


# NKN Segment Transmission Protocol

Maximize transmission efficiency & reduce data lost

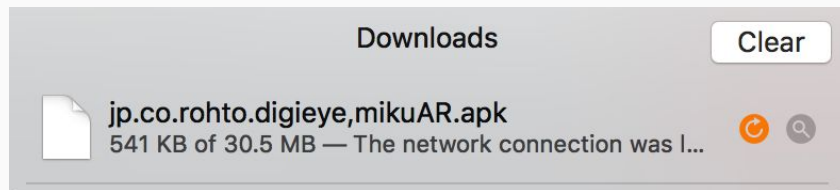


A laptop screen is shown in the background, displaying a line graph with a blue line and a pie chart. The screen is partially obscured by a dark overlay. The text is written in white, bold, sans-serif font.

**Mission statement:**  
**To improve data security.**  
**To transmit more efficiency.**  
**To reduce data lost.**

# The problem: Traditional Internet

1. Data transmission always depends on the user's network status.
2. Poor network status may cause data lost.
3. Once the data lost, you have to try to grab the data again.



当你需要获取数据的时候，因数据量大和网络原因却只能眼巴巴地干着急？

# The problem: Microservice / Cloud

## Timeout error while pulling docker image

While pulling docker image from dockerhub, getting following error :

```
0 Using default tag: latest
latest: Pulling from wurstmeister/zookeeper
a3ed95caeb02: Pulling fs layer
ef38b711a50f: Pulling fs layer
e057c74597c7: Pulling fs layer
666c214f6385: Waiting
c3d6a96f1ffc: Waiting
3fe26a83e0ca: Waiting
3d3a7dd3a3b1: Waiting
f8cc938abe5f: Waiting
9978b75f7a58: Waiting
4d4dbcc8f8cc: Waiting
6e2141080cee: Waiting
7b01624d9a37: Waiting
438e659516b8: Waiting
504083860edf: Waiting
9e313884ca1b: Waiting
7f32922adacf: Waiting
error pulling image configuration: Get https://registry-1.docker.io/v2/wurstmeister/:
```

How can I increase this timeout parameter value in docker? As my internet connection is slow sometimes.

1. 在云端和微服务上面，也存在着这样的问题。
2. 传输不可掌控，不能自定义传输数据。
3. 最终因为网络拥堵，效率低下。

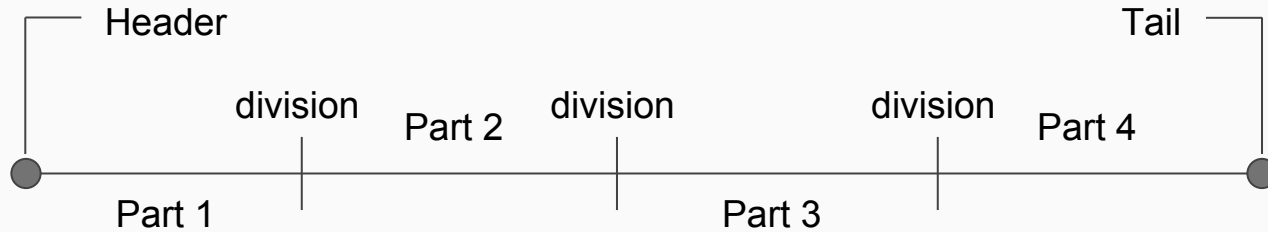
A close-up photograph of a person's hands working on a circuit board. The person is using a soldering iron to solder components. The background is blurred, showing some electronic components and a workbench.

# The solution

Introduce our protocol:  
NKN Segment  
Transmission

# How it works?

P2P file transmission on NKN blockchain.

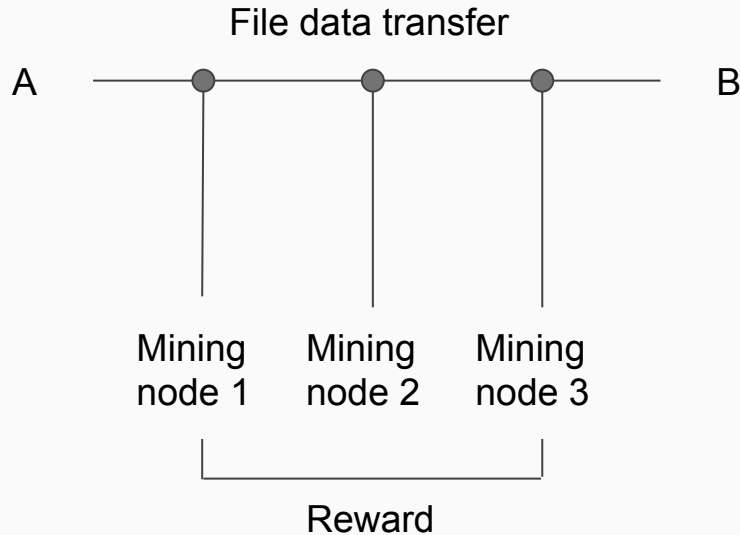


Protocol based file  
transmission

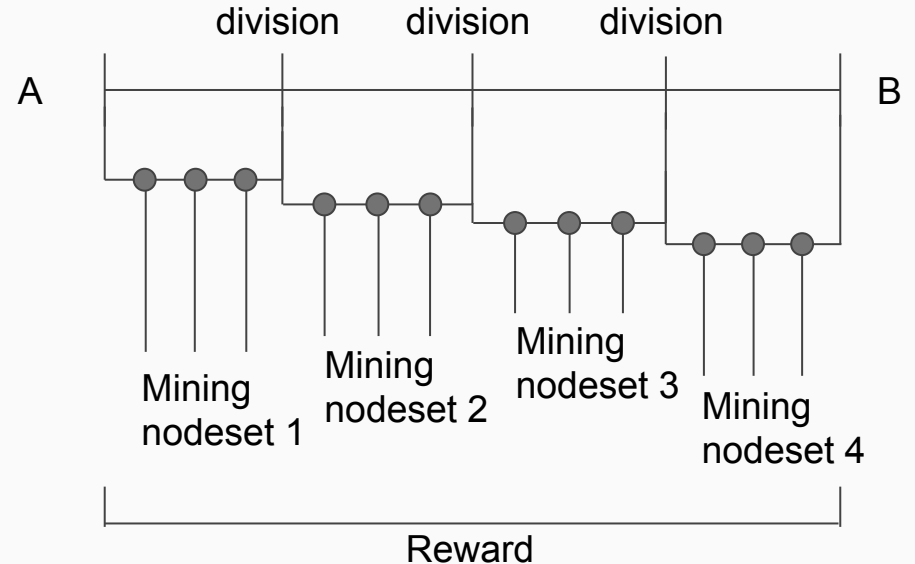
Overall, DATA SEG =  
 $\text{div}(n)+1$

# We evolved

Current NKN data transmission logic



Protocol based NKN data transmission logic



# Process overview



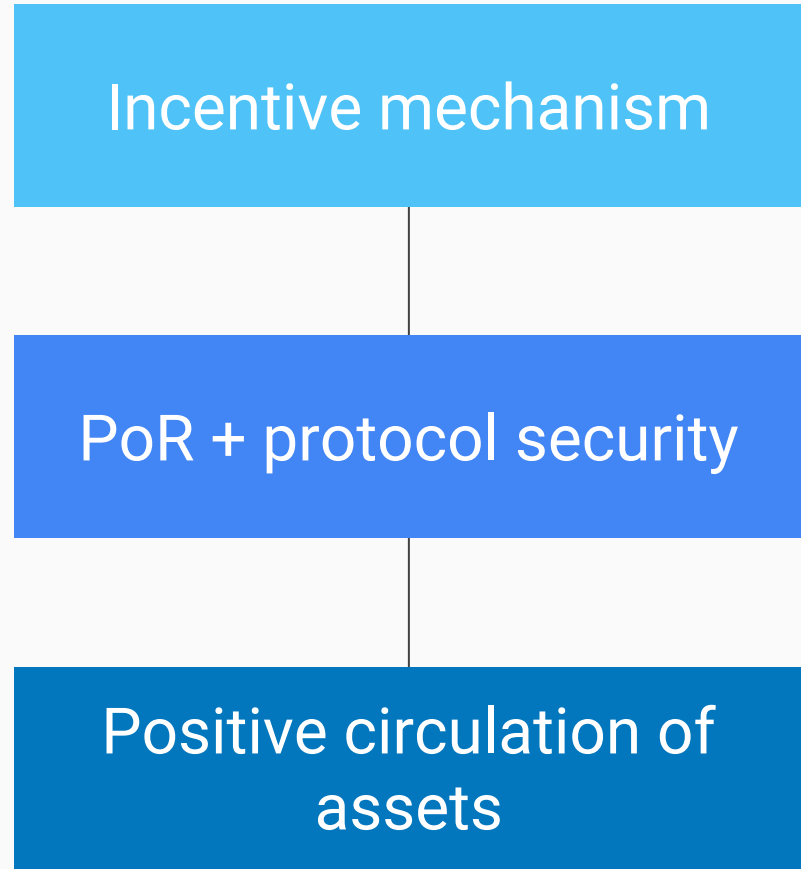


An aerial photograph of the New York City skyline at dusk. The sky is a mix of dark purple, blue, and orange. The city lights are visible, and the water of the harbor is in the background. The text 'The magic: Incentive + Value Transmission' is overlaid in white, bold, sans-serif font.

# The magic: Incentive + Value Transmission

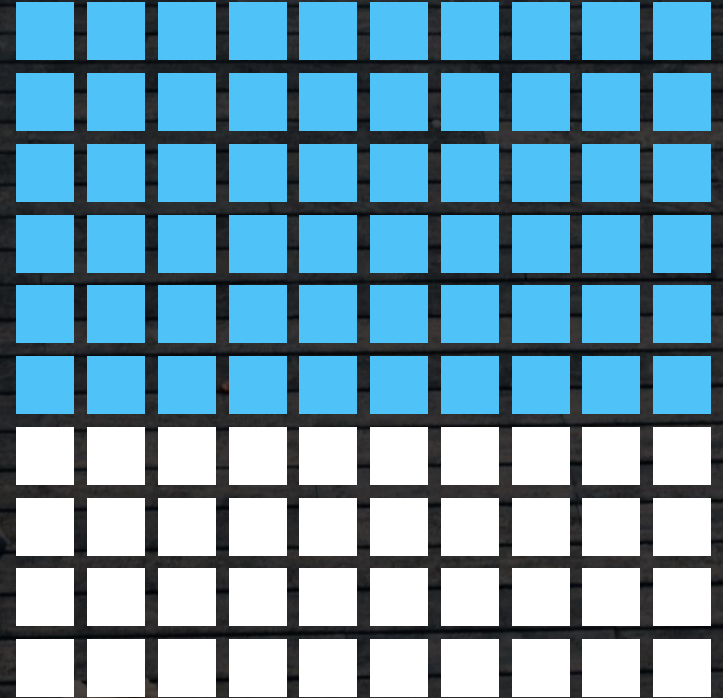
# Transmission model

Based on the incentive mechanism and PoR security, p2p transfer will bring increasingly value to the network.



# Why NKN?

**NKN is the the new kind of Proof of Relay/transmit blockchain network. We believe using infrastructure protocol, can definitely improve security and efficiency and finally the value in NKN.**



# Summarize: Our efforts

1. 通过段/分片传输技术提高了NKN区块链网络的数据传输速度, 并在此之上提升了安全性和隐私性。
2. 用NKN解决了传统互联网的数据丢失问题, 保证了数据的一致性。
3. 加强了NKN设计的通证激励模型, 使更多人能作为矿工节点加入进来, 并维持区块链网络传输的负载均衡。
4. 在原有的PoR的安全性之上, 通过段/分片数据传输加强安全性, 防止控制节点的恶意篡改。
5. 帮助增强安全+激励模型, 使区块链网络积极传输和转发数据, 让数据作为资产在NKN区块链上正向流通。