NULS Testnet Hosting Strategy Proposal

January 23, 2019

About Node Forge

Node Forge (http://nodeforge.io) is a Southern California based multi-cloud hosting company, aiming to break down the technical barriers of operating a masternode while also offering a full suite of powerful tools to help an operator manage, monitor, and expand their portfolio of masternodes through a dynamic dashboard and automated provisioning within the platform.

With the Node Forge platform, our customers can go from "zero to mining" in almost no time at all and with minimal cost. The Node Forge platform will completely automate the provisioning process; all operators are expected to do is complete a few simple setup steps and they can have a masternode up and running in minutes.

The Node Forge team would like to extend the opportunity to collaborate on a mutually beneficial solution that will help drive the success of the NULS project. Node Forge is a long-time fan of the NULS project and has been closely involved in the NULS community over the last few months. We would like to leverage what we have developed at Node Forge to help the NULS team solve some of their challenges with creating and maintaining the NULS network, as well as improve our integration with the NULS production network, offering more value to NULS agent node operators and ultimately driving greater adoption of the NULS platform.

The Challenge

We are passionate about the success of the NULS project and would like to offer our services in helping NULS succeed. We acknowledge some of the challenges that the NULS team faces in building and maintaining a fully-fledged NULS test-network, especially in the face of the upcoming NULS 2.0 network, and would like to propose some potential solutions that will minimize or eliminate your ongoing test net operational costs, reduce the barrier to entry for potential NULS test agent operators, and incentivize participation in the NULS test network. We feel that growing the NULS test network and making it more representative of the production network is essential to accurate testing and a successful production release. By improving the NULS test network, we are confident that the previous challenges experienced by agent node operators will be reduced, which will improve the overall health and perception of the NULS platform.

The Solution

To improve participation in the NULS test network, and thus minimize the likelihood of undiscovered bugs negatively impacting the production NULS network, we propose a combination of custom developed software solutions, customer incentives, and marketing strategies.

Node Forge Hosting

In order to accurately test the NULS agent software releases, we feel that the NULS test network will need the following:

- At least 25 stable active test network participants that are running known-good configurations
- Agent nodes that are reasonably distributed around the world, using a variety of specifications
- Proper incentives to encourage rapid adoption and ongoing participation in the NULS test network

Participation

The Node Forge platform will improve adoption by lowering the technical barriers of running a NULS agent node. We streamline the setup process through a custom developed user-friendly web interface that completely eliminates complicated setup instructions, mismanaged online guides, and 'user-error.' We will use this approach to attract potential agent node operators normally deterred by the technical skill required to set up and operate an agent node.

Decentralization

Node Forge has developed proprietary software solutions that allow us to build and easily manage agent nodes at a variety of cloud hosting providers in different geographic regions, with different system specifications and network tolerances. This will help ensure that the NULS test network, hosted by Node Forge, will accurately represent the production NULS network. Furthermore, the NULS development team will be able to gain additional insight about the NULS test network through advanced analytics and reports, something that is not possible in the current test network.

Incentivization

Node Forge, in participation with the NULS team, will develop incentive structures that will attract new potential agent node operators and keep current participants in the test network. Incentivizing test network participants is critical to the success of the test network. Through a combination of discounts, air drops, and marketing, we are confident that hosting a NULS test agent will be a highly desirable.

Requirements

In order to deliver the proposed solution, there are a few requirements that must be met.

Hosting Economics

Node Forge has performed extensive research on hosting partners, operating costs, and other contributing factors in order to determine a per-node rate that is both attractive to potential agent node operators and sustainable for long term operations.

Item	Rate
Hosted NULS test network agent	$80/month

This price is determined based largely on the present NULS agent node system requirements outlined in the NULS documentation:

CPU	Memory	Disk	Network
4+ "dedicated" cores	16+ GB	100+GB Storage	10+ Mbps Stable

Furthermore, the pricing takes into account an even distribution of 'budget' and 'premium' hosting providers that have a variety of different performance implications and considerations.

If the development team wishes to adjust any of these requirements or specifications, the estimated hosting cost would be adjusted accordingly.

Test Network Air Drop Rewards

In order to incentivize NULS test agent operators to create and maintain their node on Node Forge, we feel it is essential to devise a recurring reward based on participation in the NULS test network. Additional details and economics are provided in the NULS Allocation Proposal section.

NULS Team Participation

The success of this strategy depends heavily on active participation between Node Forge and NULS in the development of a comprehensive marketing and promotion plan that will properly attract and incentivize participation in the NULS test network. Node Forge proposes that NULS consider the following marketing and promotion activities:

Co-Branded Advertising

Node Forge would like to work with NULS to develop co-branded advertising and marketing, promoting our partnership through social media channels like Twitter, Telegram, Medium, Signal, etc. Node Forge is willing to provide a branding kit including logos and other assets for use by the NULS marketing team upon acceptance of this proposal. Node Forge is also willing to collaborate on the development of

digital marketing assets if desired. Node Forge will reciprocate in distribution of marketing materials through our network of followers and subscribers, attracting new potential customers to the NULS ecosystem from our current customers, and new potential Node Forge customers from the NULS community.

Stress Test

Node Forge proposes a stress test of the test network to properly assess system requirements for nodes on the test network, and subsequently on the production network. The aforementioned NULS test network agent specifications were based upon stated system requirements currently outlined by the NULS team, but are expected to likely be excessive given recent optimizations in the NULS software and observed system resource utilization.

As previously mentioned, the airdrop example and hosting economics provided are based on the current system requirements for operating a production network NULS agent node. If the stress test in the test environment reveals that the current system requirements are in excess of what is required, the development team may choose to adjust the stated system requirements, which would in turn impact the hosting economics. This adjustment would have a direct impact on hosting expenses, and thus hosting rates required to operate a test NULS agent node with Node Forge. Since the air drop economics are also based on hosting costs, this could also potentially allow for less NULS required to properly incentivize test node operators and maintain test net equilibrium. In short, minimizing system requirements will minimize the NULS required for the test net Air Drop campaign.

Other Incentive Mechanisms

If desired, Node Forge can work with the NULS team to develop other incentive structures, such as a coupon pre-purchase, where the NULS team or NULS community fund could purchase vouchers for hosting discounts which they could in turn use for competitions, rewards, or other activities in order to attract test net participants. This would help further offset the cost of hosting for new NULS test agent node operators, increase adoption, and create media attention.

NULS Allocation Proposal

As discussed prior, we believe it will be important to incentivize NULS test agent operators to create and maintain their nodes. We propose the following terms for this improvement proposal to achieve test network sustainability.

NULS Allocation	520,000 NULS
Purpose	Application and commitment of a CCC Agent Node as a source of rewards for test network agent participants
Method	The NULS Community Fund will commit and stake 520,000 NULS in subject CCC node. All CCC agent node rewards will be proportionally distributed among all test network agents on a monthly basis. Subject CCC node will be hosted by Node Forge, and hosting costs will be deducted from the rewards pool prior to distribution.
Number of Nodes	25-50 test network agents

The above terms would allow the NULS team to incentivize test network participation while minimizing additional capital expenditure by the NULS team or NULS Community Fund. In summary, Node Forge requests that the NULS Community Fund dedicate 20,000 NULS to establishing a NULS agent node, to be operated on the NULS main production network, in addition to a 500,000 NULS transitory stake. It is important to note that the NULS Community Fund maintains full custody of all NULS collateral and staking assets. Given this arrangement, Node Forge will only need the private keys for the packing and rewards addresses in order to operate the agent node and manage rewards distributions. It is our eventual goal to automate the test network rewards distribution process, a system which Node Forge intends to commit internal resources to develop.

All reward proceeds will be proportionally distributed (by test network production; *% of blocks packed*) to all participating test network agents on a monthly basis. This would incentivize new and prospectively long-term stable network participation up to the point where the individual rewards balance out hosting costs in addition to a marginal return (assumed 10% annually), at which point the network participation would reach a natural equilibrium respective of current market conditions. It is important to note that this mirrors the current economic incentive model for the production network. Additionally, the NULS team will still be able to retain a level of discretion as prospective operators still need to apply for test network NULS in order to operate a test network agent.

Proposal Strengths Summary

- This proposed model establishes a familiar economic incentive model that will create a sustainable NULS test network environment.
- Incentive economics theoretically will balance naturally with market dynamics similar to the current production environment.

- The proposal continues to promote and maintain decentralization and open participation by the community. Test network agent operators still have the flexibility to host their own test node servers on a platform of their choice. This proposal is not dependent on Node Forge's hosting services.
- Capital expenditures from the NULS team and Community Fund are negligible. The NULS Community Fund maintains custody of all NULS collateral and staking assets.
- The proposal and subsequent test network participation continues to be a community driven initiative.

Agent Economics

The below analysis begins with initial assumptions reflecting the current market environment and projects the number of test network agents with all variables held constants to demonstrate what current market conditions can support. The latter case presents a more normalized environment with very conservative assumptions in growth over the next twelve months. The normalized case demonstrates what the test network could prospectively support in an environment with more dynamic conditions and further illustrates the relative magnitudes of operating agents between test and production networks.

Initial Assumptions	
Current price of NULS (as of 1/3/19)	$0.40
Test agent node monthly hosting cost	$80.00
Target equilibrium annual return per agent	10%
50% commission off entrusted 500k NULS*	4,300

*Rewards calculated at current staking conditions

Constant Environment Case												
Month	1	2	3	4	5	6	7	8	9	10	11	12
# of Main Agents	85	85	85	85	85	85	85	85	85	85	85	85
Reward Pool	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300
Projected Price	$0.40	$0.40	$0.40	$0.40	$0.40	$0.40	$0.40	$0.40	$0.40	$0.40	$0.40	$0.40
# of Test Agents*	21	21	21	21	21	21	21	21	21	21	21	21

*Assumes supply and demand equilibrium

Normalized Environment Case**												
Month	1	2	3	4	5	6	7	8	9	10	11	12
# of Main Agents	85	89	93	97	101	105	109	113	117	121	125	128
Reward Pool	4,300	4,106	3,930	3,768	3,618	3,481	3,353	3,234	3,123	3,020	2,924	2,833
Projected Price	$0.40	$0.50	$0.60	$0.70	$0.80	$0.90	$1.00	$1.10	$1.20	$1.30	$1.40	$1.50
# of Test Agents*	21	25	29	33	36	39	42	44	46	49	51	53

*Assumes supply and demand equilibrium
**Assumes conservative growth in main network agents and NULS market price over the proceeding twelve months. Projected rewards pool adjusts with appropriate fluctuations of total main network consensus agents.

It is important to reiterate that the same incentive and market forces driving supply and demand for test network agents are closely similar to that of the production environment.

Next Steps

Once the NULS team and community have reviewed our proposal, had time to discuss it, and offer feedback, Node Forge would like to coordinate a follow-up discussion and subsequent vote within the NULS community. In accordance with the NULS community charter and in the best interest of the NULS community as a whole, we intend to use this process to address any questions or concerns, gain community consensus in proceeding with our proposed actions, as well as set a timeline for implementation and finalize any details.

We are eager to establish a strong working partnership with the NULS team and NULS community, and help solve some of the challenges they face today. Please reach out to us when you are ready and we will discuss the next steps!

Roger Sutton - Roger@nodeforge.io
Andrew Stock - Andrew@nodeforge.io

Node Forge, LLC