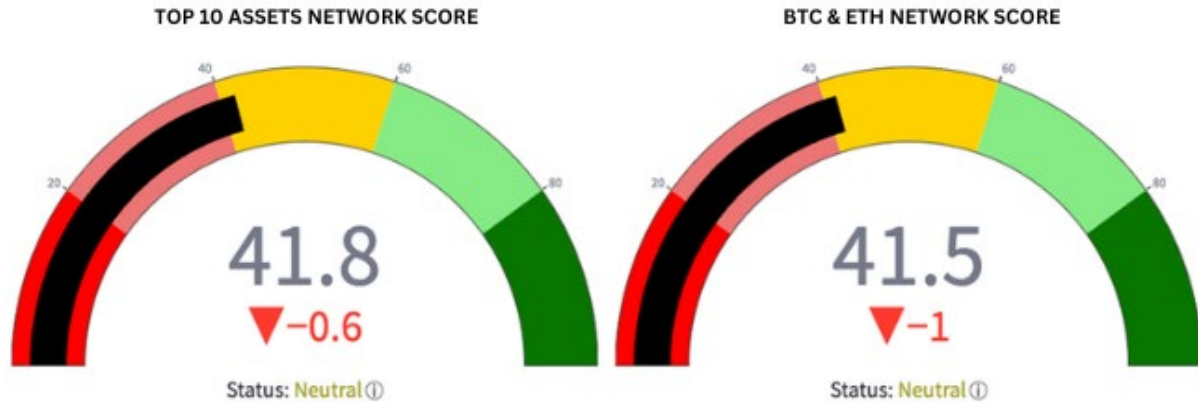


Digital Pulse Report: A HIGH-CLASS PROBLEM

21 September 2023

Coinbase Asset Management

FUNDAMENTAL PULSE – WEEKLY NETWORK PERFORMANCE



WEEKLY NETWORK PERFORMANCE – TOP 10 ASSETS



Asset scores have mostly declined over the past month. Bitcoin network activity is an exception, staying close to its historical average.

ASSETS	ASSET SCORE	7D CHANGE	30D CHANGE	VOLUME	TRANSFERS	ACTIVE USERS	USER GROWTH	VALUATION	NETWORK DISTRIBUTION	VELOCITY
Top 10 Assets	42	-1	-5	20	67	54	43	25	75	9
BTC & ETH	42	-1	-3	17	81	66	45	26	58	0
Bitcoin	54	3	2	9	97	94	61	21	100	0
Ethereum	28	-5	-8	24	64	37	28	30	16	0
Ripple	29	-5	-19	21	27	6	29	21	100	0
Dogecoin	33	-2	-26	8	59	3	39	12	100	14
Cardano	43	-3	-4	39	11	5	20	27	100	100
Polygon	24	-2	-10	20	8	7	20	18	98	0
Litecoin	35	1	-3	63	16	10	45	15	95	0
Bitcoin Cash	44	3	0	21	84	82	59	52	10	0
Chainlink	54	8	-3	45	50	44	42	45	66	85
Stellar	52	-5	-3	36	81	68	20	47	100	14

*Snapshot from the Coinbase Asset Management Pulse on 9/20/2023. Pulse Report includes the top ten assets by market capitalization. More than 70 assets and risk management tools are available for demonstration on request. Notes: The Scores are 12-month trailing percentile values. Changes on the gauge chart represent the seven-day change. "Top 10 Assets" are size-tilt weighted, the square root of market capitalization. "BTC & ETH" are equally weighted.

Status- High > 60, Neutral 40 to 60, Low < 40. A score of 44.1 means the score is better than 44.1% of its values in the past 365 days.

Asset Scores are unique and sensitive to changes in a particular asset. Readers should not compare asset scores across assets. Please see metric descriptions endnotes for details.

A High-Class Problem: Ethereum's Shapella upgrade is proving to be a double-edged sword. Demand has been exceptional. The percentage of ether staked has risen to 21% of total supply from 15%. The line to be in the staked-ETH club is still ten days long. Rewards have declined sharply in response, now less than 4%. If the deposit queue stays full, staking ratios would be 50% in May 2024 and 100% at the end of next year. And that's a problem. Why? The network stops working. Holesky testnet failure emphasizes the point – the number of validators was set to 2.1 million, roughly three times mainnet, and it failed. It will now launch with 1.4 million. Liquid staking services that command a high market share also introduce centralized risk. But it is a solvable problem. Slowing the speed of new validators is the temporary fix, and will be integrated within the next six months. It's a bridge to give developers time for a lasting solution, including a potential material recalibration of Ethereum's monetary policy. Reducing staking yields, implementing MEV burns, and lowering liquid staking dominance are all under consideration. Be aware, not troubled. This is the dynamism of Ethereum on display. Challenges are identified early to the benefit of long-term network health. And context is key. Staking demand is high because users are optimistic about the future. It's a high-class problem.

SLOWING THE NUMBER OF NEW VALIDATORS

Ethereum core developers plan to set a churn limit as part of the Dencun upgrade. Slowing the churn limits new staking validators, allowing more time to tackle challenges associated with the surging staking demand. With the upgrade occurring in Q3 2024, the churn limit is expected to range from 14 to 16. The table below simulates that and other scenarios.

Max Churn Limit Activation Date : Dec 01, 2023		
Max Churn Limit	50% ETH staked	100% ETH staked
Fastest	28-May-24	18-Dec-24
16	23-Jul-24	26-Dec-25
12	9-Oct-24	4-Sep-26
8	15-Mar-25	21-Jan-28
6	19-Aug-25	8-Jun-29
4	29-Jun-26	12-Mar-32
Max Churn Limit Activation Date : Apr 01, 2024		
Max Churn Limit	50% ETH staked	100% ETH staked
Fastest	28-May-24	18-Dec-24
16	1-Jul-24	4-Dec-25
12	1-Aug-24	26-Jun-26
8	1-Oct-24	8-Aug-27
6	1-Dec-24	20-Sep-28
4	2-Apr-25	15-Dec-30

Source: eips.ethereum.org. Shaded in grey is the proposed change, and in green is the fastest, when the deposit queue stays full.

Metric Definitions

1. Volume – The aggregated value of native units transferred between addresses on-chain.

2. Transfer Count – The sum count of transfers between addresses. It becomes more valuable when used in conjunction with Volume.

2.1 Low Transfer Count & High Volume: High volume but transferred by a few addresses.

2.2 High Transfer Count & Lower Volume - Indicates higher retail activity or exchanges amongst small accounts.

2.3 Lower Transfer Count & Lower Volume: Indicates slower network usage and low network demand.

2.4 High Transfer Count & Higher Volume- indicates high network usage. A persistent trend is substantial.

3. Active Users: Number of addresses active in the network as recipients or originators of ledger change. This includes value transfers, signing blocks, and other forms of ledger change activity.

3.1 High Value: High network usage and high demand.

3.2 Low Value: Low network usage and low demand.

4. User Growth Rate: The rate at which new addresses with non-zero balances are added to the network.

4.1 High Value: Indicates users being added to the network at an increasing rate.

4.2 Low Value: Indicates users being added to the network at a slower pace.

5. Valuation: This metric compares the on-chain volume to the realized capitalization representing the value of the network. Realized capitalization is a revised form of market capitalization that accounts for the value of the coin at the time the coin was last spent. A lower volume compared to the high value of the network indicates the network could be overvalued and vice versa.

5.1 High Value: Indicates the network is closer to its real value based on the on-chain volume.

5.2 Low Value: Indicates the network is very close to being overvalued considering the activity on the network.

5.3 Medium value: Asset is reasonably valued—sustainable demand for transactions.

6. Velocity –This indicator shows the turnover of coins in the network as measured by on-chain volume divided by active supply. The primary use of this metric in this instance is to help access an asset's market-relevant supply.

6.1 High Value: There is greater circulation of coins in the network and use for payments.

6.2 Lower Value: There is lower circulation of coins in the network and use for payments.

7. Network distribution – The metric used, the SER ratio, compares the smallest accounts (sum held by accounts with a balance less than 0.00001% of the supply) against the richest accounts (sum held by the top 1% addresses).

7.1 High value: Signifies high distribution of supply and higher decentralization.

7.2 Low value: Low supply distribution and heavy concentration amongst a few wallets.

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