location where it
will be created and click the 'Save' button.
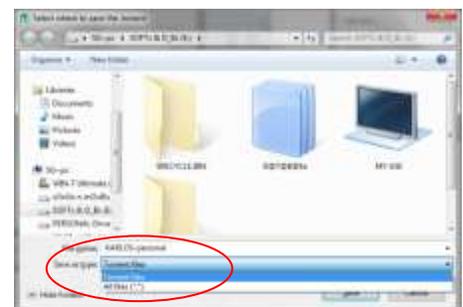
(viii) Now, your torrent file is ready on that saved location.
(ix) After the .torrent file gets created, it will show its "seeding" stage in any torrent downloading software (that is installed in your PC)

(x) Grab that .torrent file and somehow upload it in any torrent site. The steps for uploading .torrent files are :-
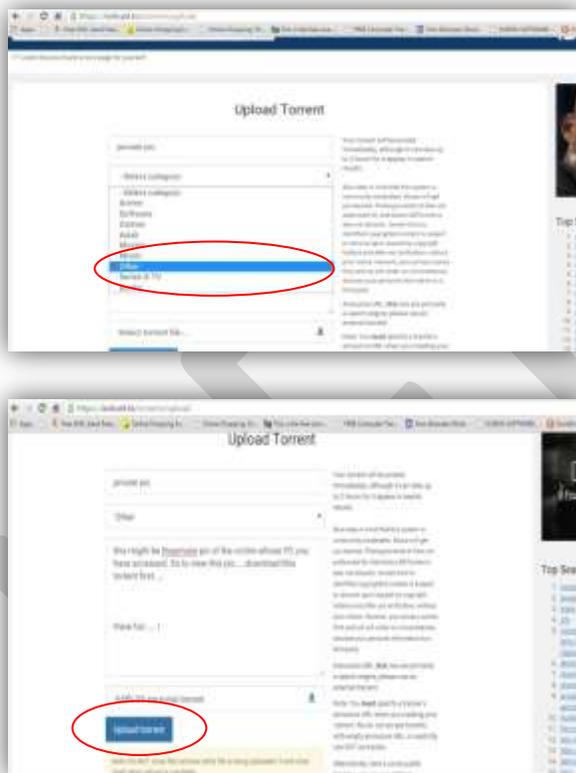
(xi) After the torrent is being uploaded, it has seeders but need 2-4 days to gradually increase the peers. In this way anyone can make your (victim's) personal photos, videos, projects and other files open to the world.

How to make Torrent users Secure? – As told earlier, torrent users can be tracked down using the IP address, since this a peer-to-peer system (people know your IP & you know people's IPs). So there is an extra tool (for Windows) available called *PEER-BLOCK*; what peer block does is : it lets you control who your computer 'talks to' on the internet by selecting appropriate lists of 'known bad' computers- you can block communication with other users (peers), advertising or spyware oriented servers, computers monitoring your P2P activities, computers those have been hacked etc. This tool becomes a precious shield when you become a seeder. This tool restricts access and henceforth can't

get others into your computer & your computer won't try to send anything either. To download the tool, visit :
www.peerblock.com . There is also another tool called *Peer-Guardian* for MAC users also.
We can also take other precautions such as keep all our private/personal photos, videos, projects, files in a
separate external hard disk or we can run these torrent programs in a virtual environment.

ACKNOWLEDGMENT

CONCLUSION

Now-a-days security has become the prime issue for computer users. Torrent based file stealing and broadcasting that file to the entire world
can lead the victim to a dangerous situation and so torrent users must remain cautious while accessing torrent network using torrent programs.

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