How to use I2P in qBittorrent

In this tutorial we will learn how to use qBittorrent I2P to download/upload torrents on both the Clearnet as well as the I2P network.

What is I2P network?

Nothing is better than the horse's mouth itself –

https://github.com/i2p/i2p.i2p

https://geti2p.net/en/

https://github.com/PurpleI2P/i2pd

https://i2pd.website/

https://en.wikipedia.org/wiki/I2P

https://www.reddit.com/r/i2p/

I2P has two main implementations

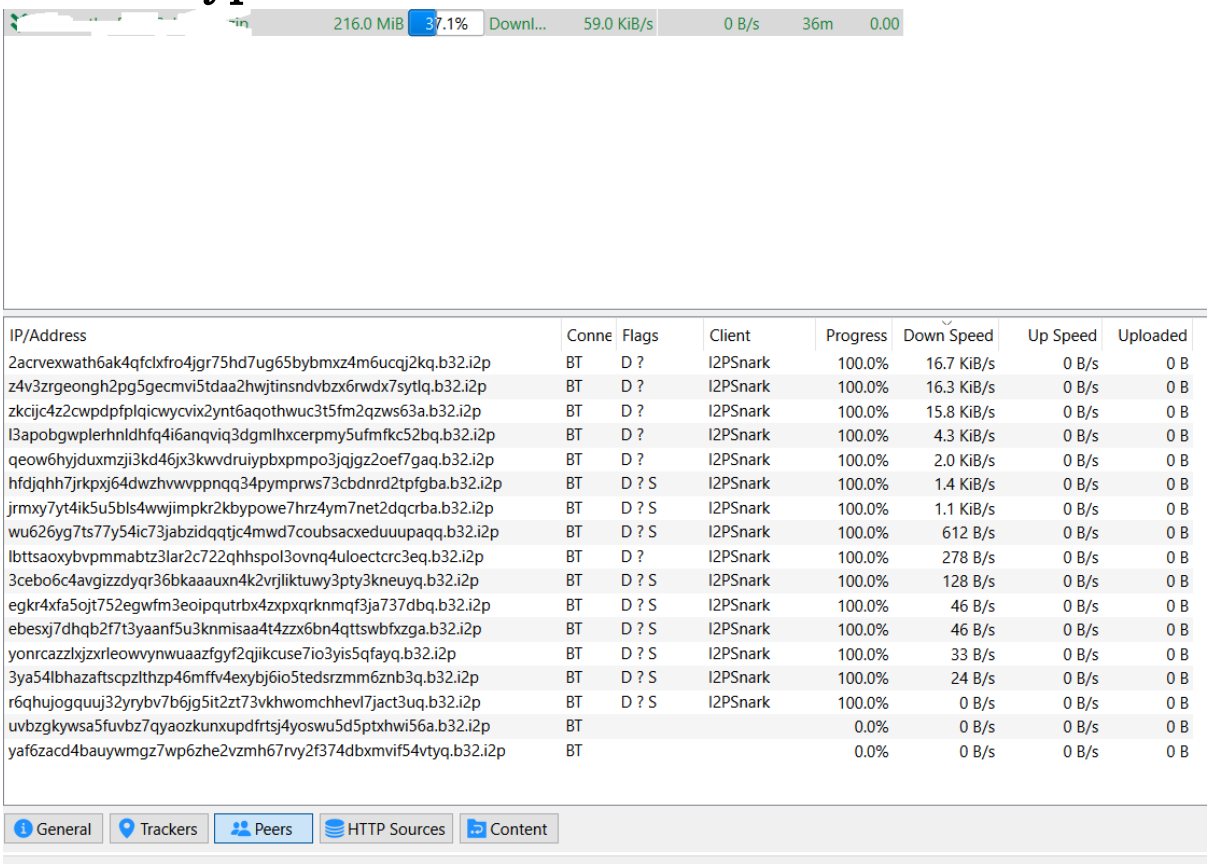
1) JAVA
2) C++

Links of both have been aforementioned.

Why i2p network in torrenting?

1. Full anonymity & privacy when torrenting.

2. No IP address gets leaked. Because I2P has its own encrypted address & looks like this –



IP/Address	Conne	Flags	Client	Progress	Down Speed	Up Speed	Uploaded
2acrvexwath6ak4qfclxfro4jgr75hd7ug65bybmxz4m6ucqj2kq.b32.i2p	BT	D ?	I2PSnark	100.0%	16.7 KiB/s	0 B/s	0 B
z4v3zrgeongh2pg5gecmvi5tdaa2hwjtinsndvbzx6rwdx7sytlq.b32.i2p	BT	D ?	I2PSnark	100.0%	16.3 KiB/s	0 B/s	0 B
zkcijc4z2cwpdpfplqicwycvix2ynt6aqothwuc3t5fm2qzws63a.b32.i2p	BT	D ?	I2PSnark	100.0%	15.8 KiB/s	0 B/s	0 B
l3apobgwplerhnldhfq4i6anqviq3dgmlhxcerpmy5ufmfkc52bq.b32.i2p	BT	D ?	I2PSnark	100.0%	4.3 KiB/s	0 B/s	0 B
qeow6hyjduxmzji3kd46jx3kwvdruiypbxpmpo3jqjgz2oef7gaq.b32.i2p	BT	D ?	I2PSnark	100.0%	2.0 KiB/s	0 B/s	0 B
hfdjqhh7jrkpxj64dwzhvwvppnqq34pymprws73cbdnrd2tpfgba.b32.i2p	BT	D ? S	I2PSnark	100.0%	1.4 KiB/s	0 B/s	0 B
jrmxy7yt4ik5u5bls4wwjimpkr2kbypowe7hrz4ym7net2dqcrba.b32.i2p	BT	D ? S	I2PSnark	100.0%	1.1 KiB/s	0 B/s	0 B
wu626yg7ts77y54ic73jabzidqqtjc4mwd7coubsacxeduuupaqq.b32.i2p	BT	D ? S	I2PSnark	100.0%	612 B/s	0 B/s	0 B
lbttsaoxybvpmmabtz3lar2c722qhhspol3ovnq4uloectcrc3eq.b32.i2p	BT	D ?	I2PSnark	100.0%	278 B/s	0 B/s	0 B
3cebo6c4avgizzdyqr36bkaaauxn4k2vrjliktuwy3pty3kneuyq.b32.i2p	BT	D ? S	I2PSnark	100.0%	128 B/s	0 B/s	0 B
egkr4xfa5ojt752egwfm3eoipqutrbx4zxpxqrknmqf3ja737dbq.b32.i2p	BT	D ? S	I2PSnark	100.0%	46 B/s	0 B/s	0 B
ebesxj7dhqb2f7t3yaanf5u3knmisaa4t4zzx6bn4qttswbfxzga.b32.i2p	BT	D ? S	I2PSnark	100.0%	46 B/s	0 B/s	0 B
yonrcazzlxjzxrleowvynwuaazfgyf2qjikcuse7io3yis5qfayq.b32.i2p	BT	D ? S	I2PSnark	100.0%	33 B/s	0 B/s	0 B
3ya54lbhazaftscpzlthzp46mffv4exybj6io5tedsrzmm6znb3q.b32.i2p	BT	D ? S	I2PSnark	100.0%	24 B/s	0 B/s	0 B
r6qhujogquuj32yrybv7b6jg5it2zt73vkhwomchhevl7jact3uq.b32.i2p	BT	D ? S	I2PSnark	100.0%	0 B/s	0 B/s	0 B
uvbzgkywsa5fuvbz7qyaozkunxupdfrtsj4yoswu5d5ptxhwi56a.b32.i2p	BT			0.0%	0 B/s	0 B/s	0 B
yaf6zacd4bauywmgz7wp6zhe2vzmh67rvy2f374dbxmvif54vtyq.b32.i2p	BT			0.0%	0 B/s	0 B/s	0 B

3. NAT Transversal & Hole Punching

4. I can add more, but to be frank, these are enough for more than 90% of torrent users.

Difference between I2P-Only & Mixed Mode –

I2P-Only mode means that Torrents can only be uploaded or downloaded with the support of I2P network.

1) Trackers that support I2P Network (I will list them later)
2) DHT, PEX that supports I2P network.

Mixed Mode means that Torrents can be uploaded or downloaded on the Clearnet as well as I2P network simultaneously. This process is also called Bridging or Network Mixing.

First & foremost, this tutorial's whole purpose is to make qBittorrent users familiar with I2P Torrenting – rather than going into other technical or nitty-gritty of I2P network and of qBittorrent alpha version.

TO DO STEPS –

1) Download & install qBittorrent v4.6.0alpha1 which is available for Windows, Mac & Linux – https://www.qbittorrent.org/download

2) Download I2P – java or c++ - it's your choice, links aforementioned.

3) Install & Setup your I2P software.

4) After setting up i2p you will need to setup I2P SAM ports for torrenting.

5) If you are using C++ implementation of I2P.

6) For that, you need to go to *i2pd.conf* and which can be found in %appdata% >> roaming >> i2pd OR wherever your computer has stored it (mine is Windows), *different OS can have different folder structure* but the file name remains the same >> "i2pd.conf".

7) Since, our main motivation is to Configure I2P network for torrenting and nothing else – we shall configure I2P for only torrenting.

8) Now, in the following group of screenshots below, I will provide the settings you have to do in *i2pd.conf* file for using I2P in qBittorrent.

9) Bandwidth and Share Ratio.

Bandwidth = speed dedicated to I2P network

Share Ratio = how much bandwidth you want to share from the alloted.

10) Both of these specifications can be adjusted accordingly as per user's preference.

I have listed what I prefer – which is P, i.e., 2048 KBps & 100% of what I alloted I share.

```
## Enable communication through ipv4
ipv4 = true
## Enable communication through ipv6
ipv6 = false

## Enable SSU transport
ssu = false

## Bandwidth configuration
## L limit bandwidth to 32KBs/sec, O - to 256KBs/sec, P - to 2048KBs/sec,
## X - unlimited
## Default is L (regular node) and X if floodfill mode enabled. If you want to
## share more bandwidth without floodfill mode, uncomment that line and adjust
## value to your possibilities
bandwidth = P
## Max % of bandwidth limit for transit. 0-100. 100 by default
share = 100

## Router will not accept transit tunnels, disabling transit traffic completely
## (default = false)
# notransit = true

## Router will be floodfill
## Note: that mode uses much more network connections and CPU!
# floodfill = true
```

11) Second screenshot

```
[ntcp2]
## Enable NTCP2 transport (default = true)
# enabled = true
## Publish address in RouterInfo (default = true)
# published = true
## Port for incoming connections (default is global port option value)
# port = 4567

[ssu2]
## Enable SSU2 transport
# enabled = true
## Publish address in RouterInfo
# published = true
## Port for incoming connections (default is global port option value or port + 1 if SSU is enabled)
# port = 4567

[http]
## Web Console settings
## Uncomment and set to 'false' to disable Web Console
enabled = true
## Address and port service will listen on
address = 127.0.0.1
port = 7070
## Path to web console, default "/"
# webroot = /
## Uncomment following lines to enable Web Console authentication
## You should not use Web Console via public networks without additional encryption.
## HTTP authentication is not encryption layer!
# auth = true
# user = i2pd
# pass = changeme
## Select webconsole language
## Currently supported english (default), afrikaans, armenian, chinese, czech, french,
## german, italian, polish, portuguese, russian, spanish, turkish, turkmen, ukrainian
## and uzbek languages
# lang = english
```

12) Third screenshot

```
[httpproxy]
## Uncomment and set to 'false' to disable HTTP Proxy
enabled = true
## Address and port service will listen on
address = 127.0.0.1
port = 4444
## Optional keys file for proxy local destination
# keys = http-proxy-keys.dat
## Enable address helper for adding .i2p domains with "jump URLs" (default: true)
## You should disable this feature if your i2pd HTTP Proxy is public,
## because anyone could spoof the short domain via addresshelper and forward other users to phishing links
# addresshelper = true
## Address of a proxy server inside I2P, which is used to visit regular Internet
# outproxy = http://false.i2p
## httpproxy section also accepts I2CP parameters, like "inbound.length" etc.

[socksproxy]
## Uncomment and set to 'false' to disable SOCKS Proxy
enabled = false
## Address and port service will listen on
address = 127.0.0.1
port = 4447
## Optional keys file for proxy local destination
# keys = socks-proxy-keys.dat
## Socks outproxy. Example below is set to use Tor for all connections except i2p
## Uncomment and set to 'true' to enable using of SOCKS outproxy
# outproxy.enabled = false
## Address and port of outproxy
# outproxy = 127.0.0.1
# outproxyport = 9050
## socksproxy section also accepts I2CP parameters, like "inbound.length" etc.
```

13) Fourth screenshot

```
[sam]
## Comment or set to 'false' to disable SAM Bridge
enabled = true
## Address and ports service will listen on
address = 127.0.0.1
port = 7656
# portudp = 7655

[bob]
## Uncomment and set to 'true' to enable BOB command channel
enabled = false
## Address and port service will listen on
# address = 127.0.0.1
# port = 2827

[i2cp]
## Uncomment and set to 'true' to enable I2CP protocol
enabled = false
## Address and port service will listen on
# address = 127.0.0.1
# port = 7654

[i2pcontrol]
## Uncomment and set to 'true' to enable I2PControl protocol
enabled = false
## Address and port service will listen on
# address = 127.0.0.1
# port = 7650
## Authentication password. "itoopie" by default
# password = itoopie
```

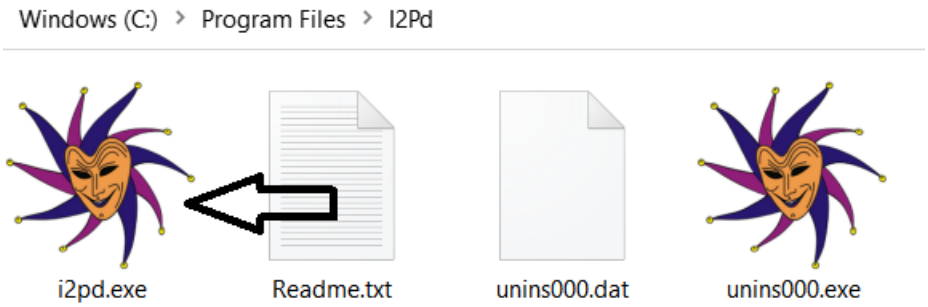
14) Note down the SAM Bridge keys – which are as shown in screenshot – 127.0.0.1 & 7656.

15) Tunnels. Here, you can adjust the I2P tunnels quantity & hops (length), that you wish based on your threat perception. I have used the Default setup – You can change it according to your liking.

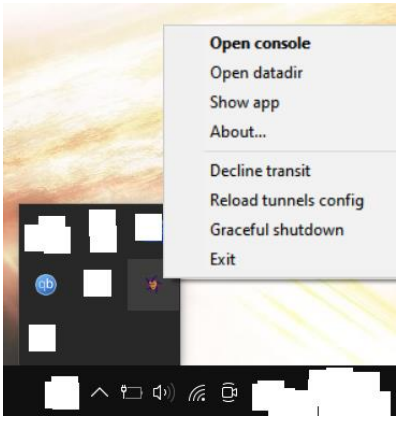
```
[exploratory]
## Exploratory tunnels settings with default values
inbound.length = 2
inbound.quantity = 3
outbound.length = 2
outbound.quantity = 3
```

16) Now, save everything and start I2PD.

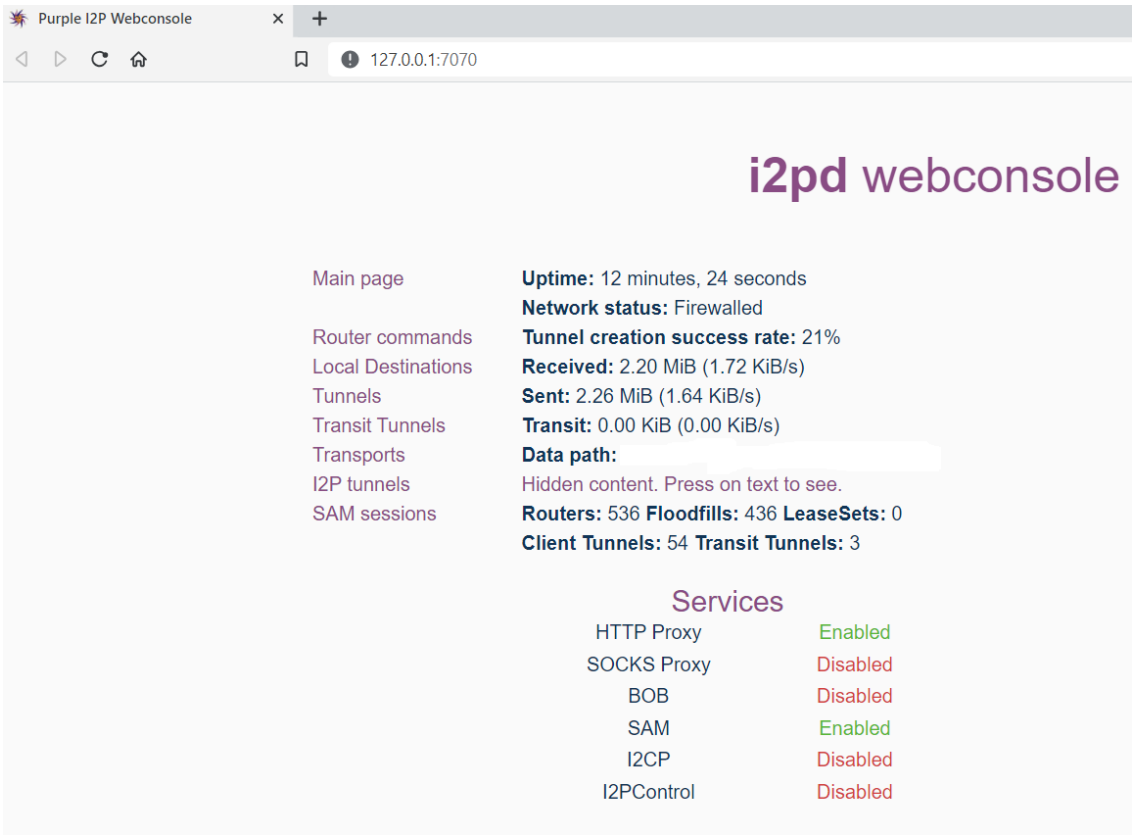
17) To run I2PD, click on i2pd icon



18) Click on the upward arrow in the taskbar. And then right click on the I2PD icon.



19) Click on Open console and let it run for some time so that i2p can create connections & integrate itself into the I2P network. As shown below



20) Few things to note –

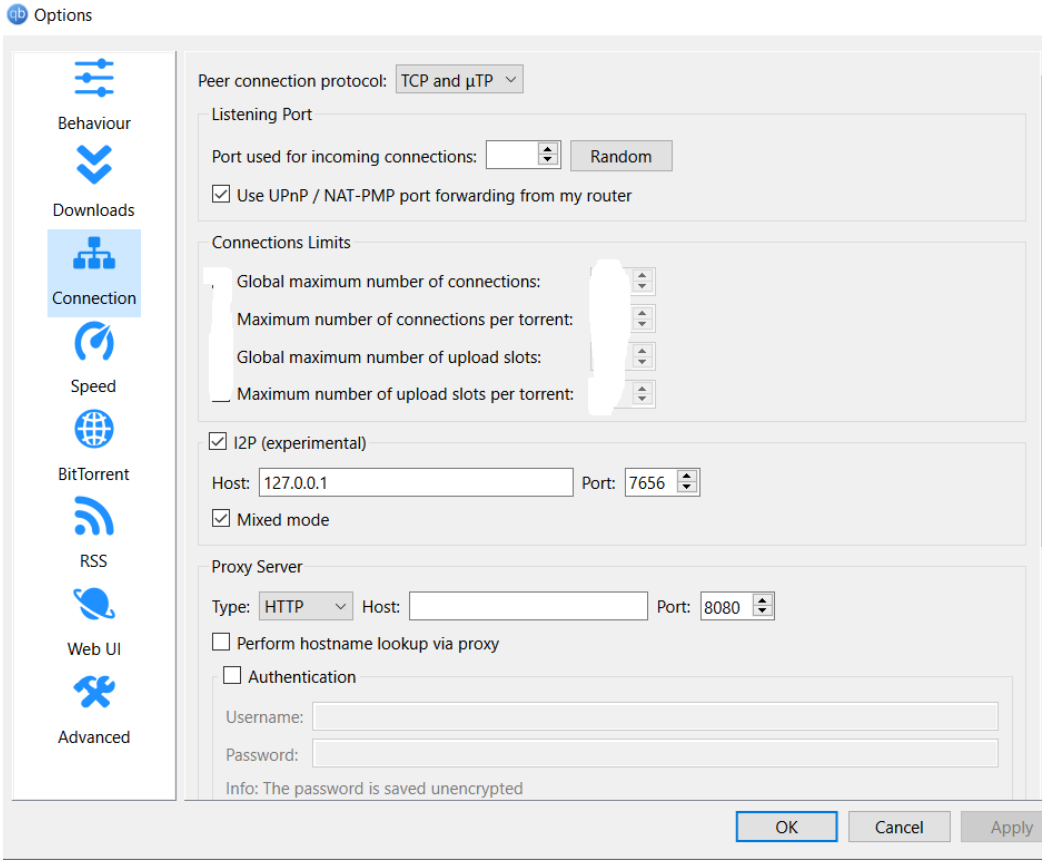
(i) Your network status has to be either FIREWALLED or OK to use I2P network

(ii) If you are using I2P for the very first time, then let it run for at least 30 minutes before you start torrenting. This is done so that the network can integrate itself to your router.

(iii) Tunnel creation success rate should be 10% or above to seamlessly use I2P

21) Open qBittorrent v4.6.0alpha1.

22) Go to settings >> Connections. Checkmark I2P & Mixed mode & fill out the SAM ports as shown in the screenshot.

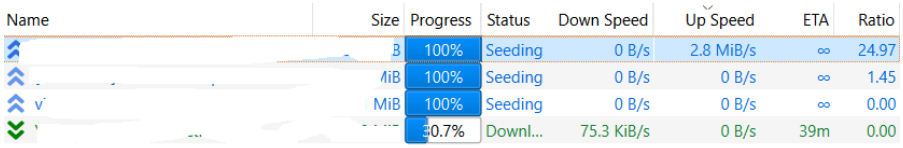


23) Apply and save it.

24) Now, download a torrent.

25) Add the following I2P trackers to the torrent which I will add as a txt file in the torrent.

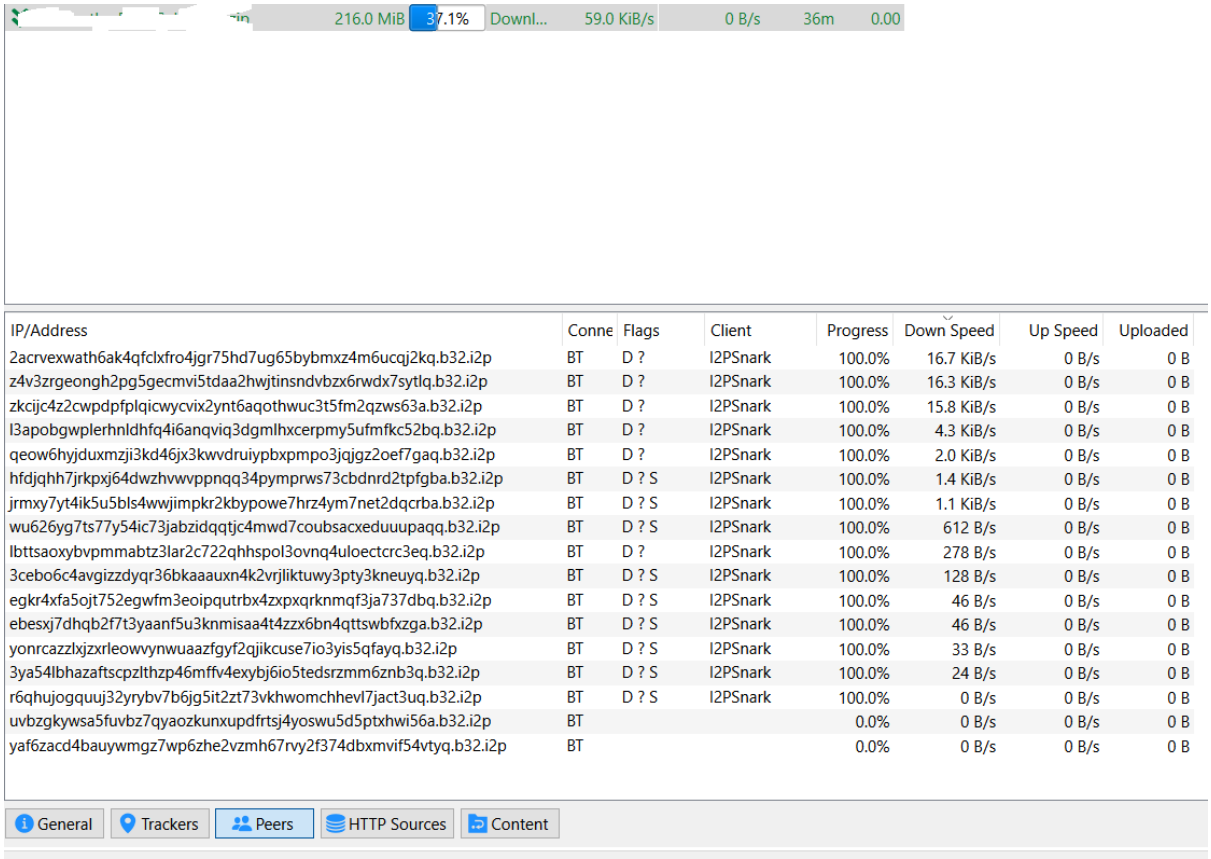
26) Your torrent should look like this – in Mixed Mode.
Here, you can see the Clearnet IP as well as I2P address.



Name	Size	Progress	Status	Down Speed	Up Speed	ETA	Ratio
[redacted]	[redacted]B	100%	Seeding	0 B/s	2.8 MiB/s	∞	24.97
[redacted]	[redacted]MiB	100%	Seeding	0 B/s	0 B/s	∞	1.45
[redacted]	[redacted]MiB	100%	Seeding	0 B/s	0 B/s	∞	0.00
[redacted]	[redacted]	0.7%	Downl...	75.3 KiB/s	0 B/s	39m	0.00

IP/Address	Conne	Flags	Client	Progress	Down Speed	Up Speed	Uploaded
uc7uflrkrbwplbwv2bczv5bldet6g7vqkxh2zbrvetejeuuinwbq.b32.i2p	BT	U	I2PSnark	78.7%	0 B/s	54.9 KiB/s	20.8 MiB
112.133.247.222	µTP	U I H X P	µTorrent 3.6	62.3%	0 B/s	1.9 MiB/s	472.9 MiB
94.196.143.33	µTP	U H X P	µTorrent 3.6	36.4%	0 B/s	824.2 KiB/s	376.7 MiB
35.233.4.162	BT			0.0%	0 B/s	0 B/s	0 B
34.140.17.165	BT			0.0%	0 B/s	0 B/s	0 B

27) For, I2P Only Mode – your torrent should look like this



Why do we need to add I2P specific trackers when using qBittorrent v4.6.0alpha1?

Simply, because at the moment, libtorrent has not implemented I2P DHT & I2P PeX.

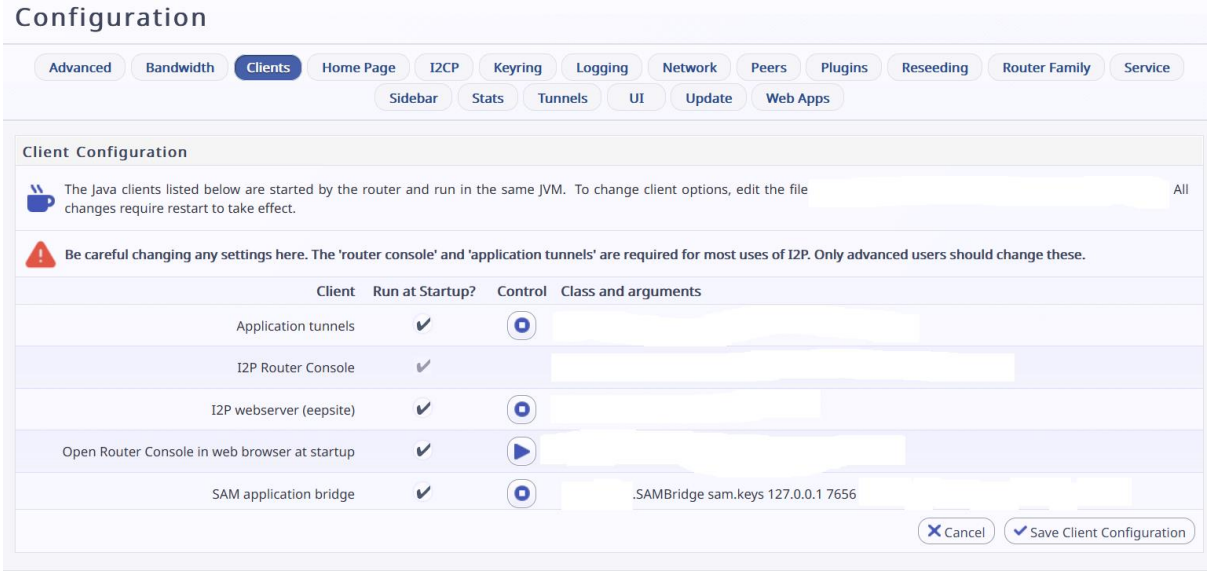
The moment they do it, it will be easier to implement it in qBittorrent (as it is based on libtorrent).

You can read further here, if you want to - https://github.com/arvidn/libtorrent/issues/7408

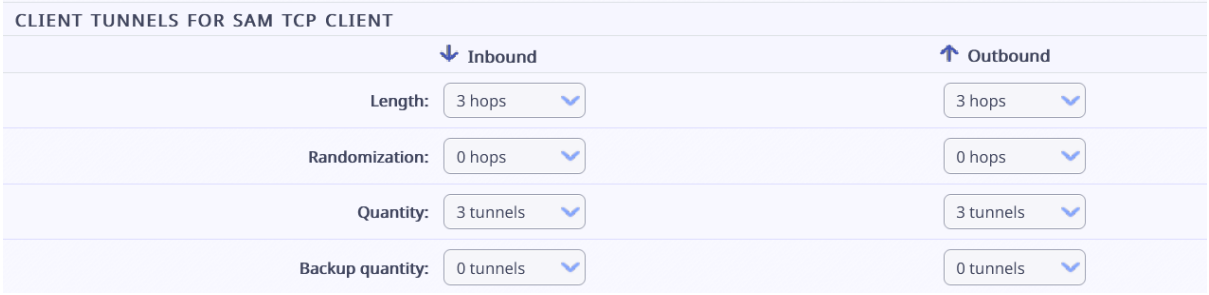
Now, let us move onto I2P JAVA implementation settings.

Almost, Same procedure as above –

1) Download JAVA i2p from link aforementioned.
2) Install and set it up.
3) Go to settings >> Clients



4) Checkmark SAM
5) Note down SAM keys
6) Save configuration.
7) Click on Tunnels. Set it up according to your needs.



8) Save configuration.

9) Insert SAM keys in qBittorrent as shown above and You are done.

Hope you will find it educational.

I2P torrenting rocks 😊