Proposal: High Performance Public Infrastructure (Q3 & Q4 2024)

Proponent: 42PDjUSugisVhhNQg453fkDwLmg9QMzeWe9huR817xt7c3DW

Date: 8th July 2024

Total Requested PHA: $20,1968 USD or 194,192.307 PHA

Short description: Ongoing & advanced costs for the running of high performance, scalable, and reliable public infrastructure in Q3 and Q4 of 2024 for Phala and Khala.

Why are Public RPC Services Needed for Phala

Setting up blockchain infrastructure is difficult, time consuming, and expensive:

- It requires a level of server development expertise that many do not have
- It's costly to run a full node nearly continuously, especially when your dApp's traffic is low and inconsistent.
- Running production level infrastructure is especially tricky. You need to autoscale quickly to handle bursty traffic, and you want to provide services in different regions around the world to provide low latency services - all of this is incredibly costly, but comes with significant economies of scale for a provider.
- DevOps requires constant attention - time that would be better spent elsewhere building.

A shared node API service helps mitigate these barriers of entry to trying accessing a new protocol by reducing all these costs to near zero. We manage all the nodes for our users and distribute them across the world (with intelligent routing) to achieve global scalability from day 1, we monitor each node and ensure that they meet certain service levels, and we have the expertise and scale to handle production workloads and high peak traffic.

In summary, we try to reduce the pain of getting started on Khala and minimise the costs of accessing secure nodes while traffic from your dApp is low. When you grow, you can continue to use our shared API service, or we also provide access to one click deploy dedicated Khala nodes to any cloud of your choosing.

Background on our RPC Service

As Polkadot's largest and most cost efficient infrastructure provider, we provide scalable free public API services for Phala. Since our inception in November 2020 we have a long track record focussing

on three key areas; performance/reliability, providing more value from our Ultimate API service, and cost optimisation.

Performance/Reliability

OnFinality is operationally striving for a minimum of 99.99% reliability, which means less than an hour of downtime each year. **We are the only RPC provider to guarantee this with actual financial penalties (see appendix A)**. We proudly display and share our 90 day uptime statistics for each network publicly here.

We have invested hugely into a team dedicated to optimising our application gateway and caching layer to ensure that we provide the fastest possible service for our customers. We run clusters in 5 different regions (North Virginia, Frankfurt, Tokyo, Singapore, and Hong Kong) and across 4 different cloud providers (AWS, GCP, Alicloud, and our own dedicated hardware) to ensure that we are fault tolerant to any single region or cloud provider ceasing service.

Cost Optimisation & Decentralisation

OnFinality is very conscious about providing a strong level of support for Phala and Khala at an extremely competitive price.

That's why our Khala and Phala API services are running entirely on OnFinality Cloud - North Virginia, our own private hardware and self service Cloud.

This allows us to support the decentralisation of the Phala and Khala Networks while delivering exceptional performance at a competitive price.

Service Details

In the last 6 months (2024-01-01 and 2024-01-01) our Khala API Service has

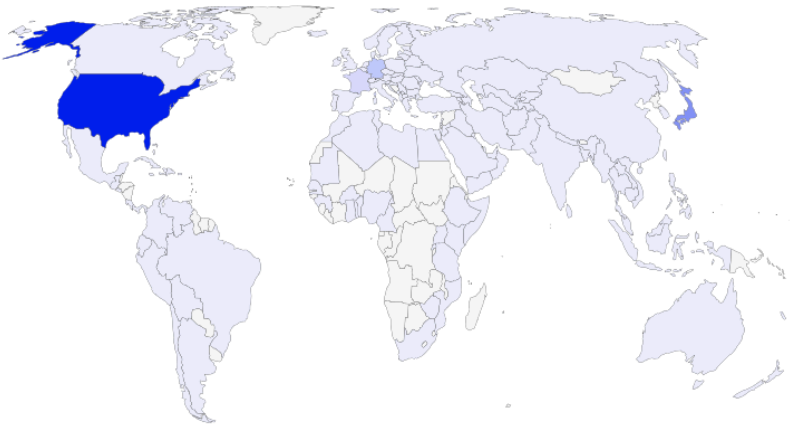
- Served a total of 376 Million (376,107,012) responses
- Accumulated over 3,000 GB of data egress
- The highest daily total was 16 million responses (16,633,185) in a single 24 hour period
- All time totals for Khala is 10,802,293,451 (10.8 Billion) since June, 2021
- Phala served over 158 million API responses in the period
- All time totals for Phala is 547 million (547,938,607)

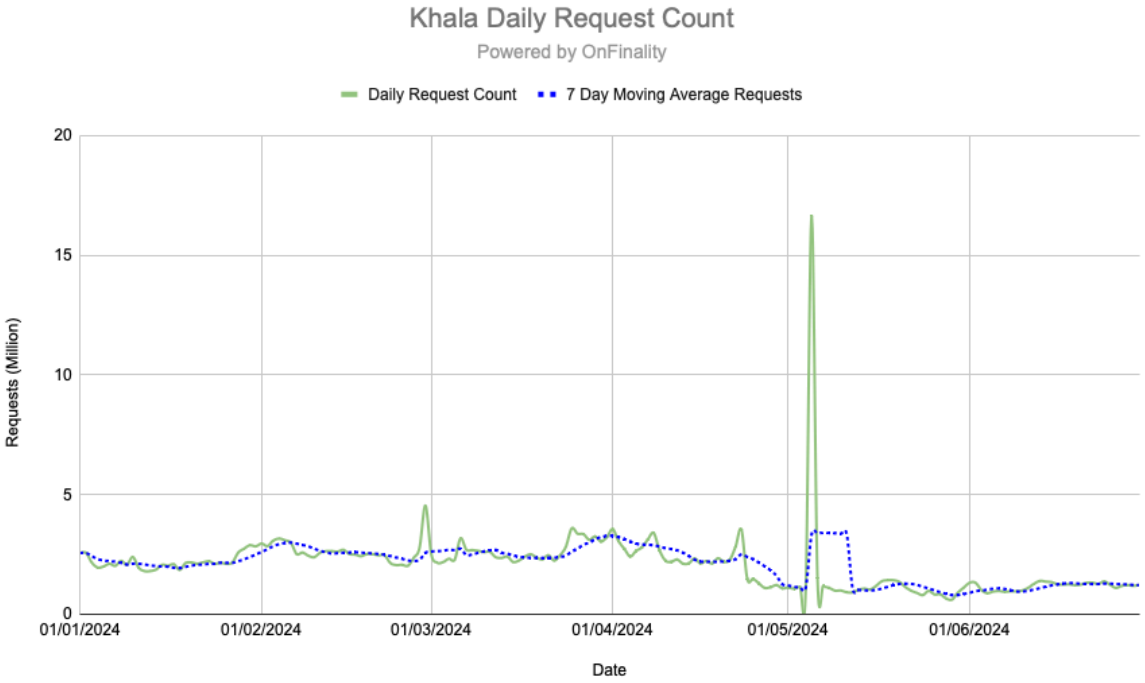
At the end of this period the 90 day uptime was 99.50% for Phala and 99.53% for Khala. You can always see live data of our API service on our public status page.

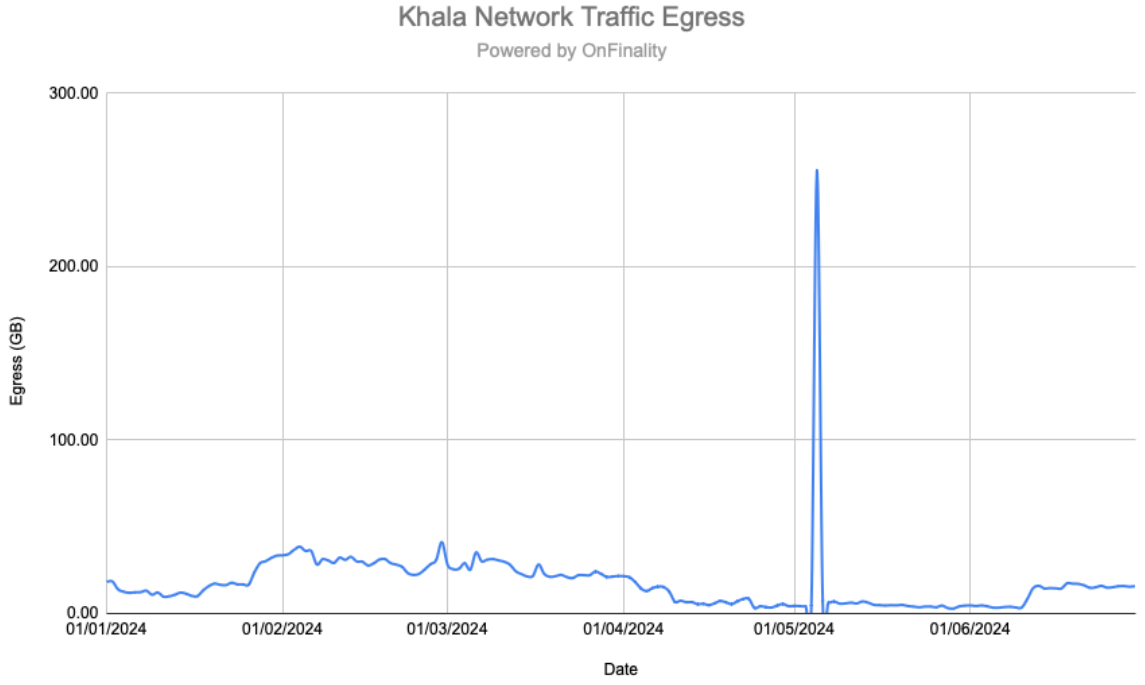
Khala November Requests by Country

Requests by Country

Top Countries	Requests
United States	23,457,971
Japan	13,703,354
Germany	5,835,412
Singapore	4,385,993
France	3,983,290
Other	18,493,227



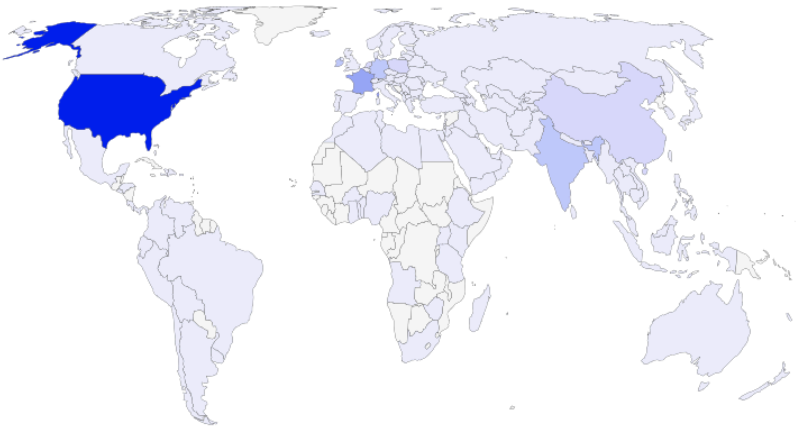

Khala Daily Request Count
Powered by OnFinality
Daily Request Count
7 Day Moving Average Requests
Requests (Million)
20
15
10
5
0
01/01/2024
01/02/2024
01/03/2024
01/04/2024
01/05/2024
01/06/2024
Date

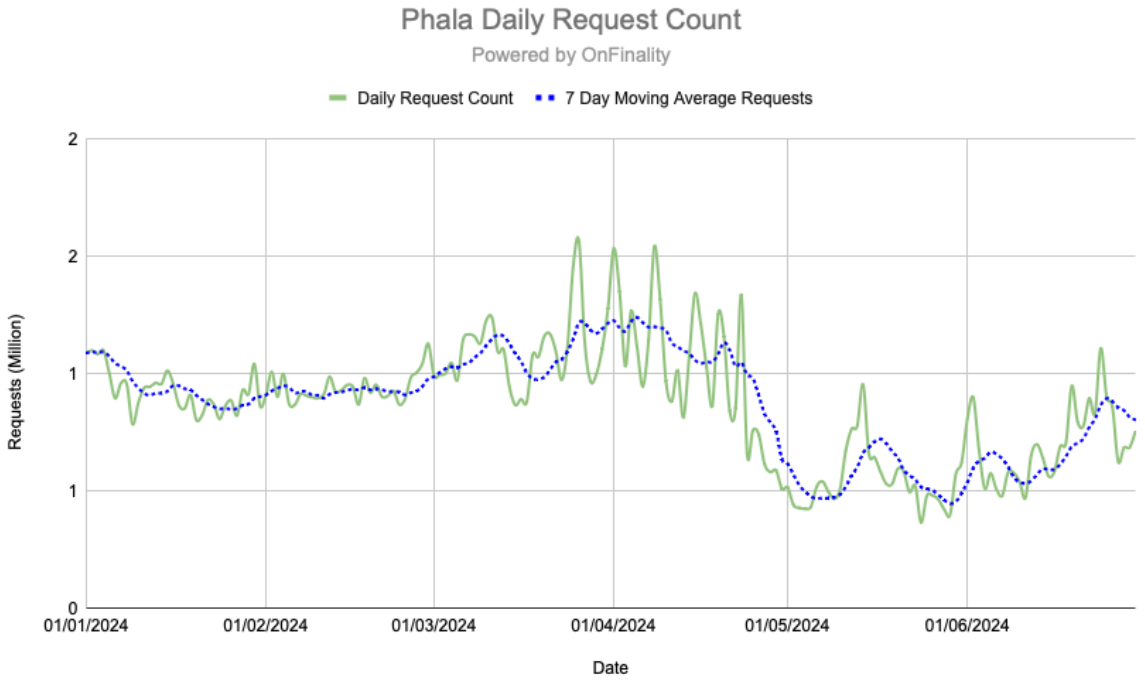

Khala Network Traffic Egress
Powered by OnFinality
Egress (GB)
300.00
200.00
100.00
0.00
01/01/2024
01/02/2024
01/03/2024
01/04/2024
01/05/2024
01/06/2024
Date

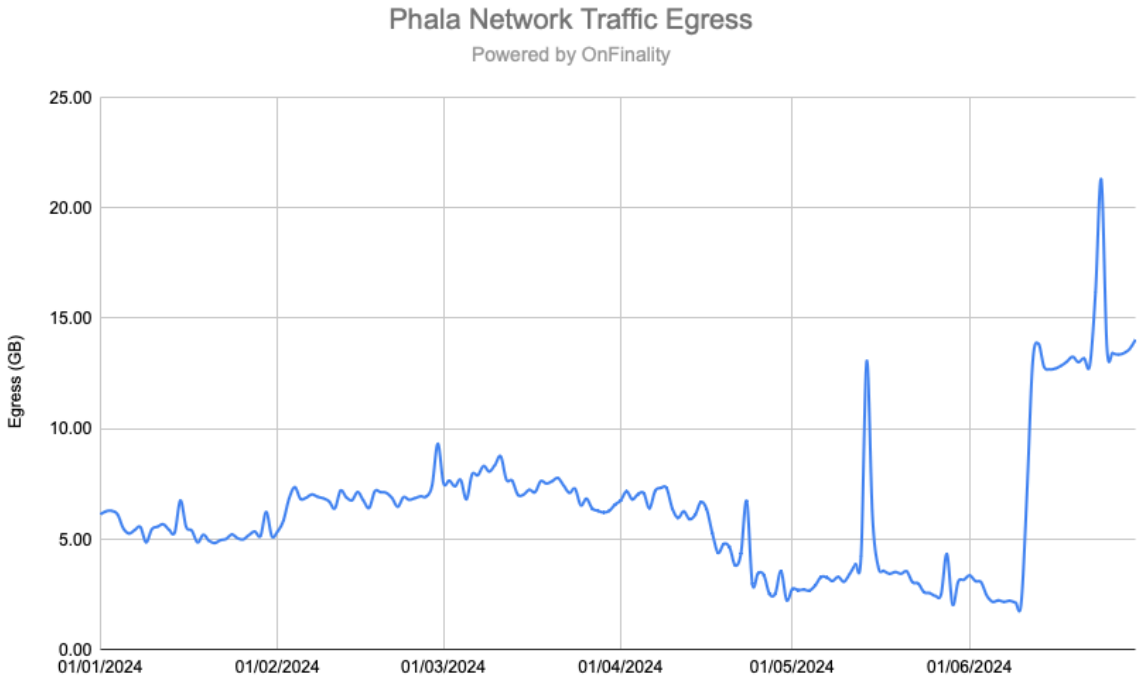
Phala November Requests by Country

Requests by Country

Top Countries	Requests
United States	9,874,948
France	4,116,602
Germany	2,770,109
Ireland	2,405,403
India	2,217,239
Other	20,510,589







Costings

We are using a fixed price to allow us to bill in advance and to simplify the administration of this proposal, as well as provide cost clarity to both parties. This proposal includes combined running costs for our infrastructure for Phala and Khala for all of Q1 and Q2. By paying 6 months up-front we will apply a 15% discount to our services.

The total combined running cost is USD $20,196. This is all inclusive of capital and operating expenses, administration time from OnFinality DevOps, onboarding costs, backup costs, and all other monitoring and right-sizing by our team.

Network	Periods of Service (Months)	Monthly Cost	6 Months Up-Front Discount	System Availability Discount	Total Cost for Q3
Phala	6.00	$3,000	15.0%	10% (99.50%)	$13,770.000
Khala	6.00	$1,400	15.0%	10% (99.53%)	$6,426.00
				Total	**$20,196.00**
				PHA Rate	**0.104**
				PHA Total	**194,192.307**

The PHA conversion rate will be retrieved from Subscan using the EMA7d day time weighted average price ending at day of lodging.

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 requests 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://khala.api.onfinality.io/public
- wss://khala.api.onfinality.io/public-ws
- https://phala.api.onfinality.io/public
- wss://phala.api.onfinality.io/public-ws

Our mission remains to support all blockchain developers in the world by providing core infrastructure so they can focus on building the next dApp.

Appendix A- Service Level Agreement

This Appendix sets out the terms on which we will provide the Support Services set out in this Appendix to the Phala community for the duration of the Term of the Agreement.

1 Unless the context requires otherwise, in this appendix:

Actual Availability means Scheduled Availability minus Unavailability.

Available means that the Services is:

a accessible; and

b materially performing in conformity with the Documentation.

Documentation means the user and technical documentation for the Services available on the website (if any), and includes any update of the Documentation.

Error means any outage, bug, defect, failure, error or vulnerability affecting the Services that results in the Services not being Available.

Excluded Event means errors that are due to:

a outages, bugs, defects, errors, failures or vulnerabilities in third party systems or software, except to the extent caused or contributed to by us (for example, bugs introduced in the wider blockchain network that affect all services);

b outages, bugs, defects, errors, failures or vulnerabilities arising from use of the Services in a manner contrary to the reasonable instructions or restrictions set out in the Documentation;

c factors outside of our reasonable control, including any Force Majeure event, Internet access or related problems beyond the demarcation point of the Services (the demarcation point for the Services is our hosting environment) or outages of, or issues caused by, third party cloud service providers used by us, except to the extent caused or contributed to by us; or

Scheduled Availability means 24 hours per day, 7 days per week, excluding System Maintenance.

Support Hours means the hours of 8am to 10pm Monday to Friday, excluding public holidays in Auckland, New Zealand.

Support Services means the support services described in this Appendix to be provided by the Supplier.

System Availability will be calculated on a calendar month basis using the following formula: (Actual Availability divided by Scheduled Availability) multiplied by 100%.

System Maintenance means time that the Services are not Available due to development or maintenance, including for maintenance and upgrading of the Hosted Environment. System Maintenance includes scheduled maintenance and unscheduled, emergency maintenance.

Unavailability means the time that the Services is not Available, other than due to System Maintenance or an Excluded Event.

We means the Supplier.

You means the Phala community

2 For so long as you pay all Fees, and subject to the conditions in paragraph 6 of this Appendix, we will perform the Support Services.

3 We will use reasonable efforts to achieve System Availability of 99.9% or more each calendar month.

4 Where you consider on reasonable grounds that the Services are not materially being performing in conformity with the Documentation, we will:

a provide email support in the form of consultation, assistance and advice; and

b use reasonable efforts to assist in the resolution of the issue (taking into account the nature and severity of the issue).

5 The provision of support by us of this Appendix is conditional on you:

a first using reasonable efforts to resolve the issue by referring to the Documentation;

b providing reasonable technical support to us to help resolve issues when running the service (e.g. making up to date node images available in a reasonable timeframe);

c allowing us to automatically upscale the service to handle increases in traffic volume; and

d contacting us during Support Hours via one of the following methods:

Email: support@onfinality.io

Support portal: support.onfinality.io

6 The following terms apply to System Availability:

a If we fail to maintain the target uptime in paragraph 3, you shall become entitled to the service credit specified in Table 1 corresponding to the system availability of the service, on submitting a written claim for such service credit, provided that the service is being run in full SLA mode (as per paragraph 2), and the relevant fault or problem:

i. did not result from any Excluded Event; and

ii. was promptly notified to us once you became aware of the fault or problem.

Table 1 (System Availability Service Credit)

System Availability	Service credit percentage
<50%	70% of the monthly Fees for the calendar month
>=50% and <80%	50% of the monthly Fees for the calendar month
>=80% and <90%	40% of the monthly Fees for the calendar month
>=90% and <95%	30% of the monthly Fees for the calendar month
>=95% and <99%	20% of the monthly Fees for the calendar month
>=99% and <99.9%	10% of the monthly Fees for the calendar month