

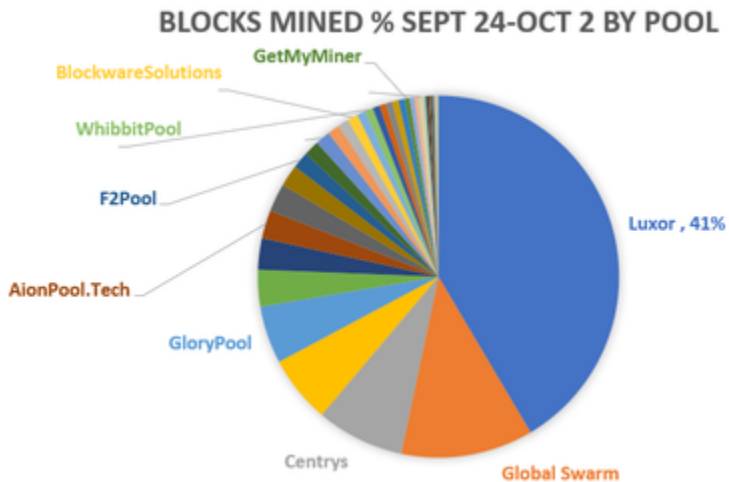
Data Analytics and Decision Making

- Data Wrangling

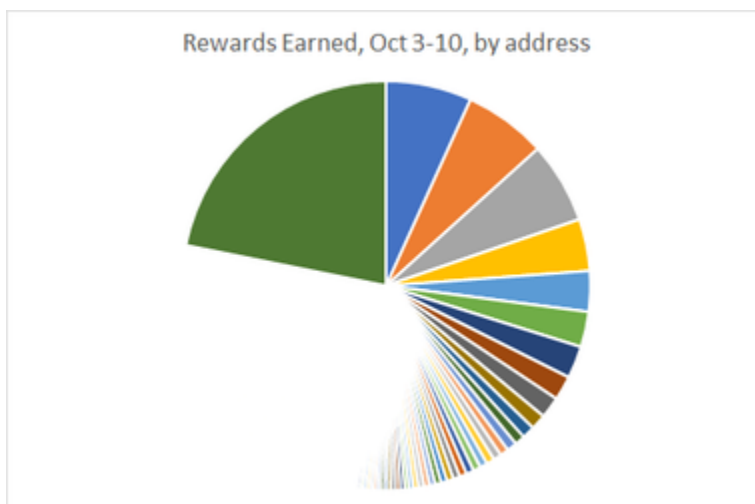
Week over Week Comparisons

High level

1. tier 1 miner distribution, week over week
 - a. Tier 1 addresses are listed in the block info as 'miner'
 - b. This shows the distribution of blocks mined by Mining Pool or Solo Miner (those that mine at network difficulty)

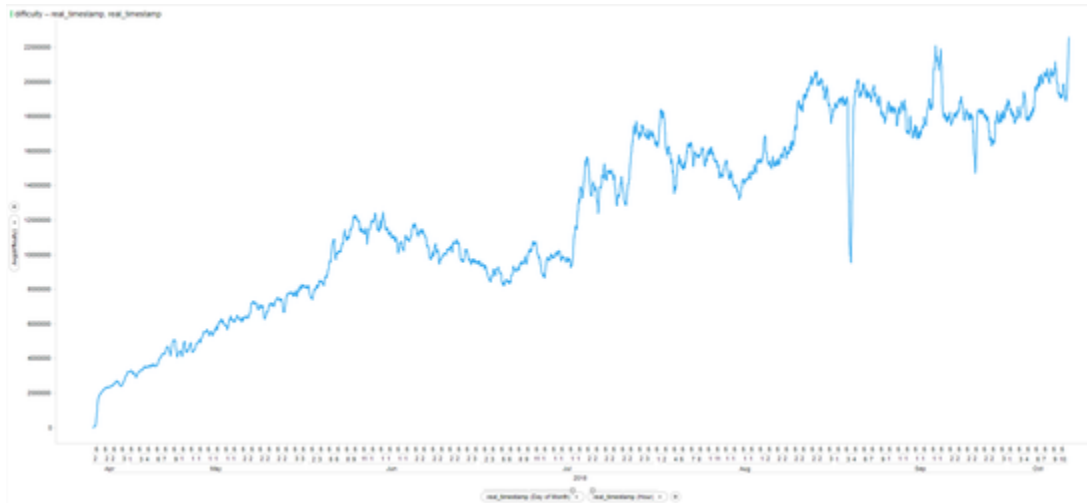


1. tier 2 miner distribution, week over week
 - a. in Aion_etl there is some simple logic to identify an address as a pool
 - i. mine more than 2.5% of daily blocks or send more than 10 transactions per day (over the period)
 - b. Addresses identified as a pool are then run through the Transactions database and all recipients of value from a pool are tagged as Tier 2 Pool miners
 - c. Tier 2 also includes T1 addresses that don't meet the is_pool? requirement.

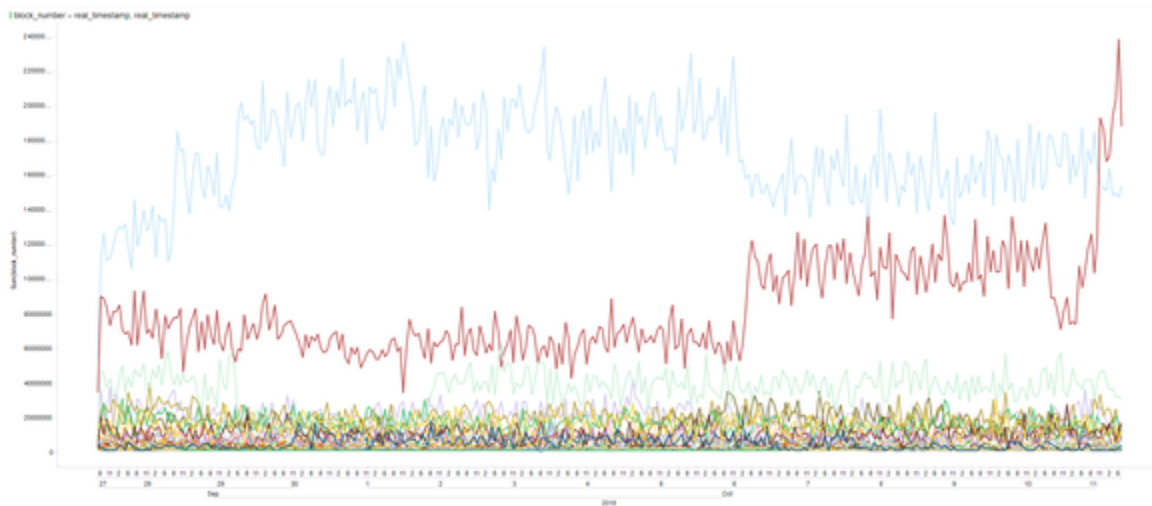


- false positives
 - If an identified pool sends a transaction the recipient is flagged as a miner
 - i.e. pool is moving their balance

1. Network difficulty
 - a. Spotfire Tool



1. T1 Mining Overtime
 - a. Spotfire Tool



Miner Related

1. Daily active miners
2. Miner churn
3. Transactions
 - a. to address (known exchange/smart contract)
4. Is this Address a Pool
 - a. Pools send Transactions
 - i. frequent basis
 - b. Pools are T1 addresses

Network

- Under attack?

Wish List

1. Mining Address rating/score
2. Mining Address Overview

- a. first day
 - i. Daily active miner %
- b. Last 14 days
 - i. daily active miner %
- c. pools used
- d. amount mined
- e. Estimated Mining Hardware
 - i. increase over time?

Network Stability Metrics

Miner Retention/Momentum

Addresses that consistently receive value

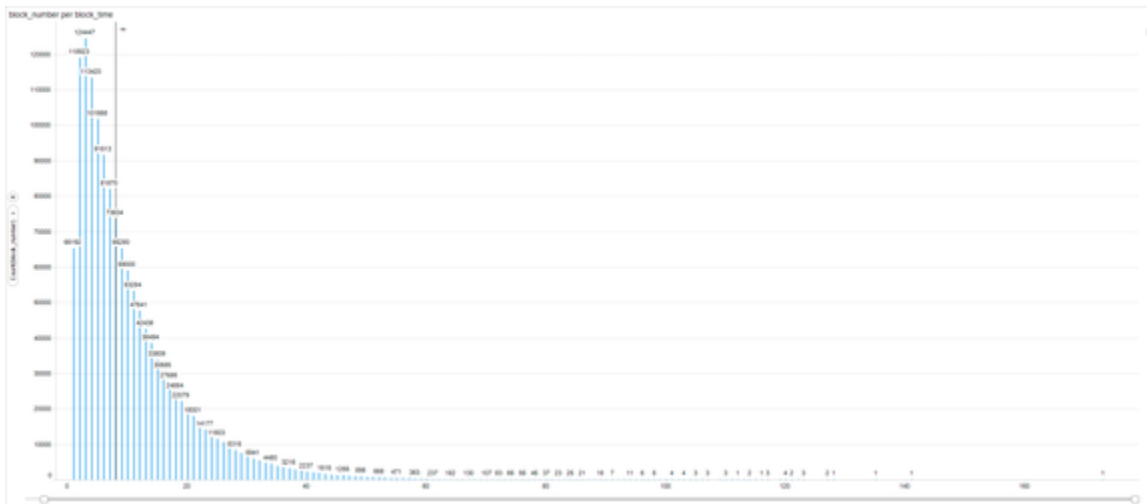
Calculate the total reward earned per period

- and pool addresses

All the receiving addresses

- filter out non-active accounts (figure out evaluation criteria)

BlockTime



Pool Monitoring

<https://miningpoolstats.stream/aion>

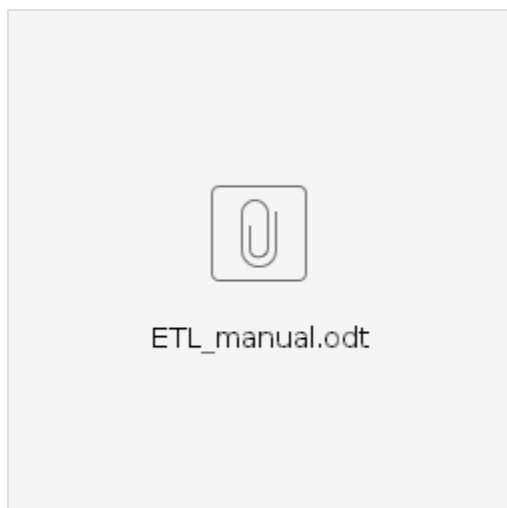
- uses pool API for hashpower
- uses dashboard API for network hashpower

Analysis

- VoskCoin Video Impact - [VoskCoin Impact](#)
 - [Analysis_v2.xlsx](#)
- Is Aion network under Attacks? https://docs.google.com/document/d/1Ym_ArAi5FhlyeuUzHgQ23wN6Dc86jJFDrCiTy3YvASw/edit
- NiceHash and Graphic Card Equivalence - [Nice Hash and GCE.xlsx](#)
- Mining Pools - [Mining Pool.xlsx](#)

Data Tools

Aion_ETL



https://github.com/qoire/aion_etl

Monitoring Systems in Place

Aion Monitoring System

2018-09-11 Monitoring System Meeting notes

Risk Register (Draft)

This risk register is a simple way to evaluate the risk of an opportunistic attack on Aion. By identifying and defining risk criteria, rating it (1-low to 5-high) based on current conditions, and then totaling the values we can estimate the level of risk.

Description	Rating (1-5)	Evaluation
Is Equihash 210,9 on NiceHash?	1	Yes/No how much compute cost (see crypto51.app)
Circulating Supply of Coins on Aion	1	Wallet balances, and Value. As supply moves over through the bridge this rating will increase
Value of Aion Coin	1	Current market value of Aion, Market Cap
Hashpower of Aion	4	(CGE Cost of replacement or rent from NiceHash) a low hash rate is riskier and given a higher score
Exchange Volume	3	This is a relative estimation. Use 7-day moving average of 24-hour volume?
Exchange block confirmation criteria	1	A number of confirmation blocks required from exchanges. This will vary but understanding which exchanges have lower criteria will help evaluate needed attack time.
Exchange Trade volume policy	1	Max value allowed per identity (how secure or vulnerable do we the exchange is)
Media Attention	1	Is Aion getting more than usual media attention, how is the sentiment
Total	13	Current Risk Rating = Medium

The above chart will help evaluate when we are more at risk of a 51% attach (this is a draft). i.e. rate each criterion and add them up

Very Low < 10

Medium < 20

High > 20

Very High > 30