



**Program Sunset Final Proposal of Snapshot Service
Q4 2022 and Q1 2023**

Table of Contents

1.0 Summary	3
2.0 Highlights	3
2.1 Migrated from Hetzner to Own servers	3
2.2 Security upgrades	4
3.0 Company Introduction	4
3.1 Company Background	4
3.2 Ecosystem Background	4
4.0 Meet The Team	5
5.0 Service Description	6
6.0 Usage	6
7.0 Operational Expenses	7
8.0 Budget	7
9.0 Future Plans	8

1.0 Summary

Proponent	RadiumBlock (RealWeb, LLC) an LLC registered in the United States with EIN 87-2225143
Date	May 7, 2023
Requested Allocation	Initial Provision: 2543.56 DOT (\$13,608 USD, based on EMA 7 value of \$ 5.35
Recipient Address	13GtCixw3EZARj52CVbKLrsAzyc7dmmYhDV6quS5yeVCfnh1

Short Description:

The RadiumBlock team, an infrastructure provider for the Polkadot/Substrate community, is seeking final funding for the snapshot service for Q4 2022 and Q1 2023. Going forward, the snapshot program is understood to be sunset in preference of the warp sync. RadiumBlock however plans to keep the service going as a free common good at no cost to the treasury.

2.0 Highlights

RadiumBlock is committed to providing high-quality infrastructure services to our customers. Our mission is to continuously improve and innovate in order to meet the evolving needs of the Web3 ecosystem. Over these last two quarters we have overhauled our infrastructure resulting in the following:

Over these last two quarters we changed from relying on Hetzner servers to using our own servers.

- Migrating from Hetzner servers to our own servers in Dallas
- Security upgrades

2.1 Migrated from Hetzner to Own servers

In light of unfavorable comments by [Hetzner against crypto/web3](#) technology, RadiumBlock migrated our snapshot to be hosted on our own on-prem servers. Our tech stack/backbone is a Private Cloud Infrastructure platform called "Scale Computing Platform" <https://www.scalecomputing.com/>, something similar to VMWare. The cluster gives us the benefits of redundancy and high reliability vs standalone servers - via zero downtime hardware upgrades. Presently, we have Scale Computing clusters deployed on the private racks we rent out from major Datacenter in 5 locations - Chicago, Sydney, London, Singapore and Mumbai.

Additionally we have our own servers in a data center in Dallas. We use compute capacity in Dallas and Chicago for the snapshot service.

2.2 Security upgrades

We have recently made a concerted effort to buttress our security practices.

- Access to the servers are permitted only through a Bastion Server where every keystroke is logged, and scrutinised as part of monthly audit. The Bastion based ssh management service uses 2 factor authentication and enables timed access revocation, role based access control.
- Session keys and controller keys are stored in a hashi vault with access limited to two of our most senior admins who have been with us for over 10 years and us the two directors.
- We ensure our colo partners have SOC2 certification.

These steps are in addition to classic security practices we have learned from 2 decades of Linux security management.

3.0 Company Introduction

3.1 Company Background

RadiumBlock is wholly owned by RealWeb LLC. RealWeb has been in business since 2004. Every year, our team manages millions of dollars in AWS infrastructure, making us one of the industry's most dependable and trustworthy web hosting companies. In addition, our engineers have extensive experience managing data centres and business infrastructure.

We are now harnessing our expertise and experience in building reliable infrastructure services for the future of web3.

3.2 Ecosystem Background

RadiumBlock is an active and known participant in the Polkadot/Kusama community. We participate in the Polkadot and Kusama Thousand Validator Program, offering validator service to several other chains.

We are active infrastructure providers in the DotSama ecosystem. Some of the services we provide are

- Snapshot Service [snapshot](#) services (validator and active snapshots)
- Kusama, Polkadot, Statemine, Statemint endpoints
- White Label validators ([Node-as-a-Service](#))

4.0 Meet The Team

RadiumBlock Web3 infrastructure is managed by 5 full-time staff members who are responsible for configuring and managing the end-points, nodes and the underlying infrastructure. All these team members have a minimum of 15 years of experience in the Server/Cloud Management and Solutions industry.

Vinu Joseph, *Primo Radium*

Vinu is a computer engineer turned Entrepreneur. He is Founder of Vtrio, India, Co-Founder Real Web LLC, based in Texas, USA, and Web2Market Inc, USA and owns 8 brands of hosting companies catering to different demographics. Passionate about decentralized computing, and cryptocurrency in general, he is an early investor in some of the Polkadot projects including Polkadex.

Mr Curie

In true web3 spirit, Mr Curie prefers to use a pseudonym in public documents. He serves as the chief architect and technology advisor of RadiumBlock. A technology enthusiast with advanced experience in high performance computing and data center hardware technology, Mr Curie is passionate about decentralized computing and channels that enthusiasm into RadiumBlock.

Les Barton, *Edge Computing Operations*

Les has 15 years of experience in edge computing operations - managing and maintaining geo-diverse edge nodes for CDNs and ecommerce platforms. He is the VP, Operations of a leading e-commerce hosting company in the USA

Matt, *DevOps*

Matt too prefers to use a pseudonym in public documents. He has been a senior system administrator for a leading e-commerce hosting company. He is a technology enthusiast always driven by curiosity. At RadiumBlock he is in charge of DevOps flows.

Sindhu R, *Cloud and On-prem Systems*

An AWS architect with 16 years of experience in Infrastructure and systems management, she is Chief Tech Manager of RadiumBlock. More than 10 years of expertise in Cloud systems including AWS, GPC and Cloudstack. Have architected Infra on AWS on many corporations including billion dollar companies.

Veena John, *Web3 Infrastructure*

Veena is a computer engineer with 20+ years of experience in infrastructure and system management - AWS, GPC and Cloudstack. Energized and passionate about web3 infrastructure, she has architected infra on AWS for many corporations.

Additionally we have a team of 9 computer engineers who function as our 24/7 support team whose responsibilities include monitoring and updating systems, performing periodic audits on testing system performance, and resolving any alert notifications.

Sunshine Autentico, *Coordination and Outreach*

Sunshine recently started at RadiumBlock and is in charge of coordinating various projects and helping with customer outreach and engagement.

5.0 Service Description

- Snapshots are compressed copies of the latest state of a blockchain, allowing a new node to synchronize with the network in an instant instead of downloading all the blocks.
- A functioning infrastructure for providing blockchain database snapshots that are both usable and beneficial to node operators and validators.
- There will be one new snapshot per day.
- There are two versions of the snapshots a) pruned and b) archival. The pruned snapshot contains just enough data to validate the chain. The compressed RocksDb of the Polkadot snapshot is currently 99GB. They are pruned to contain the last one thousand blocks, making them much more efficient to download and validate. Additionally we offer a full archival snapshot for the benefit of the community.
- RadiumBlock [snapshots](#) are always up-to-date with relevant metadata and download links.
- RadiumBlock's security systems are state of the art, with an emergency response team on standby 24/7.
- RadiumBlock's incident and problem management system with continuous monitoring and quick response time ensures optimum node performance.
- RadiumBlock's redundant implementation setup allows for continuity, seamless upgrades and basic disaster recovery & contingency management.
- Node operators can quickly download and install nodes from RadiumBlock snapshots which reduces recovery times after failures.

6.0 Usage

We are seeing the following total data flow (downloads) for October 2022 - April 2023.

Kusama/Polkadot Validator Snapshot	20TB/month
Kusama/Polkadot archive Snapshot	30TB/month

In terms of storage a pruned Kusama node with 1000 blocks required 119GB of storage. It is approximately 100GB after compression. At the time of writing, a pruned Polkadot node with 1000 blocks required 70GB of storage. It is approximately 50GB after compression.

The archive snapshot however is significantly larger, requiring ~1.5TB for Kusama and ~700GB for Polkadot. Managing the archival snapshot due to the large storage size has increased our labor cost.

7.0 Operational Expenses

We have a portion of our 24/7 team's hours used for snapshot service. We estimate the effort to be equivalent to one engineer who works 10 hours per month to support our snapshot services. The labor cost for a month will be \$700 at an hourly rate of \$70. We also incurred a one time cost worth 15 hours in migrating and setting up validator and archive snapshot setup on our own servers - i.e. an additional one time labor cost of \$1050.

Under the current set up, the costs incurred are for -

- Cost of running the server (including data transfer)
- Labor charge (Set-up, maintenance and support)

Furthermore, we pass on the costs with a 20% markup.

8.0 Budget

Overall Budget for Q4 2022 and Q1 2023

Item	Cost
Labor, recurring	\$4200
Server Infrastructure	\$6000
Backup	\$600
Sub Total	\$10800
<i>+20% MarkUp</i>	<i>\$2160</i>
<i>Conversion Fee 5%</i> <i>(to cover crypto to fiat conversion loss)</i>	<i>\$648</i>
Proposal Total	\$13608

9.0 Future Plans

RadiumBlock plans to continue operating the snapshot service for general good free of cost. We do so because we still find it a useful resource to bootstrap our nodes very quickly. However this will be the **final proposal to the treasury** for the snapshot service and the snapshots we host will be provided as a best effort.