

# **FACTOM COMMUNITY TESTNET**

## **Organizational Structure & Governance**

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## Factom Community Testnet - Organizational Structure & Governance

VERSION	DATE	CHANGED BY	CHANGES
0.1	2018-03-16	Tor Hogne Paulsen	Draft for community review
0.2	2018-03-26	Tor Hogne Paulsen	Incorporated comments from community in text
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0.4	2018-04-13	Alex Carrithers	Altered the Organisational Structure and Working Group sections. Added appendix.
1.0	2018-04-24	Rene Pedersen	Remove draft and change version number

E-Mail: [factom.testnet@icloud.com](mailto:factom.testnet@icloud.com)

Discord: <https://discord.gg/XWJezKm> (primary support channel)

Wiki: <http://www.factom-testnet.com/>

Testnet Signup: [Fill out this form to sign up.](#)

Network monitoring: <http://monitoring.factom-testnet.com>

Node monitoring: <http://factoid.org>

Testoid Faucet: <http://faucet.factoid.org>

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# 1. Definitions and Abbreviations

## 1.1. Definitions

**Factom Community Testnet (FCN) Network**

The entirety of the Testnet Network including all operating nodes.

**Testnet Authority Pool**

The group of Qualified Authority Nodes (QAN), including nodes currently operating as part of the Authority Set (AS).

**Testnet Authority Set**

Encompasses The Federated Servers and Audit Servers. It is the backbone of the Factom Network

**Testnet Federated Server**

A node that is authorized to create directory blocks and write to the blockchain.

**Testnet Audit Server**

The Audit Servers operates in the same manner as the federated servers; in practice doing the same work, but is not authorized to write to the blockchain. If a federated server is removed from the Authority Set an Audit server is promoted to take its place.

**Community Testnet Node Monitoring System**

A system to monitor node health, software versions and uptime. Currently one is provided for free by The Factoid Authority [here](#).

## 1.2. Abbreviations

<b>AS</b>	Authority Set
<b>FCN</b>	Factom Community Network
<b>M3</b>	Factom Milestone 3
<b>TA</b>	Testnet Administrator
<b>TAP</b>	The Testnet Authority Pool
<b>The Testnet</b>	The Factom Community Testnet
<b>WG</b>	Working Group
<b>WGC</b>	Working Group Chairman
<b>WGM</b>	Working Group Member
<b>WPS</b>	Writes Per Second
<b>QAN</b>	Qualified Authority Node

## 2. Organizational Structure

- 2.1. The Factom Community Testnet (“The Testnet”) is headed by The Testnet Administrator, who has the option to appoint a deputy if he or she wishes.
- 2.2. The Testnet community has the option to form Working Groups. These Groups will constitute discrete organisational entities within the larger Testnet structure.
- 2.3. The working groups are chaired by one or multiple chairmen, which acts as the point of contact for the group. In addition to this the chairmen have administrative duties as described in chapter 4 of this document.
- 2.4. The activities and organisational structure of the Testnet are distinct from that of the Factom Mainnet.

## 3. Governance

### 3.1. General principles

- 3.1.1. The Factom Community testnet is a self-contained organization currently without formal responsibilities to external entities.
- 3.1.2. This is likely subject to change, as an overarching Factom Community Structure is seen as likely to emerge in the near future. The Testnet should be incorporated into such a structure at a later stage to facilitate solid governance, as well as sufficient coordination between The Testnet and the broader Factom community.
- 3.1.3. The Testnet Administrator is selected for a 6 month term by a vote held on the 1st of May and 1st of November. The candidate with the most community support shall be selected as the new Administrator. If there is a tie a new vote will be held every consecutive day until the tie is broken.
- 3.1.4. Every entity which has hosted a qualified authority node for the last 30 consecutive days leading up to the vote will be allocated one vote. The voting period lasts from 00:00 UTC to 23:59 UTC and the votes will then be tallied, factomized on the mainnet and then published.

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- 3.1.5. A *motion of no confidence* may be put forward by any entity that is hosting an authority server. To trigger a vote of no confidence a total of at least 20% of the Authority-entities will have to back the motion. The voting period will be held 2 days after a successful motion of no confidence (UTC; 00:00-23:59). A quorum requires at least 50% attendance of the authority entities, and the administrator is obliged to resign if a majority of the quorum casts a *no confidence* vote.

In the event of a motion of no confidence passed, the TA is obliged to organise the subsequent vote. Refusal to organise the subsequent vote will result in the forfeiture of the position of TA.

- 3.1.6. Any changes to chapter 3.1 and 3.2 in this document requires the consent of a majority of the Authority entities, and shall be effected through a vote in the #governance-channel. Notification of a vote shall be given 1 week prior to the event. The voting period shall last from 00:00 UTC to 23:59 UTC, and a quorum requires at least 50% attendance of the authority entities.

## 3.2. Testnet administrator

- 3.2.1. The Testnet Administrator (TA) is responsible for defining short-, medium- and long-term goals for The Testnet, and shall ensure that the organization is effectively working towards these in unison.
- 3.2.2. The TA may appoint a deputy to assist them with executing their duties, and to whom the administrator responsibilities may be transferred to for short periods of time when the TA may be unavailable.
- 3.2.3. The TA shall publish a monthly report in the Discord #testnet-announcements-channel, which should at minimum include information on the following:
- a) New and leaving members in the authority set
  - b) Basic statistics:
    - Number and type of nodes in the authority set.
    - Number and duration of of potential network stalls.
    - Number and duration of individual node failures.
    - Number and name of sub-testnets (if applicable).
    - Number of total entries since last report.
    - Number of total spent Ec since last report.

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- WPS if applicable.
  - c) Description of changes to testnet network code (if applicable).
  - d) Description of changes to testnet documentation (if applicable)
  - e) Changes in group composition (if applicable)
  - f) Any bugs/errors in blockchain code that has been identified
  - g) Other information if relevant
- 3.2.4. The TA is responsible for maintaining and updating documentation as described in chapter 7 and found in the appendix of this document. In addition to this the TA is responsible for managing and updating document permissions.
- 3.2.5. The TA shall maintain the Factom Community Testnet **Discord** channels. This includes administering the channel groups, and ensuring that channel membership reflects the organizational structure as described in the appendix of this document.
- 3.2.6. The TA may remove entities temporarily (as described in 5.1 and 5.2 in this document) from the Testnet Authority Pool, and/or the Discord channel if he is convinced that the entity is not acting with good intentions, is actively sabotaging the testnet or is acting as a disruptive force.
- A vote shall then be held within 72 hours where the community will decide if the entity shall be reinstated to the Testnet Authority Pool or removed permanently. The vote shall be effected in the same manner as described in para 3.1.6 of this document.
- 3.2.7. The TA is responsible for issuing Testoids/Test credits to new members of the testnet. This can be done manually, via the deployment of a group which are responsible for funds, or by a public Testoid/test-credit faucet.
- 3.2.8. Should the TA vacate the position before the end of their term, either voluntarily or involuntarily, a by-election will be held to elect a new TA in accordance with standard electoral procedures outlined in clauses 3.1.3 and 3.1.4.

The by-election should be held within 7 days of the vacancy arising. If the by-election falls within 30 days prior to the regular election outlined in clause 3.1.3, then that election will be automatically credited to the TA elected in the by-election.



## 4. Working Groups

- 4.1.1. Testnet Community members have the power to form Working Groups to structure and focus work and administrative efforts that need to be executed to maintain, develop and support activity on The Factom Community Testnet.
- 4.1.2. Each Working Group is centered around a *working paper* which includes the following information:
  - Overview of chairman and members.
  - Past, present and upcoming milestones.
  - List of current and completed tasks and responsibilities in the group.
  - Group specific documentation.
- 4.1.3. A link to the working paper for each Working Group is available in the table in the appendix in this document.
- 4.1.4. Working Groups are formed when community members recognise a need for a specific function to be carried out on the testnet and there are volunteers who are willing to occupy the role of Chairman and Members of that Working Group.
- 4.1.5. To form a Working Group, a prospective Chairman (see 4.2) should notify the TA of the intention, then submit the documentation outlined in 4.1.2 to the TA. The TA will then add that Group's information to the appendix of this document.
- 4.1.6. To disband a Working Group, the Chairman must inform the TA of the intention to disband. If the TA wishes, he or she may seek the continuation of that Working Group by recruiting new volunteers to act as Chairman and Members.
- 4.1.7. The TA has the ability (but not the obligation) to disband a Working Group in the event that there has been no Group activity for three months and the Chairman is unresponsive to requests for information. In all other cases, the Chairman is responsible for disbanding the Working Group.

### 4.2. Working Group Chairmen

- 4.2.1. Working Group Chairmen (WGC) are the point-of-contact between the TA and their respective working groups.

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- 4.2.2. The main objective of the WGC is to ensure that their group is healthy and is functioning in a way that benefits The Testnet.
- 4.2.3. The WGC shall set, and keep up to date, short- and long time goals for their group.
- 4.2.4. The WGC may add or remove members from his group as she/he sees fit to ensure that the group is functioning optimally, and that there is a healthy working environment for the people involved.
- 4.2.5. The WGC is responsible for maintaining and updating documentation as described in chapter 5 of this document. This includes managing and updating document-permissions for the documents he/she is responsible for.
- 4.2.6. The WGC shall issue a monthly report to the TA to be delivered at the latest on the **25th** day of each month. The WGC is responsible for issuing the report in an appropriate format, based on the amount and complexity of the information included.
- 4.2.7. The WGC shall participate in the *Factom Community Testnet Working Group Coordination Forum* ("Working Group Coordination Forum"). Where the activities of a Working Group may affect the operation of other Working Groups, the Chairman of that Group is obliged to coordinate those activities with the relevant Chairmen of the relevant Working Groups.
- 4.2.8. In the event that as Chairman resigns their position, Working Group Members may appoint a new Chairman. Where Members cannot agree on a new Chairman, the Testnet Admin will make the appointment from the list of prospective volunteers.
- 4.2.9. Working Group Members or the TA may replace their Working Group Chairman where there is broad community consent.

### 4.3. Working Group Members

- 4.3.1. Working Group Members (WGM) take part in the day-to-day business of their respective Working Group.

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- 4.3.2. The WGM shall work together with the WGC and the other group members to achieve the short- and long term goals and milestones set for their group.
- 4.3.3. If a WGM realizes that he/she is not able to contribute to the group in a meaningful manner he/she should notify the WGC and attempt to find a solution that alleviates the problem.

## 5. The Testnet Authority Set

- 5.1. The Testnet Authority Set are those nodes operating a factomd instance that performs consensus or audit on the Factom Testnet.
- 5.2. Any entity may apply to host a node within the Testnet Authority Set. An **entity** in this regard are persons, groups, companies or organizations that currently are, or have applied to be, part of The Testnet Authority Pool (TAP).
- 5.3. To be eligible for its nodes to join the TAP, an entity shall put in an application to the *Authority Pool & Network Management working group* as described in the *Before You Start* section of *The Testnet's* [wiki-page](#).
- 5.4. Nodes put forward by entities will have to comply with the minimum requirements described on the webpage mentioned above to be included in the TAP as a Qualified Authority Node (QAP).
- 5.5. Qualified Authority Nodes are added to the TAP, and then promoted to the Authority Set by the *Authority Pool & Network Management working group* when practicable.

## 6. Testnet objectives and milestones

### 6.1. The Community Testnet main objectives

- 6.1.1. Familiarize entities that might apply for hosting main net Authority servers past M3 with the Factom software, as well as the process around, and challenges related to, stable hosting of Factom nodes.

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- 6.1.2. Get experience regarding a decentralized Authority set and learn how “real world” scenarios affect the stability and performance of the Factom network and Authority set dynamics.
- 6.1.3. Test different deployment strategies for factomd code and nodes/servers.
- 6.1.4. Monitor nodes of entities that want to apply for hosting main net Authority Servers past M3 to verify ability to and competency in regards of hosting stable and secure nodes.
- 6.1.5. Test the current (and future) *real world* load capabilities and limitations of the Factom network.
- 6.1.6. Identify minimum server system requirements, as well as establish a SOP and checklists.
- 6.1.7. Establish a long standing testnet that will be operational in parallel to the Factom main net to be used for deployment testing of software updates.
- 6.1.8. Provide a public test net for entities to test and debug Factom-based applications prior to integration with the Factom main net.

## 6.2. Testnet Milestones

Testnet Milestone	Description	Target Date	Achieved Date
TM1	First version of the Factom community testnet online	2018 - Q1	2018 - Q1
TM2	Matching Factom Main Net Authority Set (9 federated servers and 9 audit servers)	2018 - Q1	2018 - Late Feb.
TM3	Monitoring blockchain WPS (writes per second)	2018 - Q1	2018 - Late Feb.
TM4	Achieving 5 WPS (writes per second)	2018 - Q1	2018-02-26
TM5	Getting individual node monitoring and push notification system online	2018 - Q1	2018-02-28
TM6	Achieving 10 WPS (writes per second)	2018 - Q1	2018-03-01
TM7	Establishing a Community Testnet Wiki	2018 - Q1	2018-03-05
TM8	Having 33 servers (1/2 of the goal of 65 servers) online in the authority set	2018 - Q1	2018-03-09
TM9	65 servers pledged to the Authority Set (sufficient for full scale test)	2018 - Q1	2018-03-09
TM10	Introduce a <i>Testoid Faucet</i> to provide testnet operators with Testoids for ID-creation and testing	2018 - Q1	2018-03-10
TM11	Formalizing Governance & Organizational structure	2018 - Q1	
TM12	Deploying new "M3"-code for facilitating successful automated node-failovers	2018 - Q1	
TM13	Having 65 nodes in the Testnet Authority Pool	2018 - Q2	2018-03-26
TM14	Achieving 15 WPS (writes per second)	2018 - Q2	
TM15	Having 10 consecutive node failures with successful failovers and no network stall.	2018 - Q2	
TM16	Factomize logging of individual node uptime and performance data	2018 - Q2	
TM17	Full scale Authority Set test (65 nodes in Authority Set)	2018 - Q2	
TM18	Achieving 20 WPS (writes per second)	2018 - Q3	

## 7. Documentation

### 7.1. Community Testnet documentation and resources

- 7.1.1. To help maintain a functional Testnet community over time, a minimum set of documentation is required to facilitate governance, maintaining testnet structure, and documenting the working groups activity.
- 7.1.2. It is of paramount importance that The Testnet documentation is kept up to date, and the overall responsibility for this lies with the Testnet Administrator.
- 7.1.3. For ordinary documents and spreadsheets Google Docs/Sheets shall be used as this common platform facilitates easy cooperation and sharing.
- 7.1.4. The Testnet is to have its own wiki.
- 7.1.5. Entities other than The Testnet may also host resources, tools, monitoring utilities etc., and shall be responsible for maintaining and updating this independently of the The Testnet.
- 7.1.6. The people, roles and entities described in 8.1 are responsible for keeping their associated documentation up to date, and shall do a document review at minimum 6 month intervals.
- 7.1.7. Documents associated with the working groups should be treated as dynamic document, and a version control scheme is not required.

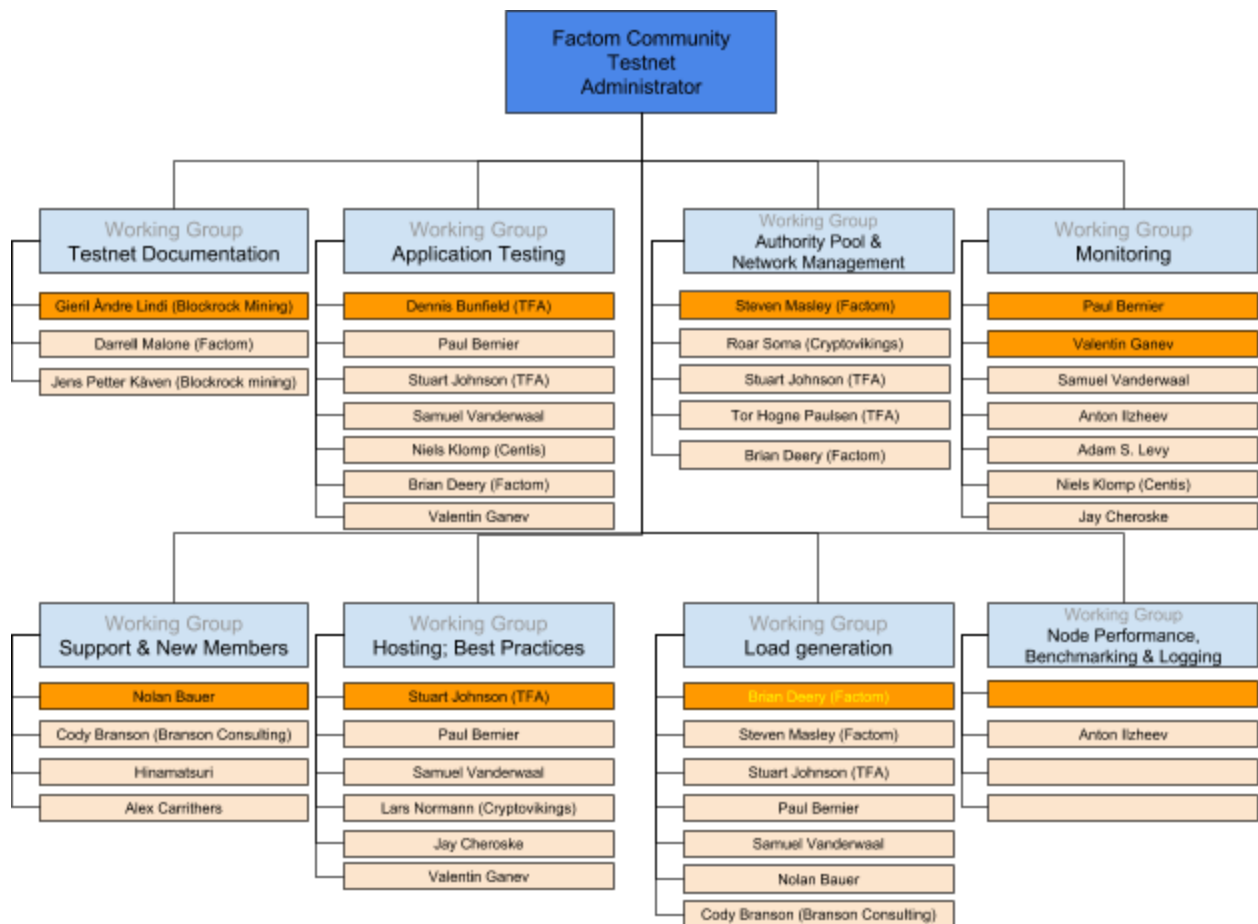
## 8. Appendix

### 8.1. Maintenance responsibilities: documents & utilities

Document	Responsible entity
<a href="#">Factom Community Testnet - Organizational Structure &amp; Governance</a>	Testnet Administrator
<a href="#">Factom Community - Testnet Wiki</a>	WG Documentation Chairman
<a href="#">Factom Community - Testnet Wiki (GitHub)</a>	WG Documentation Chairman
<a href="#">WG Documentation: - Working Paper</a>	WG Documentation Chairman
WG Application Testing: Working Paper (Not Public)	WG Application Testing Chairman
WG Authority Pool & Network Management - Working Paper (Not Public)	WG Authority Pool & Network Management Chairman
Authority Pool Status - Working paper (Not Public)	WG Authority Pool & Network Management Chairman
<a href="#">WG Monitoring - Working Paper</a>	WG Monitoring Chairmen
<a href="#">WG Monitoring - Network monitoring tools</a>	WG Monitoring Chairmen
<a href="#">WG Monitoring - Historical testnet WPS</a>	WG Monitoring Chairmen
<a href="#">WG Support &amp; New Members - Working Paper</a>	WG Support & New Members Chairman
WG Support & New Members - List over Testnet Applicants (Not Public)	WG Support & New Members Chairman
<a href="#">WG Hosting; Best Practices - Working Paper</a>	WG Hosting; Best Practices Chairman
<a href="#">WG Load generation - Working Paper</a>	WG Load generation Chairman
WG Node Performance, Benchmarking & Logging - Working Paper (Not Public)	WG Node Performance, Benchmarking & Logging Chairman
<a href="#">Factom Community Testnet Node Monitoring System</a>	The Factoid Authority
<a href="#">Factom Testnet Testoid &amp; Test Credit Faucet</a>	The Factoid Authority

## 8.2. Working groups

### 8.2.1. Current structure



### 8.2.2. WG: Testnet Documentation

8.2.2.1. The current chairman for the *Testnet Documentation* WG is listed in the chart of the organizational structure in chapter 2 of this document.

8.2.2.2. This WG is using the Discord-channel #WG-documentation for its coordination and cooperation. This is a channel that is open for everyone to read, but only members of this working group may participate in it.



- 8.2.2.3. The *Documentation working group* is responsible for maintaining The Testnet Wiki located at [www.factom-testnet.com](http://www.factom-testnet.com).

### 8.2.3. WG: Application Testing

- 8.2.3.1. The current chairman for the *Application Testing WG* is listed in the chart of the organizational structure in chapter 2 of this document.
- 8.2.3.2. This WG is using the Discord-channel #wg-applicationtest for its coordination and cooperation. This is a channel that is open for everyone to read, but only members of this working group may participate in it.
- 8.2.3.3. The *Application Testing* working group is formed to provide a space for developers on the Factom blockchain to interact and coordinate the testing of their software.

### 8.2.4. WG: Authority Pool & Network Management

- 8.2.4.1. The current chairman for the *Authority Pool & Network Management WG* is listed in the chart of the organizational structure in chapter 2 of this document.
- 8.2.4.2. This WG is using the Discord-channel #wg-authorityset for its coordination and cooperation. This is a channel that is only open to the members of this WG, as there will information shared which is of a sensitive nature; I.E. names of entities that want it to be kept secret, IP-addresses, SSH-login details, not yet disclosed code etc...
- 8.2.4.3. The *Authority Pool & Network Management WG*'s responsibilities are to:
- Maintain the Authority Pool by qualifying new nodes or removing nodes that no longer meet the criteria (or which are leaving The Testnet).
  - Maintain and manage the Authority set by promoting and demoting qualified nodes to/from the Authority Set.
  - Updating the network code.

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- Keeping the *Application Testing WG*, and the Testnet Administrator informed about planned updates of the network code.
- Inform the *Hosting; Best Practices WG* about findings that should be included in the Best Practice documentation to ensure maximum uptime and stability.

### 8.2.5. WG: Monitoring

- 8.2.5.1. The current chairman for the *Monitoring WG* is listed in the chart of the organizational structure in chapter 2 of this document.
- 8.2.5.2. This WG is using the Discord channel #wg-monitoring for its coordination and cooperation. This is a channel that is open for everyone to read, but only members of this working group may participate in it.
- 8.2.5.3. The *Monitoring working group* should work to provide the community with monitoring tools for the testnet network that displays metrics like current WPS (writes per second), number of test credits spent, blockchain height etc..
- 8.2.5.4. The monitoring group is responsible for maintaining the monitoring tools as described in para 5.2 in this document.
- 8.2.5.5. All software produced by the monitoring group is to be released open source under MIT license.

### 8.2.6. WG: Support & New Members

- 8.2.6.1. The current chairman for the *Support & New Members WG* are listed in the chart of the organizational structure in chapter 2 of this document.
- 8.2.6.2. This WG is using the Discord channels #wg-new-members and #wg-support for interacting with new and existing members. These channels are open for everyone to participate in.

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- 8.2.6.3. *The Support & New Members* WG is responsible for helping new persons, entities and organizations to join the testnet by providing guidance and support. The chairman of the WG shall ensure that new members register an application for the testnet on the Wiki-page, as well as make sure that they understand the most important aspects of The Testnet before starting the process of joining.
- 8.2.6.4. The group shall maintain a list of common problems encountered in the installation process to be able to quickly help out new members, as well as strive to be more knowledgeable about the workings of the protocol as to be able to share knowledge with the general testnet community.

### 8.2.7. WG: Hosting; Best Practices

- 8.2.7.1. The current chairman for the *Hosting; Best Practices* WG is listed in the chart of the organizational structure in chapter 2 of this document.
- 8.2.7.2. This WG is using the Discord channels #wg-server-best-practices. This is a channel that is open for everyone to read, but only members of this working group may participate in it.
- 8.2.7.3. *Hosting; Best Practices* WG is responsible for developing and documenting *best practices* for server/node hosting. The *best practices* shall be published in their working document, and be kept up to date as new issues are uncovered.

### 8.2.8. WG: Load Generation

- 8.2.8.1. The current chairman for the *load generation* WG is listed in the chart of the organizational structure in chapter 2 of this document.
- 8.2.8.2. This WG is using the Discord-channels #wg-testload. This is a channel that is open for everyone to read, but only members of this working group, as well as registered load-testers, will be able to participate in the discussion. Everyone may become a load-tester by sending a request to the group chairman.

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- 8.2.8.3. The *Load Generation working group* is responsible for setting a current Testnet *Maximum Load* that the entities should not surpass in total. Currently this is expressed in a limit of WPS (Writes Per Second).
- 8.2.8.4. The group may also set a limit on *Maximum Individual Load* an entity may put on the testnet.
- 8.2.8.5. The current max WPS is published in the groups' discord channel as a pinned message.

### 8.2.9. WG: Node Performance, Benchmarking & Logging

- 8.2.9.1. The current chairman for the *Node Performance, Benchmarking & Logging work group* is listed in the chart of the organizational structure in chapter 2 of this document.
- 8.2.9.2. This WG is using the Discord-channels #wg-nodeperformance. This is a channel that is only open to the members of this WG, as there will information shared which is of a sensitive nature; i.e. individual node performance metrics.
- 8.2.9.3. The *Node Performance, Benchmarking & Logging working group* is responsible for devising a benchmarking- and logging-scheme for individual nodes hosted by entities applying for hosting servers in the M3 Authority set. Any software produced in this capacity shall be open-source.
- 8.2.9.4. The group shall log performance and uptime data as requested and specified by the entity that will make the final selection of M3 Authority Servers.
- 8.2.9.5. The members of this group are to be approved by the entity that will make the final selection of M3 Authority Servers.