


Proposal: High Performance Public Infrastructure (Q4 2022)

Proponent: ELkVhHcvaP9L43RK9SP6Wn3FBfusEN5EJe2gH7aA2ETiufP

Date: 17th January 2023

Requested KSM: USD: \$50,292.86 (Value will be calculated using EMA7 rate [here](#) on day of approval)

Short description: Ongoing costs for the running of high performance, scalable, and reliable public infrastructure for Kusama and Statemine.

Raw Data:  Kusama Data Q4 2022

Original Motivation

Over the last 3 months (October, November, December 2022) we've provided a scalable free public API service so that everyone can access public pools of managed Kusama and Statemine nodes. This provides the following three outcomes:

- Grow the ecosystem by reducing the barriers to entry to access a high performance nodes
- Help scale existing projects in the ecosystem by providing infrastructure services that can be depended on
- Assist with the testing of all networks by providing valuable data back to the community on how validator nodes are running and scaling as the network traffic increases (we've made Github issues based on behaviour we've observed)

Service Details

During Q4 of 2022, we've made a large number of stability improvements to our Ultimate API service. We've finished significant work on advanced rate limiting on behalf of our customers. This means that we can continue to provide generous public API endpoints for over 40 different networks for common-good applications, but restrict access to high volume users that abuse this free service. We've been able to manage our costs significantly on behalf of our customers as a result.

For customers that do sign up for paid API keys, we've been adding more and more features to provide a better experience. API access restrictions allow our customers to restrict their API keys to work only from 'Allowed' origins and/or IP addresses, preventing unauthorised consumption of

their service. We also provide more detailed monitoring of failed requests through our service to help customers identify and fix bugs before they get to production.

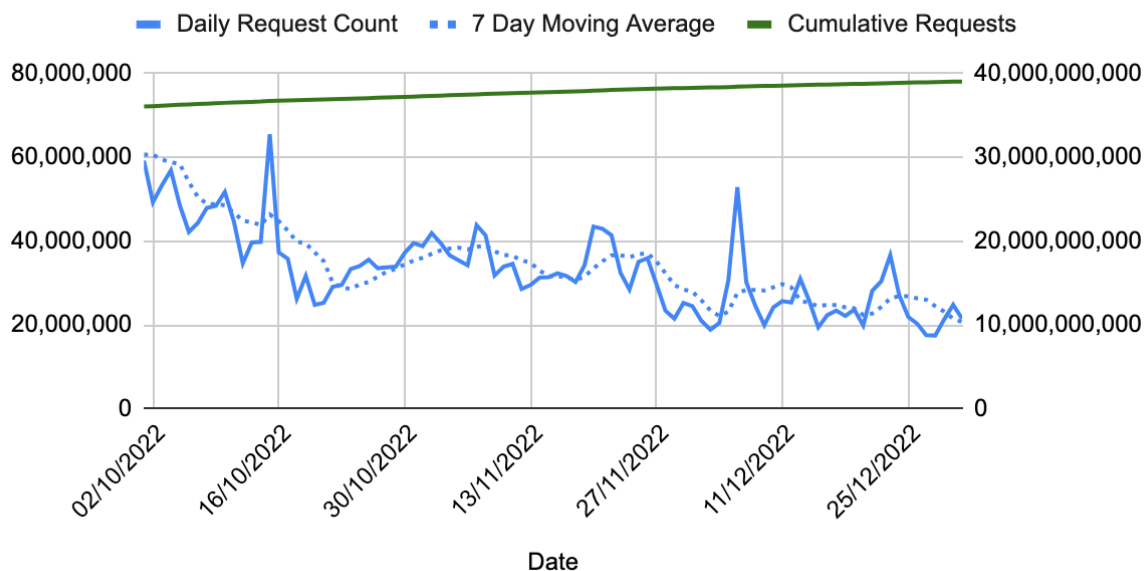
Our customers are building cross-chain wallets, running some of the largest block explorers, and are indexing multiple networks - they've all benefited from these API access restrictions, improved monitoring, and the larger number of supported Polkadot chains.

Between 2022-10-01 and 2022-02-31 our Kusama API service has:

- **Reduced cost to the Kusama treasury while serving a similar amount of traffic**
- Served a total of 3.308 billion responses
- Accumulated almost 5.8 TB of data egress
- The highest daily total was over 65 million responses in a single 24 hour period for Kusama alone
- Our rolling 7 day average at the end of this period was almost 35 million responses each day
- Statemine had almost 270 million API responses in the period
- All time totals for Kusama is 39,026,342,745 (39 billion) since November, 2020
- At the end of this period the 90 day uptime on Kusama and Statemine was 99.98% and 99.99% respectively

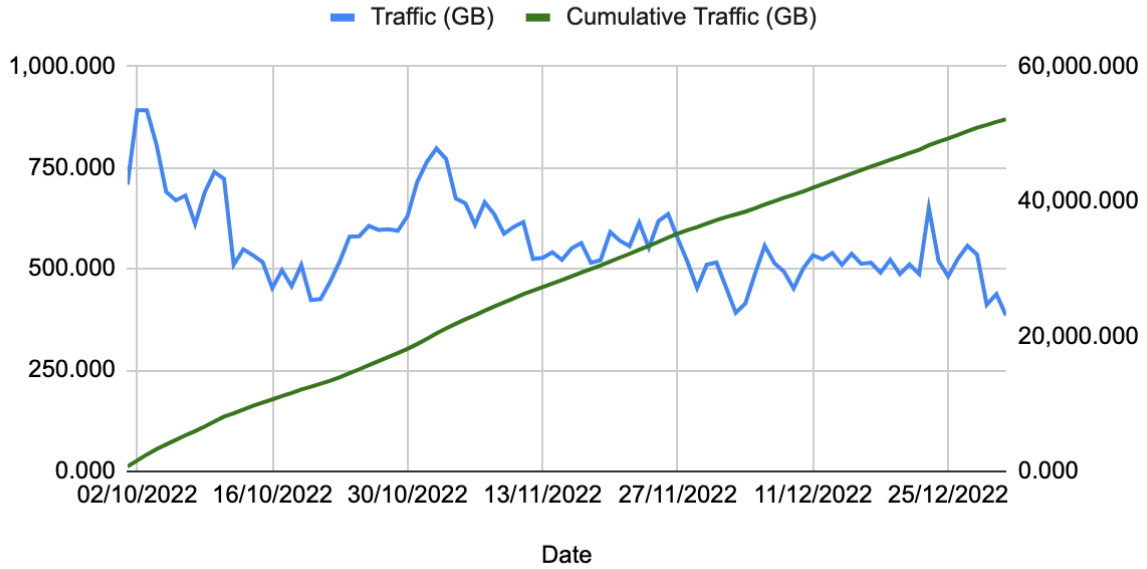
Kusama Q4 2022 Requests

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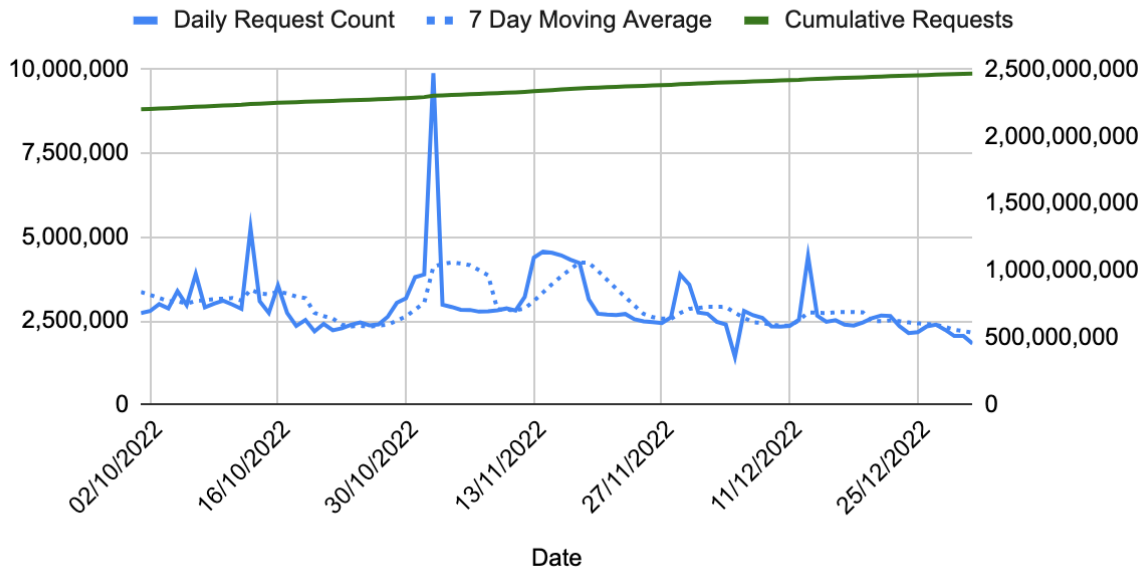
Kusama Q4 2022 Data Traffic

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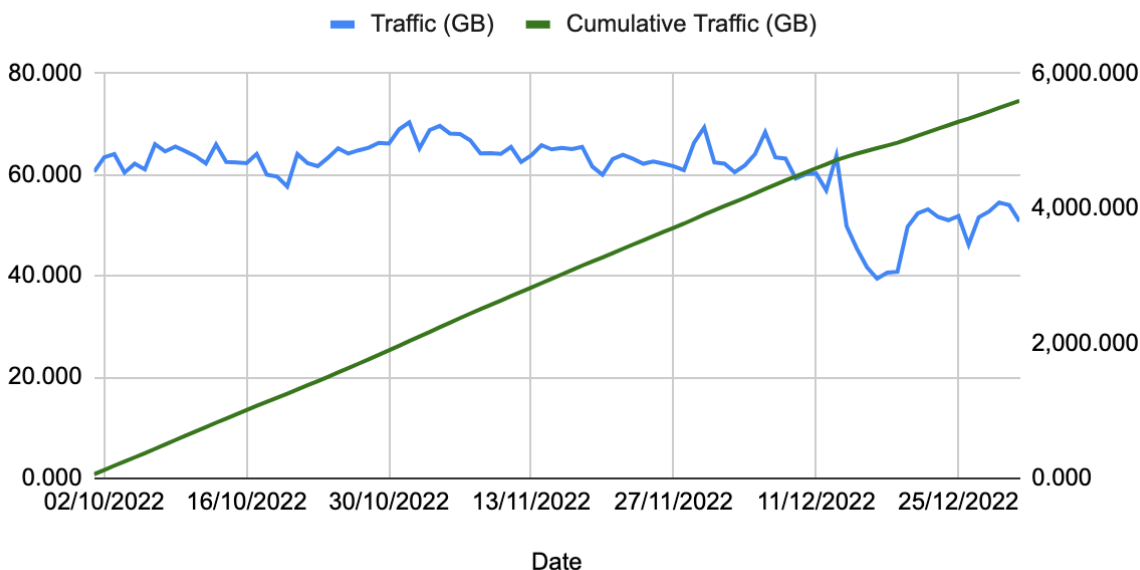
Statemine Q4 2022 Requests

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Statemine Q4 2022 Data Traffic

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Enhancements

Additionally, we are proud to have delivered some key service enhancements that benefit the Polkadot ecosystem in the last quarter. This includes:

- [API Access Restrictions](#)— a new security feature to help you securely manage access to your OnFinality API endpoints
- [Detailed Error type breakdowns](#) on your API Insights dashboard
- A new [Integration tab](#) to help you get connected quickly
- Support for more Polkadot parachains
- [New enhanced deployment automation processes](#) to allow our network partners to automate deployment of their networks with OnFinality
- Support for [Ethereum](#)
- A variety of improvements to our health metric collection tools and automated recovery scripts to ensure our 99.9% SLA is exceeded.
- Scale improvements to our team, processes, and systems to allow us to provide this same service to any substrate team

You can always see live data on our API service on our public [status page](#) and [network analytics page](#).

Costings

This proposal includes combined running costs for our infrastructure for Kusama and Statemine. The total combined running cost is USD \$50,292.86 - [raw data is here](#).

Network	Type	Price (USD)	Billable Units	Q4 2022 Cost (Total)
Kusama	Compute	\$0.085 / Compute Unit / hr	216,989.2	\$18,444.08
Kusama	Storage	\$0.0004 / GB / hr	38,209,321.0	\$15,283.73
Kusama	Backup	\$0.0004 / GB / hr	11,640,170.0	\$4,656.07
Kusama	Data	\$0.15 / GB	48,575.0	\$7,286.25
			Subtotal	\$45,670.13
Statemine	Compute	\$0.085 / Compute Unit / hr	27,834.7	\$2,365.95
Statemine	Storage	\$0.0004 / GB / hr	2,821,338.0	\$1,128.54
Statemine	Backup	\$0.0004 / GB / hr	867,331.0	\$346.93
Statemine	Data	\$0.15 / GB	5,208.7	\$781.31
			Subtotal	\$4,622.73
			Grand Total	\$50,292.86

KSM amount will be calculated using EMA7 rate [here](#) on day of approval

About OnFinality

[OnFinality](#) is a SaaS platform providing infrastructure services for the Polkadot/Substrate community. Our mission is to support all blockchain developers in the world by providing core infrastructure so they can focus on building the next dApp.

We continue to reaffirm our dedication to providing free support of 500,000 responses to our API service each day for users around the world. You can access our public API service by connecting to it using [Polkadot.js](#) or via the endpoints listed below. You can also [create your own free API key in our application](#) and track metrics and statistics.

- <https://kusama.api.onfinality.io/public>
- <wss://kusama.api.onfinality.io/public-ws>
- <https://statemine.api.onfinality.io/public>
- <wss://statemine.api.onfinality.io/public-ws>

Thanks to the funding of our original treasury proposals back in 2020, OnFinality has run over 50 API service endpoints for many different teams around the growing Polkadot ecosystem. We've been able to take the tools and infrastructure that we've built and help other teams scale while providing

superior experiences to their communities. We are dedicated to helping the Polkadot ecosystem through this next phase of parachain growth.

Our mission remains the same, to support all blockchain and dApp developers by providing core infrastructure and developer tools that save them hours.

Payment Conditions

The total ongoing running costs for high performance, scalable, and reliable public infrastructure for Kusama and Statemine.

- Amount in USD: \$50,292.86
- KSM Rate: EMA7 rate [here](#) will be taken on day of approval
- Amount in KSM: Will be calculated using EMA7 rate [here](#) on day of approval
- Beneficiary address: ELkVhHcvaP9L43RK9SP6Wn3FBfusEN5EJe2gH7aA2ETiufP
- Beneficiary contact: James Bayly - OnFinality (james.bayly@onfinality.io)