

Validator “Freeking” Slashing Proposal - Draft

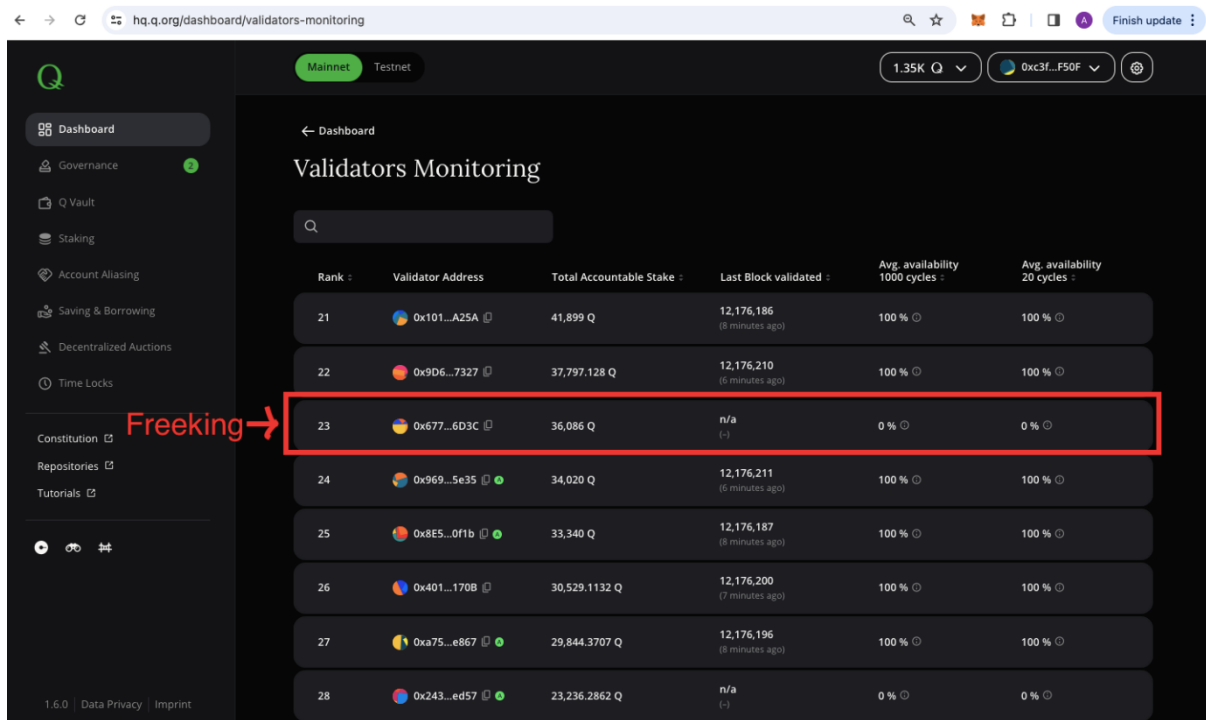
This is the documentation in support of the slashing proposal against the Validator Node with the following address: 0x677B24C03686b98ecFa5fd45e07b65c184c56D3C.

Overview of facts

- The Validator in question is Validator 0x677B24C03686b98ecFa5fd45e07b65c184c56D3C.
- Based on analysis of on-chain data, it was determined that this Validator has not validated any blocks since Tuesday January 23rd, 2024.
- The last block validated by the Validator is the following:

Block id: 11583175 Block Hash:
0x1651d896d682a548c980d8d928e8a6c79e987539aa5d7fa7cd5aa6241c069353 timestamp
(unix): 1706038599 Time: Tue Jan 23 2024 08:36:39 pm CET Relative: 21 days
ago (as of Tue Feb 13 2024)

- See screenshot below for current status of the Validator as still down:



Rank	Validator Address	Total Accountable Stake	Last Block validated	Avg. availability 1000 cycles	Avg. availability 20 cycles
21	0x101...A25A	41,899 Q	12,176,186 (8 minutes ago)	100 %	100 %
22	0x9D6...7327	37,797,128 Q	12,176,210 (6 minutes ago)	100 %	100 %
23	0x677...6D3C	36,086 Q	n/a (-)	0 %	0 %
24	0x969...5e35	34,020 Q	12,176,211 (6 minutes ago)	100 %	100 %
25	0x8E5...0f1b	33,340 Q	12,176,187 (8 minutes ago)	100 %	100 %
26	0x401...1708	30,529,1132 Q	12,176,200 (7 minutes ago)	100 %	100 %
27	0xa75...e867	29,844,3707 Q	12,176,196 (8 minutes ago)	100 %	100 %
28	0x243...ed57	23,236,2862 Q	n/a (-)	0 %	0 %

- Following analysis by the team at Q Development AG, it was determined that this Validator joined the Validator Node set through the ITN (Incentivized TestnNet) program. As such, their Discord username is known to the team at Q Development AG who have shared this same username with the Root Node panel. Their username is “freeking”.
- The Validator has been contacted on Discord on January 24, 25, and 26 and has been asked for an explanation as to the downtime as well as action to remedy such downtime. No responses were received on any of these messages. See screenshots below:



Florian | Q DEV 01/24/2024 11:59 AM

@freeking please also check your validator node, it seems stuck at a recent bad block. Try to check your version , update it, restart and if you don't want to sync from scratch use the snapshot service by stakecraft.



4



@seb160 | sbbnode.com Sync done ✓

Florian | Q DEV 01/25/2024 1:07 PM

awesome 🙌

Dear @freeking and @lhor | Orally Network both of your nodes seem still to be down since the bad-block yesterday with the old version.

May you share your progress on fixing the issue? Ideally you :

Stop current validator -> check version is up to date, otherwise update -> delete old chain data (if you use docker-setup chaindata is a bit hidden) -> restart the node. If you do not want to restart syncing from scratch, checkout the snapshots provided by Stakecraft.



Florian | Q DEV 01/26/2024 10:24 AM

@freeking

Your validator node is still not syncing, you are missing to sign blocks since Wednesday 24th of January. You did not reach out in the community chat.

cc @Alice Zhang

Rank	Validator Address	Total Accountable Stake	Last Block validated	Avg. availability 1000 cycles	Avg. availability 20 cycles
21	0x677...6D3C	36,086 Q	n/a	58.5294 %	0 %

Freeking Validator not securing the chain 2 Messages >

Florian | Q DEV Click to see attachment 16h ago



Freeking Validator not securing the chain

Started by Florian | Q DEV

January 29, 2024



Florian | Q DEV 01/26/2024 10:24 AM

@freeking

Your validator node is still not syncing, you are missing to sign blocks since Wednesday 24th of January. You did not reach out in the community chat.

cc @Alice Zhang

Rank	Validator Address	Total Accountable Stake	Last Block validated	Avg. availability 1000 cycles	Avg. availability 20 cycles
21	0x677...6D3C	36,086 Q	n/a	58.5294 %	0 %



Florian | Q DEV Yesterday at 4:34 PM

Dear @freeking , it has been almost a week since the bad block incident and your node has not been updated yet.

cc @Alice Zhang @Ben | Q DEV

Rank	Validator Address	Total Accountable Stake	Last Block validated	Avg. availability 1000 cycles	Avg. availability 20 cycles
21	0x677...6D3C	36,086 Q	n/a	1.6305 %	0 %

- This Validator has a total stake of 77,191 Q. Of this, 73,583 Q belong to this Validator's delegators.
- The total accountable stake, i.e. the stake that is relevant for determining the rewards of this validator, is 36,086 Q and the self-stake is only 3,608.6 Q.
- During the period of inactivity, the Validator has earned approximately 257.2 Q, of which 244.34 Q were paid to delegators since the validator shares 95% of its rewards with delegators.
- We (the Root Nodes) can only slash self-staked tokens.
- The total staked by the 27 active Validators is 40,173,788.29 Q. Hence Validator “23” has just under 0.1% of total Validator stake.
- At the time of writing, there are 79221540.76 Q Tokens in circulation, Validators’ stake makes up 50.71 % of total Q Tokens in circulation.

Relevant provisions in the Q Constitution

- Clause 1.3 of the Q Constitution provides that operators of full nodes on the Q Protocol, including Validator Nodes, agree and accept the provisions of the Q Constitution.

The screenshot displays the Q Constitution website. The browser address bar shows the URL: q.org/constitution#_article_1_supremacy_of_the_q_constitution. The page title is "Q Constitution". On the left, a sidebar lists the contents: Preamble, Q Constitution (expanded), Article 1. Supremacy Of The Q Constitution, Article 2. The Q Blockchain and Transactions On Q, Article 3. Q Tokens and Q Token Holders, Article 4. Validator Nodes, Article 5. Root Nodes, Article 6. Slashing, Article 7. Withdrawal Of Stake, Article 8. Rights During and Following Slashing, Article 9. Validator Node List, Validator Node Exclusion List and Root Node List, Article 10. Expert Panels, Article 11. Q Id, Article 12. Integrated Applications, Article 13. Applicable Law and Dispute Resolution, Appendix 1. Definitions, Appendix 2. Root Node Selection, and Appendix 3. Transaction Fees. The main content area features "Article 1. SUPREMACY OF THE Q CONSTITUTION" with seven numbered clauses (1.1 to 1.7). On the right, a sidebar provides metadata: Version 1.4, Date 20 December 2023, Constitution Hash 0x30d72e6b106772bde445d8e3e5b24e182a2b05d936, Preceding Constitution Hash 0x4fbd55592b6d327e7fbb779a378ff068974b2e39f6f, Q System Contract Registry 0xc3E589056Ece16BC88d22, and Last updated 2024-02-02 16:00:39 +0100.

Q Constitution

Preamble

Q Constitution

Article 1. Supremacy Of The Q Constitution

Article 2. The Q Blockchain and Transactions On Q

Article 3. Q Tokens and Q Token Holders

Article 4. Validator Nodes

Article 5. Root Nodes

Article 6. Slashing

Article 7. Withdrawal Of Stake

Article 8. Rights During and Following Slashing

Article 9. Validator Node List, Validator Node Exclusion List and Root Node List

Article 10. Expert Panels

Article 11. Q Id

Article 12. Integrated Applications

Article 13. Applicable Law and Dispute Resolution

Appendix 1. Definitions

Appendix 2. Root Node Selection

Appendix 3. Transaction Fees

Article 1. SUPREMACY OF THE Q CONSTITUTION

1.1 This Q Constitution sets out the basic rules of Q, including the rules for participating in, using, interacting with or contributing to Q.

1.2 This Q Constitution shall only be amended at the proposal of one or more Q Token Holders if such proposal is put to a vote and accepted in accordance with Appendix 5. Otherwise, any purported amendment to this Q Constitution shall be null and void.

1.3 By operating a full node that supports the Q peer-to-peer network, each node on Q, including each Validator Node and each Root Node, (each node on Q, a “**Q Node**”) agrees to and accepts this Q Constitution, as amended from time to time in accordance with the terms of this Q Constitution. By holding at least one Q Token, each Q Token Holder agrees to and accepts this Q Constitution, as amended from time to time in accordance with the terms of this Q Constitution. By holding a Q Personal ID, each Q ID Holder agrees to and accepts this Q Constitution, as amended from time to time in accordance with the terms of this Q Constitution.

1.4 Notwithstanding each Q Stakeholder's agreement to and acceptance of this Q Constitution in accordance with Article 1.3, the Q Stakeholders shall not at any time constitute, participate or act in a partnership with one another under this Q Constitution.

1.5 A Q Stakeholder shall only access Q and use the Q Blockchain using a client software which offers a mechanism independent of the Q Blockchain for collecting cryptographic proof of each removal of the Main Account or the Alias (as applicable) of a Validator Node from the Validator Node List and each addition of the Main Account of such Validator Node to the Validator Node Exclusion List in accordance with Article 9.

1.6 Capitalised terms used, but not otherwise defined in this Q Constitution (including in the Preamble and Appendices to this Q Constitution) shall have the meanings given in Appendix 1. Certain technical parameters used in the definitions included in Appendix 1 are specified in Part B of Appendix 7.

1.7 The parameters in square brackets are included in this Q Constitution for information purposes only and each of them reflects an aspect of the current technical implementation of this Q Constitution. Such parameters do not form part of this Q Constitution and amendments to any such parameters do not constitute Fundamental Changes, Basic Changes, Detailed Changes or Other Changes and, accordingly, do not require the consent of any Q Stakeholder in accordance with this Q Constitution at any time.

Version
1.4

Date
20 December 2023

Constitution Hash
0x30d72e6b106772bde445d8e3e5b24e182a2b05d936

Preceding Constitution Hash
0x4fbd55592b6d327e7fbb779a378ff068974b2e39f6f

Q System Contract Registry
0xc3E589056Ece16BC88d22

Last updated
2024-02-02 16:00:39 +0100

- Clause 4.5.1 of the Q Constitution provides that a Validator Node is obligated to operate a full node.

The screenshot shows a web browser displaying the Q Constitution document at the URL `q.org/constitution#_article_4_validator_nodes`. The left sidebar contains a table of contents with items like Article 11, Article 12, Article 13, and various Appendices. The main content area displays Article 4.5, which states that each Validator Node is responsible for maintaining the state of Q. Sub-clause 4.5.1 specifies that a Validator Node must operate a full node supporting the Q peer-to-peer network. Sub-clause 4.5.2 requires verification of Onchain Voting Proposals. Sub-clause 4.5.3 details the process for block candidates and slashing proposals, including a list of conditions (a-e) for when a Validator Node must record a transaction. A note at the bottom clarifies that a Validator Node with a designated Alias is the only one entitled to act through its Alias.

- Clause 5.3.4 of the Q Constitution states that Root Nodes are obliged to submit a slashing proposal for a Validator in breach of its obligations under the Q Constitution.

The screenshot shows a web browser displaying the Q Constitution document at the URL `q.org/constitution#_article_5_root_nodes`. The left sidebar is identical to the previous screenshot. The main content area displays Article 5.3, which states that each Root Node is responsible for monitoring the functioning of the Q Blockchain. Sub-clause 5.3.1 requires Root Nodes to provide evidence for inclusion on the Root Node List. Sub-clause 5.3.2 requires Root Nodes to operate a full node. Sub-clause 5.3.3 requires Root Nodes to monitor Validator Nodes and Root Nodes for breaches. Sub-clause 5.3.4 requires Root Nodes to enforce the rules of the Q Constitution and protect the value of the Q Blockchain by submitting a Slashing Proposal in case of a breach. Sub-clause 5.3.5 requires Root Nodes to execute a corresponding Slashing Transaction if a Slashing Proposal is accepted. Sub-clause 5.3.6 requires Root Nodes to propose a Slashing Confirmation during the Slashing Appeal Verification Period if a Slashing Appeal is withdrawn or considered withdrawn.

- Part A of Appendix 9 to this Q Constitution states that whenever a Validator reaches availability below 30% on a 1000 validation cycle basis, it may be slashed for any percentage above 0% and up to 100% of its self-stake.

q.org/constitution#_part_a_slashing_of_q_tokens_which_are_self_staked_to_validator_nodes

Q Constitution

Blog About Documentation Network Chamber Start Building

Preamble
Q Constitution
Appendix 1: Definitions
Appendix 2: Root Node Selection
Appendix 3: Transaction Fees
Appendix 4: Integrated Applications
Appendix 5: On-chain Voting
Appendix 6: Layer Zero Voting
Appendix 7: Constitutional Parameters
Appendix 8: Expert Panels
Appendix 9: Guidelines For Slashing
Appendix 10: Withdrawal Of Stake Procedure
Appendix 11: Onboarding Process, Governance Services And Governance Fees
Appendix 12: Initial DAO Integrated Applications

Download PDF

PART A- SLASHING OF Q TOKENS WHICH ARE SELF STAKED TO VALIDATOR NODES

Severity of non-compliance	Description	Non-exhaustive List of Examples	Maximum percentage of Q Tokens which are Self Staked to Validator Node to be Slashed
Level 1	Very light misbehavior	<ul style="list-style-type: none"> Availability below 95% down to 90% on a 1,000 validation cycle basis 	0.1%
Level 2	Light misbehavior	<ul style="list-style-type: none"> Availability below 90% down to 80% on a 1,000 validation cycle basis Extending a local fork, one of whose paths is invalid (building on an invalid block) Initiating or co-signing empty blocks (without including valid Transactions) 	3.0%
Level 3	Medium misbehavior	<ul style="list-style-type: none"> Availability below 80% down to 60% on a 1,000 validation cycle basis Not validating and/or recording transactions on the Q Blockchain on a first-come-first-served basis Abusive proposition of out-of-turn blocks Confirmation of transactions which are not Valid Transactions Accepting invalid blocks and forwarding in the network to peers 	10.0%
Level 4	Severe misbehavior	<ul style="list-style-type: none"> Availability below 60% down to 30% on a 1,000 validation cycle basis Breach of obligations set out in Article 4.5.1 	95.0%
Level 5	Very severe misbehavior	<ul style="list-style-type: none"> Availability below 30% on a 1,000 validation cycle basis Blacklisting of transactions or Public Keys Fraudulent transactions (e.g. signing double spend transactions) Ignoring voting transactions which are valid Transactions Breach of obligations set out in Articles 4.5.2 or 4.5.3 	100%

Version: 1.4
Date: 20 December 2023
Commitment Hash: 0x30c724d16c7722da44310afcc387bc3a0f568d8c3a1624e182a2b05a93854a
Proposing Contributor Hash: 0x4fc05592b6327a7fba78a4843fba528904779a370f0689f42a6289f3f
Q System Contract Registry: 0x38580546ce168c88ac0f210e9a7342a883522
Last updated: 2024-02-02 16:00:38 +0100

Considerations and reasoning behind the proposed slashing percentage

The space for discretion by the Root Nodes in determining the appropriate slashing percentage for this Validator Node is quite large, any number above 0 and up to 100%. Proposing some form of slashing here is important in demonstrating that Root Node oversight and governance on Q works and that the provisions of the Q Constitution are enforced and to deter future misbehaviour from network participants such as Validators. As such, Q Token Holders should be able to proceed with comfort and certainty that the rules by which they abide by are systematically and equally enforced among all participants of the Q ecosystem.

On the other hand, while the Validator in question has failed to fulfil its obligation to such an extent that it may, constitutionally, be slashed of the entirety of its self stake, there was no harm done to the Q Protocol and there was no evidence of malicious intent through actions aimed at corrupting and harming the integrity of the Q Protocol.

As such, it may be argued that, despite the relatively low number of Q tokens in question, a 100% slashing of the Validator's self stake is overly harsh and may deter future Validators from joining the Q ecosystem for fear of overly harsh penalties over negligent, as opposed to malicious, actions. It must further be noted that within the Web3 space, slashing beyond a nominal symbolic amount is not a widely adopted practice, and in any case, slashing into a Validator's existing stake significantly beyond what was rewarded may be seen as excessive in situations where no harm was done to the system.

With that being said, slashing only the amount of Q tokens which the Validator has earned themselves through rewards is such a low amount that it seems also excessively lenient and has little effect upon the status quo of the Validator set.

Keeping in mind that the purpose of Root Node oversight and the slashing mechanism are to ensure the security of the Q Protocol, one may argue that a pragmatic interpretation of that aim in the present situation is, at a minimum, to ensure that the Validators present in the active set of Validators (the top 27) are running full nodes and able to actually validate transactions on-chain. Further, it would be beneficial to the Q Protocol's reputation to ensure that no Validator displayed as "active" within the set is visibly inactive. With that aim in mind, a slashing of 40% of the Validator's self-stake would be

sufficient to achieve the goal of removing the Validator from the active set by reducing the Validator's self-stake to a size that also limits the size of its permitted delegated stake, thus leading to its drop in the Validator ranking below the top 27 and being removed from the active set.

This ballpark area seems to also be the consensus based on the temperature check survey circulated among the Root Nodes last week where six out of seven total survey responders favoured either a 35% slashing percentage or a range between 40% and 50%.

As such, a 40% slashing is proposed.