Building Storage Systems for the Burstcoin Blockchain Platform

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Outline

- What is a Blockchain?

- What is Burstcoin?

- What is the POC protocol?

- How use of NVMe™/NVMe-oF ™ by using Proof of Capacity can enable industry growth and creation of additional storage markets.

- Blockchain Adoption by the Market

- Q&A

What is Blockchain?

- Blockchain is a distributed database of records stored in blocks.

- Blockchain is secured using peer validation in cryptography.

- Blockchain as a technology has several facets that directly or indirectly can impact user depending on implementation.

What is Burstcoin?

- Burstcoin is an open-source decentralized platform that connects people, companies, and financial institutions. It allows you to move value – according to your own rules – within a scalable, green and customizable ledger.

- Burstcoin is the first cryptocurrency using the proof-of-capacity algorithm.

- Burstcoin was the first cryptocurrency to implement working, "Turing complete" smart contracts in a live environment in the form of *Automated Transactions* (AT), this occurred before both Ethereum and Counterparty.

What is Burstcoin? Continued

- Burstcoin uses Automated Transactions include decentralized crowdfunding.

- An innovation by Burstcoin and Qora is the *Atomic cross-chain transactions* (ACCT), this allows for full decentralized trading between two cryptocurrencies without the need for any third-party, namely an online exchange. Cross-chain transactions have been successfully made between the blockchain of Burstcoin and Qora (2014).

Proof of Capacity Consensus Protocol (POC)

- Proof of Capacity uses the outputs of the shabal-256 cryptographic function to validate capacity to be used in mining.

- Shabal-256 currently is ASIC-resistant due to the IO requirements (as it requires writes).

- One time hashing process(plotting) versus continuous hashing.

Proof of Capacity Consensus Protocol (POC) Continued

- Mining process only involves reading the plots every new block(~ 4 min. average) and submitting the answers plus deadline(time to read to actual nonce).

- Power requirements for reading the plots greatly reduce overall energy consumed by the Burstcoin blockchain.

Energy Efficient and Current State

1000 kWh
Electricity consumed per
transaction (Bitcoin)

0.0024 kWh
Electricity consumed per
transaction (Burst)

8,112,058	176,856	489	429,105
TOTAL TRANSACTIONS	BURST WALLETS	FULL NODES	TERABYTES CURRENTLY MINING

Examples of Plotting and Mining with Western Digital

Plotting

7.2 TB plotted in 5 hours, 11 minutes
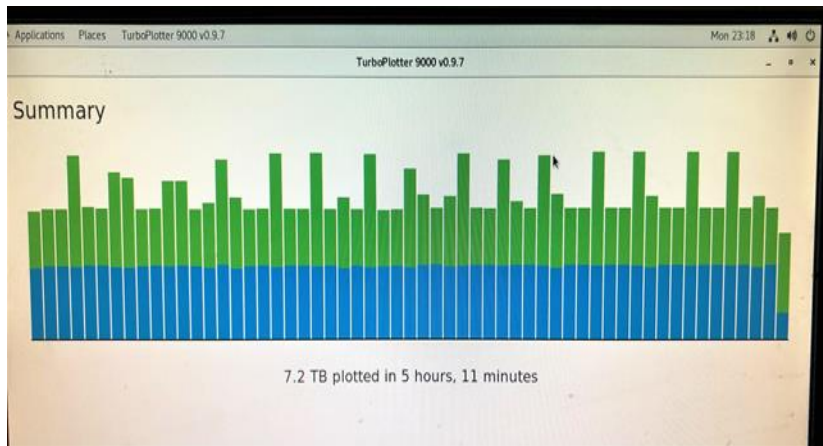
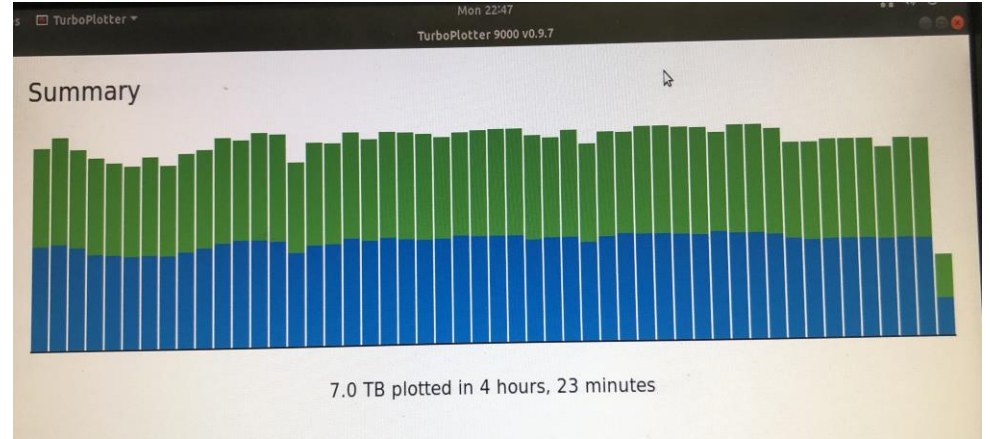🟩 Memory writes

🟦 Nonce Generation

Advantages of using NVMe™/NVMe-oF™ by mining Proof of Capacity

- Better read performance for mining.
- Significant write performance increase for plotting.
- Improvements in NVMe™ and NVMoF ™ allow further optimization of drive resources
- POC mining allows for usage of under or unutilized resources within storage systems.

Examples of Plotting and Mining with Supermicro using NVMe ™

7.0 TB plotted in 4 hours, 23 minutes

■ Memory writes

■ Nonce Generation

Examples of Mining Applications

NVMe™/NVM-oF™ devices possibilities for new markets

- The idea of plotting allows to replace (erase) previous data consistently at the byte level and replace with the new data. The drives can be reused and by using the algorithm in the recycling process the secondary market can be added as an opportunity for expansion.

- Idle NVMe™/NVMe-oF™ capacity can be used as shared resource.

- Plotting algorithm is great tool to do benchmarking for Data Center performance analysis (stress testing).

# NVMe™/NVM-oF™ devices possibilities for new markets - Continued

- Security commands in TCG bring great value to overall benefit when it comes to use of Proof of Capacity

- HDD's, SSD's and flash price are dropping and interest in financial sector creates an expansion opportunity as market adopts the new form of financial exchanges.

Blockchain Adoption by the Market

- Companies racing to adapt blockchain include Amazon, Walmart, UBS, Microsoft, IBM and PwC. The Bank of Canada is also experimenting with the technology.
- Governmental agencies looking into application.

Estimated bank spending on blockchain tech

$400 million

300

200

100

0

'14   '15   '16   '17   '18   '19
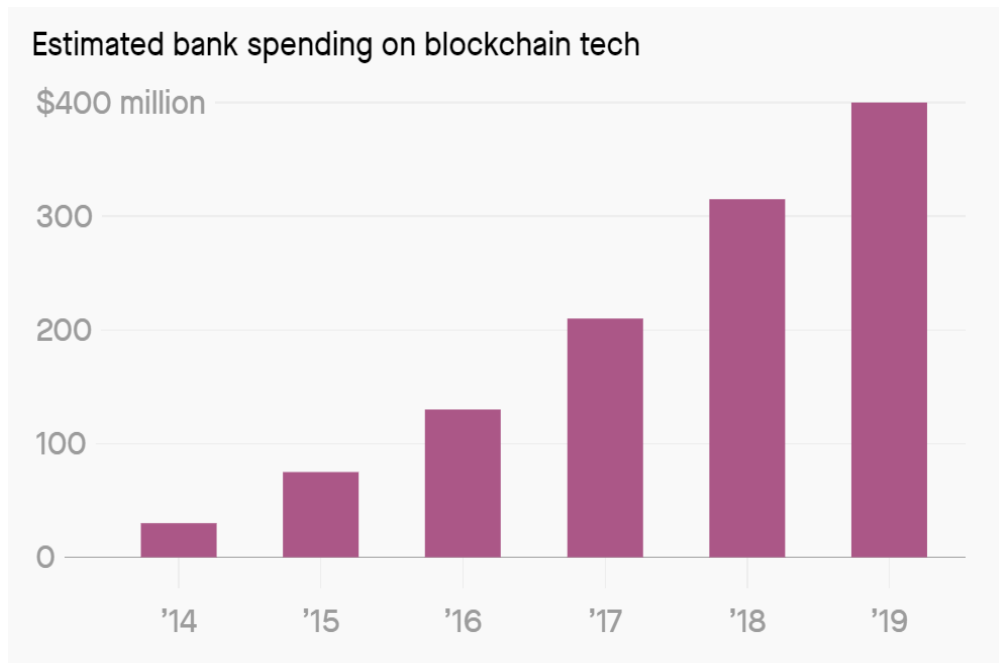
Interested in Learning More?

You can use the following websites:

https://myactionspot.com/myactionspot/blockchain-services/

Donate and get involved ->

https://www.burst-coin.org

Need additional information or to schedule a meeting?

info@myactionspot.com or nixops@protonmail.com

Q&A

References

- https://explore.burst.cryptoguru.org/chart/transaction/total
- https://qz.com/576671/banks-will-their-quintuple-spending-on-blockchain-by-2019/
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