

IQToken White Paper

Prepared by Nathan Helfrey, Co-Founder of IQToken LLC



Introduction

A quick disclaimer on Net Neutrality. No matter which side of the debate you fall on (it appears most people are in favor of net neutrality and quite upset about it's repeal), we believe that some positive things can be accomplished by allowing Internet Service Providers (ISP's) to differentiate between types of traffic which we will outline throughout this paper. We certainly recognize the fear that ISP's will be given the power to censor, block, or throttle traffic resulting in limiting free speech and/or picking "winners". It seems that most of the fears center around ISP's censoring free speech and potential higher cost of Internet. It is our hope that free and open competition will drive the ISP's towards good behavior. That no traffic is blocked and that everyone from enterprises to consumers will have the opportunity to improve the quality of their Internet experience.

Quality of Service (QoS) is defined as applying a policy to traffic in order to prioritize certain types of traffic, such as business critical applications or real time traffic such as voice and video over other types of less critical traffic. QoS has been widely adopted in enterprise networks for over 15 years, but the application of QoS to Internet traffic has never been an option for businesses or consumers. There has been a saying in the network industry that the Internet is the "Wild West", and as Network Engineers and Architects we must always advise our customers that there is no way to guarantee that packets won't get dropped or delayed when you send them over the Internet. In the Enterprise, this has led organizations to design private Wide Area Networks (WAN) in order to give them better control over business critical traffic.

A whole new market segment has emerged called Software Defined WANs in the attempt to improve the quality of business traffic over the Internet. According to IDC reports this new market segment will grow to over \$8 Billion USD by 2021. Enterprises of all size are buying expensive new routers, software, and services to connect branch offices with the goal to improve the quality of the traffic and minimize packet loss and latency over the Internet. The move away from traditional private WAN's to public Internet is already happening because SD-WAN offers significant ROI over Private WAN. This proves there is a market and enterprises are willing to pay for improved quality over the Internet.



We seek to solve all this with IQToken. We believe that there is an easier, cheaper and better way to provide QoS over the Internet, and that is to purchase your spot in a “Fast Lane” queue directly from the Internet Service Providers (ISP's).

Purchasing directly from ISP's creates it's own unique set of challenges:

- The cost could be so low that it falls into the "micro transaction" category, where fractions of a cent are charged.
- You'd need to negotiate separate agreements with ISP's if there are multiple ISP's in your end to end path.
- International connections would need to deal with multiple different fiat currency types.
- ISP's could be slow to implement the desired QoS policies for their customers.

Using a cryptocurrency token on a smart contract platform such as the Ethereum network combined with IQToken LLC software resolves these issues by:

- Metered per app/per user/per site transactions allow for micro transactions and billing based on usage.
- No need to negotiate with multiple ISP's. The system will automatically determine the paths and hops through the Internet and automatically creates the QoS policy on each of the ISP's network routers through API's.
- International ISP's receive payment in IQX tokens and can exchange to local currency or resell to their customers.

Using IQX also has benefits to end users and consumers, not just enterprise organizations:

- Hardcore gamers may be willing to pay for better quality connections to the game servers.
- Voice and video call applications rely on real time traffic and suffer greatly from packet loss and latency. Consumers may be willing to pay for a higher quality experience.
- Cord cutters may choose to spend money to improve the quality of video streams over the Internet.
- Distributed organizations relying on cloud services or Software as a Service applications may want to pay for higher quality.

For IQX to receive broad adoption among all end users, the experience must be seamless.

- Depending on the application developers strategy, the IQX client could be invisible to the end user, all they see is the option to purchase better quality, or a check box to enable better quality over the internet on demand.
- The application developer will have revenue opportunities to sell improved quality over the Internet by charging for IQX tokens in local currency.

Our Business Model

IQToken LLC will be a for profit business, however, we will open source most or all of the software we develop. It isn't our intention to lock ISP's and application developers into IQToken the company for enabling these services. We want ISP's and application developers to adopt the IQX token and do not want to place any barriers for that adoption. IQToken LLC's purpose will be to offer services to ISP's and application developers to assist them with implementing the service.

IQToken will have a sustainable business built around the IQT token that includes:

- Professional Integration services.
- IQX Node hosting services (SAAS) offering for ISP's.
- Support, maintenance and managed service agreements for ISP's.
- Application development consulting for integration of IQX Client into applications for developers.

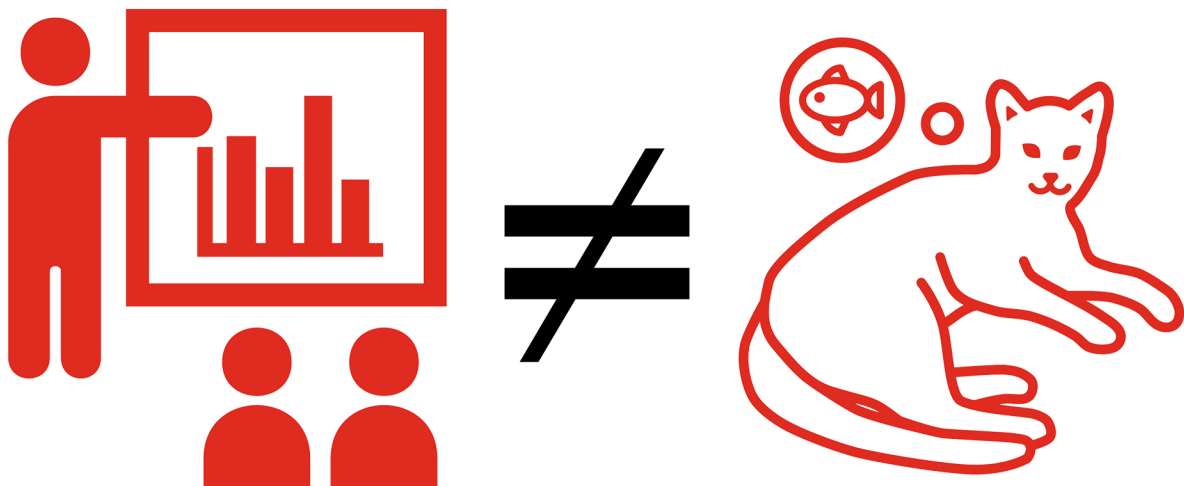
These business activities will fund the ongoing development of the IQToken software stack to add features and functionality over time once the initial seed money from the initial coin offering has been spent. Many projects in the blockchain and cryptocurrency space today are non-profit foundations and after the initial ICO, they rely on donations to fund development. We feel that structuring IQToken LLC as a for profit business ensures that funding will be available for ongoing development of new features and functionality.

Why Should Service Providers Sign Up?

ISP's will sign up to use IQX for one reason, and one reason only. Increased revenue and profits. In order to get them to sign up with IQX, we need to offer them the IQX platform as a managed service. IQToken LLC will be formed making it easy for ISP's to implement the service.

The Internet has traditionally treated all traffic equally, VoIP, video conferencing, and cloud hosted business applications have the same level of priority as cat videos. Internet Service Providers do not have unlimited amounts of bandwidth and periods of congestion do occur. When congestion occurs all traffic has an equal chance of being dropped. Packet loss during congestion has the highest impact on real time traffic such as voice and video calls.

In the United States, the FCC recently repealed Net Neutrality. It is now legal in the United States for ISP's to begin monetizing internet traffic by providing preferential treatment to certain types of traffic or traffic from specific users or business that pay for having their traffic prioritized.



IQX will be an ERC20 token on the Ethereum network.

SEC Guidance: IQX will be a United States based corporation and must follow US securities laws. The issuance of our IQX token will be used to fund IQX the corporation in developing software and services surrounding the use cases outlined in this white paper.

- The IQX token is not a security, it is a product, and if we are successful the token will be usable to purchase higher quality Internet traffic from participating ISP's in the future.

Reference guidance from the SEC can be found at:

<https://www.sec.gov/news/public-statement/statement-clayton-2017-12-11>

In addition, a project like this is filled with risks:

- **Political:** Net Neutrality laws preventing ISP's from prioritizing traffic are enacted. The Risk of this appears to be fairly low, at least until the end of the current US administrations term. If the United States does indeed pass a law preventing ISP's from being able to prioritize traffic, then the future of the IQX token will be in other countries.
- **Scalability:** The Ethereum network has been suffering some congestion and scalability issues in the past (the crypto kitty craze January 2018). We believe the Ethereum network is the right choice for our token and that the Ethereum Foundation will be able to resolve current and future scalability. That said, we are prepared to move to an alternative blockchain platform if required. Also, significant progress has been made with payment channels which reduce Ethereum gas cost, we are watching this development closely.
- **Technical:** The technical challenges could be too great to overcome.
- **Adoption:** ISP's could refuse to adopt IQX.

Is a token really required? We certainly believe that a unique utility token solves a lot of problems, especially micro transactions for metered billing and international payments. However, ISP's could just decide to do a manual billing and configuration in local currency, or another form of cryptocurrency could be accepted.

We want to be clear that ownership of the IQX token does not entitle the holder to any share in IQX the corporation and that we are making no promises to the coins current or future value.

IQT Solution Modular Architecture

IQX will be a modular architecture with each component of the solution serving its unique role.

Ethereum ERC20 Token/Smart Contracts: IQX will reside on the Ethereum network. The Ethereum Networks smart contracts will be leveraged to create a contract between ISP and consumer. The ISP will offer prioritized packets over their network in exchange for IQX tokens.

Client software: Open source software. Acts as a IQX wallet and determines end to end path of traffic across the Internet. Communicates with server nodes of each ISP to request the traffic priority. Funds smart contract(s) on Ethereum network.

Server Nodes: Open source software. Resides at or hosted for each participating ISP. Communicates with client to process requests. Provides client with smart contract on Ethereum Network. Utilizes API to push QoS configuration to ISP routers. Communicates to Smart Contract when QoS has been implemented. Tears down QoS policy when no longer required.

ISP Network Routers: Receives QoS configuration from server node through API. Prioritizes traffic per configuration. Reports to server success/failure of configuration.



IQT Solution Modular Architecture

Scenario: User A wants to make a video call to User B. User A is connected to ISP A and User B is connected to ISP C. ISP B is the Internet backbone carrier connecting both ISP A and ISP B.

1. User A establishes the video call to User B.
2. The application has a built in widget from IQToken which determines the end to end path of the call and communicates cost back to IQToken widget and Smart Contract.
3. Either User A or User B could elect to upgrade the video call to premium Fast Lane service.
4. The IQToken Widget sends the request for Premium service and interacts with the IQToken application layer.
5. Application layer stores the request in a queue in the database layer.
6. Automation layer picks up the request from the queue and pushes the Fast Lane configuration to ISP A, ISP B, and ISP C.
7. ISP A, B, and C communicate success back to the Automation Layer which triggers the smart contract layer to approve release of funds.
8. User A and User B now enjoy improved quality of their video call.
9. When call is terminated, the process is triggered in reverse and the automation layer removes the Fast Lane configuration from ISP A, B, and C.

Application Layer

QUEUE (Data Not Saved)

Database Layer

Authentication

Smart Contrast Layer

Automation Layer

ISP A Automation

ISP B Automation

ISP C Automation

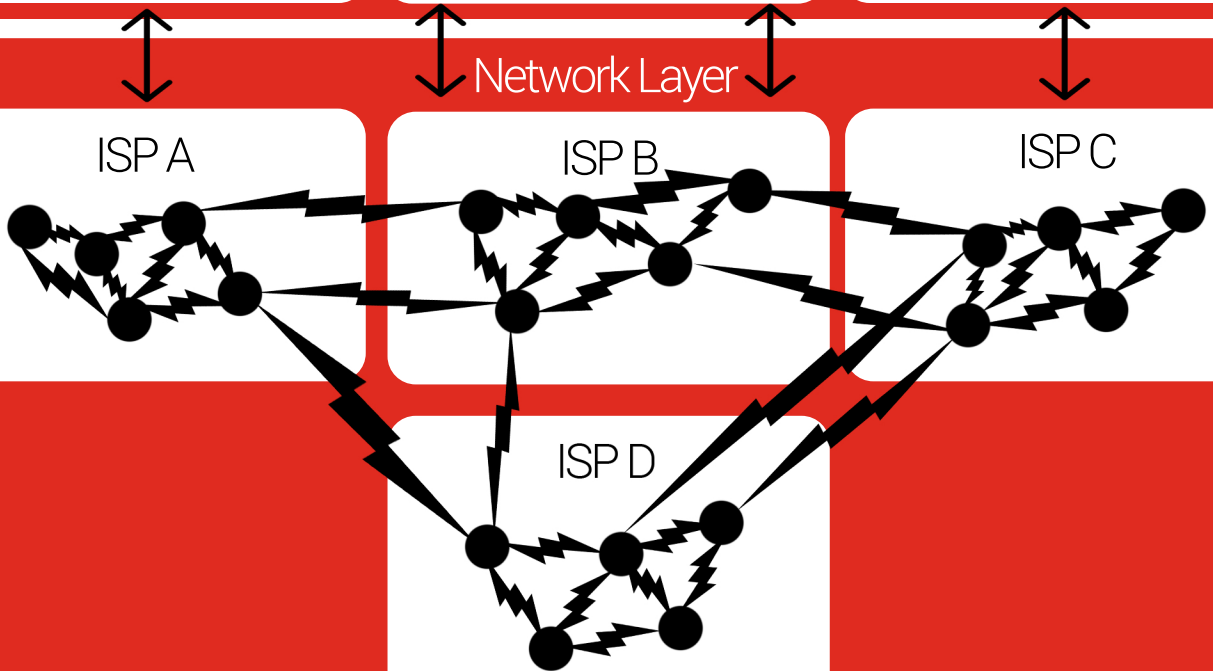
Network Layer

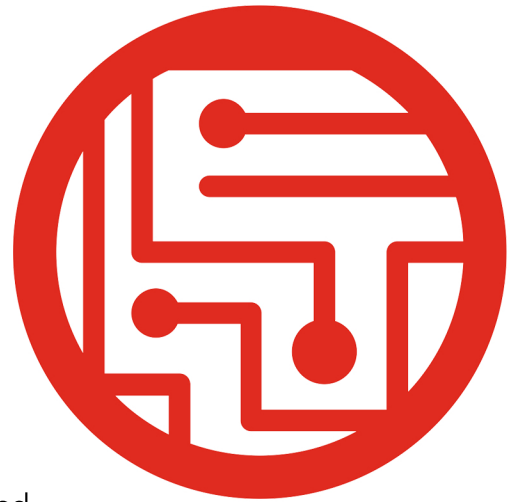
ISP A

ISP B

ISP C

ISP D



**When is the token sale?**

We have the following target dates:

ICO Period: June 1st 2018 through July 31st 2018

How many coins will be sold?

100,000,000,000

Will there be a cap to the total number of coins?

Yes, 100,000,000,000 total coins will be all that is ever created.

Will IQX be listed on any exchanges?

Yes, it is the teams goal to list IQX 30 to 60 days after token distribution.

Can I mine IQX?

No, only 100,000,000,000 coins will be created as part of the ICO and no new coins will ever be added through mining or any other method.

What problem are you trying to solve?

Businesses and consumers would like to pay for priority traffic on the Internet and ISP's would like to see increased revenue for providing prioritization of traffic. IQX will enable both.

-ISP's will want an automated method of charging customers for preferential treatment of traffic across their network.

-Business's require their traffic to be treated preferentially because there are times of congestion on the Internet.

-The Internet as it exists today is best effort, however, the technology exists to prioritize certain traffic over others.

Why the Ethereum network?

The Ethereum Foundation has a large ecosystem of support and development. They are working on creating a secure and scalable blockchain. IQToken LLC is focused on developing the solutions specific to the Utility of IQX and will focus our efforts there.

Why can't United States residents participate?

Unfortunately current SEC regulations make allowing the purchase of tokens as part of an ICO by US citizens too risky for us to allow. The Howie test can be used to determine what is and what is not considered a security, and the fact that the future value of the IQX token is highly dependent on a 3rd party (IQToken LLC), it could pass the Howie test as a security. We don't think the IQX token or any other "utility" token is a security, most participants in ICO's don't think "Utility" tokens are securities, but that is the current state of regulation in the United States. If you feel motivated enough, please write your congressman.

Glossary of Terms

IQX: Internet Quality Token

IQToken LLC: The for profit business

QOS: Quality of Service

VPN: Virtual Private Network

ISP: Internet Service Provider

WAN: Wide Area Network

SAAS: Software as a Service

IAAS: Infrastructure as a Service

PAAS: Platform as a service

