PerfOps CDN Analytics – Enterprise

Below are explained the most common Q&A related to enterprise access/seat for CDN analytics. Follow the "table of content" on the right to quickly navigate through the material

Intro

PerfOps is a network analytics tool that helps DNS and CDN providers to troubleshoot their network by collecting performance metrics by measuring their resources (DNS or CDN).

PerfOps is owned by DigICert, and it was acquired in 2022 as part of Tiggee LLC products. It's running the popular benchmarking websites CDNperf.com, DNSperf.com, Cloudperf.com

Benchmarking Websites

The publicly available benchmarking/ranking tables are being visited by a million unique visitors that are looking to buy CDN, DNS or Cloud solutions. The ranking place depends on pure raw performance that we've collected using our monitoring solutions

CDNperf.com

On this site we're ranking the CDN providers that agreed to share their performance stats publicly. Each provider has it's own landing page, and visitors can quickly compare them with other providers.

On the page we also have pricing calculator, where visitors have the ability to quickly compare pricing based on their filters (geo location, bandwidth, https requests etc).

In the future we're xlooking we're looking to redesign the page to serve as a lead generation channel for providers. As an example, add personalized banner to providers landing page and add lead gen form where visitors can contact them directly.

DNSperf.com

This is the most visited public benchmarking website for DNS. It's being used by many tech giants and tech newspaper outlets to discuss any potential outages and reasons why they occurred.

Cloudperf.com

Our latest project where we monitor the speed and availability of Cloud EC2 instances.

Why my work matters?

Corporate buyers of CDN, DNS and Cloud products are using these websites to decide which provider to use to fit their needs. They prefer 3rd party stats to justify the budget to their management.

Hence, every time you improve the performance in the backend and improve the ranking, your sales team has a higher chance to close new customers for your company.

RUM Monitoring

We monitor CDNs using RUM methodology (**R**eal **U**ser **M**easurements). The data is being collected using our JS script that is installed on websites across the globe (our paid RUM partners). Each time their visitors are visiting these websites (e.g. streaming platforms, blogs, web widgets etc) they're downloading objects from the CDNs we're monitoring.

What object do we monitor with RUM?

The current default CDN monitoring is done with small object of 500byte image that is the same for all providers. The RUM monitoring system is setup to be unbiased and to be based on pure raw performance by doing equal number of tests and same object for all providers.

What data do we collect with RUM?

To be compliant with all current privacy policy laws we collect only performance-based data of CDNs because the measurements are being done by private individuals.

We collect the following data:

- HTTP headers
- Request time (from sending request to finishing receiving data)
- User IP (last few octets are hidden due to privacy laws)
- User Agent
- Continent/City/Country
- ASN/ISP
- SSL Time
- TCP Connect Time
- DNS Lookup Time
- Client IP Resolver
- Status Code
- Cache Status
- mobile vs desktop

How to access the data?

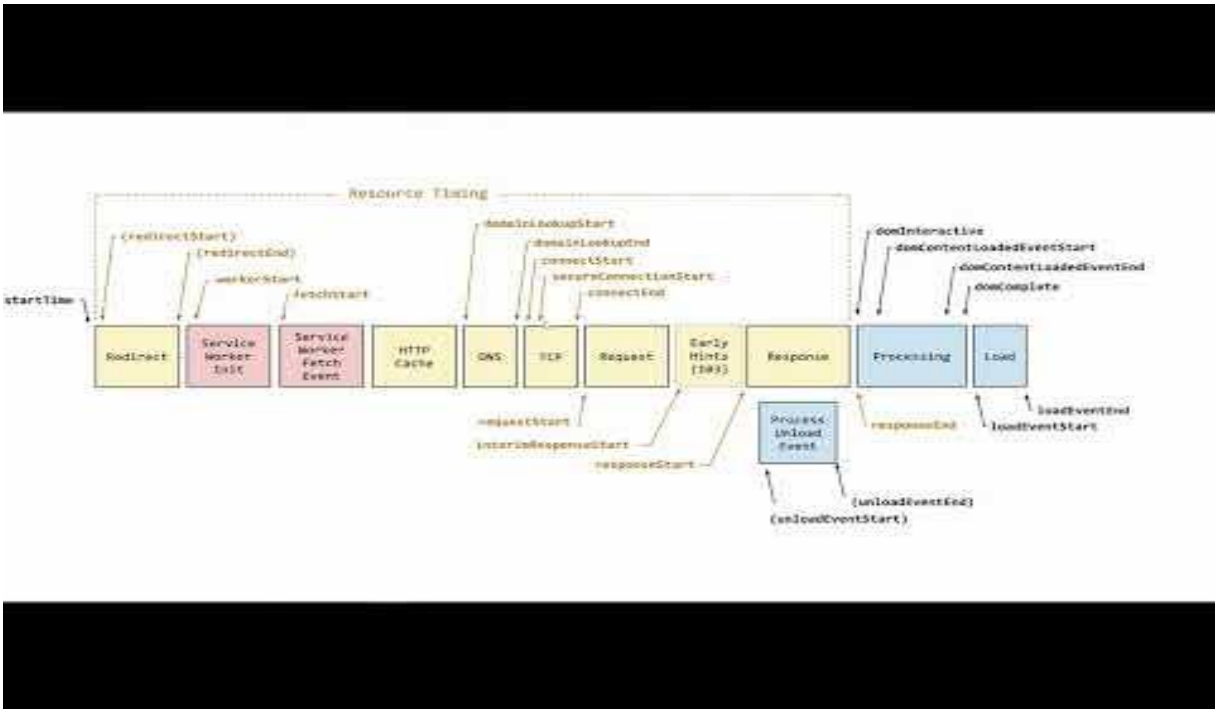
You can access the data via API or UI. Please note that there's different type of data shown on UI vs API. All the data is shown via API because we cannot place and show the entire dataset in UI.

What data is being shown in UI vs API (raw logs)?

- Panel:
    - Request time (from sending request to finishing receiving data)
    - User IP
    - User Agent
    - Continent/City/Country
    - ASN/ISP
    - HTTP Headers

- Raw Logs (API)
    - Request Time
    - User IP
    - User Agent
    - Continent/City/Country
    - ASN/ISP
    - HTTP Headers
    - + from UI:
        - **SSL Time**
        - **TCP Connect Time**
        - **DNS Lookup Time**
        - **Client IP Resolver**
        - **Status Code**
        - **Cache Status**
        - **mobile vs desktop**

CDN Data Breakdown – Video



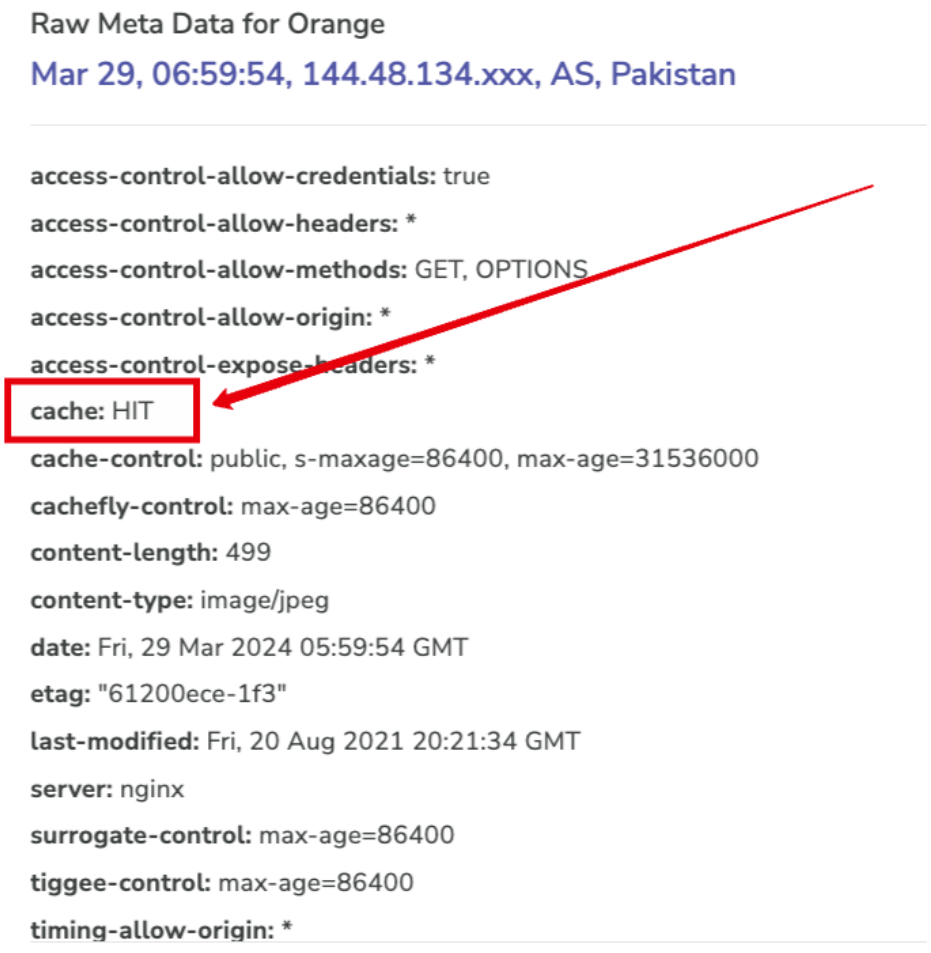
Can you check ASN/ISP data if you don't have PoP on that network?

Yes, you can check any ASN/ISP. Our RUM monitoring system collects data from real people worldwide and they will download and test your CDN even if you don't have presence in that region, ASN or ISP.

That's the main reason and value why CDNs are using the service, it shows what your performance is by getting real tests from people that are outside your network. Based on that data you can make decisions about where you need to invest or fix a PoP.

How do we determine Cache ratio?

We look for the "Cache Header", which you setup on CDN side (it's setup to expose the headers from the CDN platform).



API

All the data being collected is available via our Rest API. Furthermore, you can access our synthetic monitoring network of nodes using API or CLI.

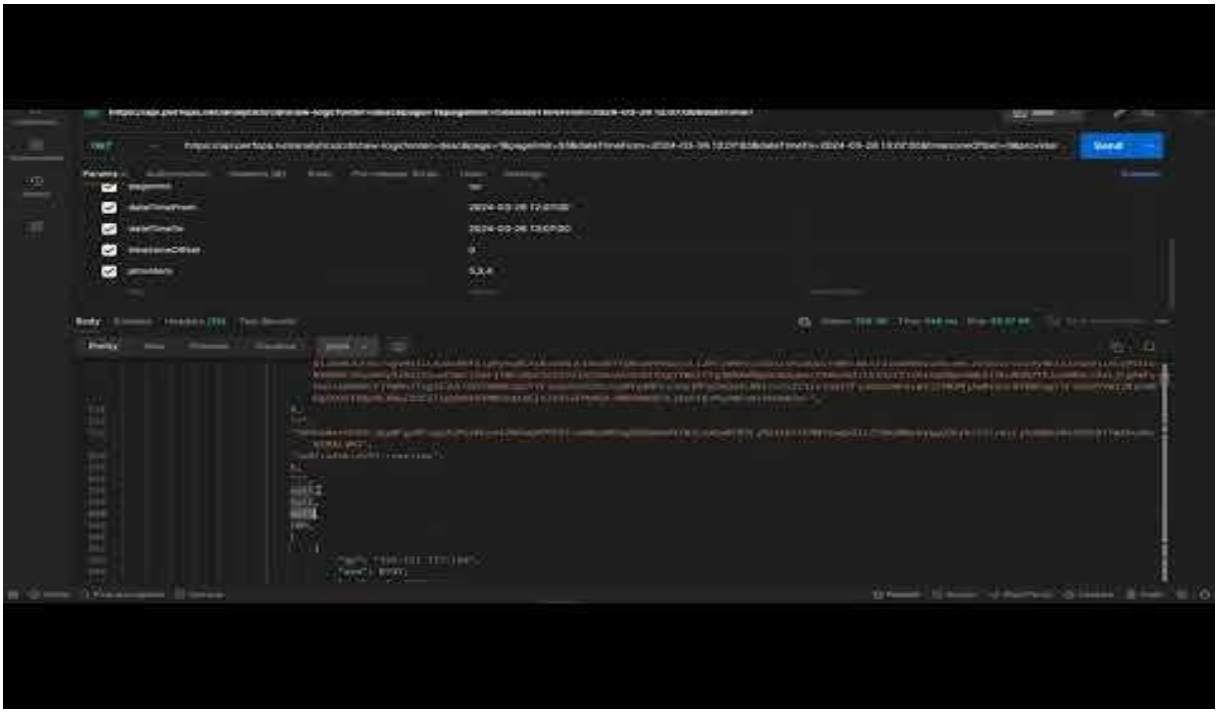
Your API credentials are located in your PerfOps panel

PerfOps Raw Logs (performance data).pdf

API docs?

The API is fully documented, and you can find the Swagger docs here: https://api.perfops.net/api-docs/

Video demo of API



Can anybody access your raw logs via API?

Only paid users have full access to the API in terms of how much data they can pull and number of requests per page. As a user of PerfOps you can pull all of the collected metrics in limited quantity (for testing purposes).

Please contact your manager to find out who has full API permissions.

API Rate Limit

There is a rate limit for unpaid API Users regardless of if they have enterprise permissions. We do have paid API users that have higher limits.

- "Free" API users → 200 raw logs per page
- "Paid" API users → 100 000 raw logs per page

Can we pull data from other providers?

Yes, at the moment you have the ability to pull data from all public and your private endpoints.

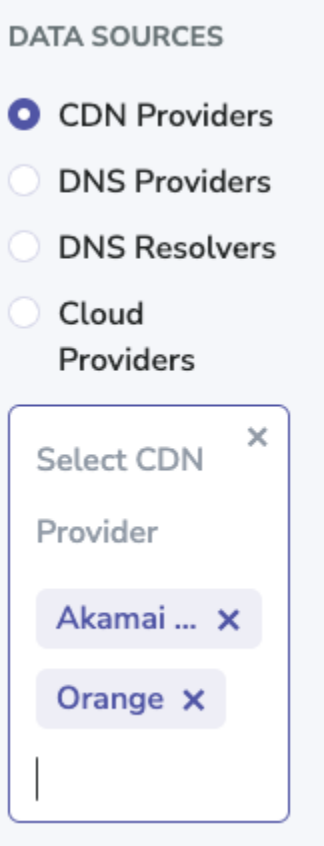
UI

As an enterprise user, you have all the features unlocked and can compare all public providers for CDN, DNS and Cloud.

To access the UI dashboard, please sign in here: https://panel.perfops.net/

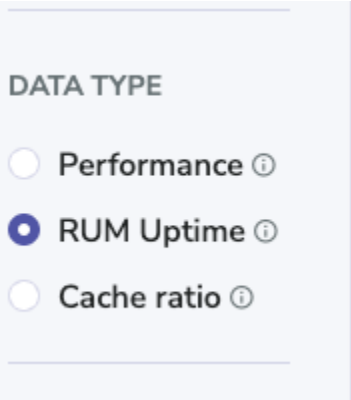
Data Sources

You can choose any public or private CDNs that you have access to. This can be used to dive deep into analytics of one provider or compare multiple at once for the same search criteria.



Data type

Inside the panel there's explanation why these metrics mean.

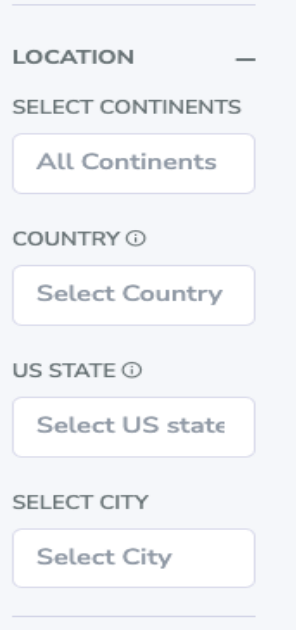


You can choose three data types:

- Performance → time it takes to download the object
- RUM uptime → 2500ms is setup as default timeout
- Cache Ratio → is the object served from Edge or Origin

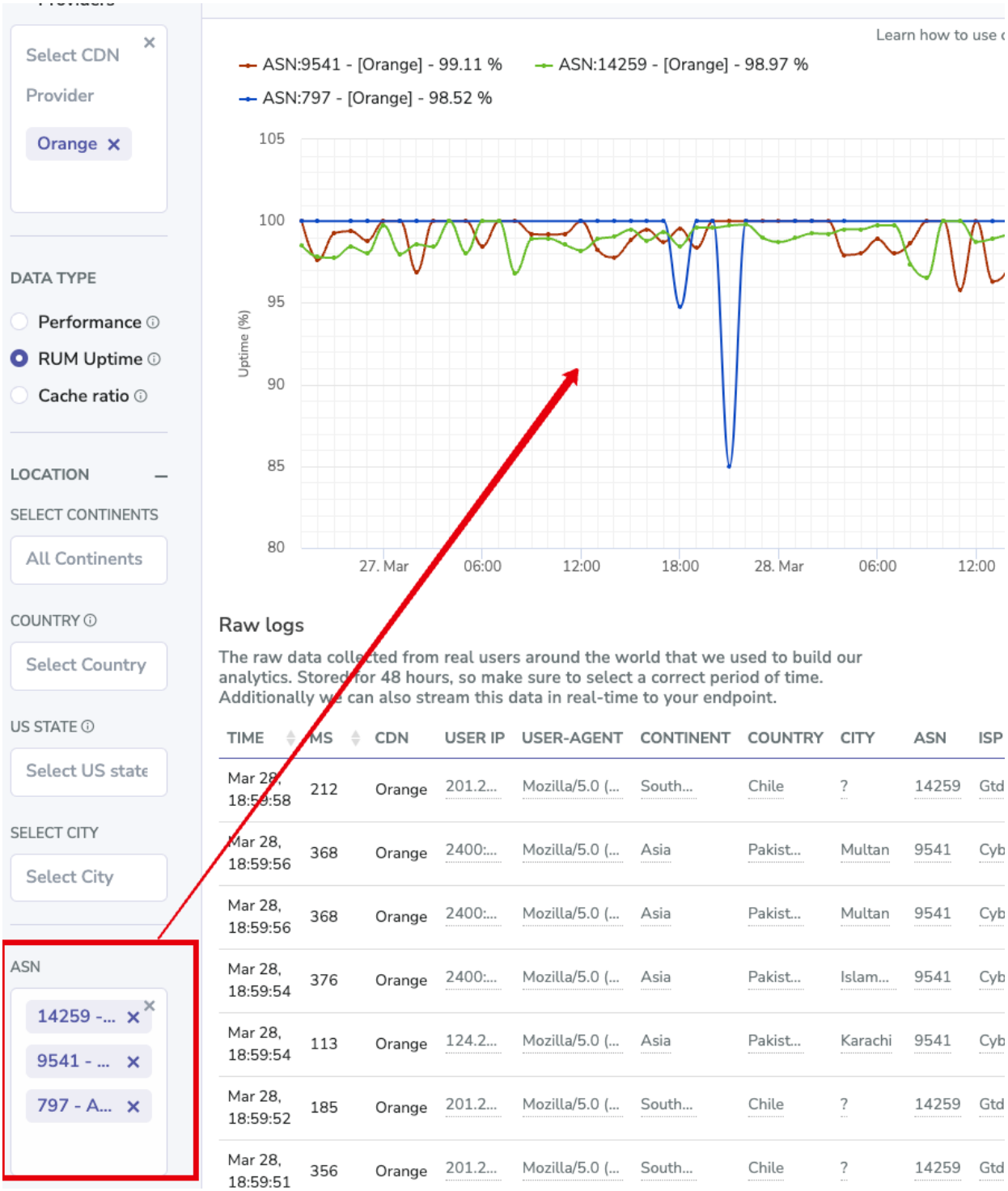
Location

Standard location filter that you can choose Continent, Country, City, USA states or City



ASN/ISP filter

You can select ASNs or ISPs and show them in ranking graphs



Raw Logs in UI

At the bottom of the dashboard you can check the raw logs of the selected search. You can access the HTTP headers for more details, however, please keep in mind that we keep raw logs for 48hrs before we delete them from the system. You can access and store all your raw logs internally via API.

Raw logs

The raw data collected from real users around the world that we used to build our analytics. Stored for 48 hours, so make sure to select a correct period of time. Additionally we can also stream this data in real-time to your endpoint.

TIME	MS	CDN	USER IP	USER-AGENT	CONTINENT	COUNTRY	CITY	ASN	ISP	RAW
Mar 28, 18:59:58	212	Orange	201.2...	Mozilla/5.0 (...	South...	Chile	?	14259	Gtd In...	View
Mar 28, 18:59:56	368	Orange	2400:...	Mozilla/5.0 (...	Asia	Pakist...	Multan	9541	Cyber...	View
Mar 28, 18:59:56	368	Orange	2400:...	Mozilla/5.0 (...	Asia	Pakist...	Multan	9541	Cyber...	View
Mar 28, 18:59:54	376	Orange	2400:...	Mozilla/5.0 (...	Asia	Pakist...	Islam...	9541	Cyber...	View
Mar 28, 18:59:54	113	Orange	124.2...	Mozilla/5.0 (...	Asia	Pakist...	Karachi	9541	Cyber...	View
Mar 28, 18:59:52	185	Orange	201.2...	Mozilla/5.0 (...	South...	Chile	?	14259	Gtd In...	View
Mar 28, 18:59:51	356	Orange	201.2...	Mozilla/5.0 (...	South...	Chile	?	14259	Gtd In...	View
Mar 28, 18:59:46	187	Orange	201.2...	Mozilla/5.0 (...	South...	Chile	?	14259	Gtd In...	View
Mar 28, 18:59:36	414	Orange	201.2...	Mozilla/5.0 (...	South...	Chile	?	14259	Gtd In...	View
Mar 28, 18:59:20	180	Orange	201.2...	Mozilla/5.0 (...	South...	Chile	?	14259	Gtd In...	View
Mar 28, 18:59:20	181	Orange	201.2...	Mozilla/5.0 (...	South...	Chile	?	14259	Gtd In...	View
Mar 28, 18:59:19	188	Orange	201.2...	Mozilla/5.0 (...	South...	Chile	?	14259	Gtd In...	View
Mar 28, 18:59:17	186	Orange	201.2...	Mozilla/5.0 (...	South...	Chile	?	14259	Gtd In...	View
Mar 28, 18:59:17	179	Orange	201.2...	Mozilla/5.0 (...	South...	Chile	?	14259	Gtd In...	View

Graphs, Segmentation, Algorithm, Period and Interval

On the top middle place of the dashboard you can choose Algorithm, Group By, Period and Interval.

Algorithm → choose statistical methodology to show data (eg. Mean or Median)

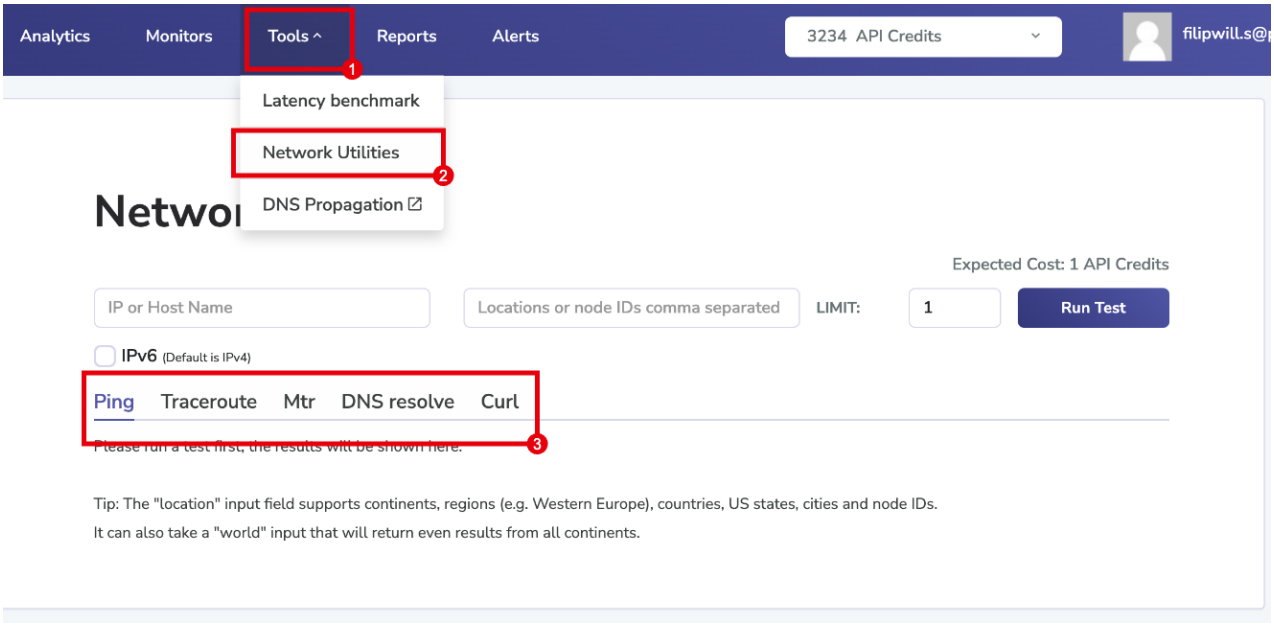
Group By → choose if you want to group the search results by certain criteria (eg. ASN)

Period → you can choose the period since we start monitoring your resource until last minute. You have the ability to custom select certain time and date.

Interval → you can choose Month, Day, Hour, Minute and Seconds (for a chunk of 10min). As you choose smaller period the interval lowers (eg. for 1h period you can view per minute interval).

Network Utility Tools

You can access our network of synthetic nodes to troubleshoot your network using traceroute, DNS resolve, Mtr or Curl. For using this service you're spending "Credits" (1 Credit = 1 test from 1 node).



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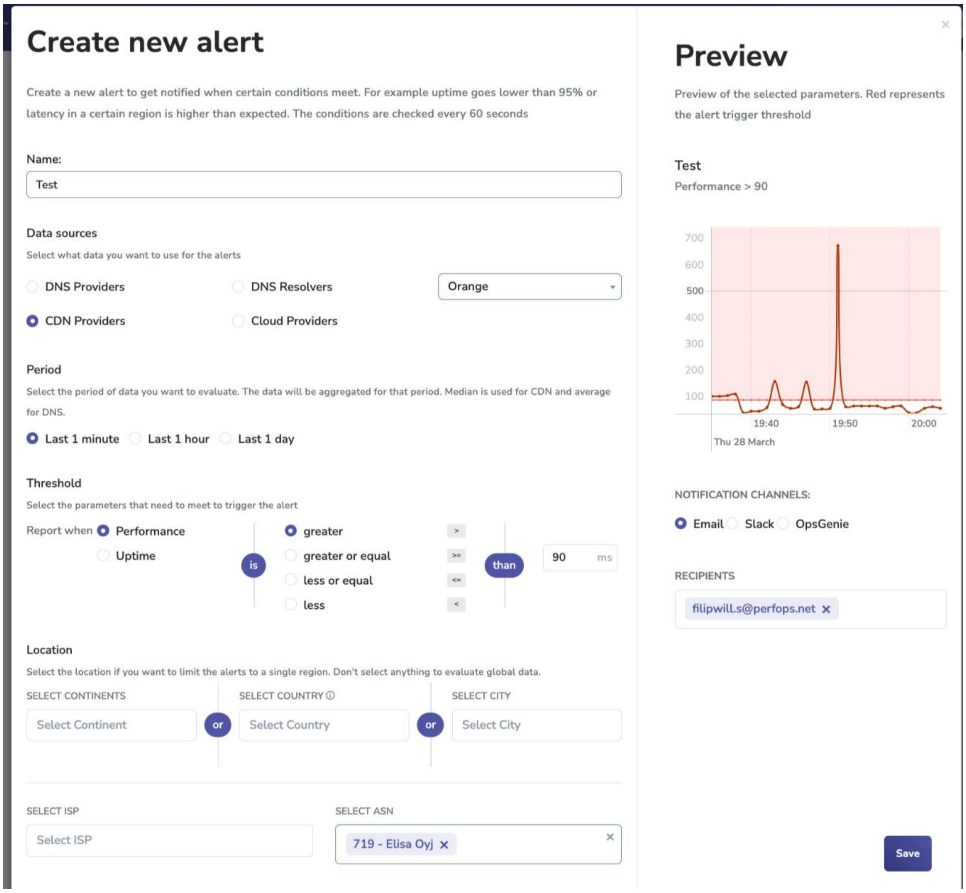
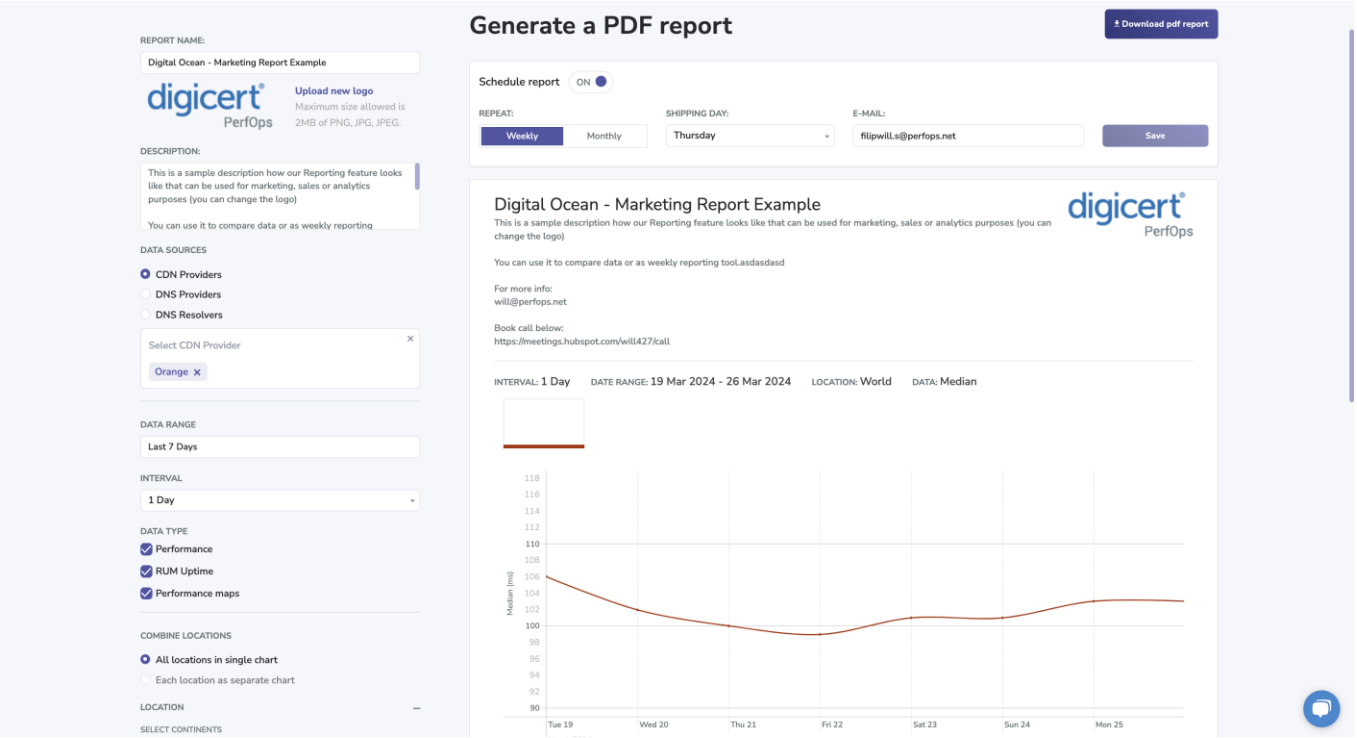
Alerts

Setup custom Alerts to be notified when performance reaches certain threshold on Geo-location, IPS or ASN level. You can be notified via Email, Slack or OpsGenie



Reports

Setup automatic performance reports or download them manually as PDFs. This can be useful if you need to report performance with upper management (the description is editable).



Use-cases & Workflow

We'll show few workflows and use-cases on how to leverage PerfOps data to improve network performance and potentially improve your overall ranking on CDNper.com

ASN/ISP Issues

Our RUM testing network is spread across tens of thousands of networks (ASNs/ISPs) and you can use this data to determine if the performance issues are on ASN or ISP level. To double confirm the issue is on your network, you can compare the performance of your competitors on the desired ASNs/ISPs.

As rule of thumb, the majority of internet traffic in certain countries is via the top 5 or 10 ASNs. Therefore, if you focus your attention on these ASNs you can dramatically improve end-user experience.

Resources:
Stats about internet users per ASN

Client IP Resolver Issues

We are collecting DNS IP resolver info from our RUM testers. This can help engineers to determine if the issue is on specific DNS resolver.

Please note this is paid service and available to providers that subscribe to this service.

HTTP Headers Workflow

You can create custom HTTP headers placeholders that will help you with debugging and troubleshooting issues (eg. placeholder "server", it will show you from which exact server the object was retrieved).

Routing Issues

The main idea of CDN is to deliver seamless experience to end-users from wherever they're trying to reach your content. That's why companies are using CDNs that have good spread of PoPs. However, many times their routing isn't setup and their PoP isn't working properly and delivers bad experience to end-users.

Bad vs Good Routing