FutureTech Industries, LLC

Entity: Name (or first name if applying as a natural person)
FutureTech Industries, LLC

Entity: E-mail address
ceo@fti.bi

Team member introductions
Our team comprises of experts who have built and scaled some incredible solutions for equally incredible organizations. Some examples include:

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Alex has designed and operated planet-scale automation systems for Tinder, MIT, and Tsunami.gov.

Madison has architected, built, deployed, and maintained similarly planet-scale solutions for NOAA, MIT, and Tinder to name a few.

Austin has contributed substantially to Mozilla open source software, Tsunami.gov, NOAA, and a variety of others.

Introduce your Entity/Company
FutureTech Industries architects, designs, deploys, and manages planet-scale solutions for its clients, backed by modern yet stable technologies that have been battle-tested. We've been responsible for and successfully managed critical systems for a variety of organizations in the most difficult of situations, including air-gapped deployments and kernel-level implementations, with a level of intricacy and accuracy that can only be described as graceful. We're proud to maintain 99.999% uptime and 100% SLA in the majority of systems we maintain. We love Factom, our clients' solutions backed by Factom love Factom, and we're excited to continuously contribute to the Factom Protocol. In fact, we've already put out one series on Medium about running Factom at scale, and there are many more to come.

How many nodes do you envision to run on the Factom Community Testnet (or other testnets?)
2

What type of legal structure does your team use?
LLC

Will you operate as an incorporated company?
Yes

If yes to the above, where are you/will you incorporate? Are your already incorporated?
We're already incorporated in Delaware.

Are there any major shareholders (>10%) other than the members in your application?

No

Do you and/or your team members have previous experience running a business or managing large capital? If so, make a short writeup of your experience below.

Running businesses is what we do best! We're happy to have built our organization from the ground up over the last decade, moving from producing 1-2 applications a year to a handful a month on a consistent basis for major players in the software space. Additionally, we work comprehensively with our clients to bring their concept into reality, and ultimately assist them in turning their MVP and eventually final software into a stable product with millions of users. In terms of managing large capital, it's a regular occurrence with clients and we have rigid protocols in place to ensure auditability. We build software, but so much more importantly, we create and enable organizations to do better for everyone.

What has your team done to ensure a proactive approach to managing the financial aspects of your business?

We have strict protocols in place for anything involving money changing hands, including auditing/continuous review, analysis, reporting, and anything else we can do. Working with major and government organizations, that level of responsibility is implicit. To say we take our finances and the security involved around it seriously is to make an understatement.

Clarify your commitment to the Factom protocol? What have you brought to the table already, and what will you bring in the future?

We're very much committed to the Factom Protocol and furthering it. We enjoy contributing to the open source community, and in a natural conclusion, we authored a series (https://articles.fti.bi/factom-ha-immutable-audit-logs-part-one) on deploying highly available Factom on Kubernetes, garnering a substantial volume of traffic on all social channels. Part Two of that series, coming out shortly, will provide the first plug-and-play Factom deployment available for Kubernetes, which has been taking the majority market for container deployment as of late. We've also designed and deployed solutions for our clients that directly and indirectly integrate with Factom, and our team is actively contributing to a product coming soon that uses Factom at its core for auditability for enterprise clients. All in all, Factom is incredible and we want to give back in any way we can.

What is your/your entity's motivation for applying for hosting Factom Authority servers?

Simply put, we love Factom, giving back is very important to us, and we believe that for such an important platform, stability and security is critical. We've managed critical systems like this before, and not only is it a fun set of challenges, we truly believe we'd be a great fit on the ANO team. We have a team ready to go to monitor any nodes we operate 24/7 and, Since we're running solutions that require Factom, we have a vested interest in the stability and success of the network. We also love giving back to any community we can.

What vision do you/your entity have of the future of Factom?

We envision Factom kind of the way we've seen it work for our clients. Factom becomes a perfect quorumed protocol that allows developers to simply integrate, while introducing an unprecedented degree of immutability which entire organizations benefit from. When you need or just might benefit from an audit log, Factom's there, allowing an integration in a matter of minutes for minimal constant cost. We especially see a use for Factom in the operations and application logging spaces. We believe Factom can be used to protect organizations against malicious developers, and as evidence that software logs haven't been altered. In addition, we believe that Factom can be used with software as a service companies such as ourselves, to prove to clients that events we claim took place actually did. It is our goal to expand Factom's role in this space.

What will your efficiency be with only one node?	**0,10000000000000001**
What will your efficiency be with two nodes?	0,25

Node #1 Type	**We deploy to Google Cloud's VMs, which have varying degrees of hardware and software isolation far above the norm while technically being a VPS.**
Node #1 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	northamerica-northeast1-c
Node #1 CPU, Number of cores	8+
Node #1 CPU, type & clock-speed	Skylake Xeon 2.0GHz
Node #1 RAM, amount in GB	28
Node #1 RAM, scalable if < 24 GB	Not applicable (>= 24 GB)
Node #1: Storage, RAID type	Regional PDs backed by RAFT
Node #1: Storage, Disk type	SSD
Node #1: Storage, Free Size in GB for Factom	200
Node #1: Storage, Do you have a separate factom volume/disks?	Separate disk(s), Separate volume(s)
Node #1: Connection & uplink speed (not just your NIC speed)	10Gbps down/16Gbps up

Node #2 Type	**We deploy to Google Cloud's VMs, which have varying degrees of hardware and software isolation far above the norm while technically being a VPS.**
Node #2 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	asia-south1-c
Node #2 CPU, Number of cores	8+
Node #2 CPU, type & clock-speed	Skylake Xeon 2.0GHz
Node #2 RAM, amount in GB	28
Node #2 RAM, scalable if < 24 GB	Not applicable (>= 24 GB)
Node #2: Storage, RAID type	Regional PDs backed by RAFT
Node #2: Storage, Disk type	SSD
Node #2: Storage, Free Size in GB for Factom	200
Node #2: Storage, Do you have a separate factom volume/disks?	Separate disk(s), Separate volume(s)
Node #2: Connection & uplink speed (not just your NIC speed)	10Gbps down/16Gbps up

Add any other information relevant to server specifications and hosting, including planned availability of your maintenance team and how you would propose to handle an unscheduled restart.

As of today, we're planning to utilize bare nodes, but in the near future, we'd like to move to Kubernetes, which gives us a higher degree of granularity of control while handling a big chunk of maintenance for us. We're particularly excited for Google's 10Gbps down/16Gbps up per node as well as direct peering as the Factom network grows.

Which date did you join the Factom community testnet (approximate date is ok)?

7/1/2018

How does your team administer the nodes (more options possible)?

By more than 1 team member, By known and non constantly rotating directly hired personnel, Fallback by a specialized company

How many people in your team are able to operate the servers (including direct hired personnel, but excluding hired fallback companies)?

5+ depending on uptime requirements

How many years of combined experience does your team have on running production servers?
100

Could you elaborate on the production servers your team has managed (amounts, OS-types, purpose)?
We've managed blocks of nodes backed by terabytes upon terabytes of RAM and disk, including over thousands of servers at once for a single client and tens of thousands of servers over the years spanning every OS imaginable. We enjoy the fact that a sizable number of those nodes have been for critical, client-/public-facing services of the aforementioned orgs, and of those, they've upheld their SLAs/required uptime 100% of the time. Our developers have designed and built many autoscaling production-grade systems: simple web backends, custom workflow engines and their processors, geohashing solutions, clustered and sharded PostgreSQL and Redis configurations with failover, and a wide variety of other intricate solutions for our clients. We can handle every level of the stack and have the ability to monitor and maintain the most complex of setups.

Have you run follower nodes outside the qualified-node pool on the testnet? If so to what effect? Other contributions to the testnet?
We've run a small handful of testnet nodes for when we've designed and tested solutions for our clients. We've had much success, and our Kubernetes chart that's coming soon will provide one-click testnet node deployment.

Have you run any mainnet nodes? If yes, please elaborate why, and for how long
Like the testnet, we've run a handful of nodes for our clients. Unlike the testnet configuration, they're deployed for maximum availability, and have done exactly that. Our nodes have yet to go down in the time we've been running them; for more information check out our aforementioned article.

How are you going to make sure your nodes operate securely?
We do regular and continuous audits and monitored updates/maintenance, including pentesting, load testing, container analysis, binary verification, access logging, network load and policy reviews, as well as deploy a handful of network introspection tools in front of our traffic. If applicable and permitted, we also run honeypots, and for HTTP traffic, we have end-to-end introspectability.

How are you going to make sure you are able to respond quickly?
With our extended experience operating complex configurations, we have a suite of tools in-house to manage SLAs and escalation. Their policies become increasingly aggressive in terms of contact, and don't stop until incidents have been acknowledged and start being worked on. In summary, we have clients with ridiculously tight SLAs, and we have the supporting software to make sure we meet those SLAs every time.

Could you provide a picture on how you would see your ideal auth node infrastructure?
In the ideal world, we see our node running on Kubernetes with high availability running 3+ nodes in multiple zones and regions. With that configuration, we could manage dozens of Factom nodes with fairly constant complexity.

Free-text. Add any additional information deemed relevant.
We're incredibly excited for Factom, and we'd love to be ANOs. If we end up being an ANO, and even if not, we're prepared to dedicate a small team to furthering Factom in a variety of ways, the same team that's designed and deployed a variety of Factom-based solutions for clients, and focuses on R&D. No matter what,

we want to give back to the Factom community however we can, and whether or not we become an ANO we'll still be using Factom in our solutions.

Add any application supporting files here

Federated Reserve & Prestige IT

Entity: Name (or first name if applying as a natural person)
Federated Reserve & Prestige IT

Entity: E-mail address
support@prestigeit.io

Team member introductions
Chris (@mrroboto) - Technical Advisor

Chris is a Senior Engineer and Researcher at Honda Research Institute Japan, developing AI and robotics. In 2013, Chris took leave from university to join Amazon.com and develop web services for marketplace vendor transactions, where he helped recover $10M in annual revenue. After completing his degree, Chris joined AWS to help build software that moves petabytes of data from data centers around the world to the AWS cloud. During his time at AWS, Chris helped design, develop, build, test, and deploy this software globally. Chris helped provision and maintain the large server fleets that run the software, implement tools and alarms to monitor software and server performance. He was global on-call for service outages and bugs. He conducted performance analysis (software profiling, network analysis) and basic vulnerability testing on the software and led service launches into new Asia regions. Chris worked directly with enterprise customers to investigate and resolve technical issues. Prior to Amazon, Chris' focus was in AI research. In his free time Chris enjoys contributing to open source, leading NASA's Apollo 11 open source project on GitHub.

Saul (@swibb) - Lead Server Architect

Saul is a seasoned IT professional with a focus on networking, systems, and cybersecurity. He has in-depth industry knowledge of cloud based and in-house infrastructure, systems, and cybersecurity, and has made it his mission to bring industry best practice to the blockchain arena.

● CSIS - CompTIA Secure Infrastructure Specialist

● Systems Administration

● Infrastructure Architecture

● Network Security

Ransom (@ransoing) - Server Administrator

Ransom studied Computer Science in college, and has spent a decade working in the Aerospace industry, creating web applications that provide worldwide access to scientific data and enabling spacecraft operators to perform mission-critical analysis of telemetry data. He recently dove headlong into cryptocurrency and cryptographic applications, learning the intricacies of cryptography and creating a robust fail-safe backup solution for blockchain private keys.

● Experienced with security best practices for both front-end and server-side web application code

● Well-acquainted with how private keys and recovery mnemonics are generated and used within software and hardware wallets

● Current blockchain projects:

  ○ CryptoCoinBackup

  ○ Open Savings Initiative

Colin @vanish - Lead Security Architect

Colin brings 8+ years of experience in IT as an Architect, Engineer, Consultant, Pre-Sales, Implementation, and Technical Support, with substantial experience in critical customer-facing roles as a primary technical point of contact for customers and partners internationally. Passionate about team member and client relationships, Colin's greatest strength is in partnering with both end-users and project sponsors to achieve success with customized and impactful Information Security solutions.

● Highly experienced working with Bash, Python, Powershell, SQL, and

REST APIs

● Specialized in Secure Architecture, Virtualization, Endpoint Security,

Continuous Monitoring, Data Analytics, and Security Automation &

Orchestration

● Technical leader of implementation projects, solutions design, client

success, technical training, and ongoing support

Henry (@Henry Liu) - Community Growth & Marketing

Henry spent 2+ years at Facebook leading growth strategies for venture-backed e-commerce startups.

● 15+ success stories, some of which have been featured in F8 (Facebook's Developer Conference), Ad Week, and Cannes Lions Festival.

● Managed over 100 businesses and $150M+ in ad revenue ($450M+ in e-commerce sales).

● Member of the hiring team, mentor, and sole trainer for Ads Auction & Delivery for new-hires.

Nathan (@scooterdobbins) - Community Growth & Marketing

Nathan has 10+ years of business development experience with a concentration in communication, cybersecurity, and network administration. Since starting his own cybersecurity consulting business, Nathan has become passionate about bringing security education to the forefront of the blockchain community.

● Experience includes:

  ○ Security best practices

  ○ End-user/community education

  ○ Corporate security auditing

  ○ Policy and procedure creation

Chris (@corem1) - Business Strategy

Chris spent 10+ years as a strategist working both at startups and Fortune 500 companies. He has spent the last 5 years supporting cybersecurity strategy in the IT, gaming, and telco industries. His current areas of focus include:

● Cybersecurity program strategy, roadmap, and execution

● Defining standards and capabilities for data security

● Agile and service management

● Customer experience

Mark (@markthorsen) - Finance & Operations

For the last 4 years, Mark led new investments for the Central Texas Angel Network (CTAN) - the most active angel investment group in the US. He vetted and advised over 1,000 startups across all industries, and helped deploy over $60M of capital into 120+ seed stage companies.

● Prior to CTAN, Mark co-founded two tech startups, for which he raised over $600k in seed investment, hired the teams, and led growth.

● Mark began his career in finance for 5 years where he managed over $100 million in daily traded collateralized securities.

● He graduated college in 3 years with a degree in Economics.

Lisa (@lisaesq) - In-House Legal Counsel

Lisa has practiced corporate law for the last 8 years. She is licensed in California and Texas. Her areas of practice include corporate contracts & transactions, trusts & estates, real estate, and start-ups. She is Managing Partner of her own legal practice where she advises companies on contracts of all types, including but not limited to:

● Purchase agreements

● Commercial leases

● Master service agreements

● Franchise agreements

Introduce your Entity/Company

Federated Reserve and Prestige IT applied in the last round to be an Authority Node Operator, but were runner up and third runner up, respectively, in the selection process. The two companies have joined forces this application cycle! The combined teams bring together more than three decades of experience managing complex business and technical projects including web service development and operations for enterprise.

Team members include seasoned professionals from Facebook, Google, Amazon and AWS, as well as cybersecurity, organizational security, corporate finance, and venture capital industries. We have a presence in three time zones to ensure global coverage, and have been running 4 nodes (1 federated, 3 followers) for the last 4 months with 99% uptime.

We have been involved in crypto since 2013, and today work at the forefront of the industry as builders, advisors, and investors to ensure its long-term success.

How many nodes do you envision to run on the Factom Community Testnet (or other testnets?)

2

What type of legal structure does your team use?

LLC

Will you operate as an incorporated company?
Yes

If yes to the above, where are you/will you incorporate? Are your already incorporated?
Colorado, United States

Are there any major shareholders (>10%) other than the members in your application?
No

Do you and/or your team members have previous experience running a business or managing large capital? If so, make a short writeup of your experience below.
Mark, who manages the team's Finance & Business Operations, spent the last 4 years leading new investments for the Central Texas Angel Network (CTAN) - the most active angel investment group in the US. During his time there, he led $60M of new investments into over 120 companies. Before that, Mark started two tech startups for which he personally raised over $600k of angel investment. And before that, he worked in finance for 5 years where he managed over $100 million in daily traded collateralized securities.

What has your team done to ensure a proactive approach to managing the financial aspects of your business?
Our team has other income streams and also maintains enough cash at all times to cover 6 months worth of projected operating expenses. We have in-house legal counsel who has outlined in our LLC Operating Agreement the means by which we distribute Factoids among our team members. We've engaged Cohen & Co, an accounting firm experienced in crypto, to handle our accounting. Lastly, we've hired a professional bookkeeper to ensure we maintain proper books and records.

Clarify your commitment to the Factom protocol? What have you brought to the table already, and what will you bring in the future?
We have been contributing to the Factom Community Testnet since March 2018. We currently maintain a federated server and 3 follower nodes, and have showcased our reliability as an Authority Node Operator within the confines of the testnet. During this time, we have invested thousands of dollars in cloud server infrastructure to support our nodes with ample resources. We plan to continue operating two nodes on testnet alongside our two main-net nodes if selected as an Authority Node Operator.

GRANTS

We will be deferring 50% gross revenue to the Grant Pool.

CONFERENCES

We are very active blockchain advisors and investors, and frequently get invited to speak at well-known conferences. This year alone we've spoken at over half a dozen conferences globally. If elected as an ANO, we'll use these conferences as a platform to evangelize Factom to the hundreds, sometimes thousands of attendees. This exposure can lead to new users, customers, investors, and partners for Factom.

Here is the list of conferences in 2018 that we have attended and are scheduled to attend:

- Medici Summit

- Tech Summit

- The North American Bitcoin Conference

- Blockchain and Energy
- Bitcoin & Ethereum Super Conference
- Anarchapulco
- Tokyo Accelerator Event
- POLYCON
- APAC Blockchain
- Token 2049
- Blockchain Conference 2018
- Italian Fintech Forum
- Facebook F8 Developer Conference
- Blockchain Innovations Networking in Dubai
- Consensus 2018
- Blockchain & Bitcoin Summit 2018
- Futurist Conference Toronto
- Global Blockchain Summit 4
- Texas Bitcoin Conference 2018
- Money 2020 / Coin Agenda
- Hong Kong Fintech Week
- Scaling Bitcoin
- Hyperledger
- DevCon4
- Consensus Invest

PARTNERSHIPS

Additionally, we are founding members and Austin chapter chairs of the Silicon Valley Blockchain Society (SVBS). This is a global group of institutional investors and blockchain entrepreneurs who meet monthly to learn about the best blockchain projects. We can use this platform to educate new audiences on the benefits of Factom.

CONTENT MARKETING

One of our team members, Henry, comes from Facebook where he specialized in helping small and medium sized enterprises scale their audiences. He is willing to advise Factom on the same. We also have close relationships with a tech writer at Huffington Post, community organizers in Europe that led community development for Polymath, and content creators in China who run the country's top ten WeChat groups and top ten crypto media sites that we can facilitate introductions to.

PERSONAL SECURITY RESOURCE

We have developed internal solutions that protect against the exploitation of common attack vectors and crypto storage pitfalls, that we would be happy to share with the Factom community.

What is your/your entity's motivation for applying for hosting Factom Authority servers?

Our motivation for hosting Factom Authority servers is supporting a project that has real world applications today - something most blockchain projects lack. Our team has been involved in crypto since 2013 and thinks long term when making investments. But it's very exciting to be part of a project that is effecting change today.

What vision do you/your entity have of the future of Factom?

The future of Factom is very important for our world as it allows the public to validate data, provide trust, and bring honesty to industries that often require centralized parties and enormous amount of credibility and resources. We believe that by contributing to the Factom network through pledging to the Grant Pool and making sure that the servers are safe and long-standing, we can accelerate the adoption of the Factom network and make the world more honest and fair.

What will your efficiency be with only one node?	**0,5**
What will your efficiency be with two nodes?	0,5

Node #1 Type	**Virtual Private Server (VPS)**
Node #1 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	AWS, sa-east-1c // Sao Paulo, Brazil
Node #1 CPU, Number of cores	8
Node #1 CPU, type & clock-speed	Intel Xeon Platinum 8175 @ 2.5 GHz (m5.2xlarge)
Node #1 RAM, amount in GB	32
Node #1 RAM, scalable if < 24 GB	Not applicable (>= 24 GB)
Node #1: Storage, RAID type	None
Node #1: Storage, Disk type	SSD, Provisioned IOPS SSD @ 600 IOPS
Node #1: Storage, Free Size in GB for Factom	200
Node #1: Storage, Do you have a separate factom volume/disks?	Shared with OS
Node #1: Connection & uplink speed (not just your NIC speed)	Up to 10 Gigabit*

Node #2 Type	**Virtual Private Server (VPS)**
Node #2 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	AWS, us-east-2b // US, Ohio
Node #2 CPU, Number of cores	8
Node #2 CPU, type & clock-speed	Intel Xeon Platinum 8175 @ 2.5 GHz (m5.2xlarge)
Node #2 RAM, amount in GB	32
Node #2 RAM, scalable if < 24 GB	Not applicable (>= 24 GB)
Node #2: Storage, RAID type	None
Node #2: Storage, Disk type	SSD, Provisioned IOPS SSD @ 600 IOPS
Node #2: Storage, Free Size in GB for Factom	200
Node #2: Storage, Do you have a separate factom volume/disks?	Shared with OS
Node #2: Connection & uplink speed (not just your NIC speed)	Up to 10 Gigabit*

Add any other information relevant to server specifications and hosting, including planned availability of your maintenance team and how you would propose to handle an unscheduled restart.

Prestige IT will provide 24x7 support for the nodes we host. We have a support email address that can be used to communicate issues, needed actions, etc. This email address generates a ticket into our ticketing system which is viewable by all team members. We also have a support phone number that will ring each team member's phone in rotation according to team technical skill hierarchy. We also actively monitor the Factom discord chat for updates, changes, and scheduled maintenance windows.

Which date did you join the Factom community testnet (approximate date is ok)?
3/29/2018

How does your team administer the nodes (more options possible)?
By more than 1 team member

How many people in your team are able to operate the servers (including direct hired personnel, but excluding hired fallback companies)?
5

How many years of combined experience does your team have on running production servers?
20

Could you elaborate on the production servers your team has managed (amounts, OS-types, purpose)?
We have managed hundreds of production servers providing varying services, including: Web, Dev, Email, Real-Time Communication, Monitoring, File Storage, Sharepoint, Domain Controller, Print, Application, Virtual Hosts, Database, FTP, Remote Access, etc...

OS Types: Windows Server (NT, 2003, 2008, 2008 R2, 2012, 2012 R2, 2016); Linux Server (Ubuntu, Debian, Red Hat, Cent OS), VMware (ESXI, VCenter Server)

Have you run follower nodes outside the qualified-node pool on the testnet? If so to what effect? Other contributions to the testnet?
No

Have you run any mainnet nodes? If yes, please elaborate why, and for how long
We have not run any mainnet nodes.

How are you going to make sure your nodes operate securely?
All of our nodes are contained within hardened AWS security group and VPC designed specifically for the needs of Factom. The only ports allowed through the firewall are ones absolutely necessary for Factom to function. The SSH port used for administration has been moved from its default of 22 to a custom port number to prevent any exploit or malicious actions on well known standard ports. In addition, only approved IP addresses are whitelisted for SSH access. All nodes have advanced CloudWatch monitoring enabled so our team will be alerted to resource over-consumption and system faults. At the OS level, we have disabled all unnecessary services unrelated to Factom, and we have enabled a secure NTP service to ensure proper time syncing from a vetted server. System shared memory has been secured, and a security login banner has been added.

How are you going to make sure you are able to respond quickly?
We have a company help desk phone number which rotates between all of our team members. Additionally, we have an IT support ticketing system which forwards support requests to all team members to ensure rapid response.

Could you provide a picture on how you would see your ideal auth node infrastructure?

Our ideal infrastructure would be a dynamic cloud based architecture to ensure maximum flexibility so we easily adapt to the evolving needs of the Factom protocol. All of our nodes would operate with utilization rates under 60% for all metrics. We believe that we are currently close to meeting our ideal infrastructure goals with our current builds.

Free-text. Add any additional information deemed relevant.

We as a team are fully open to any changes or recommendations regarding server configuration, specs, or location that would be deemed more beneficial to the protocol. The beauty of our choice to go with a cloud architecture, is that it allows us to scale with increasing needs, and be dynamic in our approach. If there is an under-served VPS region, a more well suited server configuration, or a need for increased hardware specifications, we are more than happy apply those changes as needed.

Add any application supporting files here

Veteran Blockchain Investment Firm

Entity: Name (or first name if applying as a natural person)
Veteran Blockchain Investment Firm

Entity: E-mail address
nolan@vbif.io

Team member introductions
Kyle: founded and currently operates as CEO and private wealth advisor of Silver Bulldog Investment Group, headquartered in Seattle, Washington. The fund specializes in precious metals, uranium and the rare earth metals space as well as the emerging blockchain economy. Prior to that, Kyle was trained by the USAF as a Special Operations pilot and been the Director of Operations for one of the pre-eminent military detachments in the nation. He has deployed overseas nine times to Iraq and Afghanistan. He graduated from Central Washington University in 2002 with degrees in both Aeronautical Science and Economics.

Nolan: Starting as an avionics maintainer on USAF fighter aircraft and subsequently trained as a Special Operations pilot, Nolan has a robust background in technology, acquisitions, and operations that he brings to the Veteran team. Prior to founding Veteran, Nolan spent over two years overseeing the modernization of Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance systems and domestic responder requirements for the National Guard.

Stan: Stan has over 25 years of experience in operations management. His most recent position was as the chief operations officer responsible for the organizing, training, and equipping of a 300+ person organization responsible with executing critical missions in support of the National Military Strategy. A native West Virginian, Stan will engage with the WVU Foundation to advance the Factom Protocol while engaging with local, state, and federal government entities to provide solutions to their requirements.

James: As the senior System Admin, James brings over 15 years of system admin experience to the Veteran team. He began his career working with a major casino in the Palm Desert. After a relocation, James was hired to manage the information technology department for a municipality in California. He brings to the Veteran team experience in law enforcement evidence chain management, water and energy distribution, and agriculture supply chain. James is experienced in Windows and Linux production systems.

Bradley: As the junior System admin and Security/Compliance Officer, Bradley brings extensive knowledge of the Department of Defense Information Network (DOD/IN) to the Veteran team. A member of the AF Cyber career field, Bradley will be responsible for securing the Veteran public and private Factom networks and testing the systems for threats and vulnerabilities.

Introduce your Entity/Company
Veteran seeks to invest in the top entrepreneurs, developers and leaders fostering innovation and providing real-world applications and solutions in the emergent blockchain economy. Our mission is to act as a catalyst for widespread blockchain adoption and innovation in disrupting and replacing the unsustainable legacy economy.

Within the next several years, we envision blockchain and digital currencies having an established and innovative role in the new economy. The Veteran team is experienced in traditional finance and blockchain technologies; having strong relationships with the most promising entrepreneurs and top investors in the space. Veteran is committed to serving as a pillar of integrity in which we seek to assist in returning our world to one of honesty and transparency.

Veteran will provide the Factom protocol an avenue to the largest on demand client in the entire world; the U.S. Government. As active holders of security clearances, we have access to and regularly interact with executive level leaders within multiple agencies across the government spectrum. Our West Virginia office allows us a strategic geographic advantage in being in close proximity to the National Capital Region. Our team has multiple habitual relationships with the FBI, DEA, NSA, DHS, DOD, and a few lesser known institutions. These relationships and the trust that has been earned for over a decade are the vehicle for allowing Factom Inc. and the protocol access and visibility that will drive institutional usage. Our firm intends to leverage our position to educate the U.S. Government on the value the Factom protocol can provide, while providing tailored solutions to meet their needs. WHEN Veteran achieves our mission, we will have effectively connected the protocol to the largest global on demand customer.

How many nodes do you envision to run on the Factom Community Testnet (or other testnets?)

2

What type of legal structure does your team use?

LLC

Will you operate as an incorporated company?

If it is advantageous for us as a firm and concurrent with the protocol to incorporate, we will incorporate. Until then we will continue to operate as an LLC and take advice from Gordon Law in Chicago until deemed necessary to reevaluate.

If yes to the above, where are you/will you incorporate? Are your already incorporated?

Are there any major shareholders (>10%) other than the members in your application?

No

Do you and/or your team members have previous experience running a business or managing large capital? If so, make a short writeup of your experience below.

Yes. Kyle is CEO of Silver Bulldog Investment Group, having founded and running a private equity firm that specializes in physical precious metals, uranium, rare earth minerals as well as the junior gold and silver development and exploration companies.

Nolan has experience managing multi-million acquisition projects for the U.S. Government, possesses DAWIA Program Management Level 1 certification and is trained as a Contract Officer Representative. His most recent position involved validating, executing & managing $115M+ Air National Guard field requirements while assisting in the administration of $11B US domestic response & weapons requirements with Air Staff, AFLCMCs, ANGRC, and Nat'l agencies field requirements.

Stan has over 25 years of experience in operations management. His most recent position was as the chief operations officer responsible for the organizing, training, and equipping of a 300+ person organization responsible with executing critical missions in support of the National Military Strategy.

What has your team done to ensure a proactive approach to managing the financial aspects of your business?

Our firm has actively prepared for the financial aspects of being selected to operate multiple nodes as a part of the Factom community by the following:

-Established a robust and well-funded ""FCT bank"" in which we can self-fund, direct, and appoint talented personnel immediately to further the protocol.

-Established a direct working relationship with Gordon Law in Chicago which we now have on retainer in order to advise us on matters directly relating to private equity specific to Fintech, regulatory compliance specific to the CLOUD act as well as our business modeling for the Factom protocol and its tax implications.

-Our firm possesses a Data Universal Numbering System (DUNS) number and System for Award Management (SAM) account in preparation for U.S. Government grant and contract award.

-Short-term (next 12 months) and long-term (5 years) financial business modeling to scale both single and multiple (up to 6 nodes) have been formed and our firms private equity is able to scale aggressively, on notice and up to and including a level commensurate with a domestic data center.

Clarify your commitment to the Factom protocol? What have you brought to the table already, and what will you bring in the future?

We have been extremely hard at work every single day focusing on the Factom protocol. We have been early supporters and participants within the Factom community, to include selection to participate during the establishment of testnet. We have been operating and maintaining nodes within the testnet authority set for going on six months now. During this time, we have also provided the majority of load on the testnet to both stress test and provide a realistic view of widespread network usage. We have shown that we have both the technical capabilities and the drive and motivation to operate multiple servers with precision, reliability and stability. We have wholeheartedly given all of our time and effort as a firm to this protocol and project, to include running unsuccessfully for an open community Guide position. This is not a hobby for us, this is our full-time profession. In our firm; we take honesty, trust and integrity and hold it in the highest regard.

We have a handful of future plans for the protocol. Firstly, we intend to open the protocol to the largest on-demand customer in the world, the U.S. Government. We will accomplish this through building and maintaining a Factom GovCloud network, providing BaaS to the USG on FEDRAMP compliant network systems. We will be proposing a community grant establishing the initial infrastructure and software necessary to meet these goals. Secondly, we have established a relationship with West Virginia University to donate all efficiency of our second node to the WVU Foundation to advance blockchain curriculum and to produce Factom-experienced workforce. This partnership will go above that of the Dash/ASU endowment, being the largest blockchain funded university partnership ever. The partnership will advance the protocol for decades, establishing opportunities to identify and test development of the protocol for the future. Lastly, we have identified a handful of potential Small Business Innovation Research/ Small Business Technology Transfer grants we are soliciting to advance the development of the Factom Protocol while commercializing the technology.

What is your/your entity's motivation for applying for hosting Factom Authority servers?

Truth is Subversive" -Paul Snow

In short; every single pillar of society to include commerce, capital and the institutional framework that we have grown accustomed to is corrupted. We at Veteran wholeheartedly believe that Factom and its protocol has the potential to return us to a more sustainable, honest, transparent and accountable future. In our hearts, we want to be a part of the solution; not the problem.

What vision do you/your entity have of the future of Factom?

Our vision for the Factom protocol is for it to develop, catalyze, and envelop every single layer and level of private commerce as well as sovereign governments. The members of the Veteran team possess active Single Scope Background Investigations that provide our members opportunities to engage with government agencies concerned with protecting and securing the most sensitive information. In addition to providing a medium for commercial entities to participate in the Factom protocol, our intention is to engage with government entities to find solutions to their needs and requirements. We picture ourselves as the U.S. Government development branch of the Factom community. We intend to leverage our experience and access to increase awareness and generate usage by identifying and providing solutions to the largest on-demand customer available, the U.S. Government.

What will your efficiency be with only one node?	**0,5**
What will your efficiency be with two nodes?	0,5

Node #1 Type	**Virtual Private Server (VPS)**
Node #1 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	AWS us-east-1b (or open zone in east-1 region)
Node #1 CPU, Number of cores	8
Node #1 CPU, type & clock-speed	Intel Xeon® E5-2686 v4 - 2.3 GHz
Node #1 RAM, amount in GB	32
Node #1 RAM, scalable if < 24 GB	Not applicable (>= 24 GB)
Node #1: Storage, RAID type	None
Node #1: Storage, Disk type	SSD
Node #1: Storage, Free Size in GB for Factom	100
Node #1: Storage, Do you have a separate factom volume/disks?	Separate disk(s)
Node #1: Connection & uplink speed (not just your NIC speed)	1 Gbit

Node #2 Type	**Virtual Private Server (VPS)**
Node #2 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	AWS us-east-2b (or open zone in east-2 region)
Node #2 CPU, Number of cores	8
Node #2 CPU, type & clock-speed	Intel Xeon® E5-2686 v4 - 2.3 GHz
Node #2 RAM, amount in GB	32
Node #2 RAM, scalable if < 24 GB	Not applicable (>= 24 GB)
Node #2: Storage, RAID type	None
Node #2: Storage, Disk type	SSD
Node #2: Storage, Free Size in GB for Factom	100
Node #2: Storage, Do you have a separate factom volume/disks?	Separate disk(s)
Node #2: Connection & uplink speed (not just your NIC speed)	1 Gbit

Add any other information relevant to server specifications and hosting, including planned availability of your maintenance team and how you would propose to handle an unscheduled restart.

There are six separate data centers (zones) available within the AWS us-east-1 region. We will deploy our primary node within one of the free zones in this region. Our plan for the secondary node will be to transition hosting eventually to the West Virginia University to operate and manage utilizing their own infrastructure. In the interim, we are evaluating the feasibility of deploying our secondary node on the AWS GovCloud infrastructure. If it is determined that the limitations in place will be problematic, we will deploy our secondary node in the AWS us-east-2 region.

Unscheduled restarts will be handled in a timely manner. We will always have a team member available within one hour to troubleshoot and restart our nodes. Our members regularly monitor and participate in Discord and Factomize and have measures in place to notify should an issue arise. Nolan is located in Eastern timezone (UTC -04:00/05:00) and James is located in Pacific timezone (UTC -07:00/08:00). Between the two of them, they will maintain coverage and response capability. As a testament to our availability, we were notified and monitored the situation throughout the latest mainnet stall.

Which date did you join the Factom community testnet (approximate date is ok)?

2/7/2018

How does your team administer the nodes (more options possible)?

By more than 1 team member

How many people in your team are able to operate the servers (including direct hired personnel, but excluding hired fallback companies)?

3

How many years of combined experience does your team have on running production servers?

15

Could you elaborate on the production servers your team has managed (amounts, OS-types, purpose)?

Besides successfully running Factom testnet nodes for the previous five months, our team has experience in Windows and Linux based production servers. During James' early career was a member of the System Admin team responsible for the information architecture for a casino in the Palm Desert. He now manages the IT department for a municipality within California. He utilizes and manages both Windows and Linux systems. Nolan has a little over four years of windows and linux server management experience maintaining a home media and VPN server. Although trained in cyber operations, Bradley is new to system administration and learning the intricacies of running Factom nodes. We expect him to become proficient in Factom node management under the Leadership of Nolan and James. Through the WVU endowment and military ties, Veteran is positioning themselves to be able to bring on interns and additional personnel to support the node operations as the protocol scales. Every member of our team is a shareholder and dedicated to the successful implementation of our Authority Node Operator status.

Have you run follower nodes outside the qualified-node pool on the testnet? If so to what effect? Other contributions to the testnet?

Yes. We've run testnet nodes since Alpha, being the primary provider of load to the testnet until M3. Additionally, Nolan assisted with onboarding new members during the Alpha and Beta stage of the testnet. Nolan was also part of and remains an active contributor in the #support channel assisting others with their node setups. We will continue to deploy nodes on the testnet and contribute where possible.

Have you run any mainnet nodes? If yes, please elaborate why, and for how long

Yes, approximately 1 month prior to testnet implementation. Terminated mainnet node to focus on testnet and to learn how to interact with the protocol.

How are you going to make sure your nodes operate securely?

We will take a multi-faceted approach to securing our nodes. Our nodes will all operate within a security group that provides an initial layer of defense. Guard nodes upon deployment will provide a secondary layer of defense. Each node will use iptables to close off unused ports and we will remove daemons and services that are not in use. Additionally, we have brought on a DODIN trained administrator to provide threat testing and monitoring of our systems. His primary role will be in securing the GovCloud network, but will be utilized to provide input to our public authority nodes.

How are you going to make sure you are able to respond quickly?

Our team has demonstrated the ability to respond rapidly to updates and restarts on the testnet. Our Authority nodes will utilize the AWS EC2 cloudwatch and Simple Notification Service to notify personnel of potential issues. Additionally, we are currently utilizing a combination of the TFA Bot connected to Discord, Telegram, and are working on a couple of Twilio applications that will notify our team of issues. We maintain a 24/7 emergency on-call capability outside of the normal hours our team spends online.

Could you provide a picture on how you would see your ideal auth node infrastructure?

We will plan to operate our servers utilizing a minimum of three guard nodes configured to protect the authority node. Behind the guard nodes, we will maintain an active authority node and a backup capable of being swapped out. We will also operate a handful of instances in standby that can be shuffled around as needed to minimize downtime (to include daily synchs to maintain block height). As we scale, we will develop a plan that meets best practices of the Factom Community in securing the authority set.

Free-text. Add any additional information deemed relevant.

We have structured our company to operate solely on a single node and will be prepared to relinquish the node when appropriate. For all intents and purposes, we will operate our second node the same as our first with one major difference, our plan for efficiency will be to allocate any grant pool share into the West Virginia University Foundation. We are finalizing the legal aspect of this proposal and are extremely excited about the future outcome. The balance of FCT will be the WVU Foundation's to sell on market/redistribute as they wish, however the proceeds of the FCT will be re-invested into the WVU curriculum with a focus on blockchain technology and Factom Protocol development. In time, the second node will provide an opportunity for students to understand and interact with the protocol while providing inputs to improve processes and implementation. When the decision to relinquish the node to another operator comes, we will evaluate our financial position and expect to be able to continue the WVU Foundation endowment and would encourage other operators to contribute.

Add any application supporting files here

https://drive.google.com/open?id=1CUWn71Ytv1qna4ot2M5eANLIwU_JxcrE,
https://drive.google.com/open?id=1A2vkMjwyQJ4VaW1kF3jaKmc6h7Z_t8eC

De Facto

Entity: Name (or first name if applying as a natural person)
De Facto

Entity: E-mail address
team@de-facto.pro

Team member introductions
DeFacto-Introduction.pdf

Introduce your Entity/Company
DeFacto-Introduction.pdf

How many nodes do you envision to run on the Factom Community Testnet (or other testnets?)
2

What type of legal structure does your team use?
LLC

Will you operate as an incorporated company?
Yes

If yes to the above, where are you/will you incorporate? Are your already incorporated?
Russia

Are there any major shareholders (>10%) other than the members in your application?
Yes

Do you and/or your team members have previous experience running a business or managing large capital? If so, make a short writeup of your experience below.
DeFacto-Introduction.pdf

What has your team done to ensure a proactive approach to managing the financial aspects of your business?
DeFacto-Financial.pdf

Clarify your commitment to the Factom protocol? What have you brought to the table already, and what will you bring in the future?

DeFacto-Commitment.pdf

What is your/your entity's motivation for applying for hosting Factom Authority servers?

We see a huge potential of Factom protocol and want to be ambassadors of Factom in Russia and CIS.

What vision do you/your entity have of the future of Factom?

We are sure that Factom will reach 1 billion capitalisation within next 24 months and then even more.

Huge corporations will start using Factom.

Internet projects/startups will use Factom.

We want to be the part of it and help Factom to reach this.

What will your efficiency be with only one node?	**0,25**
What will your efficiency be with two nodes?	0,34999999999999998

Node #1 Type	**Virtual Private Cloud (VPC)**
Node #1 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	Russia, Moscow, Selectel
Node #1 CPU, Number of cores	4
Node #1 CPU, type & clock-speed	Intel® Xeon® E5-2670 v3 (Haswell) 2.3 Ghz
Node #1 RAM, amount in GB	24
Node #1 RAM, scalable if < 24 GB	Not applicable (>= 24 GB)
Node #1: Storage, RAID type	RAID 1
Node #1: Storage, Disk type	SSD
Node #1: Storage, Free Size in GB for Factom	200
Node #1: Storage, Do you have a separate factom volume/disks?	Separate volume(s)
Node #1: Connection & uplink speed (not just your NIC speed)	1 Gbit

Node #2 Type	**Virtual Private Cloud (VPC)**
Node #2 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	Russia, St. Petersburg, Selectel
Node #2 CPU, Number of cores	4
Node #2 CPU, type & clock-speed	Intel® Xeon® E5-2670 v3 (Haswell) 2.3 Ghz
Node #2 RAM, amount in GB	24
Node #2 RAM, scalable if < 24 GB	Not applicable (>= 24 GB)
Node #2: Storage, RAID type	RAID 1
Node #2: Storage, Disk type	SSD
Node #2: Storage, Free Size in GB for Factom	200
Node #2: Storage, Do you have a separate factom volume/disks?	Separate volume(s)
Node #2: Connection & uplink speed (not just your NIC speed)	1 Gbit

Add any other information relevant to server specifications and hosting, including planned availability of your maintenance team and how you would propose to handle an unscheduled restart.

DeFacto-Nodes.pdf

Which date did you join the Factom community testnet (approximate date is ok)?

2/1/2018

How does your team administer the nodes (more options possible)?

By more than 1 team member

How many people in your team are able to operate the servers (including direct hired personnel, but excluding hired fallback companies)?

3

How many years of combined experience does your team have on running production servers?

25

Could you elaborate on the production servers your team has managed (amounts, OS-types, purpose)?

1) Different web-servers with LAMP/nginx/… (Ubuntu/Debian)

2) Git servers (Ubuntu) for development

3) Staging servers — intermediate server between dev-server and production — used for testing, compiling and etc.

4) IKEv2 VPN servers (Ubuntu/StrongSwan) with additional security: certificate files + login/passwords

5) Dedicated Factom Testnet server (Audit)

6) Proxy servers

7) MS SQL servers

We responsibly approach to server configurations: ssh key-based auth, firewall setup, port allowance/restrictions, logging, rotating logs, load & hardware monitoring and etc.

Have you run follower nodes outside the qualified-node pool on the testnet? If so to what effect? Other contributions to the testnet?

Running 3 Testnet nodes since Feb 2018 till now.

No incidents. High uptime. Timely updates.

Tested identity generation, coinbase/effiency set, brain-swapping.

Our nodes: DeFacto-Testnet1 + DeFacto-Testnet2 + DeFacto-Testnet3

Anton Ilzheev assigned as Deputy Admin in May 2018.

Responsibilities:

— Checking testnet nodes healths and investigating the problems

— Onboarding/help testnet operators

— Supporting & improving Swarm Testnet monitoring

Have you run any mainnet nodes? If yes, please elaborate why, and for how long

We have run follower node on the mainnet — we were interested how it works. Approx. from Oct 2017 till Feb 2018 (then started the testnet nodes).

How are you going to make sure your nodes operate securely?

DeFacto-Nodes.pdf

How are you going to make sure you are able to respond quickly?

Different team members in different timezones.

Available via Discord 18/7.

24/7 available by phone.

Could you provide a picture on how you would see your ideal auth node infrastructure?

DeFacto-Nodes.pdf

Free-text. Add any additional information deemed relevant.

We are excited to be part of the Factom community. As previously mentioned, we are committed to run reliable & stable Authority nodes and distribute Factom among Russian corporations increasing its usage.

We also have open-source ideas for increasing Factom usage (it's partially described in DeFacto-Commitment.pdf).

Add any application supporting files here

https://drive.google.com/open?id=1tnPXEcv2TrQFkjftwRxji27C7JDjURUf,
https://drive.google.com/open?id=1_GCfKdm-es3LaKY79cNKpTO2Ltafwc3V,
https://drive.google.com/open?id=11KughTB-WUnPJ4Z64MSYXgB7KMkIjn0z,
https://drive.google.com/open?id=1RJbHiLOAl6vTe0gBPyi3sr9UjZ5YY6jK

Anchor Block

Entity: Name (or first name if applying as a natural person)
Anchor Block

Entity: E-mail address
info@anchorblock.io

Team member introductions
Please see attached PDF for full team members backgrounds.

Introduce your Entity/Company
Anchor Block is a recreation of our previous application which was submitted under "Branson Consulting." We saw some issues from the first found that pertained to support and contributions and we wanted to revamp everything. After hours of brainstorming we came up with a new entity, an entity that includes multiple verticals. In June we introduced to the community our "Daily Discord Digest" where we compile all the important conversations for the day that were discussed in Discord and send out to our subscribers. We decided to put efforts towards content creation and have since developed and created our first tutorial video on "How to Perform a Brainswap" on the testnet. We want to assist in helping newcomers to the Factom ecosystem by streamlining communications and the onboarding process. We have added 2 new team members that are fully committed to the project, one being our main systems administrator. Anchor Block has trained 4 of our team members to provide 24/7 support to the infrastructure. On top of this, we have developed a few more ideas and plans for next steps should we be selected, check out our attached PDF!

How many nodes do you envision to run on the Factom Community Testnet (or other testnets?)
2

What type of legal structure does your team use?
LLC

Will you operate as an incorporated company?
Yes

If yes to the above, where are you/will you incorporate? Are your already incorporated?
We will incorporate in Montana, United States.

Are there any major shareholders (>10%) other than the members in your application?
No

Do you and/or your team members have previous experience running a business or managing large capital? If so, make a short writeup of your experience below.

Cody has been running his own consulting company for almost 2 years now fully revolving around cryptocurrencies and blockchain tech. Having seen the ups and downs of business, and of the crypto currency market, Cody has developed thick skin and is here for the long haul. Cody has assisted clients with managing large capital investments and helped them understand how wallets, exchanges and how the blockchain works spanning across multiple cryptos. Previously Cody spent time working under a few business and assisted with growing the business and overcoming obstacles in marketing, sales, personnel turnover, managing people and increasing profits.

Dennis is our business growth partner. He has helped grow multiple businesses in the past 20 years. See his bio on our attached PDF for the full spectrum of the value he brings to the table.

What has your team done to ensure a proactive approach to managing the financial aspects of your business?

After consulting with our financial advisor we have a much better understanding on how we can continue business through the different scenarios that can play out. We have come up with a document regarding how we will manage capital based off multiple variables including price per FCT, 1 and 2 server management, cloud computing rates and ways to cut costs.

Clarify your commitment to the Factom protocol? What have you brought to the table already, and what will you bring in the future?

Anchor Block configured and deployed our first testnet server in February of 2018. After consulting and revamping our business we added 2 nodes to the testnet in June of 2018 and added one more since. We started our "Daily Discord Digest" in May for the team members at Go Immutable in order to keep some of the members up to speed with the discussions. After receiving great feedback from the team we opened it up to the community in June and currently are aiding in keeping multiple ANOs and community members up to speed everyday. In July we launched our newly designed website with our updated logos/names/content. We made it easier to join our newsletter by creating a subscription service through Mail Chimp and are currently in talks with adding this to other ANO sites to widen Factoms audience. A large part of our proposal is the creation of content directed towards testnet users and prospective ANOs, we created our first video and uploaded to our site. We also created a Youtube channel that is going to be dedicated to tutorials material and currently has our first video on it.

We have plans in play to design/develop/create/deploy multiple more video tutorials to our instituted resources. These videos include tutorials for onboarding the testnet for the first time, what is Factom, Factom and Bitcoin comparisons, how to create and identity, How to spin up a node - going all the way from scratch on the GCP console to running factomd.

We are currently also planning a site that will act as a hub for all current ANOs and prospective ANOs. A site where anyone interested in getting more involved with Factom can go check out and get up to speed. This includes content creation, design work, marketing, tutorials, google doc links, discord channel links, our newsletter subscription, and more.

We want to free up more time for ANOs going after bigger fish, so we have agreed to manage servers on the testnet for the team at Go Immutable and a soft commitment from the team at LayerTech. We plan to open this up to more ANOs as we grow.

Anchor Block sees the need in acquiring a larger presence on exchanges, and as part of our pledges we are committed to partaking in this development.

What is your/your entity's motivation for applying for hosting Factom Authority servers?

Anchor Block is here for the long haul. We have been involved with the Factom community since the start of the year and want to see it grow. The amount of talent that is in the community is unreal and we feel lucky we get to play a small part. Anchor Blocks motivation is tied into our mission, we want to lead the charge in video content creation and streamline efficiency with communications. We believe with less ANOs resources tied to mundane tasks we can impact the future by carrying the load. Our vision is to create video tutorial content for current ANOs and aspiring ANOs, aid teams in communications, and assist in getting Factom trading everywhere.

What vision do you/your entity have of the future of Factom?

Anchor Blocks vision for the future of Factom lies in the technology that Factom offers. We see the incredible power the immutable tech behind Factoms blockchain and want to help the world see it too. By sticking to our pledges and taking on new ventures, we believe we can realize this.

What will your efficiency be with only one node?	**0,5**
What will your efficiency be with two nodes?	0,59999999999999998

Node #1 Type	**Virtual Private Server (VPS)**
Node #1 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	Google Cloud Platform - VPS - n1-standard-8. Location - London, England. Region - europe-west2
Node #1 CPU, Number of cores	8
Node #1 CPU, type & clock-speed	Intel Xeon E5 2.8 GHz
Node #1 RAM, amount in GB	30
Node #1 RAM, scalable if < 24 GB	Not applicable (>= 24 GB)
Node #1: Storage, RAID type	RAID 1
Node #1: Storage, Disk type	SSD
Node #1: Storage, Free Size in GB for Factom	200
Node #1: Storage, Do you have a separate factom volume/disks?	Shared with OS
Node #1: Connection & uplink speed (not just your NIC speed)	1 Gbit

Node #2 Type	**Virtual Private Server (VPS)**
Node #2 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	Google Cloud Platform - VPS - n1-standard-8. Location - Finland. Region - europe-north1
Node #2 CPU, Number of cores	8
Node #2 CPU, type & clock-speed	Intel Xeon E5 2.8 GHz
Node #2 RAM, amount in GB	30
Node #2 RAM, scalable if < 24 GB	Not applicable (>= 24 GB)
Node #2: Storage, RAID type	RAID 1
Node #2: Storage, Disk type	SSD
Node #2: Storage, Free Size in GB for Factom	200
Node #2: Storage, Do you have a separate factom volume/disks?	Shared with OS
Node #2: Connection & uplink speed (not just your NIC speed)	1 Gbit

Add any other information relevant to server specifications and hosting, including planned availability of your maintenance team and how you would propose to handle an unscheduled restart.

Anchor Blocks will change out keys between 4 team members each month for an added layer of security. We take weekly snapshots in the event of an instance failure and the redundancy in GCP fails. We have implemented a monitoring system by using GCPs Stackdriver monitoring and linked this to our Pager Duty account for mobile push notifications. We have developed a calendar that includes "shifts" that each team member will be responsible for, covering 24/7 support and unforeseen maintenance of our servers. We built this out to handle any unforeseen issues that may arise, and are ready to cover it around the clock.

Which date did you join the Factom community testnet (approximate date is ok)?
2/21/2018

How does your team administer the nodes (more options possible)?
By more than 1 team member

How many people in your team are able to operate the servers (including direct hired personnel, but excluding hired fallback companies)?
4

How many years of combined experience does your team have on running production servers?
15

Could you elaborate on the production servers your team has managed (amounts, OS-types, purpose)?
Cody has deployed and managed a server set of 5 AWS t.2 mediums to handle enterprise wide applications which ran a sales quoting tool that connected multiple users and allowed sharing in the private cloud. Weekly snapshots were taken to provide an extra layer of redundancy and a fully configured firewall was deployed to allow access from static IPs only.

Vasiliy has managed local bare metal basic windows based machines for email and web hosting. Vasiliy has also managed cloud infrastructure regarding the testnet, bringing a node from 0 to running factomd with an associated identity. He is currently completing his docker certs on Udemy.

Brody has been involved in computer programming for 10 years. Starting out with basic website hosting and design to becoming a fully certified PHP backend developer managing a wide array of servers that support online video streams to over 25,000 people every week.

Karl has supported local and remote windows based machines for users with day to day issues. He has managed server infrastructure for his previous employer including print servers, group policy file sharing and Active Directory. Karl has performed 1st, 2nd and 3rd line support duties from basic troubleshooting to complex problem resolution in areas including Networking, Juniper Network Connect VPN, MS Office, Autodesk products, Explorer CRM software and Citrix applications.

Have you run follower nodes outside the qualified-node pool on the testnet? If so to what effect? Other contributions to the testnet?
Yes, we have ran both Authority Set nodes on the testnet and followers that are ready to be promoted. We have created a tutorial video to assist newcomers in performing brainswaps on the testnet.

Have you run any mainnet nodes? If yes, please elaborate why, and for how long
No

How are you going to make sure your nodes operate securely?
Anchor Block has locked down our GCP VPC and set firewalls according to Factom. We change out our keys on a monthly basis. Anchor Block participated in the guard nodes discussion and ready to continue if the community votes to move forward. We use static IPs on all our instances and plan to implement a controller that we will run all our servers through to limit login permissions.

How are you going to make sure you are able to respond quickly?

We have setup our monitoring tools using Stackdriver in GCP and injest stall alerts over to our Pager Duty account which pushes mobile notifications to all team members. Depending on who is on call during that time from our teams calendar, we will be ready to act in any unforeseen incidents.

Could you provide a picture on how you would see your ideal auth node infrastructure?

We spin up the node running factomd and sit it behind a fully configured VPC firewall group and controller. We change out the keys every month as a precautionary step. We take weekly snapshots of each instance and have hot swap available follower nodes. We have Stackdriver alerts pushing to Pager Duty and setup TFAs alert bot in Discord. We implement guard nodes if the community decides this is a next step. We have 4 members that can fully support any unforeseen issues that may arise.

Free-text. Add any additional information deemed relevant.

Anchor Block appreciates the time and energy the Guides have taken to review our application and the behind the scenes work they put in. We hope that throughout the last 6 months we have shown our commitment to the Factom protocol and look forward to the future.

Thank you for your consideration,

Anchor Block Team

ps. Please see attached PDF for more information regarding our commitment.

Add any application supporting files here

https://drive.google.com/open?id=1ZVLM4UsrEFPo_zH_IfG7Hds1ipynFITC

Blockchain Education Initiative

Entity: Name (or first name if applying as a natural person)
Blockchain Education Initiative

Entity: E-mail address
jason.gregoire@emulvera.com

Team member introductions
We currently have seven members and three company advisors associated with the Blockchain Education Initiative project. Members are distributed across both US coasts, Cuba/Spain, and India. BEI team members include experienced sysadmins, blockchain evangelists, and blockchain developers, as well as CTO/Directors of Blockchain and IT services companies. BEI's breadth and diversity of experience and geography will be a capabilities multiplier for our company's mission. Please see BEI's submitted Factom M3 Node Application for team member introductions.

Introduce your Entity/Company
In brief, the Blockchain Education Initiative aims to educate commercial, civic, non-profit, and social organizations; advocate blockchain-leveraging solutions to improve processes; provide a full range of blockchain consulting services (via partner organizations); design, produce, provide, and support DLT-associated technical training and education programs at the youth, colligate, and professional level; and eventually provide blockchain-associated talent development and placement services via partnerships with technical talent recruiters. We intend to concentrate our activities in Latin America and South Asia. Please see BEI's submitted Factom M3 Node Application for details regarding our intend mission, functions, organization, and ANO business plan.

How many nodes do you envision to run on the Factom Community Testnet (or other testnets?)
2

What type of legal structure does your team use?
LLC

Will you operate as an incorporated company?
Yes

If yes to the above, where are you/will you incorporate? Are your already incorporated?
We have an existing LLC in the US state of Nevada. If selected, we will amend our existing LLC and change its name to the Blockchain Education Initiative.

Are there any major shareholders (>10%) other than the members in your application?

No

Do you and/or your team members have previous experience running a business or managing large capital? If so, make a short writeup of your experience below.

Yes: Our team collectively has 30 years of experience running businesses of various sizes. All businesses previously or currently run are and were technical, either associated with IT services or specialty services such as blockchain.

Yes, our team has significant experience managing large amounts of capital: one member manages an operating budget up to $300,000, multiple members have small blockchain services companies with annual revenues of $300,000-$500,000, and one team member co-founded and helps operate a mid-sized IT services company with revenues of ~$15million.

Please see the submitted BEI Factom M3 ANO Application for additional information regarding BEI team experience.

What has your team done to ensure a proactive approach to managing the financial aspects of your business?

To be proactive, our team has created a start up/contingency corporate account (~$40,000) to handle initial capital requirements as well as to serve as an operational buffer against low FCT/USD rates.

We have conducted the initial steps to establish a corporate cryptocurrency exchange account to handle our FCT transactions. If selected we plan to operate multiple cryptocurrency exchange accounts to ensure we can reliably convert crypto to fiat and minimize our activities' impact on the general FCT market.

We've hired a CPA with significant US IRS experience to advise us as well as help manage our accounting/finances; additionally, we have held preliminary discussions with a payroll company for potential services.

We've created multiple iterations of financial planning spreadsheets to exam where and at what FCT price points the company will need to scale back or reduce services to ensure we are always able to maintain our core responsibly to the protocol of running stable and reliable Factom Mainnet nodes.

Lastly, we've identified software that we intend to subscribe to track and catalog all our Cryptocurrency transactions to facilitate accurate accounting and tax obligations. Multiple members on our team have experience in finance and accounting; we plan on leveraging our individual experience when possible and external expertise when necessary. Please see the submitted BEI Factom M3 ANO Application for additional information.

Clarify your commitment to the Factom protocol? What have you brought to the table already, and what will you bring in the future?

We have continuously run one to three Factom nodes on the Factom community Testnet since February 2018 and have been active participants in the Factom Community Slack, Discord, and Factomize community forums. We have purchased multiple domains and investigated several commercial contracts globally in support of becoming a Factom ANO. We have established a legal business entity, hired processional advisors, massed startup capital, established corporate bank and crypto exchange accounts, travelled to meet fellow DLT enthusiasts, sought and recruited top talent to form the BEI, and evangelized the Factom protocol to dozens of people in multiple countries. We have attracted accomplished and experienced business advisors and spent more than collectively 100 hours brainstorming how to best support the Factom protocol now and into the future and grow the Factom community. We have researched and conceptually built what we consider to be a robust server node architecture across multiple datacenters in multiple countries.

If selected, we will bring our server architecture online, begin initial ground work to design and build our products and services, initiate establishing multiple partnerships globally, and pursue the most effective opportunities available to evangelize the protocol and educate and train organizations to the possible benefits available with the Factom protocol. Please see the submitted BEI Factom M3 ANO Application for additional information.

What is your/your entity's motivation for applying for hosting Factom Authority servers?

The possibilities of blockchain to improve processes and aspects of our lives are plentiful, but in this early stage of the technology, it's not entirely clear what these impacts will be or how long it will be before they are here. We believe in the promises of blockchain and cryptocurrency. For the members of BEI, we are driven by the need to be a part of making sure people and organizations know what is possible through DLT and help them acquire the training, talent, and tools to make our world a better and more honest place.

In the crypto space, it's unclear who will be the winners and losers and ultimately which projects will survive or fade away. We are believers in Factom; believers in the Factom community, and that the Factom protocol has the potential to be a leader in delivering blockchain-associated benefits to the world. We want to be in a real position to evangelize the protocol, and educate and train people and organizations of what's possible with the technology.

We want the opportunity to grow the Factom community and directly contribute to help organizations and businesses create solutions that lead to greater use of the protocol in industry and our daily lives. Please see the submitted BEI Factom M3 ANO Application for additional information.

What vision do you/your entity have of the future of Factom?

We see Factom metaphorically as a locomotive - as the Mainnet matures and Factom ANOs become fully operational, the protocol will slowly build speed and momentum; eventually the technology and momentum behind ANO projects and development, as well as the robust community in support of the protocol will be recognized by the greater blockchain and crypto space ecosystem for what it is - a robust protocol with the flexibility, speed, and use case versatility that will make it a top contender for commercial, civic, and social solutions. It won't happen overnight, but we believe the community is taking the right steps and led by the right people to make this described future an eventuality. Please see the submitted BEI Factom M3 ANO Application for additional information.

What will your efficiency be with only one node?	**0,20000000000000001**
What will your efficiency be with two nodes?	0,25

Node #1 Type	**Virtual Private Server (VPS)**
Node #1 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	Milan, Italy; SeFlow S.N.C. (Europe) - SeFlow S.N.C. Datacenter, Milan, Italy
Node #1 CPU, Number of cores	8
Node #1 CPU, type & clock-speed	Intel XEON v6 processor, 3.5 Ghz
Node #1 RAM, amount in GB	32
Node #1 RAM, scalable if < 24 GB	Not applicable (>= 24 GB)
Node #1: Storage, RAID type	RAID 10
Node #1: Storage, Disk type	NVMe
Node #1: Storage, Free Size in GB for Factom	400
Node #1: Storage, Do you have a separate factom volume/disks?	Separate volume(s)
Node #1: Connection & uplink speed (not just your NIC speed)	1 Gbit

Node #2 Type	**Virtual Private Server (VPS)**
Node #2 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	Warsaw, Poland; SeFlow S.N.C. (Europe) - OVH Datacenter, Warsaw, Poland
Node #2 CPU, Number of cores	8
Node #2 CPU, type & clock-speed	Intel XEON v6 processor, 3.5 Ghz
Node #2 RAM, amount in GB	32
Node #2 RAM, scalable if < 24 GB	Not applicable (>= 24 GB)
Node #2: Storage, RAID type	RAID 10
Node #2: Storage, Disk type	NVMe
Node #2: Storage, Free Size in GB for Factom	400
Node #2: Storage, Do you have a separate factom volume/disks?	Separate volume(s)
Node #2: Connection & uplink speed (not just your NIC speed)	1 Gbit

Add any other information relevant to server specifications and hosting, including planned availability of your maintenance team and how you would propose to handle an unscheduled restart.

BEI will have two core experienced sysadmins, one supporting experienced sysadmin, and a third-party company that will provide contingency/backup sysadmin/server administration support. There is a 9 1/2 hour time zone difference between our sysadmins that should alleviate any unavailability issues, and in combination with our backup third-party company, no issue should go unaddressed for an unreasonable amount of time. Please see the BEI Factom M3 ANO application for additional details.

Which date did you join the Factom community testnet (approximate date is ok)?

2/23/2018

How does your team administer the nodes (more options possible)?

By more than 1 team member, Fallback by a specialized company

How many people in your team are able to operate the servers (including direct hired personnel, but excluding hired fallback companies)?

5

How many years of combined experience does your team have on running production servers?

55 years

Could you elaborate on the production servers your team has managed (amounts, OS-types, purpose)?

We have collectively managed database servers (mssql, mysql), email servers (exchange 2003-2016), Active Directory, Web servers, application servers (Intuit, Sage, Dynamics, Shoretel), Access Control Servers (Entrapass), NAS servers, and hosted servers (AWS, Rackspace). Linux OS, MDM (Master Data Management) Systems, Hadoop Clusters, and Windows OS. We have experience with dedicated hardware with no as well as complete virtualization and VMware hosted or Hyper V hosts. For blockchain, our team has run Ethereum nodes, Factom Testnet nodes, and Deviantcoin (DEV) nodes.

Have you run follower nodes outside the qualified-node pool on the testnet? If so to what effect? Other contributions to the testnet?

We have not run follower nodes outside the qualified- node pool - we currently run three Factom Testnet nodes (two authority nodes, one follower node).

Have you run any mainnet nodes? If yes, please elaborate why, and for how long

One Mainnet follower node was spun up and spun down as a POC with our backup 3rd-part sysadmin company.

How are you going to make sure your nodes operate securely?

Security will be one of our top priorities in administrating Factom Mainnet Nodes. We will follow all Factom Community security best practices, update security patches and factomd releases regularly and promptly, ensure maximum protection of our authority node private keys, and regularly monitor and audit our nodes for unusual activity and to monitor the status/security of our server ports. We will regulate who has the authorities to remotely access our nodes and have individual log ins for all authorized node sysadmins.

We selected the VPS provider and datacenters with security as weighted factor. In addition to the network security services our VPS providers supplies, we will purchase additional protections for each of our nodes that include additional bandwidth capacity to withstand DDOS attacks.

Also, by locating our node architecture across multiple datacenters, we naturally increase the physical and virtual security of our nodes. Please see the BEI Factom M3 ANO application for additional details.

How are you going to make sure you are able to respond quickly?

Or sysadmins will have the ability to monitor discord for any community announcement that will require immediate actions. Additionally, we will run (node) server monitoring software to monitor the health and status of our servers that will alert (SMS, text, email, call) our team members and 3rd party backup sysadmin company in the event of a problem requiring immediate attention. We also intend to use some of the community-produced applications to monitor our Factom node software for stalls and other issues. Please see the BEI Factom M3 ANO application for additional details.

Could you provide a picture on how you would see your ideal auth node infrastructure?

Please see the BEI Factom M3 ANO application for a conceptual picture of our planned node (server) infrastructure.

Free-text. Add any additional information deemed relevant.

We are excited and honored to be considered for the opportunity to work on behalf of the great Factom community for the advancement of the protocol and to reinforce the integrity of the Factom node network.

Add any application supporting files here

https://drive.google.com/open?id=1-We4OXoeJP4jGuZdzjLdwLOZgVvjbR3H,
https://drive.google.com/open?id=1nPgOuqNJpyZvvJ4ld0B-Wm09OiSGiDAU,
https://drive.google.com/open?id=1BUMIfEmr4Q17wvJeqwCvOucDXWPVqWvd,
https://drive.google.com/open?id=1MqRPi2X7Y2RygieGNucGKqHPPzReURiB

Phoenix LLC

Entity: Name (or first name if applying as a natural person)

Phoenix LLC

Entity: E-mail address

revblc@hotmail.com

Team member introductions

Kris

Kris is Lead Portfolio Manager and Chief Investment Strategist at TER Investments, a multimillion dollar cryptocurrency and digital asset management fund. A leading expert in Bitcoin, Blockchain and Cryptocurrency industries, Kris is at the core of revolutionizing the financing industry across the globe and currently consults and advises for ICO's and other companies. His network includes a range of accredited investors, family offices, and hedge fund professionals.

Prior to founding TER, Kris was involved in risk management and proprietary trading of equities for Swift Trade Canada, and holds the Portfolio Management, Investment Management, and Trading Training designations from the Canadian Securities Institute.

As an early adopter of cryptocurrencies, Kris believes digital assets and tokens are rapidly changing the landscape of commerce.

Jesse

Jesse sits squarely at the intersection of publishing and promotion – having signed two publishing deals on two different continents and navigated the world of becoming a best-selling author twice. It has been his honor to work with 100+ authors from around the world to achieve their dreams of writing and publishing a book.

With constant exposure to books, trends in publishing and the latest marketing techniques for authors, Jesse has a superpower to see the meaning between the lines and create compelling titles, book covers and marketing language.

In addition to being featured on over 50 media outlets for his best-selling book Lifestyle Entrepreneur, Jesse has been an entrepreneur his entire adult life and holds degrees from University of California, Berkeley, as well as National Taiwan University and Beijing Normal University.

Jesse believes Blockchain technology will bring innovation and transparency to the rights licensing side of the publishing industry and plans to be at the forefront of this movement.

Roan

Roan has more than 12 years of professional experience in software and infrastructure development. Having previously worked as a software engineer in the semiconductor industry at ASML, now he is a full stack integration expert.

As Chief Technical Officer for several cryptocurrency projects, Roan is quickly becoming known as an innovator and leader in the blockchain space.

Evgeny

Evgeny is an IT/Telecom systems engineer with over 20 years of experience in telecommunications and information technology. Evgeny holds a Bachelor of Information Technology and Mathematics and a Diploma of Engineering (Mathematics and Programming Languages).

Evgeny spent two years working for Red Hat in the position of Senior Technical Support Engineer, working on high severity and high impact cases. He prides himself on a systematic approach to quickly finding and eliminating non-standard network or system issues.

Evgeny's expert areas include the following:

- Cisco Routers/Switches/ASA, Palo Alto, Fortigate, Mikrotik

- Networks: Design and Operation (Certified as CCNP, CCDA, CCNA Security, PCNSE and RHCE)

- Linux setup, support and performance tuning

* Apache/Nginx * Postfix/Sendmail * MySQL/MariaDB * Nagios/Icinga/Munin/monit * Bind/Unbound - Amazon AWS EBS/S3 and other services

- Troubleshooting of complex network issues

- Linux network stack tuning and optimization

Introduce your Entity/Company

Phoenix is a team of four people who are excited about furthering the Factom Protocol. With varying backgrounds - a cryptocurrency fund manager, the owner of a publishing company, a software engineer, and a full-stack developer, we have come together to embrace this opportunity and add value to the Factom community.

We believe one of the ways we can add value is by hosting a Factom Authority Node. The Phoenix corporation will be operated as a Nevada LLC (for-profit) with the initial sole purpose to run and maintain an Authority Node, and further the use of Factom in regard to intellectual property rights

How many nodes do you envision to run on the Factom Community Testnet (or other testnets?)

2

What type of legal structure does your team use?

LLC

Will you operate as an incorporated company?

Yes

If yes to the above, where are you/will you incorporate? Are your already incorporated?

We are currently in the process of incorporating in Nevada, USA

Are there any major shareholders (>10%) other than the members in your application?

No

Do you and/or your team members have previous experience running a business or managing large capital? If so, make a short writeup of your experience below.

Our members' relevant professional history includes:

2 years operating a successful multimillion dollar cryptocurrency and digital asset management fund

Have taken a company public and worked on multi-million dollar financings

5 years running a highly successful publishing company

Have taken 25 books to #1 best-seller position on Amazon

15 years managing web and application servers in enterprise setups

5 years running a multimillion dollar proprietary trading fund (equities)

Manage large crypto investments and trading portfolios

What has your team done to ensure a proactive approach to managing the financial aspects of your business?

We recognize that cryptocurrencies are volatile and the price of Factoids can fluctuate. As such we have raised an additional $50,000 USD as a standby to ensure completion of our proposed platform by 2019. We will draw on this as needed to ensure our timeline is met and project growth continues.

Initially, we plan to devote 80% of Factoids received to fund project development. The remaining 20% will be used to cover expenses.

Clarify your commitment to the Factom protocol? What have you brought to the table already, and what will you bring in the future?

One node successfully running on the Factom Testnet

Conceptualized and detailed a publishing rights platform and marketplace on the Factom Protocol

Raised $50,000 of capital to ensure project viability

Informed high net worth and accredited investors about Factom's mission and capabilities

Created diverse and skilled team, participated on Factom Discord

What is your/your entity's motivation for applying for hosting Factom Authority servers?

We believe this is an amazing opportunity to participate in a profound new technology which is disrupting industries globally. Our aim is to host an Authority Node and create a transparent marketplace on Factom for intellectual property rights. We believe our efforts will be a small piece of the puzzle which will ultimately magnify Factom's mission globally.

What vision do you/your entity have of the future of Factom?

Factom will be the dominating technology in distributed secure data storage, a leader in the blockchain industry, and a global store of value. Factom will help bring honesty and trust to the world's organizations, making marketplaces more efficient and transparent. We plan to work with Factom to create mass adoption of the Protocol worldwide over the next few years.

What will your efficiency be with only one node?	**0,29999999999999999**
What will your efficiency be with two nodes?	0,55000000000000004

Node #1 Type	**Virtual Private Server (VPS)**
Node #1 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	Helsinki, Finland
Node #1 CPU, Number of cores	8
Node #1 CPU, type & clock-speed	Intel E5-2687W v4 processors performing at 3.0 GHz
Node #1 RAM, amount in GB	32
Node #1 RAM, scalable if < 24 GB	Not applicable (>= 24 GB)
Node #1: Storage, RAID type	MaxIOPS which is a version of SSD but a proprietary solution
Node #1: Storage, Disk type	SSD, MaxIOPS which is a version of SSD but a proprietary solution
Node #1: Storage, Free Size in GB for Factom	640
Node #1: Storage, Do you have a separate factom volume/disks?	Separate volume(s)
Node #1: Connection & uplink speed (not just your NIC speed)	NIC speed: 500 Mbps. In terms of connection speed our cloud server uses virtual software to emulate this

Node #2 Type	**Virtual Private Server (VPS)**
Node #2 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	Singapore
Node #2 CPU, Number of cores	8
Node #2 CPU, type & clock-speed	Intel E5-2687W v4 processors performing at 3.0 GHz
Node #2 RAM, amount in GB	32
Node #2 RAM, scalable if < 24 GB	Not applicable (>= 24 GB)
Node #2: Storage, RAID type	MaxIOPS which is a version of SSD but a proprietary solution
Node #2: Storage, Disk type	SSD, MaxIOPS which is a version of SSD but a proprietary solution
Node #2: Storage, Free Size in GB for Factom	640
Node #2: Storage, Do you have a separate factom volume/disks?	Separate volume(s)
Node #2: Connection & uplink speed (not just your NIC speed)	NIC speed: 500 Mbps. In terms of connection speed our cloud server uses virtual software to emulate this.

Add any other information relevant to server specifications and hosting, including planned availability of your maintenance team and how you would propose to handle an unscheduled restart.

Server specifications may be further optimized and refined according to the Factom network's needs.

We intend to use modern DevOps tools to perform automated upgrades and are committed to having two of our team on-call at all times to monitor and maintain our servers 24/7. This will assist us to provide maximum uptime and reliability.

We are striving to maintain an emergency response time of under 15 minutes. Team members are geographically distributed (US, Europe, Australia) to ensure coverage is available at all times, and our monitoring tools (including TFA-bot) alert us to any failure of our nodes. In the event of an emergency, team members will be alerted via text/phone/email.

In addition, in the event of any serious problems we would look to coordinate with the Factom team on Discord.

Which date did you join the Factom community testnet (approximate date is ok)?
6/22/2018

How does your team administer the nodes (more options possible)?
By more than 1 team member

How many people in your team are able to operate the servers (including direct hired personnel, but excluding hired fallback companies)?
2

How many years of combined experience does your team have on running production servers?
35

Could you elaborate on the production servers your team has managed (amounts, OS-types, purpose)?
ROAN: Experience with web and application servers in enterprise setups, webhosting companies (shared/VPS/dedicated) as Apache, Nginx, PHP, Java, Tomcat/GlassFish, Node, database systems as PostgreSQL/MySQL all with high availability configurations.

EVGENY: 20 years experience with Linux servers, usually fleets. Most managed servers were web servers running Nginx, Apache, PHP-FPM, sometimes with MySQL either on the same server or as standalone DB servers. In addition, experience setting up memcached/redis/mongodb servers, postfix mail server(with various addons and imap/pop3 servers of the client's choice). I know the storage and networking side of Linux inside out and have rich experience in troubleshooting complex issues.

Have you run follower nodes outside the qualified-node pool on the testnet? If so to what effect? Other contributions to the testnet?
We currently run one server on the testnet and have had limited downtime (outside the stalled network which affected everyone on July 18th, 2018). Our team also has experience with Ethereum nodes.

Have you run any mainnet nodes? If yes, please elaborate why, and for how long
No

How are you going to make sure your nodes operate securely?
Our server hardening approach is thorough, and includes or will include the following elements:

Firewall Configuration – We intend to run a Layer 3 hardware firewall in addition to the software based firewall to safeguard Factom ports from being open to the public.

Factom Identities – Best practice means to us that factom-walletd and factom-cli would not be installed on any of our mainnet servers. We plan to keep identity information strictly to USB drives which are encrypted and

held in separate geographic locations. SSH access is locked to a single dedicated IP address. Our login process will require a passphrase encrypted ssh key and 2Factor authentication.

Full OS Patching/Updating – Consistent regular patching and updating of our OS. Our nodes run on Ubuntu 18.04 and the latest version of docker-ce from the official docker repository. OS updates are installed daily and live kernel security patching is enabled, docker updates are held back. Security updates are reviewed weekly, and brain swaps/reboots of nodes are done as required.

How are you going to make sure you are able to respond quickly?

We use monitoring tools (including the TFA-bot) which alerts us if any of our nodes fail or experience problems. In addition, we are using professional alerting services for our personnel which will notify at least 2 technical staff via text/phone/email in different geographic locations, allowing for prompt response times. As has been demonstrated on the testnet, our personnel are available to respond in a timely manner. We are striving to maintain an emergency response time of under 15 minutes. If the Factoid price supports it in the future we will consider options for additional support personnel.

Could you provide a picture on how you would see your ideal auth node infrastructure?

Our ideal is a dependable, secure, adaptable, and automated structure.

Our ideal authority node would be a high availability cloud based system which allows us to grow vertically, and scale for things like storage and memory. As the needs of the Factom protocol increase we would maintain the flexibility to grow alongside Factom. An ideal system includes 24/7 availability and monitoring, with the new TFA-bot continuously monitoring our nodes.

A Layer 3 hardware firewall is incorporated in addition to the software based firewall to safeguard ports from being open to the public. Identity information is kept to USB drives which are encrypted and held in separate geographic locations. SSH access is locked to a single dedicated IP address. Our login process will require a passphrase encrypted ssh key and 2Factor authentication.

Our nodes would be hosted in varied geographic locations, maintaining one follower node for each hosted authority node. OS updates are installed daily and live kernel security patching is enabled, docker updates are held back. Security updates are reviewed weekly, and brain swaps/reboots of nodes are done as required.

A third-party network security expert would audit our architecture and make suggestions for improvement.

There is no doubt that our infrastructure would change and adapt as the needs of the network develop and progress.

Free-text. Add any additional information deemed relevant.

Please see that attached PDF document

Add any application supporting files here

https://drive.google.com/open?id=16cT7W1VjvFZxrhG_JLibq5y0Axu9BJjn

Block Conex

Entity: Name (or first name if applying as a natural person)
Block Conex

Entity: E-mail address
blockconex@gmail.com

Team member introductions
Block Conex is headed up by two of the leading VFX engineers globally. Together they have worked with the top entities within the VFX commercial/film space and are looking at utilising Factom for multiple solutions within the VFX industry. They are working with a leading Commercial Law Partner from Sheridans a UK law firm as well as working with the CEO of Joust.jobs who are developing a new freelancer recruitment platform utilising blockchain technology.

Introduce your Entity/Company
Block Conex was established in response to the multiple Blockchain solutions which the VFX industry can utilise. The company is established in the UK and will look to develop a lead within the UK VFX industry and deploy solutions globally. The team brings together multiple disciplines within the VFX industry and wider community, and works closely with multiple organisations across various industry sectors. The team has already secured Joust.jobs as an initial partner for the platform and will use this as a springboard to onboard a number of key anchor clients over the next 12-18 months. The team expects to grow through working with a number of partners, however, the team is also working on a number of its own solutions. Block Conex recognised from the start that operating within a legal "grey" area had its opportunities but also its risks. For this reason Block Conex has worked with Sheridans from day 1 to ensure it can maximise the opportunities both for itself and the wider community.

How many nodes do you envision to run on the Factom Community Testnet (or other testnets?)
2

What type of legal structure does your team use?
UK Limited Company

Will you operate as an incorporated company?
Yes

If yes to the above, where are you/will you incorporate? Are your already incorporated?
We will look to incorporate in the UK as a limited entity

Are there any major shareholders (>10%) other than the members in your application?

No

Do you and/or your team members have previous experience running a business or managing large capital? If so, make a short writeup of your experience below.

All team members have experience managing large capital intensive teams within the VFX and legal sector. Two team members currently manage multi-million pound tech capital budgets for leading VFX houses. One of the principal advisors has established and sold several successful businesses.

What has your team done to ensure a proactive approach to managing the financial aspects of your business?

We have adopted minimal expenditure at this stage. We have utilised special relationships within Amazon to obtain credits for the testnet stage and will look to deploy a favourable commercial solution with Amazon through our individual and industry connections. We are working with external partner companies who are developing solutions for the platform which will continue and will ensure we can minimise cost exposure.

Clarify your commitment to the Factom protocol? What have you brought to the table already, and what will you bring in the future?

We have been involved in the Factom community offering both technical guidance and access to specialist Amazon support where required to other Factom members. We have on-boarded one commercial entity who will utilise the Factom protocol for a large scale recruitment solution and we expect to onboard a number of other partners which will result in wider recognition and adoption of the protocol. We are working to establish a clear legal structure and we are happy to work closely with other members/ANO operators to ensure a clear legal operating structure.

What is your/your entity's motivation for applying for hosting Factom Authority servers?

It is in our team's DNA to seek out the newest technology within the VFX industry and through this we feel that the Factom protocol can play an integral part in solutions of the future. Through becoming an ANO we believe this will provide us with a platform for the UK's VFX industry to adopt and utilise solutions based on a trust and recognition of the team and company we will build.

What vision do you/your entity have of the future of Factom?

A widely adopted protocol which is recognised as providing a trusted and accessible platform. This can only occur when the protocol is utilised on mass and across multiple jurisdictions. We feel we have the unique skillset to help ensure this will happen with two of the team members having the authority and respect within the VFX industry to make this a reality.

What will your efficiency be with only one node?	**0,40000000000000002**
What will your efficiency be with two nodes?	0,5

Node #1 Type	**Virtual Private Server (VPS)**
Node #1 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	AWS LHR - eu-west-2a (London)
Node #1 CPU, Number of cores	2
Node #1 CPU, type & clock-speed	2.5 GHz Intel Xeon Scalable prcessors
Node #1 RAM, amount in GB	8
Node #1 RAM, scalable if < 24 GB	Yes
Node #1: Storage, RAID type	AWS EBS backed storage - 99.999% availability & automatically replicated.

Node #1: Storage, Disk type	EBS GP2 (SSD)
Node #1: Storage, Free Size in GB for Factom	Currently 50GB but infinitely scalable
Node #1: Storage, Do you have a separate factom volume/disks?	Shared with OS
Node #1: Connection & uplink speed (not just your NIC speed)	10 Gbit

Node #2 Type	**Virtual Private Server (VPS)**
Node #2 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	AWS Portland Oregon - us.west-2b
Node #2 CPU, Number of cores	2
Node #2 CPU, type & clock-speed	2.5 GHz Intel Xeon Scalable processors
Node #2 RAM, amount in GB	8
Node #2 RAM, scalable if < 24 GB	Yes
Node #2: Storage, RAID type	EBS 99.999% availability and automatically replicated.
Node #2: Storage, Disk type	EBS GP2 (SSD)
Node #2: Storage, Free Size in GB for Factom	Currently 50GB but Infinitely scalable
Node #2: Storage, Do you have a separate factom volume/disks?	Shared with OS
Node #2: Connection & uplink speed (not just your NIC speed)	10 Gbit

Add any other information relevant to server specifications and hosting, including planned availability of your maintenance team and how you would propose to handle an unscheduled restart.

We have a team based in Los Angeles and a team in London. If required we can draw upon additional technical resource in Chicago. This means we have "follow-the-sun" support with all members notified by Telegram if any instance failure event occurs. We are always available to move on updates and restarts.

Which date did you join the Factom community testnet (approximate date is ok)?

4/17/2018

How does your team administer the nodes (more options possible)?

By more than 1 team member

How many people in your team are able to operate the servers (including direct hired personnel, but excluding hired fallback companies)?

3

How many years of combined experience does your team have on running production servers?

50

Could you elaborate on the production servers your team has managed (amounts, OS-types, purpose)?

Collectively we currently manage 100+ production systems and services. These are largely linux based and have a wide variety of uses such as networking fundamentals (DNS, DHCP, NIS) to more sophisticated custom pipeline processing servers. We have monitoring and logging servers gathering metrics to give us realtime analysis of our infrastructure. We spin up render farms with thousands of instances daily for rendering VFX shots. Collectively we manage petabytes of live production storage (Isilon, BlueArc, GPFS, Weka.io). The availability of our systems has to be 100% as the stakes are so high for the businesses. We provision all systems to be redundant by default to help achieve 100% uptime and availability.

Have you run follower nodes outside the qualified-node pool on the testnet? If so to what effect? Other contributions to the testnet?

We have not had the need to do this.

Have you run any mainnet nodes? If yes, please elaborate why, and for how long

No

How are you going to make sure your nodes operate securely?

We limit access to our node to the three technical members of our team. We lock down all the ports that are not needed by Factom. We also run a Checkpoint nextgen firewall appliance to interrogate all traffic coming in/out of our network.

How are you going to make sure you are able to respond quickly?

As per previous response we operate a "follow-the-sun" team structure.

Could you provide a picture on how you would see your ideal auth node infrastructure?

We can provide an infrastructure diagram upon request.

Free-text. Add any additional information deemed relevant.

Add any application supporting files here

Agora Blockchain Solutions

Entity: Name (or first name if applying as a natural person)
Agora Blockchain Solutions

Entity: E-mail address
JoshS0515@gmail.com

Team member introductions
Agora Blockchain Solutions is founded by three people experienced in finance and technology who were all early adopters of both Factom and blockchain technology.

Introduce your Entity/Company
Agora Blockchain Solutions is an early-stage, entrepreneurial, for-profit company registered in France seeking to establish solutions for trust-related issues in emerging and existing markets. The team at Agora is looking to establish solutions that provide tools to parties within a partners vertical to rapidly expand their use of the blockchain. The first solution developed by Agora will addresses the emerging gig economy integrating qualified participants directly into the management and CRM solutions of companies in associated verticals.

How many nodes do you envision to run on the Factom Community Testnet (or other testnets?)
2

What type of legal structure does your team use?
société par actions simplifiée (SAS)

Will you operate as an incorporated company?
No

If yes to the above, where are you/will you incorporate? Are your already incorporated?

Are there any major shareholders (>10%) other than the members in your application?
No

Do you and/or your team members have previous experience running a business or managing large capital? If so, make a short writeup of your experience below.
Mathieu Floc spent 4 years as a head of finance at BNPPARIBAS specifically working as a Financial Analyst in regulatory and financial reporting. Joshua Schwager works with two organizations advising and growing blockchain start ups.

What has your team done to ensure a proactive approach to managing the financial aspects of your business?

We have designed financial plan for the next three years

Clarify your commitment to the Factom protocol? What have you brought to the table already, and what will you bring in the future?

Guillaume Evrat was previously helping HashnStore (current Authority node) with their setup. Guillaume was asked to handle the monitoring of their system/servers. With the addition of his blockchain expertise, he also facilitated setting up the nodes and docker. That is where Guillaume learned and fully began to understand the Factom technology; he understood the benefit of the technology and it motivated him to start a company running an Authority node and built on Factom. Joshua Schwager has been working with a group of Authority Nodes on PR related to the protocol and has submitted an application to become part of the Marketing Committee.

What is your/your entity's motivation for applying for hosting Factom Authority servers?

Expand the use of the Factom protocol and develop solutions that meet the needs of the ecosystem.

What vision do you/your entity have of the future of Factom?

That it will be the backbone of the next digital evolution.

What will your efficiency be with only one node?	**0,25**
What will your efficiency be with two nodes?	0,25

Node #1 Type	**Dedicated server**
Node #1 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	Zurich, Switzerland
Node #1 CPU, Number of cores	8
Node #1 CPU, type & clock-speed	Intel 3.1 GHz
Node #1 RAM, amount in GB	16
Node #1 RAM, scalable if < 24 GB	Yes
Node #1: Storage, RAID type	RAID 10
Node #1: Storage, Disk type	SSD
Node #1: Storage, Free Size in GB for Factom	100
Node #1: Storage, Do you have a separate factom volume/disks?	Docker volume
Node #1: Connection & uplink speed (not just your NIC speed)	1 Gbit

Node #2 Type	**Dedicated server**
Node #2 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	Geneva, Switzerland
Node #2 CPU, Number of cores	8
Node #2 CPU, type & clock-speed	Intel 3.1 GHz
Node #2 RAM, amount in GB	16
Node #2 RAM, scalable if < 24 GB	Yes
Node #2: Storage, RAID type	RAID 10
Node #2: Storage, Disk type	SSD
Node #2: Storage, Free Size in GB for Factom	100
Node #2: Storage, Do you have a separate factom volume/disks?	Docker volume
Node #2: Connection & uplink speed (not just your NIC speed)	1 Gbit

Add any other information relevant to server specifications and hosting, including planned availability of your maintenance team and how you would propose to handle an unscheduled restart.

Connection Down

A monitoring server at CheckMk will proceed with TCP request every thirty seconds on each of Agora's active servers. In case of a down connection, an immediately notification is sent via email.

If there is a missed connection breakdown, a program will be set that ping the servers every one minute to see if the connection is up or down. If one of the main servers is down, Agora will act accordingly to Brain-Transfer the Authority Identity from the defective server onto the backup server, to ensure continuous and smooth Authority Server operation.

The main server will be sync again with the network and left running for at least 6 hours as such. If no network issue occurs in the meantime, another Brain-Transfer will be processed, in order to get the Authority Node hosted back onto the main server dedicated to it.

Server Damage Recovery

If one of the main servers is damaged in any way, it will be instantly spotted through ping-check and swapped with the backup server as mentioned above, in the Connection Down paragraph. The server will be reset and the full node reinstalled using docker or a sh script as soon as practicable. If this action results in a failure due to the damage being too severe, the physical server will be replaced by a brand new one. In the meantime, the Authority Node operations will continue to run on the backup server.

Which date did you join the Factom community testnet (approximate date is ok)?

4/1/2018

How does your team administer the nodes (more options possible)?

By 1 team member

How many people in your team are able to operate the servers (including direct hired personnel, but excluding hired fallback companies)?

2

How many years of combined experience does your team have on running production servers?

Guillaume Evrat has 3 years managing production servers and Joshua Schwager has a year of work related experience.

Could you elaborate on the production servers your team has managed (amounts, OS-types, purpose)?

Ethereum, Grin, Bitcoin on Ubuntu to a total of 6 servers.

Have you run follower nodes outside the qualified-node pool on the testnet? If so to what effect? Other contributions to the testnet?

no

Have you run any mainnet nodes? If yes, please elaborate why, and for how long

Guillaume Evrat was previously helping HashnStore (current Authority node) with their setup. Guillaume was asked to handle the monitoring of their system/servers. With the addition of his blockchain expertise, he also facilitated setting up the nodes and docker. That is where Guillaume learned and fully began to understand the Factom technology; he understood the benefit of the technology and it motivated him to start a company running an Authority node and built on Factom.

How are you going to make sure your nodes operate securely?

To ensure the most secure access to the server, Agora will set up only ssh connection to the server. This will set up only access to authorized people. We will also set up 2FA to connect to the hosting provider platforms.

There will also be an established firewall to manage access to the server. Rather than using the firewall offered by hosting providers, Agora will use a software called “uncomplicated firewall” also called “ufw”.

It has been decided that this will be fully autonomous from the hosting provider platform. Additionally, there will be a bash script created to automate the launch of firewall with specific rules in case of relaunch. In TCP/UDP connection Agora will only allow access to the port useful by the nodes. This will automatically block IPs that may be spamming the network. Finally, for such firewall to function, there will exist a need to modify docker config files.

How are you going to make sure you are able to respond quickly?

Daily Routine and Network Monitoring

We will use CheckMk as the monitoring and alerting solution. It offers an easy to deploy yet

elegant interface. Signals to be monitored are:

Host resources (processor load, disk usage, network usage, system logs, CPU temperature, and every signal we deem necessary)

Application uptime

Agora has a background using this software and has received feedback from others nodes that will allows for adaptation to the threshold for alert notifications to be instant when necessary.

Furthermore, both the main server and the backup server will be subject to thirty-second ping tests from CheckMk to test their reactivity. Finally,a bash script will be created to redeploy nodes and monitoring servers in case of failure. This will result in the optimal uptime for the nodes.

Agora will also use voice alerts to be called whenever one or more nodes are down. The planned system will be similar to the following: https://github.com/Factoshi/Factomd-alert. This project was deployed in the first batch of election for Authority servers and is a great tool for monitoring.

Our two third party monitoring softwares will be located in different servers. These steps are taken to ensure we receive alerts in nearly any situation. There could be some failure from the hosting providers but with two different monitoring solutions at two different hosting providers, the chance of missing alerts is close to zero.

Monitoring of Docker

Moreover, Agora's monitoring structure will include not only monitor servers but also docker containers. Even if we are alerted when a filesystem is down (docker are considered as filesystem) on CheckMk we will set up a software that's function is to only to monitor docker containers.

We will also setup an instance of https://portainer.io on a server, this software allow us to have fancy UI to monitor our containers, images, swarmId on all of our servers and it also provides alerts. This will add an extra layer of logging, monitoring and security.

Could you provide a picture on how you would see your ideal auth node infrastructure?

The Authority Nodes will be on dedicated servers. The servers will be monitored by a checkmk instance on a different server and a remote phone call alert. There will be an instance of ufw firewall setup on the servers. Finally an other server running an other mainnet node will be set up in case of swap, failure, or update.

Free-text. Add any additional information deemed relevant.

Add any application supporting files here

https://drive.google.com/open?id=1q0xlwytkVnB28CgRGb4qmnnnHWy2KRvw

Multicoin Capital Management, LLC.

Entity: Name (or first name if applying as a natural person)
Multicoin Capital Management, LLC.

Entity: E-mail address
factom@multicoin.capital

Team member introductions
Kyle Samani, Managing Partner

Kyle is a serial tech entrepreneur from Austin, TX. He's a thought leader in the crypto ecosystem who is widely recognized for his unique insights. He has been programming since he was 10 years old.

Prior to founding Multicoin, Kyle founded Pristine, which built software for Google Glass for use by surgeons. Under his leadership as CEO, Pristine grew to millions in revenue and raised over $5M in venture capital before being acquired.

Kyle holds degrees in Finance and Management from NYU Stern.

Tushar Jain, Managing Partner

Tushar is a serial tech entrepreneur from NYC. Prior to founding Multicoin, Tushar founded ePatientFinder, a healthcare IT company specializing in data science to identify patients who are eligible for clinical trials. Tushar served as the COO of ePatientFinder, leading the development of the technology platform, the data science processes, and managing the day to day operations of the company. Tushar helped raise over $10M in venture capital for ePatientFinder and grew the company to 25 employees, over 2 million patients and hundreds of clients nationwide.

Tushar holds degrees in Finance and Political Science from NYU Stern.

Myles Snider, Associate

Myles has been involved in the blockchain space since 2014. He began doing academic research on blockchain networks while still in college, and continued writing and publishing pieces afterwards. He joined Multicoin at launch as the first employee and authored many of the research reports the company has released, including our research on Factom. He has also built open-source tools including a stablecoin data dashboard.

Tim Ogilvie, Infrastructure Partner

Tim has spent 20 years starting and operating technology companies. Most recently, Tim founded Y-Combinator-backed Think Gaming, a SaaS data platform focused on mobile games. Previously, he was founder and CEO of AdBuyer.com, an early demand side platform (sold to Mediaocean), and was a pre-launch employee at two successful consumer internet companies, Interactive Search Holdings and Pronto (both sold to IAC/InterActiveCorp). He graduated from Yale University with a B.S. in Computer Science.

Seth Riney, Infrastructure Partner

Prior to working in the blockchain space, Seth architected and implemented large-scale big data pipelines and devops systems on AWS at Paytronix, a provider of loyalty solutions, and OM1, a health outcomes and

registries company focused on the measurement and prediction of treatment outcomes. Previously, Seth was the CTO of Haystagg, a real-time ad bidding technology start-up. Seth has considerable experience consulting on cloud security and compliance in the Financial Services/Securities industry. He graduated from Yale University with a B.S. in Astronomy & Physics.

Ryan Emmick, Engineer

Ryan is a blockchain engineer with experience setting up and running nodes on multiple blockchains, including Factom. He also has extensive experience in blockchain-based data science.

Introduce your Entity/Company

Multicoin Capital is a leading thesis-driven investment fund focused exclusively on cryptoassets with more than $50M AUM. We are long-term investors in tokens and projects that will reshape entire sectors of the global economy. We are known within the crypto community for our approach to the space which focuses on rigorous fundamental analysis based on first principles and proprietary access to the best dev teams. We conduct detailed diligence of blockchain protocols, teams and market opportunities to deliver venture capital economics with public market liquidity.

How many nodes do you envision to run on the Factom Community Testnet (or other testnets?)

2

What type of legal structure does your team use?

LLC

Will you operate as an incorporated company?

Yes

If yes to the above, where are you/will you incorporate? Are your already incorporated?

We are a domestic limited liability company registered in Texas.

Are there any major shareholders (>10%) other than the members in your application?

No

Do you and/or your team members have previous experience running a business or managing large capital? If so, make a short writeup of your experience below.

Our team has extensive experience running several businesses, as well as managing significant amounts of capital.

Kyle Samani and Tushar Jain were both successful entrepreneurs who founded companies, raised venture capital, and whose businesses were ultimately acquired. Between the two of them, their prior companies generated over $10 million in revenue, raised more than $15M in venture capital, and managed more than 60 employees.

Matt Shapiro has raised almost $1 billion in institutional capital to create new companies and support management teams seeking to acquire assets and grow their businesses.

Brian Smith helped raised hundreds of millions of dollars at Bazaar Voice through its Series D fundraising and IPO.

Multicoin currently manages over $50 million in liquid cryptoassets on behalf of some of the most prominent investors in the world, including Marc Andreessen, Chris Dixon, and David Sacks. We have developed proprietary custody solutions to secure the cryptoassets and are actively managing our investment portfolio to mitigate risk and maximize upside in volatile market conditions.

What has your team done to ensure a proactive approach to managing the financial aspects of your business?

Multicoin is a profitable, well-capitalized business with 10 employees that's generating millions of dollars in revenue. We have the financial wherewithal and management expertise to successfully manage our operations.

Clarify your commitment to the Factom protocol? What have you brought to the table already, and what will you bring in the future?

Multicoin has deep expertise and passion for the Factom protocol. We have conducted significant research on Factom and are intimately familiar with its key technologies and features. Our commitment to the protocol is not something new or driven by short-term economics. Over 7 months ago we published a comprehensive 16-page report that outlined the features and vision of the Factom protocol. That report alone has been downloaded over 1,000 times, significantly raising the awareness of the Factom protocol and its mission. Furthermore, we recently published a post that explores the innovative token design of Factom as one of the optimal ways to tie protocol usage to token value.

Multicoin has built a strong grassroots brand within the crypto community and we have the ability to leverage our network to bring awareness and exposure to the Factom protocol. We have strong expertise working with protocols and developers to launch complex protocols. We also have key relationships with potential enterprise users, as well as crypto-native liquidity providers.

Multicoin is a founding member of the Austin Blockchain Collective and is committed to helping increase the adoption of crypto more broadly.

Tushar has a goal of helping bring Factom to the clinical trials industry where he has a deep background. Just like the mortgage origination industry, clinical trials keep paper records because auditors trust paper more than databases. Tushar has had extensive conversations with several top clinical trials companies and believes that Factom can help save hundreds of millions of dollars in the new drug development process.

What is your/your entity's motivation for applying for hosting Factom Authority servers?

Multicoin believes that Factom is one of the few protocols leveraging one of the fundamental attributes of blockchain technology - namely an immutable series of records - to solve a massive, global problem: data integrity. The ethos of the community has been encouraging to witness over the last year. We would like to continue our support of the project by helping to stabilize its launch and directly contribute to the success of the network.

To that end, we'd like to help increase the liquidity for FCT. We have white-glove, institutional relationships with all the major exchanges and OTC desks. We've conducted over $250M in trades with various counterparties. As a result, we have access to decision makers at these firms. We'd like to leverage our credibility as a Factom Authority Node operator in our discussions with them to encourage them to trade FCT.

Furthermore, as we participate in the broader capital markets, we believe we bring substantial credibility to the Factom protocol by publicizing that we're actively involved in its operations and maintenance.

What vision do you/your entity have of the future of Factom?

Multicoin wants to help make Factom the global standard for honest and transparent records on the blockchain. We believe Factom has wide-ranging applicability and the potential to fundamentally disrupt and transform many industries that suffer massive operational costs from altered, fabricated and lost documents.

What will your efficiency be with only one node?	**0,40000000000000002**
What will your efficiency be with two nodes?	0,40000000000000002

Node #1 Type	**Virtual Private Server (VPS)**
Node #1 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	Google Cloud, US East 1, // Moncks Corner, South Carolina, USA
Node #1 CPU, Number of cores	4
Node #1 CPU, type & clock-speed	2.5 Ghz Intel Xeon Platinum 8175
Node #1 RAM, amount in GB	32
Node #1 RAM, scalable if < 24 GB	Not applicable (>= 24 GB)
Node #1: Storage, RAID type	We store multiple copies of the blockchain on each container. If a volume fails, we throw them out and restore from backup. This takes a little bit of time(2-10 mins, depending on chain), so we deploy redundant nodes that use different volumes to ensure f
Node #1: Storage, Disk type	SSD
Node #1: Storage, Free Size in GB for Factom	250
Node #1: Storage, Do you have a separate factom volume/disks?	Separate volume(s)
Node #1: Connection & uplink speed (not just your NIC speed)	2GB

Node #2 Type	**Virtual Private Server (VPS)**
Node #2 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	Google Cloud, US Central 1, Council Bluffs, IA, USA
Node #2 CPU, Number of cores	4
Node #2 CPU, type & clock-speed	2.5 Ghz Intel Xeon Platinum 8175
Node #2 RAM, amount in GB	32
Node #2 RAM, scalable if < 24 GB	Not applicable (>= 24 GB)
Node #2: Storage, RAID type	We store multiple copies of the blockchain on each container. If a volume fails, we throw them out and restore from backup. This takes a little bit of time(2-10 mins, depending on chain), so we deploy redundant nodes that use different volumes to ensure f
Node #2: Storage, Disk type	SSD
Node #2: Storage, Free Size in GB for Factom	250
Node #2: Storage, Do you have a separate factom volume/disks?	Separate volume(s)
Node #2: Connection & uplink speed (not just your NIC speed)	2 GB

Add any other information relevant to server specifications and hosting, including planned availability of your maintenance team and how you would propose to handle an unscheduled restart.

All of our infrastructure is orchestrated by Kubernetes. Everything runs in containers and we don't let any container live for longer than 24 hours. Put differently, unscheduled restarts are part of routine function for us and we handle them gracefully.

We have centralized logging, monitoring, and alerting functionality. All logs go into SumoLogic and we use Prometheus & Grafana for performance monitoring. Alerts are generated on 5-6 "typical" issues, including nodes out of sync with the network or each other, hardware or network outages, et al. Those alerts are connected to webhooks that can automatically deploy fixes for routine issues. E.g. Deploy a container in a different availability zone if the current AZ is showing issues. We have 24x7 coverage to handle non-routine issues.

Which date did you join the Factom community testnet (approximate date is ok)?
3/22/2018

How does your team administer the nodes (more options possible)?
We have an in-house team responsible for development and administration of our nodes & Kubernetes manifests, with Tim & Seth principally responsible. We also have a full-time team in a separate time-zone to handle off hours support.

How many people in your team are able to operate the servers (including direct hired personnel, but excluding hired fallback companies)?
3

How many years of combined experience does your team have on running production servers?
40

Could you elaborate on the production servers your team has managed (amounts, OS-types, purpose)?
Today we run validation nodes on other blockchains including Tezos, EOS and Ethereum. 4 servers are responsible for our staging and production Kubernetes cluster, 2 servers for centralized logging and monitoring, and 12 servers handle block validation. We use auto-scaling groups in cloud providers for nodes that are publicly accessible while block production is on highly secure servers that typically use hardware signing modules. In the past, our technical team has run large-scale real-time bidding servers for the ad-technology market. This involved bidding on more than 20 billion ad impressions daily using 20+ servers.

Have you run follower nodes outside the qualified-node pool on the testnet? If so to what effect? Other contributions to the testnet?
No

Have you run any mainnet nodes? If yes, please elaborate why, and for how long
No

How are you going to make sure your nodes operate securely?
We will run two sets of guard nodes that sync with the network: one courtesy node that sits behind a load balancer and can be used by the network broadly. We will also run a backup responsible for snapshotting the chain and have the ability to scale these nodes very quickly via auto-scaling. Another guard node syncs privately with the chain in the event our primary load balancer is under DDoS attack. Guard nodes are in a VPC and go through a NAT gateway to access the internet. Authority nodes have no access to the internet. They use a VPN to connect through the VPC gateway and sync with the external nodes. We use an encrypted vault to handle all keys.

How are you going to make sure you are able to respond quickly?
Our monitoring system alerts us to common issues that face nodes very quickly. Many issues are resolved automatically, by launching a new container or other actions we have scripted in Kubernetes. If it's a new

issue, or the automatic fixes don't work, we have a dedicated team that receives alerts immediately and will respond. Our team is experienced in blockchain validator nodes, so we can typically resolve issues quickly.

Could you provide a picture on how you would see your ideal auth node infrastructure?
See attached image for a diagram of our auth node infrastructure.

Free-text. Add any additional information deemed relevant.

Add any application supporting files here
https://drive.google.com/open?id=1c1lXFNt-G1g9VkYoqZAWA9oGQxquOGXR

Factom Bridge

Entity: Name (or first name if applying as a natural person)
Factom Bridge

Entity: E-mail address
matt@factombridge.com

Team member introductions
Ethan Garofolo - Software developer / Speaker / Author. Current development passion is microservices.

Harlan Stanley - Server / Network / Security / Automation administrator

Matt Whittington - Software Developer - Factom Employee - POC and occational Factomd API developer.

Introduce your Entity/Company
Factom Bridge. The purpose of Factom Bridge is to create tools and support for environments that are not necessarily on the internet to access the Factom Blockchain without leaving the environment that they exist in.

How many nodes do you envision to run on the Factom Community Testnet (or other testnets?)
2

What type of legal structure does your team use?
Currently plan on LLC. Will actually form if granted ANO status.

Will you operate as an incorporated company?
In some form.

If yes to the above, where are you/will you incorporate? Are your already incorporated?
No

Are there any major shareholders (>10%) other than the members in your application?
No

Do you and/or your team members have previous experience running a business or managing large capital? If so, make a short writeup of your experience below.
Our team members have been involved in a number of startups where other peoples money was involved. The largest of these was a short lived digital currency exchange where much of the liquidity capital help was "other peoples money". That business was closed due to regulatory uncertainty instead of financial issues and the funds returned.

What has your team done to ensure a proactive approach to managing the financial aspects of your business?

In acknowledgement of possibility unrelated financial considerations effecting the viability of Authority node servers, the fixed operating costs of housing and supporting these servers is being kept to a minority (< 50%) of the rewards being generated by those servers. This is true even at the reduced price currently enjoyed by the FCT rewards earned by the servers themselves. In addition to this a portion of the FCT rewarded is being staked for network standing and as an 'emergency fund' in case of unforeseen circumstances.

Clarify your commitment to the Factom protocol? What have you brought to the table already, and what will you bring in the future?

As one of our members has connections to Factom , he is very interested in the protocols success. Testnet severs have been made available to core developers to test code before wider release and load tools have been made (not yet released) for other testnet members to utilize.

What is your/your entity's motivation for applying for hosting Factom Authority servers?

Factom Bridge plans on developing tools to widen access to the Factom Protocol. hosting servers allows for dedicated time and hardware to be applied to this end. Current hardware that was on the testnet has been repurposed in the past and other testnet support was not offered due to hardware and financial constraints or budgeting.

What vision do you/your entity have of the future of Factom?

The Factom blockchain is going to be ubiquitous in the next 5 years. Its data oriented implementation of blockchain technology is too useful to not be widely used. This wide adoption is going to require support form the community so the Factom blockchain is not surpassed because of a more enthusiastic (if not as well implemented) project.

What will your efficiency be with only one node?	**0,25**
What will your efficiency be with two nodes?	0,5

Node #1 Type	**Dedicated server**
Node #1 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	TBD Data Center in Provo Utah
Node #1 CPU, Number of cores	4
Node #1 CPU, type & clock-speed	i7-6770HQ 2.6 GHz
Node #1 RAM, amount in GB	32
Node #1 RAM, scalable if < 24 GB	Not applicable (>= 24 GB)
Node #1: Storage, RAID type	Current Raid 1. Target raid 5 implemented upon ANO acceptance
Node #1: Storage, Disk type	SATA, SSD, Current SATA SSD drives. Target will change
Node #1: Storage, Free Size in GB for Factom	500+ until Factom Blockchain grows
Node #1: Storage, Do you have a separate factom volume/disks?	Separate disk(s)
Node #1: Connection & uplink speed (not just your NIC speed)	100 Mbit

Node #2 Type	**Dedicated server**
Node #2 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	TBD (Currently Austin, but will move)
Node #2 CPU, Number of cores	4
Node #2 CPU, type & clock-speed	i7-6770HQ 2600 GHz
Node #2 RAM, amount in GB	32
Node #2 RAM, scalable if < 24 GB	Not applicable (>= 24 GB)

Node #2: Storage, RAID type	Current non. Target raid5 upon ANO Acceptance
Node #2: Storage, Disk type	SATA, SSD
Node #2: Storage, Free Size in GB for Factom	400
Node #2: Storage, Do you have a separate factom volume/disks?	Separate disk(s)
Node #2: Connection & uplink speed (not just your NIC speed)	100 Mbit

Add any other information relevant to server specifications and hosting, including planned availability of your maintenance team and how you would propose to handle an unscheduled restart.

I answered these questions with what is on hand today. ANO acceptance allows for funding of whatever hardware (raid first) is needed.

Which date did you join the Factom community testnet (approximate date is ok)?

2/1/2018

How does your team administer the nodes (more options possible)?

By more than 1 team member, will add service as needed for physical access.

How many people in your team are able to operate the servers (including direct hired personnel, but excluding hired fallback companies)?

3

How many years of combined experience does your team have on running production servers?

15

Could you elaborate on the production servers your team has managed (amounts, OS-types, purpose)?

Harlan is the primary server / network / security asset in this group. He deploys enterprise level networks and security policies in multiple operating systems and environments as part of his regular employment and has for over a decade.

Have you run follower nodes outside the qualified-node pool on the testnet? If so to what effect? Other contributions to the testnet?

Yes. Matt has run ANO and Followers and made them directly available to Factom developers for testing. There is also an entry load testing service that will be made available in the near future.

Have you run any mainnet nodes? If yes, please elaborate why, and for how long

Followers for entry of a majority of the Factom entries that are currently in the Factom Blockchain. Also to support tools that run statistics and mine application specific data from the blockchain.

How are you going to make sure your nodes operate securely?

Harlan implements security policies on enterprise level networks. His policies will dictate access to the production ano servers.

How are you going to make sure you are able to respond quickly?

We have 3 team members that will ahve the knowledge to update or otherwise support our Authority servers. Our varied regular hours cover most of the hours of the day, but additional resources will be aquired if needed.

Could you provide a picture on how you would see your ideal auth node infrastructure?

An Authority Node with a hot swappable guard node. with an additional 2 guard nodes to handle access with the outside. Until application of actual guard nodes is suggested, these will be followers at the current time. external applications do not access authority servers, only guard/followers. As we are not using Virtual servers provided by another organization, these would exist in a data center with redundant power, inernet, etc.

Free-text. Add any additional information deemed relevant.

Add any application supporting files here

https://drive.google.com/open?id=19QlGOhpsiYZnE6Yy-jRiZ9-8oeeHTJUW

Consensus Networks

Entity: Name (or first name if applying as a natural person)
Consensus Networks

Entity: E-mail address
info@consensusnetworks.com

Team member introductions
Shane holds a Ph.D. in Neuroscience from the University of Notre Dame, where he was a Reilly Fellow. He has significant expertise in developing and operating high-growth companies. As the co-founder and Chief Executive Officer of a cloud services provider, he developed the company into one of the leading Amazon Web Services Advanced Partners. Previously, Shane led the growth of data center, cloud infrastructure, and fiber optic networks in the Midwest closing debt, equity, and tax incentive transactions of over $35M and built operations achieving consistent annual revenue growth of 40-50%. Shane held leadership roles at the Purdue Research Foundation, where he was responsible for technology assessment, patent strategy, valuation, negotiation, and licensing innovations within Purdue's Intellectual Property portfolio in the Life Sciences and Biotech space. A graduate of Wabash College, Shane serves on the founding Board for the Center for Innovation, Business, and Entrepreneurship.

Nick is an experienced Information Technology professional with over 15 years in the industry. He has held numerous technical and managerial positions in a wide range of industries. He started his career in IT on the service desk 15 years ago and through hard work, training and dedication progressed his way to managing teams of experienced system and network engineers. Locally, Nick has been a key member of the technology leadership teams of Netarx Inc., Schurz Communications, and Thor Industries. He has designed, implemented and supported industry standard technologies including those from Cisco, VMWare, Microsoft and EMC as well as implementing innovative solutions using commodity hardware. Nick has expertise designing complex IT solutions, Private and Public Cloud environments, Project Management and Capacity/Business Continuity Planning. In addition

Prior to joining Consensus Networks, Nate served for over seven years in the U.S. Navy as a submarine warfare officer. He is a 2011 graduate of the United States Naval Academy with a bachelor's of science in systems engineering. He attended the U.S. Navy's nuclear power and submarine officer training before being assigned to an Ohio-class ballistic missile submarine. Nate qualified as a submarine warfare officer and completed four strategic deterrent patrols while serving as a division officer aboard the Maine. From 2016 to May 2018, he taught Physics, Thermodynamics, and Cyber Security to ROTC students at Notre Dame. Nate earned a Masters of Science from the University of Notre Dame and holds a CompTIA Security+ certification. He maintains a federal security clearance and advises companies seeking to secure government contracts as they relate to OPSEC and sensitive information. He is a member and contributor to the National Institute of Standards and Technology (NIST) working group on Blockchain for Industrial Applications. He also is an adjunct professor at the University of Notre Dame where he teaches an introductory blockchain course.

Connor completed his undergraduate education at Wabash College. While at Wabash, he double majored in computational mathematics and chemistry and has experience in healthcare and clinical trials, software/algorithm development, and small stage biotechnology startups. Connor is working towards a Master's in Science from the University of Notre Dame. A native Hoosier from Valparaiso, IN, Connor is excited to be working with Consensus Networks, where he will be focusing his efforts on leading R&D and Innovation.

He hopes to leverage his diverse background to explore new avenues for Consensus Networks to consider moving forward as blockchain begins to transform a wide variety of industries.

Introduce your Entity/Company

Consensus Networks is an Indiana based LLC focused primarily on offering blockchain infrastructure and nodes as a service. Consensus is deploying and operating a dedicated distributed ledger network across the United States consisting of high-capacity (minimum 10-40 GB backplane), low-latency (2-40 ms) network interconnects between 25 carrier hotels. Consensus currently has authorization and clearing for peak demands of 10,000 - 15,000 transactions per second (tps). Utilizing proven cyber-security methods and a proprietary technology stack within standard network systems, we provide clients with low latency and secure interconnections that enable world-class transactional settlement. Consensus is designing its network to be FedRAMP compliant, ensuring it meets federal requirements for security assessment, authorization, and continuous monitoring. The Consensus Network is ledger agnostic, meaning that Consensus is optimized to provide backbone network and infrastructure services to any emerging distributed ledger. Consensus' central location in the United States allows it to effectively and efficiently expand its network. Multiple distributed ledgers curated by the Consensus Networks team enable clients to build applications serving a variety of sectors, including government, healthcare, financial, and industrial.

Consensus is not focused on developing its own ledger but rather as a supporting mechanism for existing ledgers to help spur adoption by providing a stable platform for both developers and enterprise clients to use. We are in the process of onboarding our first major enterprise clients including two healthcare companies as well as a Fortune 500 chemical company.

How many nodes do you envision to run on the Factom Community Testnet (or other testnets?)

2

What type of legal structure does your team use?

LLC

Will you operate as an incorporated company?

No

If yes to the above, where are you/will you incorporate? Are your already incorporated?

We are not currently incorporated with no foreseeable plans to do so.

Are there any major shareholders (>10%) other than the members in your application?

No

Do you and/or your team members have previous experience running a business or managing large capital? If so, make a short writeup of your experience below.

Shane has worked as an active investor since 2008 by engaging over a dozen high-growth companies in a business foundry, board level, or leadership roles during the formative stages of corporate development through his firm. To date, these companies have raised over $80M in venture financing. With nearly 15 years of new venture experience, Shane has served as an Adjunct Professor, where he was responsible for the

Technology Realization Program, a multi-disciplinary graduate-level program focused on the fundamentals of entrepreneurship and venture finance.

What has your team done to ensure a proactive approach to managing the financial aspects of your business?

Our team is well funded through various means, including backing from institutions as well as financing through grants.

Clarify your commitment to the Factom protocol? What have you brought to the table already, and what will you bring in the future?

We'll be the first to admit we're new on the scene with Factom, but we will be quick learners and active members. As an infrastructure provider, we not only want but need the ledgers we host to succeed and as such will ensure we maintain maximum uptime on our servers to ensure users can always access the ledger. Additionally we will actively work to create a community for our users to build use cases that will attract additional enterprise clients. We've partnered with SIMBA Chain, a blockchain company making an API for developers and Enterprise to use to connect their existing applications onto the blockchain and we'd love to see what we can do to connect SIMBA Chain's API to Factom.

An additional project we're working on for potential Factom integration entails using Consensus Network's proprietary technology to facilitate medical information data transfer. This project will explore using distributed ledger technology and blockchain to improve population health outcomes by using Consensus Networks infrastructure to allow health data sharing and utilization between physicians, patients, and insurers in a secure, high-speed, and HIPAA compliant manner. Blockchain will enable more secure data sharing between these parties to occur, and as physicians can obtain greater access to patient's health data, they will be able to provide more personalized care and improve patient outcomes. Another secondary benefit from this is that insurers will be able to decrease premiums due to the increased security and lack of accessibility to malicious actors that blockchain and distributed ledger technology brings to the storage and transfer of this information. Due to the incredibly strict FDA regulations surrounding the transmission of personal health information, Factom's smart contract technology provides an attractive avenue through which this data could be transferred. Seeing as entries are stored in chains, the FDA rules and guidelines surrounding patient data transfer, access, and storage could essentially be defined as the set of rules in the first entry of the chain, and any attempt to access, manipulate, or transfer this data in a manner not in compliance with these rules would be rejected, but still recorded as having been attempted. This would allow for improved transparency into such transactions, as well as the ease with which such data could be audited by an external third-party. Such a secure and transparent system would be beneficial to healthcare systems from an administrative and regulatory standpoint for these reasons, and something uniquely suited to Factom's platform. We recently received notification of funding for a federal SBIR grant through the NIH - although not finalized yet, once awarded we would love to utilize this grant to thoroughly examine what Factom can do for healthcare.

What is your/your entity's motivation for applying for hosting Factom Authority servers?

Our motivation for applying to host is twofold. First, as an infrastructure company, we are always looking for new ledgers to host. Many are not production ready while others do not have an understandable or obvious use case that would require a production level server. As such, we try our best to ensure the ledgers we host are ready for enterprise use. (Currently we are hosting Ethereum and Hyperledger Fabric). Factom's blockchain and products (Harmony and dLoc) are perfect for our platform and highlight our other motivation, adoption. In order for our platform to succeed we need mainstream blockchain adoption. So, we are very interested in Distributed Ledgers with a variety of interesting use cases to test. Indiana is a manufacturing and supply chain hub so it is a natural fit to try many of the proposed blockchain use cases. Additionally, we have developed

partnerships with the local government and healthcare providers to build proof of concepts for further blockchain technologies. In short, we want to host Factom because that's what we do at Consensus, host blockchains and build adoption with our partners for said blockchain.

What vision do you/your entity have of the future of Factom?

We would love to see Factom become the standard chain for industrial, government, and healthcare applications like supply chain management, auditing, IoT security, identity management, and securely sharing health records.

What will your efficiency be with only one node?	**0,5**
What will your efficiency be with two nodes?	0,5

Node #1 Type	**Dedicated server**
Node #1 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	506 W South St. South Bend, IN 46601
Node #1 CPU, Number of cores	4
Node #1 CPU, type & clock-speed	Xeon 3Ghz
Node #1 RAM, amount in GB	16
Node #1 RAM, scalable if < 24 GB	Yes
Node #1: Storage, RAID type	RAID 5/6
Node #1: Storage, Disk type	SSD
Node #1: Storage, Free Size in GB for Factom	250
Node #1: Storage, Do you have a separate factom volume/disks?	Separate volume(s)
Node #1: Connection & uplink speed (not just your NIC speed)	100 Mbit

Node #2 Type	**Dedicated server**
Node #2 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	800 Oliver Ave, Indianapolis, IN 46225
Node #2 CPU, Number of cores	4
Node #2 CPU, type & clock-speed	Xeon 3 Ghz
Node #2 RAM, amount in GB	16
Node #2 RAM, scalable if < 24 GB	Yes
Node #2: Storage, RAID type	RAID 5/6
Node #2: Storage, Disk type	SSD
Node #2: Storage, Free Size in GB for Factom	250
Node #2: Storage, Do you have a separate factom volume/disks?	Separate volume(s)
Node #2: Connection & uplink speed (not just your NIC speed)	100 Mbit

Add any other information relevant to server specifications and hosting, including planned availability of your maintenance team and how you would propose to handle an unscheduled restart.

We'll have cloud backup for our servers - 1TB of backup data. We can backup as frequently as every 15min but will work within the community to determine the optimal backup frequency. We'll also be able to utilize our cloud servers as backup/guard nodes to assist in maintaining server uptime and disaster recovery. Our maintenance team is available 24/7; we pride ourselves on LedgerOps. We utilize LogicMonitor to automatically monitor our servers at all times. Faults (or an unscheduled restart) will proceed through an escalation chain and be dealt with quickly and appropriately (no matter what time).

Which date did you join the Factom community testnet (approximate date is ok)?

7/30/2018

How does your team administer the nodes (more options possible)?

By more than 1 team member, By known and non constantly rotating directly hired personnel

How many people in your team are able to operate the servers (including direct hired personnel, but excluding hired fallback companies)?
3

How many years of combined experience does your team have on running production servers?
25

Could you elaborate on the production servers your team has managed (amounts, OS-types, purpose)?
Shane - 10 years of full data center management. Built and operated one of the top 40 data centers/carrier hotels in the United States. Built multiple data center environments for multiple Fortune 500 companies including some of the largest cloud players.

Nick - 15 years, utilized Cisco, VMWare, Microsoft and EMC as well as implemented innovative solutions using commodity hardware, Private, Public, Hybrid Cloud environments (Azure/AWS), Linux Systems

Have you run follower nodes outside the qualified-node pool on the testnet? If so to what effect? Other contributions to the testnet?
No

Have you run any mainnet nodes? If yes, please elaborate why, and for how long
No

How are you going to make sure your nodes operate securely?
We practice all pillars of Cyber Security including concepts of least privilege, ensuring Biometric Access Security, and 24/7 security monitoring at data centers where we host. Our System Security Plan is designed for FedRAMP compliance. Additionally, we will be using a powerful Network Security Firewall Appliance for each of our servers to ensure maximum protection.

How are you going to make sure you are able to respond quickly?
As stated above, we utilize an automated escalation chain to ensure appropriate and rapid response. One team member will be able to respond if needed at all times.

Could you provide a picture on how you would see your ideal auth node infrastructure?
We believe that currently, too much of the blockchain is being hosted by cloud providers, introducing additional centralized infrastructure. While the cloud is an inexpensive, reliable, and short-term solution; we would like to see a network of independent, dedicated server hosts around the world, which would maintain true ledger distribution, securing the network and providing democratic governance.

Free-text. Add any additional information deemed relevant.

Add any application supporting files here

Bedrock Solutions

Entity: Name (or first name if applying as a natural person)

Bedrock Solutions

Entity: E-mail address

info@bedrocksolutions.io

Team member introductions

Jay: I'm one of those 40-somethings that grew up around computers. My professional career spans 24 years. During that time, I have worked as a system and network administrator, enterprise software developer, full-stack web developer, and cloud administrator. I am currently the primary developer and administrator for the Go Immutable ANO, and have real-world experience running factomd in production. Over the years, I've programmed in Javascript, Java, PL/SQL, T-SQL, and Python. Prior to working with Factom, I was doing full-stack Javascript development with React and GraphQL. I hold a bachelor's degree from UC Berkeley.

Alex is an accomplished devops engineer with 5 years of experience in designing, implementing and maintaining cloud services, with a focus on scale and high availability. He has professional experience building continuous integration and deployment pipelines to build, test and release software with zero downtime. Alex has managed AWS environments of ~500 EC2 Linux instances, as well as container environments using Google Kubernetes Engine. He has earned a B.S. degree in Integrated Science and Engineering and a minor in Computer Science from James Madison University.

David is an experienced full-stack web application developer. He's on the MyFactomWallet team, and a core developer for the recently awarded On-Chain Voting Protocol Grant. He has served as development lead for a small team tasked with designing and integrating multiple enhancements into a complex budget tracking tool used by the U.S. Veterans Association. He has professional experience in the full range of implementing a software release, including requirements gathering, impact analysis, design, development, testing and deployment. He holds a B.S. degree in Computer Science from James Madison University.

Introduce your Entity/Company

Bedrock Solutions is an infrastructure and application development company. All founders are technically oriented, collectively possessing the skills needed to both administer Factom infrastructure and develop Factom-based applications. Our team is passionate about the emerging opportunities within the Factom ecosystem, and we are involved in multiple Factom-related development projects. These include the administration of a first round ANO's infrastructure, and the development of on-chain voting via the grant system.

Our company is applying to run an infrastructure Authority Node. Our mission as an Authority Node Operator (ANO) is to maintain a robust and highly available infrastructure, and to share our infrastructure for the benefit of the entire Authority Set. This implies collaboration within the ANO community, with the goal of strengthening the entire Factom network. In addition, we will also research and develop new blockchain applications, primarily using cutting-edge JavaScript technologies.

How many nodes do you envision to run on the Factom Community Testnet (or other testnets?)
2

What type of legal structure does your team use?
LLC

Will you operate as an incorporated company?
Yes

If yes to the above, where are you/will you incorporate? Are your already incorporated?
We plan to incorporate in Washington, USA immediately following our election.

Are there any major shareholders (>10%) other than the members in your application?
No

Do you and/or your team members have previous experience running a business or managing large capital? If so, make a short writeup of your experience below.
No

What has your team done to ensure a proactive approach to managing the financial aspects of your business?
We have enlisted the services of the accounting firm Chawla & Chawla P.C. Monthly expenses will be paid out of pocket. Until the market for FCT matures, none will be sold to cover costs. The infrastructure/ANO division of the company will run lean, and we will support ourselves through continued contract and grant work.

Clarify your commitment to the Factom protocol? What have you brought to the table already, and what will you bring in the future?
Bedrock Solutions' mission as an Authority Node Operator (ANO) is to maintain a robust and highly available infrastructure, and to share our infrastructure for the benefit of the entire Authority Set. For Factom to become a global utility, the network needs to scale gracefully; it's not enough to choose higher server specifications. With our skillset, our team is well positioned to utilize new technologies, such as containerization, to bring greater scalability, higher security, and lower costs the entire Factom network. Our infrastructure will be released to the community as an open source "infrastructure as code" framework. This framework will allow anyone to rapidly setup an infrastructure like ours, taking advantage of the collective knowledge within the community. Declaring the cloud deployment as source code helps prevent user errors such as leaving ports open to the public. We will use our framework as a catalyst for discussing best practices between ANOs. We are passionate about infrastructure, and we will explore new technology and share our knowledge and experiences back with the Factom community.

Our team members are working contracts with five ANOs in the current Authority Set. As these contracts come to an end, our company will utilize our position as an ANO to discover additional opportunities for collaboration and grant projects that help build the foundation for Factom. We believe grants are an excellent funding mechanism for ANO projects, because they allow a high level of oversight and scrutiny into how the protocol's funds are spent. We are excited to be on the ground level building things for the Factom ecosystem. Once the demand for work exceeds what our company can provide, we plan to find, train and hire quality developers, and match them with quality projects.

We have been active members in the community since before M3 was released. Jay has been an active contributor in helping debug mainnet crashes. He has also released multiple open source Ansible roles to the

community. Each of us is contributing to the testnet by maintaining updated nodes and debugging issues. We've helped resolve problems on Factom Inc.'s website, and contributed pull requests to the Testnet Wiki. We are deeply involved in Factom projects on an individual level, and we believe we can make an even greater impact if selected as an ANO.

What is your/your entity's motivation for applying for hosting Factom Authority servers?

Bedrock Solutions desires membership in the Factom Authority Set because we have a strong desire to see the protocol succeed, and our knowledge of cloud infrastructure and infrastructure-as-code principles can contribute strongly to its success. We are a technical team, with both infrastructure and application development expertise, and intend to disseminate our knowledge to the community via an open source framework.

All communities are stronger when they collaborate and share, rather than compete and horde. Our vision is to act as a knowledge pipeline: take skills and best practices from the technically savvy ANOs and share them with the less technically inclined ANOs to improve their infrastructure. We believe that as the technical foundation of the protocol grows, more contract and grant opportunities will become available.

Another motivation is that we want to be a Standing Party in order to have a direct impact on ensuring the long term health, decentralization, and vision of Factom. We will continue our commitment to Factom regardless of whether we are granted membership, because Factom is both technically exciting and has tremendous potential to make the world a better place.

What vision do you/your entity have of the future of Factom?

We envision Factom will be integrated with software all over the world as a utility to secure and verify trusted data. Much like TCP/IP have become the default internet transfer protocols, Factom will become the default data integrity protocol. Many competing blockchain solutions offer a promise of a trusted future, but they still suffer from their cost of entry being tied to a volatile cryptocurrency. Working with cryptocurrencies is risky for companies, from both a legal and budgeting standpoint. Factom's unique two-token design circumvents this problem. We believe it is only a matter of time before Factom reaches a tipping point of adoption, and companies all over the world become aware of this incredibly valuable and inexpensive utility. Factom will save companies money in audit costs, and while that's important, we are most excited about a future where people can trust again on an internet that's riddled with fraud, fake news, and ever increasingly believable Deepfakes. The demand for Factom is going to increase over time, and we envision Bedrock Solutions playing a key role in scaling the infrastructure to handle it.

What will your efficiency be with only one node?	**0,55000000000000004**
What will your efficiency be with two nodes?	0,65000000000000002

Node #1 Type	**Virtual Private Server (VPS)**
Node #1 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	Google Cloud Platform us-west1-b The Dalles, OR, USA
Node #1 CPU, Number of cores	8
Node #1 CPU, type & clock-speed	2.2 GHz Intel Xeon E5 v4 2.2
Node #1 RAM, amount in GB	16
Node #1 RAM, scalable if < 24 GB	Yes
Node #1: Storage, RAID type	RAID 1
Node #1: Storage, Disk type	SSD
Node #1: Storage, Free Size in GB for Factom	200
Node #1: Storage, Do you have a separate factom volume/disks?	Docker volume, Separate disk(s), Separate volume(s)
Node #1: Connection & uplink speed (not just your NIC speed)	10 Gbit

Node #2 Type	**Virtual Private Server (VPS)**
Node #2 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	Google Cloud Platform asia-northeast1-c Tokyo, Japan
Node #2 CPU, Number of cores	8
Node #2 CPU, type & clock-speed	2.2 GHz Intel Xeon E5 v4
Node #2 RAM, amount in GB	16
Node #2 RAM, scalable if < 24 GB	Yes
Node #2: Storage, RAID type	RAID 1
Node #2: Storage, Disk type	SSD
Node #2: Storage, Free Size in GB for Factom	200
Node #2: Storage, Do you have a separate factom volume/disks?	Docker volume, Separate disk(s), Separate volume(s)
Node #2: Connection & uplink speed (not just your NIC speed)	10 Gbit

Add any other information relevant to server specifications and hosting, including planned availability of your maintenance team and how you would propose to handle an unscheduled restart.

Since Docker restart policies are currently disabled, a crash of factomd or a reboot of the underlying server means that server will be down and will require manual startup. In this case, transferring the identity over to the backup is generally the correct next step. At this time, a new primary server should be brought up, and once it is synced, the identity should be transferred to it from the backup. Forensic analysis can then be conducted on the failed primary. Once that is completed, the failed server can be destroyed.

As described below, our team will be available via an on-call 24/7 rotation schedule.

Please see the attached documents for detailed diagrams of our node infrastructure.

Which date did you join the Factom community testnet (approximate date is ok)?

4/1/2018

How does your team administer the nodes (more options possible)?

By more than 1 team member

How many people in your team are able to operate the servers (including direct hired personnel, but excluding hired fallback companies)?

3

How many years of combined experience does your team have on running production servers?

10

Could you elaborate on the production servers your team has managed (amounts, OS-types, purpose)?

Alex has extensive experience architecting and maintaining production environments in both Amazon Web Services and Google Kubernetes Engine; the largest being ~500 AWS EC2 instances. He has managed operating systems that consist mostly of Linux distributions including Centos, Ubuntu and Alpine. Alex has managed a variety of server roles including proxy servers like NGINX and envoy, application servers, caching servers (varnish), database servers (MySQL, PostgreSQL) and messaging servers (rabbitMQ). Alex also has experience working with numerous automation and orchestration tools in production including Terraform, Kubernetes, Docker, Helm and Chef.

Jay has run servers during various Internet eras. He has built and administered machines from scratch, assembled server racks, and run clouds on DigitalOcean, AWS, and GCP. Back in the day, he ran his own Sendmail and Bind servers, and hosted the websites of various non-profits. After that, he administered the servers and network for a small manufacturing company of approximately 100 people. More recently, he has run cloud instances for various clients. Operating systems have consisted of either Windows or Linux. Server roles have run the normal gambit, including web, database, accounting, firewall/router, email, and application. Most recently, he has run around a dozen testnet servers and a mainnet cloud for the Go Immutable ANO.

Have you run follower nodes outside the qualified-node pool on the testnet? If so to what effect? Other contributions to the testnet?

Jay: I ran at least a dozen testnet servers. On any given day, I saw that generally ~4 of them would be either federated or audit nodes. It was during this time that I began experimenting with running factomd from an infrastructure-as-code perspective. Seeing the lengthy setup instructions, the last thing I wanted to do was to have to repeat that procedure over and over manually. I created a collection of bash scripts that automate the creation and destruction of the servers, which proved the viability of a code-based approach to running factomd. That codebase was open-sourced. I have since ported that codebase over to Ansible, and am now in the process of open-sourcing that as well.

Alex: I have been running a follower node on the testnet to get hands on experience deploying factomd containers, and develop a deeper understanding of how factomd works.

David: I spun up a new follower node to test an upgrade to Ubuntu 18.04 LTS, and found that there was a reproducible crash when attempting to join the swarm. With help from key community members, we were able to determine that it was due to a bug in docker, which was fixed in a later release. I also contributed GitHub pull requests to improve the Testnet Wiki Documentation.

Have you run any mainnet nodes? If yes, please elaborate why, and for how long

Jay has experience running two mainnet nodes and four backup follower nodes for the Go Immutable ANO. These were launched the day the Authority Set set their efficiencies. We've also run local mainnet nodes to be used by the Factom Enterprise Wallet.

How are you going to make sure your nodes operate securely?

Our team will implement a number of measures to ensure the security of our infrastructure. Both cloud and node-based firewalls will be used to enforce a strict least-privilege network policy. SSH access to the cloud will only be allowed via a hardened bastion host. SSH tunneling will be used, in-lieu of a VPN, to minimize complexity and attack surface. Two-factor authentication will be enforced on all GCP accounts. OSSEC intrusion detection will be run on all nodes. Unattended upgrades will be used to ensure timely security patches are applied to certain servers.

How are you going to make sure you are able to respond quickly?

To ensure that our team is able to properly respond to any maintenance, incidents or unscheduled restarts, our team will implement an on-call 24/7 rotation schedule. We will have first, second, and third tier engineers available at all times. Incident escalations and scheduling will be done by PagerDuty or VictorOps. In addition, all alerts will be sent to our designated Slack/Discord alerts channel. Our team closely follows the Factom Discord chat to stay current on any updates or issues. We will evaluate using community tools such as The Factoid Authority's recently launched Discord bot.

Could you provide a picture on how you would see your ideal auth node infrastructure?

Our ideal Authority Node infrastructure uses best practices such as infrastructure-as-code, disposable infrastructure, blue/green deployments, auto-scaling, and containerization to achieve a highly available and

resilient service. The backup nodes are placed in different regions from Authority Nodes to add redundancy, and are available for disaster recovery operations including the brain swap procedure. The Factom database and configurations are stored on Google SSD Persistent Disks to add high durability and encryption at rest. Automated snapshots of the blockchain are taken at regular intervals. The infrastructure is supported by robust monitoring, logging, and alerting systems to give us insight on the reliability and stability of our services. All administrative processes are scripted and automated when possible. Rather than updating servers in place, the phoenix server pattern is used to destroy and create new servers as needed.

Looking further into the future, we see the factomd process being run in a container orchestration environment such as Google Kubernetes Engine. This eliminates the need to harden and administer an operating system. In addition, most auxiliary cloud services, such as intrusion detection, monitoring, and reporting, would also be moved into containers and run by the orchestrator.

Free-text. Add any additional information deemed relevant.

Add any application supporting files here
https://drive.google.com/open?id=1yuVCa82JQNi-ZVOuoFxTwhoO7hADGMql,
https://drive.google.com/open?id=1NsyUcbMih-1DkpAGqWndOrhcncfjbWgx,
https://drive.google.com/open?id=13NpXbYORk-1uMK32ORyOLu8aK6wcGhnu,
https://drive.google.com/open?id=1h_6mCWwbFH_xNXjYv6pjWenB0DPCnnaX

Cube3 Technologies Ltd

Entity: Name (or first name if applying as a natural person)
Cube3 Technologies Ltd

Entity: E-mail address
exec@cube3.tech

Team member introductions
Team members are Mike, Tom and Will, with the addition of Pete primarily in an advisory role.

Michael (Mike) is a Chartered Engineer, having gained a Bachelor of Technology from Loughborough University in the 1970s. His early career was in the challenging environment of Automotive Manufacturing where he was responsible for changing the manufacturing operations of a number of UK household names culminating in recognition in the Institution of Mechanical Engineers award for Manufacturing Effectiveness. His career switched into Logistics and Supply Chain activities where he worked in both operational and strategic roles, before taking up consultancy. Here he has delivered the design, modelling and project management of business solutions for public and private sectors covering health, utilities, automotive, construction, agricultural equipment, cellular telephones, clothing and electronics. Expertise includes: Programme & Project Management, Process re-engineering, Logistics design and Manufacturing Engineering. He is a registered Managing Successful Programmes Practitioner, a Prince2 Practitioner and a SixSigma Black Belt who firmly believes in the people, process and systems approach to transformational change and that such results are achieved by building capable teams based on trust, respect and honesty. He is now largely retired.

Thomas (Tom) was awarded his PhD in Intelligent Automation in June 2018 and holds a Masters degree in Aeronautical Engineering. In 2012 he joined BAE systems as a Student Research Engineer, working on Prognostic Health Management solutions. Following this he became a Research Associate working on Hybrid Strategy for Hydrogen Fuel Cell Vehicles, before joining the Engineering and Physical Sciences Research Council (EPSRC) Centre for Innovative Manufacture in Intelligent Automation at Loughborough University, where he currently works as a Research Engineer. Here he helps manage the group's PLM server, network storage servers and assists with the two Deep Learning computers, whilst developing custom mechatronic solutions for a number of large aerospace companies. He is the author of 9 publications and is the recipient of 4 Honours & Awards including one contribution which helped Loughborough Universities gain the award The Queen's Anniversary Prize for High-Value Manufacturing.

William (Will) was awarded his PhD in October 2017 having received both undergraduate and graduate degrees at Loughborough University. His primary research interests include robotics, unmanned vehicles and machine vision, with his PhD thesis focussing on automated aircraft taxiing. Since graduating, William continues at Loughborough University as a Research Associate in mechatronics, working on robotics and deep learning. Much of his work involves industrial and mobile robotics, predominantly using the Linux based Robot Operating System (ROS). His primary experience in server management comes from the setup and administration of deep learning servers, used to train robots for human interaction. William has also been involved in several large European projects, including the Open-Manufacturing-Operating-System (openMOS), which focuses on Industry 4.0 and Intelligent Cyber Physical Systems. His role in the openMOS project is to develop large scale simulation of industrial standards, including the deployment of OPC-UA to a large cluster of embedded systems, intended to represent a virtual factory for testing.

Peter (Pete) has an MEng in Computer Science and worked as a data analyst and programmer for a logistics consultancy during University vacations. Upon graduation he secured a position with one of the Big 4 Accountancy firms. Unfortunately, he developed a serious long-term health condition before he could start this role and has been unable to work since that point, over a decade ago. Since then he has kept up with developments in computing and technology as his health has permitted. He developed an interest in running an enterprise grade server set-up on his local network so that media centres could feed multiple TVs. Driven by a desire to do things right and a thirst to learn new skills this has evolved to encompass two servers running the Proxmox hypervisor with redundant mirrored ZFS storage and UPS backup, it currently provides local shared storage, personal cloud and calendar management facilities for his household. He began to follow cryptocurrency in 2016, starting with a small mining operation focussed on Ethereum as well as some direct investments. He also runs nodes for a number of projects including Particl, HEAT and Ethereum. He purchased his first Factoids in 2016 and has since kept a keen eye on the project. Whilst his health condition will primarily limit him to largely an advisory role in this venture, his technical experience and understanding of the blockchain space will be invaluable.

Introduce your Entity/Company

Cube3 Technologies Ltd is a UK based business operating from the Oxford Area. It has 4 founders: Pete, Tom, Will and Mike. Of the founders Pete acts in an advisory capacity only because of long-term illness. Tom is the Chief Operating Officer, Will is the Chief Technical Officer and Mike is the Chief Executive Officer. We intend to continue with a small core team and will add other resources on a contract basis as the business develops. We have demonstrable capability and experience in business, commerce and academia with a real passion to improve the integrity of information used for decision making. We have been involved with Blockchain related technology since 2016 and have formed Cube3 Technology Ltd to advance this.

How many nodes do you envision to run on the Factom Community Testnet (or other testnets?)

2

What type of legal structure does your team use?

UK Limited Company, equivalent to a LLC in the US

Will you operate as an incorporated company?

Yes

If yes to the above, where are you/will you incorporate? Are your already incorporated?

We are an incorporated company in the UK. Company Number 11433103. Please see attached certificate.

Are there any major shareholders (>10%) other than the members in your application?

No

Do you and/or your team members have previous experience running a business or managing large capital? If so, make a short writeup of your experience below.

Mike has the most experience of running a business. He was a significant member of a management team running a $56m pa turnover manufacturing business in Scotland. He has managed a significant number of multi million $ projects. He has operational experience of running teams of 20plus people and annual operating budgets in excess of $1.5m pa. His more recent experience in consulting involved him with the senior executives of a number of blue-chip companies across a wide range of business sectors.

What has your team done to ensure a proactive approach to managing the financial aspects of your business?

Mike as CEO has direct responsibility for the financial management of the business. This entails budgeting together with the management of both the procure to pay cycle and the order to cash cycle in process and operational terms. We have researched appropriate accountants and will formally appoint one on ANO confirmation. When it is necessary to liquidate any of the Factoids we have the services of an experienced cryptocurrency trader to ensure this is done in a way that provides the best value for us and in turn for the protocol whilst minimizing market disruption.

Clarify your commitment to the Factom protocol? What have you brought to the table already, and what will you bring in the future?

Our commitment to the Factom protocol has it's origins in an initial purchase of Factoids in 2016 as part of a diversified long-term (10 year+) crypto investment portfolio. Pete has been a keen follower of developments with this project, having joined the Slack back in 2017.

Following a positive assessment of the opportunity to become an ANO we have established a number of VPS instances across a range of providers in order to test their suitability for Mainnet operation. So far 2 have formally become testnet servers, 1 in the Authority set and 1 follower node. An additional server has been setup to provide centralized logging and will be configured to monitor the uptime of the others and send alerts in case of malfunction. We have built operating experience across the team in deploying these servers and have conducted a successful "Brain-Swap" on the testnet.

It is our intent to operate 2 Mainnet Nodes as dedicated servers in geo separate locations, each with a fully functioning back-up node and maximum redundancy. Operations will run as defined business processes with risk management at the core and a continuous improvement (with caution) ethos.

We have identified opportunities for development of applications that use Factom which, once the basic server operation capability has been proven, we will seek to pursue, provided there is a sound business case. We may seek grant support to bolster this. In addition, whilst we are competent system administrators, we have identified a number of areas in which we will conduct research to identify and then implement best-practices. This includes a robust centralized logging solution and appropriate auditing techniques to identify unauthorized access of any of our servers. If the community is interested we would be happy to publish these findings, perhaps subject to peer-review by other experienced infrastructure ANOs. We would do this because we recognize it is in our best interests for all Factom nodes to be run as securely and professionally as possible.

Please see our full proposal document for further details.

What is your/your entity's motivation for applying for hosting Factom Authority servers?

Our motivation for running factom servers stem from our beliefs. We believe that business and political decision making can be improved through greater confidence in the fidelity of the information. It must be. We have personally suffered from poor decisions, particularly with regard to health issues, at governmental level. We can make a real difference. Blockchain technology is one of the most fundamental tools in our armoury to make this difference. Factom, in particular is well placed to be really significant. In addition we believe we have the skill sets to run reliable nodes and believe it is of the utmost importance that all nodes are run to the highest standards for the Factom vision to become a reality. Naturally we expect a significant financial upside over the medium to long term but this will not be realized without taking on considerable risk and expending proper effort to make sure the Factom network is operationally sound. With our unique skill set and current personal circumstances, we find ourselves in the exciting position of being able to provide support to this network at a time when the market conditions are less than favourable to other entrants (who may not be prepared to take on the significant time and financial commitments without more certainty on reward).

What vision do you/your entity have of the future of Factom?

Our vision for working with Factom is to capitalise on the “Honesty is subversive” belief of Paul Snow and by working together encourage the use of Factom to increase geometrically as people adopt it as the norm; disrupting the inefficiency of traditional record keeping, disparate information and legal tussles over who actually said what.

What will your efficiency be with only one node?	**0,59999999999999998**
What will your efficiency be with two nodes?	0,69999999999999996

Node #1 Type	**Dedicated server**
Node #1 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	The provider is nine (nine.ch). They were established in 2004 and are ISO27001 certified. Their datacentres are based in Zurich, Switzerland and all have redundant power, climate control and internet connectivity as well as 24/7 security and support staff
Node #1 CPU, Number of cores	10
Node #1 CPU, type & clock-speed	Intel XEON E5-2630v4 2.2GHz base clock, 3.1 GHz Turbo frequency
Node #1 RAM, amount in GB	32
Node #1 RAM, scalable if < 24 GB	Not applicable (>= 24 GB)
Node #1: Storage, RAID type	RAID 1
Node #1: Storage, Disk type	SSD
Node #1: Storage, Free Size in GB for Factom	340
Node #1: Storage, Do you have a separate factom volume/disks?	Separate volume(s)
Node #1: Connection & uplink speed (not just your NIC speed)	1 Gbit

Node #2 Type	**Dedicated server**
Node #2 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	The provider is Internetport Sweden AB. They have been established for over 10 years. Their datacentres are in the Swedish cities of Hudiksvall and Kista and are both fully redundant and fault tolerant in terms of power, cooling and internet connectivity.
Node #2 CPU, Number of cores	4
Node #2 CPU, type & clock-speed	Intel XEON E3-1220v6, 3GHZ base clock, 3.5GHz Turbo frequency
Node #2 RAM, amount in GB	32
Node #2 RAM, scalable if < 24 GB	Not applicable (>= 24 GB)
Node #2: Storage, RAID type	RAID 1
Node #2: Storage, Disk type	SSD
Node #2: Storage, Free Size in GB for Factom	440
Node #2: Storage, Do you have a separate factom volume/disks?	Separate volume(s)
Node #2: Connection & uplink speed (not just your NIC speed)	1 Gbit

Add any other information relevant to server specifications and hosting, including planned availability of your maintenance team and how you would propose to handle an unscheduled restart.

Please see Cube3 Technologies Ltd_ResponsetoServerSpecificationQuestion.pdf

Which date did you join the Factom community testnet (approximate date is ok)?

6/27/2018

How does your team administer the nodes (more options possible)?

By more than 1 team member

How many people in your team are able to operate the servers (including direct hired personnel, but excluding hired fallback companies)?

3 team members providing 24/7 support. In addition Pete (an advisor) is also capable of operating the serverss

How many years of combined experience does your team have on running production servers?

2

Could you elaborate on the production servers your team has managed (amounts, OS-types, purpose)?

2 years of formal experience running production servers, specifically the set up and administration of deep learning servers, used to train robots for human interaction at the University of Loughborough (2 deep learning servers, both running Ubuntu 16.04. Each has 256Gb of Ram, 20 cores and two Tesla k80's. There are around 10-15 users conducting research to manage. Both are dedicated remote systems).

Some team members have significant experience with servers that may not fall under a strict definition of "production" but nonetheless are important pieces of infrastructure that people rely on. Their roles in implementing, supporting and maintaining them have provided them with valuable experience. These include:

Running a 50 raspberry pi cluster for distributed factory simulation. Each pi is running raspbian, with communications split between a mixture of linked via a OPC-UA server/client interface, a ROS installation and direct GPIO interfaces between paired Pis. This cluster also plugs into 7 ubuntu desktops which communicate via ROS and display a graphical version of the simulation using VREP.

PLM (Product Lifecycle Management) server implementation administration for research at a large university. (5 years) (1 server, Windows with SQL Server)

Server administration which included IP maintenance and the implementation of a data policy to respect Non-Disclosure Agreements covering reception, storage and disposal of data. (3 years)

Management of back-up RAID arrays for critical and secure data.(2 years)

In addition, other members of the team have administered their own local network servers for file share, personal cloud, calendar management etc. for a no. of years. These use the open-source debian-based Proxmox hypervisor and VMs running Ubuntu Server. They have also run a small GPU mining farm for a no. of years as well as run nodes for a no. of blockchain projects including Particl, HEAT and Ethereum.

Have you run follower nodes outside the qualified-node pool on the testnet? If so to what effect? Other contributions to the testnet?

No. We currently have 1 testnet node in the authority set and 1 follower node that we can use to “brain-swap” between whenever upgrades are required.

Have you run any mainnet nodes? If yes, please elaborate why, and for how long

No

How are you going to make sure your nodes operate securely?

Please see attached file Cube3 Technologies Ltd_ResponsetoSecurityofNodeQuestion.pdf

How are you going to make sure you are able to respond quickly?

Cube3 will operate a 24/7 rota to ensure at least one system administrator is on-duty at all times. When on-duty, each system administrator will ensure that, for the duration of their shift, they are contactable via their

main phone/SMS number and email. They may use a number of personal devices to meet this requirement, each set with clear distinct audible alerts in case of phone/SMS so they know instantly it is a Factom ANO alert. They will also ensure they are within easy-reach of their main laptop and have a secondary workstation as a failover as well as having their SSH key devices to hand. They will keep a 3G/4G modem available in case their main broadband connection fails. Our monitoring servers will alert the on-duty system administrator if there is a fault with any of our Factom node servers or one of the monitoring servers. This alert will be sent via a phone call or SMS as per the individual system administrator's preference. An email will go out in parallel so the message will still be received in the unlikely event of a local cell-phone network failure.

System administrators will have Cube3's incident response procedures to hand so that when they have identified the problem there will be a clear plan of action in order to deal with it immediately.

Could you provide a picture on how you would see your ideal auth node infrastructure?

We would opt to run a high-performance dedicated machine of similar specification to the systems we have proposed earlier in the application. These will have dual redundant power supply units (PSUs) and two Nvme solid state drives (SSDs) in a Zettabyte File System(ZFS) mirror. It would be attached to an UPS to provide resilience for any mains power interruptions and will be located in a Tier3+ datacentre with redundant power, network and air conditioning/cooling.

We would implement standard security hardening procedures as detailed in our earlier response, including shutting down of non-essential services. A Secure Shell (SSH)bastion server would be used to gain administrative access to the machine and will use SSH keypairs instead of passwords and additionally require 2 factor authentication (2FA) to logon. Appropriate ingress and egress firewall rules will be implemented on the edge router residing at the boundary of the network as well as on the server OS itself.

A complete duplicate of this setup will be run in parallel as a secondary system in a geographically distinct Tier3+ datacentre, hosted by a different provider with separate administration and billing infrastructure from the first. It may be used with a manually implemented failover strategy, alternatively if a reliable automatic system can be devised the 2 setups may be linked via an OpenVPN secure network so that the connection will be impervious to Man in the Middle attacks.

Both nodes will be continuously monitored via 2 geographically distinct monitoring servers that evaluate the nodes' control panel on port 8090. In addition the 2 monitoring servers monitor each other and if one goes down the other will alert the on-duty system administrator so we cannot be left without monitoring. It is done in this way, rather than having the Factom nodes themselves monitor the monitoring servers, in order that as little additional services as possible are having to be run on the Factom nodes, so that their operation is not jeopardized.

All systems will have their logs automatically sent via Transmission Control Protocol (TCP) to an external centralized logging server located in another datacentre using Rsyslog, such that if a server is hacked an attacker will not be able to delete their traces.

All server administrators will have dual secure devices to logon for redundancy in case of emergency and dual network access, eg. broadband and 4G failover. They will also have a 2FA backup device. (Please refer to our earlier answers for more detail on this).

As you can see, what we are currently planning to implement is virtually this ideal. In a perfect world, with unlimited funds, it may be possible to further strengthen this setup with the following configuration but this would only be done if extensive testing can demonstrate the superiority of this solution despite the additional complexity.

Instead of a single machine, each datacentre would contain 3 machines of identical specifications running a Proxmox high availability cluster. Depending on the hardware requirements at least 2 of the machines in this cluster could also form a Ceph storage cluster to provide the required distributed redundant storage. Alternatively, 2 additional machines may be used to provide this. It will use separate physical networks for

outbound internet, shared storage communication and shared cluster communication. The Factom node would be run in a VM and would utilize hardware fencing to ensure if the machine running the VM goes down then it stays down and cannot be restarted without informed administrator intervention and instead the VM is automatically spun up on another machine in the cluster. This setup should theoretically provide complete redundancy in the event of CPU/RAM/Motherboard failure. It may make sense for the 3 machines to be located in separate racks, provided the datacentre can accommodate the required discrete network cabling so that, for example, a switch failure in a rack won't bring the cluster down.

Free-text. Add any additional information deemed relevant.

Our proposal and responses are comprehensive and therefore quite long. The proposal document is designed to take the reader through our thinking from beginning to end whereas the question responses address the specific questions raised. (In fact the limitations of the Google Forms have required us to add specific responses to individual questions as PDF documents.)

As such there is overlap between the proposal document and the question responses. Either will give the reader a good understanding of the Cube3 Technologies intent in submitting to be a Factom Authority Node Operator. Together they should address most aspects of how Cube3 can participate in this amazing challenge. We are grateful for you taking the time to read our comprehensive response and are ready to answer any further questions you may have.

Add any application supporting files here

https://drive.google.com/open?id=18jp1FUIka_alkP1ls-t2KA4seFZPxYz4,
https://drive.google.com/open?id=19A8d0yCcG0K2rwa14aQDwAOujH_DCvps,
https://drive.google.com/open?id=1VeX_pPemzJcu_7h_uhLFGh6UzZtdYCyR,
https://drive.google.com/open?id=1b5oGv-xhiui-45amZCKX6c2xgh0qK4Hk,
https://drive.google.com/open?id=1SpAIsXqWyc4XBETYU_CZ1OHL6dbhv98h,
https://drive.google.com/open?id=1BLJHS2EcQeISUjS2y1g8aUPcsGDj7fUz,
https://drive.google.com/open?id=1TUInkWFb6C8pT-qXNOpCq6zfXnUMjA4T

GAMiX

Entity: Name (or first name if applying as a natural person)
GAMiX

Entity: E-mail address
josh@gamix.io

Team member introductions
Jeremy is a Silicon Valley Marketing Executive, Josh is a Digital Marketing Specialist focused on SEO and traffic generation + open source community management, Vaclav is a technology specialist and a phenomenal sysadmin for multiple operating systems and large-scale deployments, and Collin is the founder and leader of the wildly successful Gambit utility token and trading group.

Introduce your Entity/Company
GAMiX is a server administration and blockchain technology company headquartered in the United States of America. Our diverse team spans the world with team members in the U.S.A., Czech Republic, and the Philippines. Gamix has followed Factom for some time now and we're incredibly excited about the future of blockchain ledger technology.

How many nodes do you envision to run on the Factom Community Testnet (or other testnets?)
2

What type of legal structure does your team use?
LLC

Will you operate as an incorporated company?
Yes

If yes to the above, where are you/will you incorporate? Are your already incorporated?
We have already incorporated.

Are there any major shareholders (>10%) other than the members in your application?
No

Do you and/or your team members have previous experience running a business or managing large capital? If so, make a short writeup of your experience below.

Yes. Jeremy manages several well-established companies primarily in the real estate sector. Collin manages the successful Gambit utility token and trading group, Josh manages several businesses including an e-store and B2B computer and server service.

What has your team done to ensure a proactive approach to managing the financial aspects of your business?

Incorporating as an LLC, Earmarking enough funds for the start-up period, ensuring that our other businesses do well while we work on GAMiX.

Clarify your commitment to the Factom protocol? What have you brought to the table already, and what will you bring in the future?

We're still fairly new to the community but we participated in the first ANO selection round and unfortunately weren't picked. This time around we hope to have your consideration! We've been steadily running 4 test nodes over the last several months and are excited to be a part of the community. Many of us have backgrounds in Marketing and Digital Marketing and we would love to work with others like Matter of Fact that also have extensive Marketing backgrounds to help further the protocol. Jeremy and Josh work with the FreeNAS and TrueOS projects and we'd love to see if there is some synergy there between Factom and the projects we manage.

What is your/your entity's motivation for applying for hosting Factom Authority servers?

We've been crypto enthusiasts for a long time but Factom is the first project that has gotten us excited in a long time. Factom has such an amazing potential for broader adoption that the future is really limitless. We want to be a part of this future and help drive worldwide adoption. It's always nice to make a little bit of Factoids too while doing what one loves :).

What vision do you/your entity have of the future of Factom?

I kind of answered this above so i'll just reiterate world-wide adoption. Factom is one of those rare gems that has the potential to actually make that happen.

What will your efficiency be with only one node?	**0,5**
What will your efficiency be with two nodes?	0,5

Node #1 Type	**Virtual Private Server (VPS)**
Node #1 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	United States, Iowa, US-West, Google Cloud / Compute
Node #1 CPU, Number of cores	4
Node #1 CPU, type & clock-speed	Intel Broadwell 2.4 Ghz.
Node #1 RAM, amount in GB	24
Node #1 RAM, scalable if < 24 GB	Not applicable (>= 24 GB)
Node #1: Storage, RAID type	RAID 1
Node #1: Storage, Disk type	SSD
Node #1: Storage, Free Size in GB for Factom	200
Node #1: Storage, Do you have a separate factom volume/disks?	Shared with OS
Node #1: Connection & uplink speed (not just your NIC speed)	10 Gbit

Node #2 Type	**Virtual Private Server (VPS)**

Node #2 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	Canada - Northeast
Node #2 CPU, Number of cores	4
Node #2 CPU, type & clock-speed	Broadwell 2.4 Ghz.
Node #2 RAM, amount in GB	24
Node #2 RAM, scalable if < 24 GB	Not applicable (>= 24 GB)
Node #2: Storage, RAID type	RAID 1
Node #2: Storage, Disk type	SSD
Node #2: Storage, Free Size in GB for Factom	200
Node #2: Storage, Do you have a separate factom volume/disks?	Shared with OS
Node #2: Connection & uplink speed (not just your NIC speed)	10 Gbit

Add any other information relevant to server specifications and hosting, including planned availability of your maintenance team and how you would propose to handle an unscheduled restart.

GAMiX has several team members across the globe that allows us to offer nearly 24/7 monitoring of any authority nodes that we run. We have email notifications set up and plan to use a telegram script to send push notifications if we are selected as an ANO.

Which date did you join the Factom community testnet (approximate date is ok)?

2/1/2018

How does your team administer the nodes (more options possible)?

By more than 1 team member

How many people in your team are able to operate the servers (including direct hired personnel, but excluding hired fallback companies)?

3

How many years of combined experience does your team have on running production servers?

20

Could you elaborate on the production servers your team has managed (amounts, OS-types, purpose)?

Hundreds of different types of servers over the years. We also work for iXsystems so we're very adept at running multiple types of servers. Our primary choice is to use FreeBSD, TrueOS, or FreeNAS when appropriate but we have lots of experiences with Linux variants as well. Jeremy was a network administrator as well when he served in the armed forces.

Have you run follower nodes outside the qualified-node pool on the testnet? If so to what effect? Other contributions to the testnet?

We've been running 4 testnet nodes for the last several months.

Have you run any mainnet nodes? If yes, please elaborate why, and for how long

How are you going to make sure your nodes operate securely?

We would ensure that encrypted SSH keys were used to connect and stay on top of security updates to the OS daily.

How are you going to make sure you are able to respond quickly?

Having several members in different timezones gives us a strategic advantage to respond to issues quickly.

Could you provide a picture on how you would see your ideal auth node infrastructure?

Our ideal auth node infrastructure would be using iXsystems bare-metal hardware.

Free-text. Add any additional information deemed relevant.

Add any application supporting files here

Roba Realty

Entity: Name (or first name if applying as a natural person)
Roba Realty

Entity: E-mail address
hakim@robarealty.com

Team member introductions
Please see attached Document

Introduce your Entity/Company
Roba is a small dynamic business incorporated in 2012 with headquarters located in Falls Church, Virginia. Roba's core services include professional, brokerage and real estate services, and information technology consulting for state and federal government agencies. Our multi-industry focus enables us to leverage corporate expertise to promote the Factom protocol to a wide audience, with credibility and expertise across a variety of subject matter domains. Roba's core expertise comes from both its senior management team and corporate resources. Our senior management team is comprised of individuals who have strong expertise in the areas of real estate, information technology, state and federal government, and commercial construction projects. It is this senior management team that has successfully managed and operated the authority server within the Factom community test net. Full biographical descriptions of the Roba management team are provided below. Roba has also formed key strategic partnerships to help promote the Factom protocol to the widest audience possible. Roba also has consulting agreements in place with experts in the areas of healthcare, cybersecurity and marketing. We will leverage these consulting agreements to pursue specific opportunities in these areas, using this expertise on an ad-hoc basis when needed to minimize overall costs and maximize the value of our consultants' time.

How many nodes do you envision to run on the Factom Community Testnet (or other testnets?)
2

What type of legal structure does your team use?
S-Corp

Will you operate as an incorporated company?
Yes

If yes to the above, where are you/will you incorporate? Are your already incorporated?
Already incorporated in Virginia, USA

Are there any major shareholders (>10%) other than the members in your application?

No

Do you and/or your team members have previous experience running a business or managing large capital? If so, make a short writeup of your experience below.

yes, our CEO has been the Principal broker of Roba Realty since 2012. Roba Realty's gross income and sales have averaged over 2.5 million dollars per year over the last 4 years. Prior to Roba Realty, our CEO managed a team of 10+ developers at Verizon Communications with a department budget of about 3 million dollars that included salaries for employees, consultants and software licensing fees. Additionally, Our CEO managed a budget of over 5 million dollars at Fairfax County Government as a director of Information Technology

What has your team done to ensure a proactive approach to managing the financial aspects of your business?

Roba Realty has been in business since 2012 with gross sales and income exceeding 2 million dollar per year. As a registered S corporation in the state of VA, we have fulfilled our fiduciary responsibilities. We follow Generally Accepted Accounting Principles, manage our books, and perform routine audits of our financials.

Clarify your commitment to the Factom protocol? What have you brought to the table already, and what will you bring in the future?

Members of Roba have been long term believers of the Factom Protocol. Our members have been vibrant members of the community. We have participated in the community testnet, acted as moderators in slack and discord, participated as members of exchange committees, applied for authority set and guide roles, and provided content as content writers to other ANOs. We have identified several short and mid to long term opportunities in our attached proposal that we believe will add real value to this developing ecosystem.

What is your/your entity's motivation for applying for hosting Factom Authority servers?

Members of Roba are very excited by the prospect of blockchain technology, and see Factom as one of the only companies attempting to address enterprise level problems with blockchain based solutions. We believe the Factom protocol has real credibility as demonstrated by its market penetrations, and we want to be part of its journey to adoption and success. We believe our collective abilities will be an overall asset, and our commitment has been demonstrated throughout the last several months.

What vision do you/your entity have of the future of Factom?

We believe Factom will become an ubiquitous data integrity layer and solution that supports thousands of applications. We envision the genius of the Factom protocol, including its 2 token system and foresight into addressing problems, coming to light and resulting in a massive surge of interest. We see thousands of developers working on and using this protocol, and we see it being implemented in both public and private based solutions.

What will your efficiency be with only one node?	**0,5**
What will your efficiency be with two nodes?	0,5

Node #1 Type	**Virtual Private Server (VPS)**
Node #1 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	AWS Paris
Node #1 CPU, Number of cores	4
Node #1 CPU, type & clock-speed	2.4 GHz Intel Xeon E5-2676 v3 (Haswell) processor

Node #1 RAM, amount in GB	32
Node #1 RAM, scalable if < 24 GB	Yes
Node #1: Storage, RAID type	RAID 5/6
Node #1: Storage, Disk type	SSD
Node #1: Storage, Free Size in GB for Factom	200
Node #1: Storage, Do you have a separate factom volume/disks?	Separate volume(s)
Node #1: Connection & uplink speed (not just your NIC speed)	10 Gbit

Node #2 Type	**Virtual Private Server (VPS)**
Node #2 Location (VPS: Provider, Region // Other: Country, City, Datacenter)	AWS Osaka
Node #2 CPU, Number of cores	4
Node #2 CPU, type & clock-speed	2.4 GHz Intel Xeon E5-2676 v3 (Haswell) processors
Node #2 RAM, amount in GB	32
Node #2 RAM, scalable if < 24 GB	Yes
Node #2: Storage, RAID type	RAID 5/6
Node #2: Storage, Disk type	SSD
Node #2: Storage, Free Size in GB for Factom	200
Node #2: Storage, Do you have a separate factom volume/disks?	Separate volume(s)
Node #2: Connection & uplink speed (not just your NIC speed)	10 Gbit

Add any other information relevant to server specifications and hosting, including planned availability of your maintenance team and how you would propose to handle an unscheduled restart.

Please see our campaign document for more information

We have maintained over 99.9% uptime through AWS and have unparalleled technical support, backup, disaster recovery and hot-site fail over capabilities through our contract with AWS. While our systems administrator will be our in-house server administrator, we have also contracted with a very reliable and reputable 3rd party vendor who will provide 24/7 network, server support and maintenance services. We have also added a seasoned systems engineer with extensive experience in linux/unix systems The combination of in-house, as well as, third party server support will ensure experienced and knowledgeable staff are available around the clock to not only monitor our server's uptime and performance, but also ensure timely ad-hoc and scheduled updates, patches, and upgrades are coordinated. Roba Realty will have 4 POC's available for contact, with two in house personnel capable of handling network issues as they arise. We have a system in place that we believe will allow us to respond to any issues within 45 minutes, and we will actively work to reduce this response time. Within one month, we intend to reach a state in which all core members of Roba are able to handle network management issues. We believe this, in conjunction with our third-party support and access to AWS technical staff will ensure optimal node reliability.

Which date did you join the Factom community testnet (approximate date is ok)?

3/1/2018

How does your team administer the nodes (more options possible)?

By 1 team member, By more than 1 team member, Fallback by a specialized company, We currently have 1 team member administering our node. For our main net nodes we will have multiple team members and a specialized company

How many people in your team are able to operate the servers (including direct hired personnel, but excluding hired fallback companies)?

2

How many years of combined experience does your team have on running production servers?
25

Could you elaborate on the production servers your team has managed (amounts, OS-types, purpose)?
Our system administrator has almost almost twenty years of experience in administering various types of servers. Initially, he worked for the American Red Cross Datacenter, being part of the datacenter's administrator team, managing and monitoring the entire American Red Cross datacenter unix based servers, and being on call 24/7 for any server issues. For the last 17 years he has been a federal employee managing and administering Windows based servers. Specific examples include managing Domain Controllers (DC), Exchange, and File and Print Servers. He also has experience installing and configuring servers and trouble shooting server issues and updating patches and dealing with the logical and physical security of the servers.

Our new systems engineer has experience in this department. As a linux/unix administrator installed and configured open source flavor operating systems such as Fedora, CentOs, Ubuntu, FreeBSD, and OpenBSD on thousands of dedicated and co-located servers. He was also responsible for troubleshooting and resolving various hardware and software related issues such as kernel panics on custom built servers, upgrading software from command prompts using tools such as YUM (Fedora, Centos) and apt-get upgrades and updates(Ubuntu).

Have you run follower nodes outside the qualified-node pool on the testnet? If so to what effect? Other contributions to the testnet?
No

Have you run any mainnet nodes? If yes, please elaborate why, and for how long
No

How are you going to make sure your nodes operate securely?
Roba plans on closely monitoring server logs for any inconsistencies and storage and memory issues. We will activate server alert's on the authority servers to keep abreast of any issues. We intend on having a scalable system in place that ensures our authority servers can make any necessary changes. Roba will continue being engaged with the Factom community group, making sure server patches and updates are coordinated and timely. Our nodes will be protected behind firewalls, and we intend to implement guard nodes as a precaution. We have a network administrator along with a newly added systems engineer who will both ensure secure operation of our nodes.

How are you going to make sure you are able to respond quickly?
We will have 4 POCs available for contact through email and phone and have all members of our core team capable of handling network issues. We will also have a 24/7 specialized company monitoring our servers, who will be capable of coordinating restarts and updating servers as needed.

Could you provide a picture on how you would see your ideal auth node infrastructure?
An ideal setup includes 24/7 availability with a high performance system that must be scalable for things like memory and storage. Security and

log monitoring is essential. The use of firewalls and at least 2 guard nodes per server is deal and the Auth node administrators should continuously be in touch with the factom administrators and be able to coordinate updates and restarts in a timely fashion.

Free-text. Add any additional information deemed relevant.

Add any application supporting files here
https://drive.google.com/open?id=10s3xkQw-OqlsAypsmSCCKb-GXFGCgojt