



Observe your API with an API Gateway Plugins

Bobur Umurzokov

Thank You to the Code PaLOUsa Sponsors



<prosoft>

CGI

Friends of Code PaLOUsa



Couchbase

DATASTAX



mongoDB®



redis



Bobur Umurzokov

- Apache APISIX Contributor.
- Software Engineering Trainer at Software Development Academy
- Developer advocate for Apache APISIX
- For more info:
 - <https://www.linkedin.com/in/boburu-147400106/>
 - <https://github.com/Boburmirzo>





APIs are everywhere – API Observability

API Gateway – a central point for observation

About Apache APISIX

API Observability 3 pillars – logging, tracing, and metrics

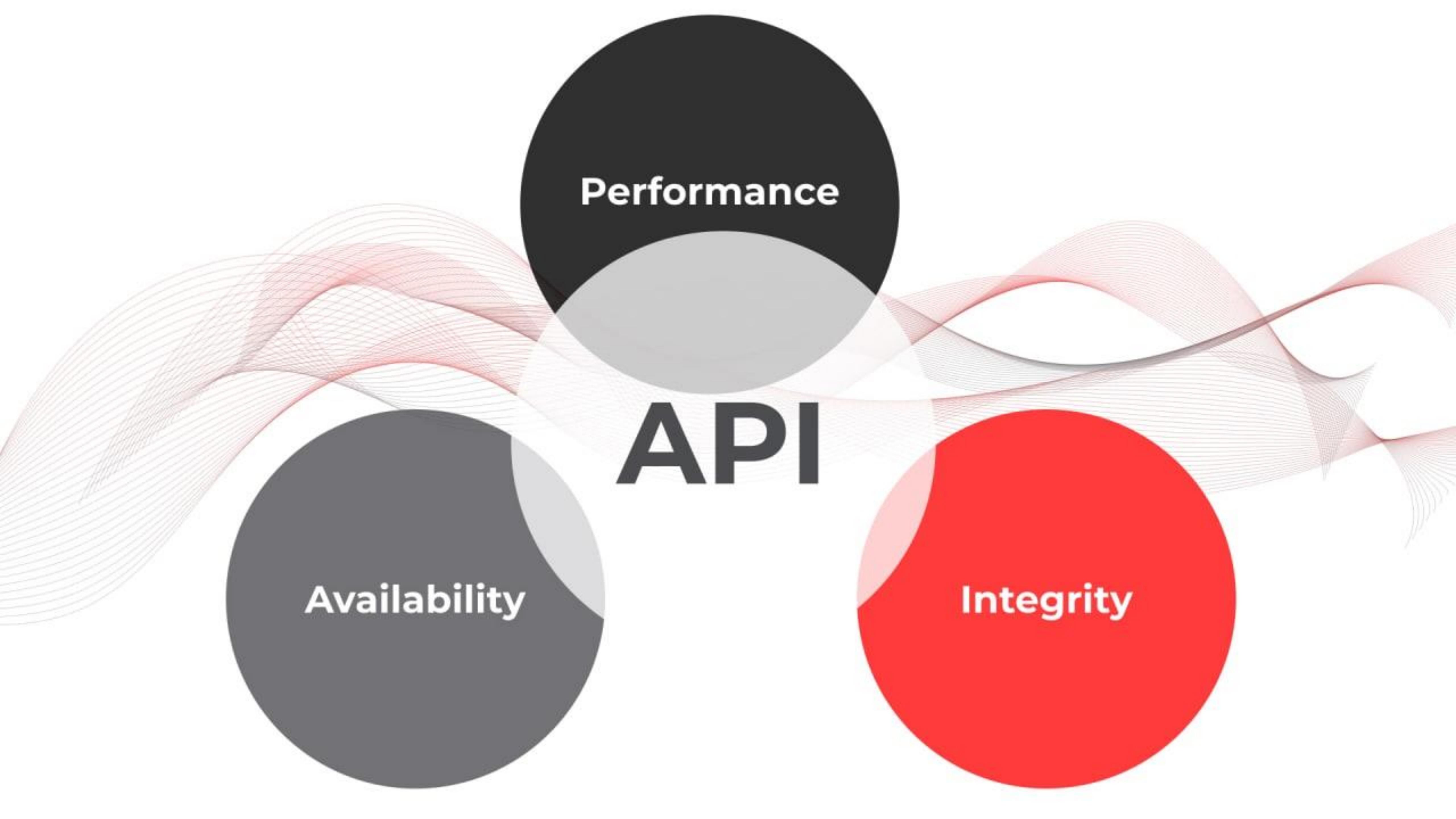
APISIX Plugins for observability

Demo

A scene from the movie Avatar. On the left, a Na'vi woman with long hair and a blue glow is shown in profile, looking towards the right. On the right, another Na'vi woman is standing, also with a blue glow. They are surrounded by numerous glowing blue and purple bioluminescent plants and organisms, creating a mysterious and futuristic atmosphere.

APIs

APIs are everywhere



Performance

API



Availability



Integrity

Monitor for the Unknown Unknowns

Unknown Unknowns

Things we are neither aware of nor understand. Future events or situations that are impossible to predict or plan for.

Knowns	Unknowns
Known Knowns <i>Things we are aware of and understand.</i>	Known Unknowns <i>Things we are aware of but don't understand.</i>
Unknown Knowns <i>Things we understand but are not aware of.</i>	Unknown Unknowns <i>Things we are neither aware of nor understand.</i>
Knowns	Unknowns



Monitoring

Monitor for the Unknown Unknowns

Unknown Unknowns

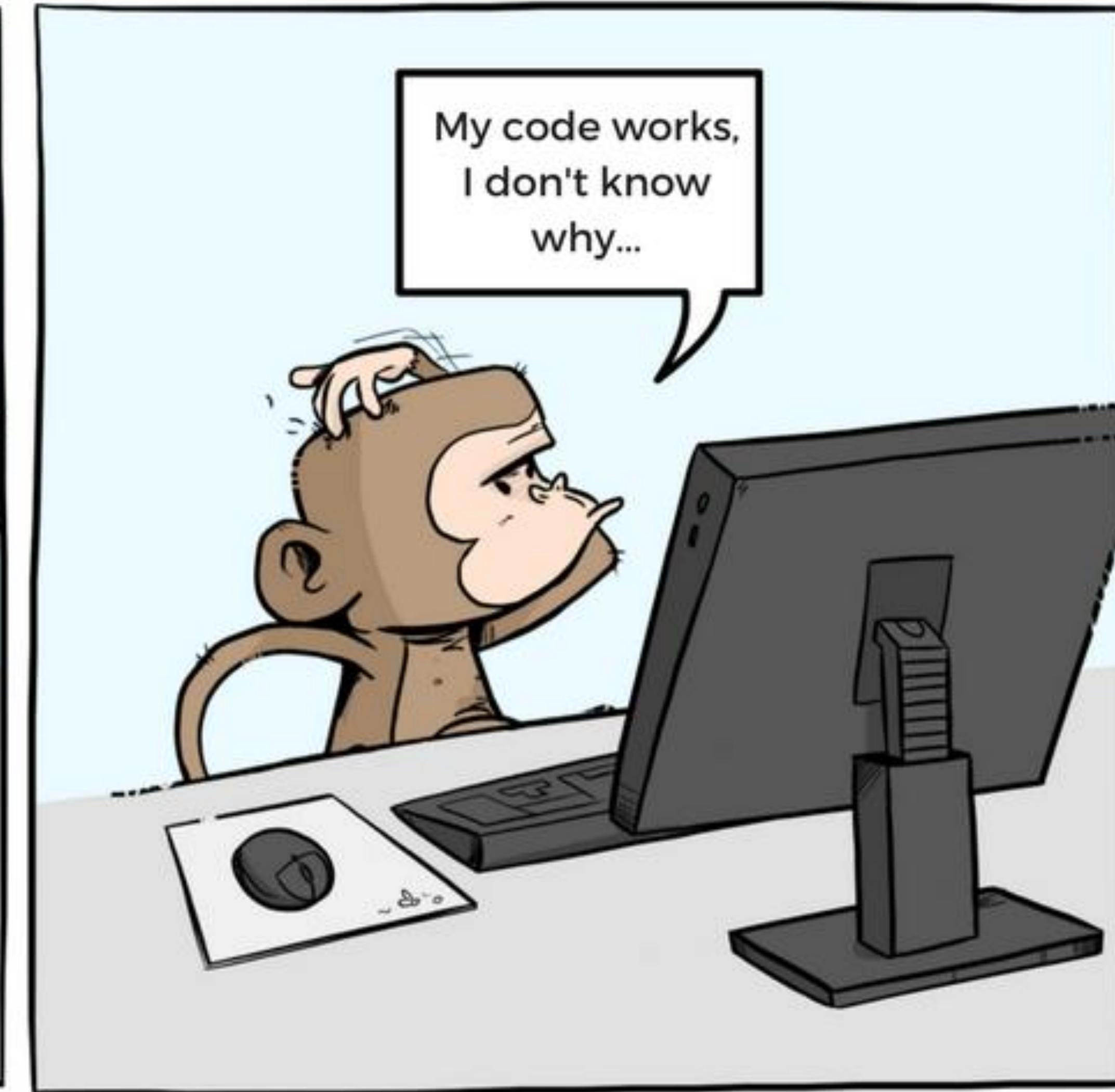
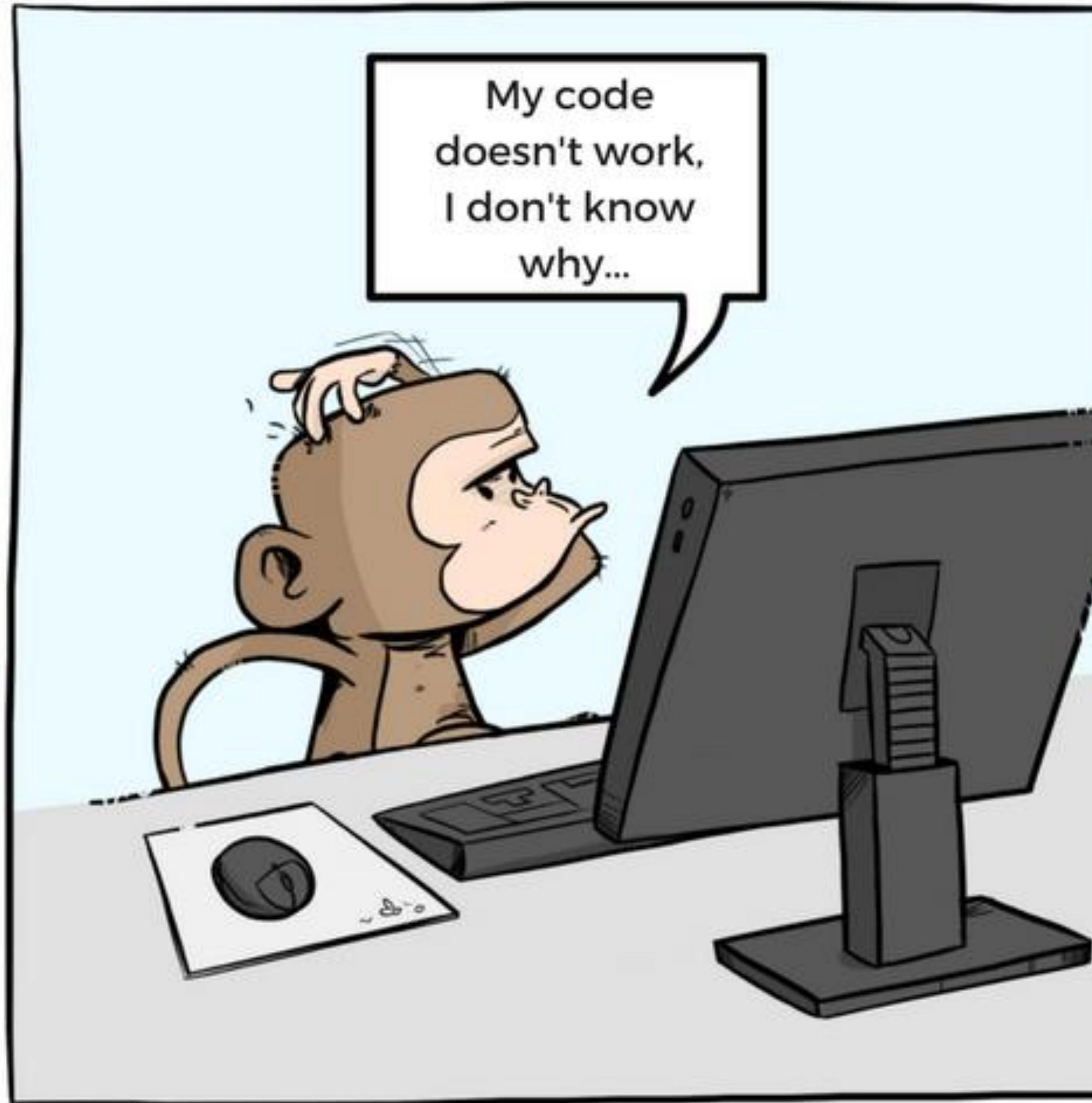
Things we are neither aware of nor understand. Future events or situations that are impossible to predict or plan for.

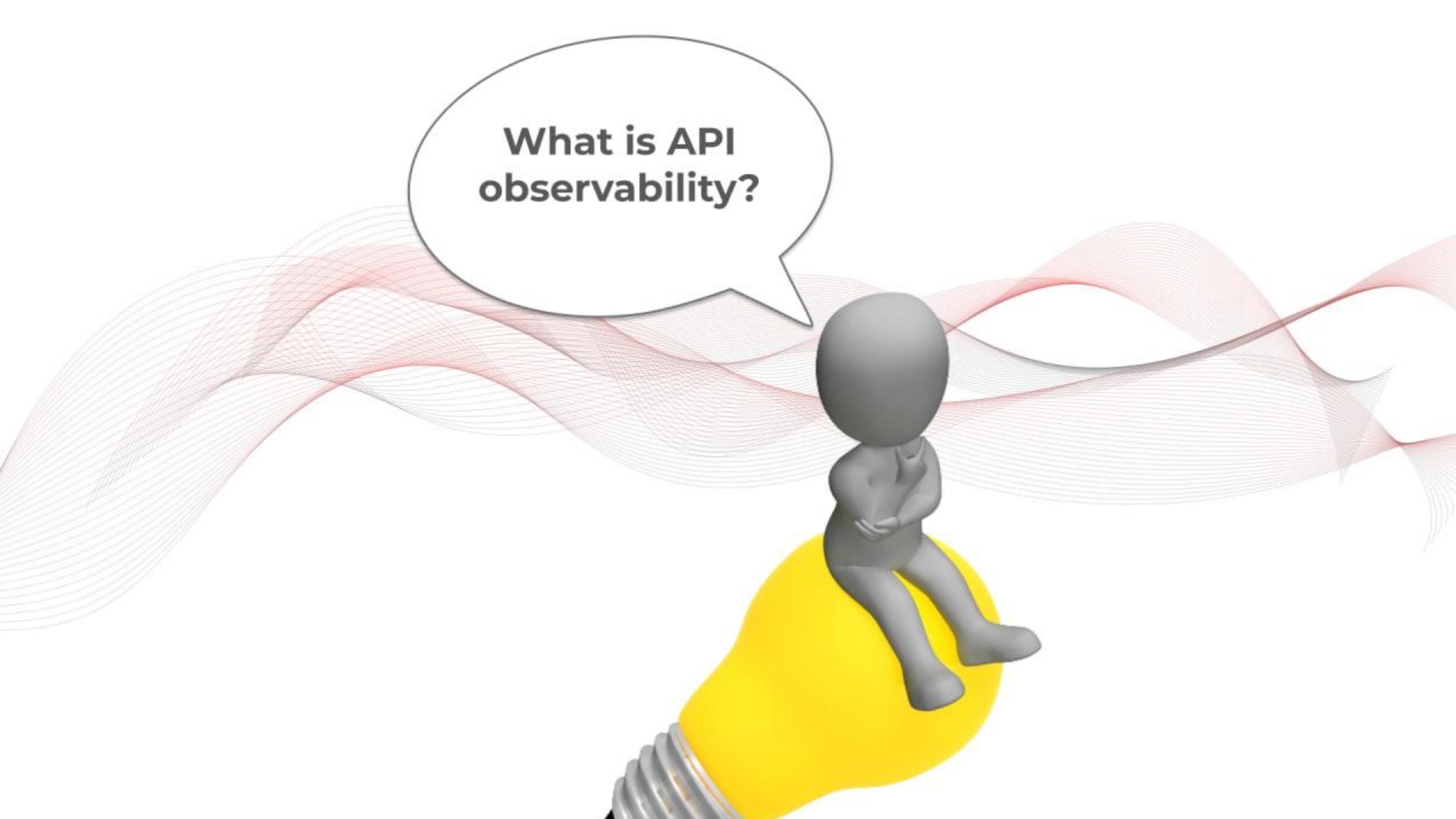
Knowns	Unknowns
Known Knowns <i>Things we are aware of and understand.</i>	Known Unknowns <i>Things we are aware of but don't understand.</i>
Unknown Knowns <i>Things we understand but are not aware of.</i>	Unknown Unknowns <i>Things we are neither aware of nor understand.</i>
Knowns	Unknowns



Observability

Evidence-based Debugging





**What is API
observability?**





API Observability is a part of every API development

- Sales and growth teams to monitor your API usage, free trials, observe expansion opportunities and ensure that API serves the correct data.
- Engineering teams to monitor and troubleshoot API issues.
- Product teams to understand API usage and business value.
- Security teams to detect and protect from API threats.

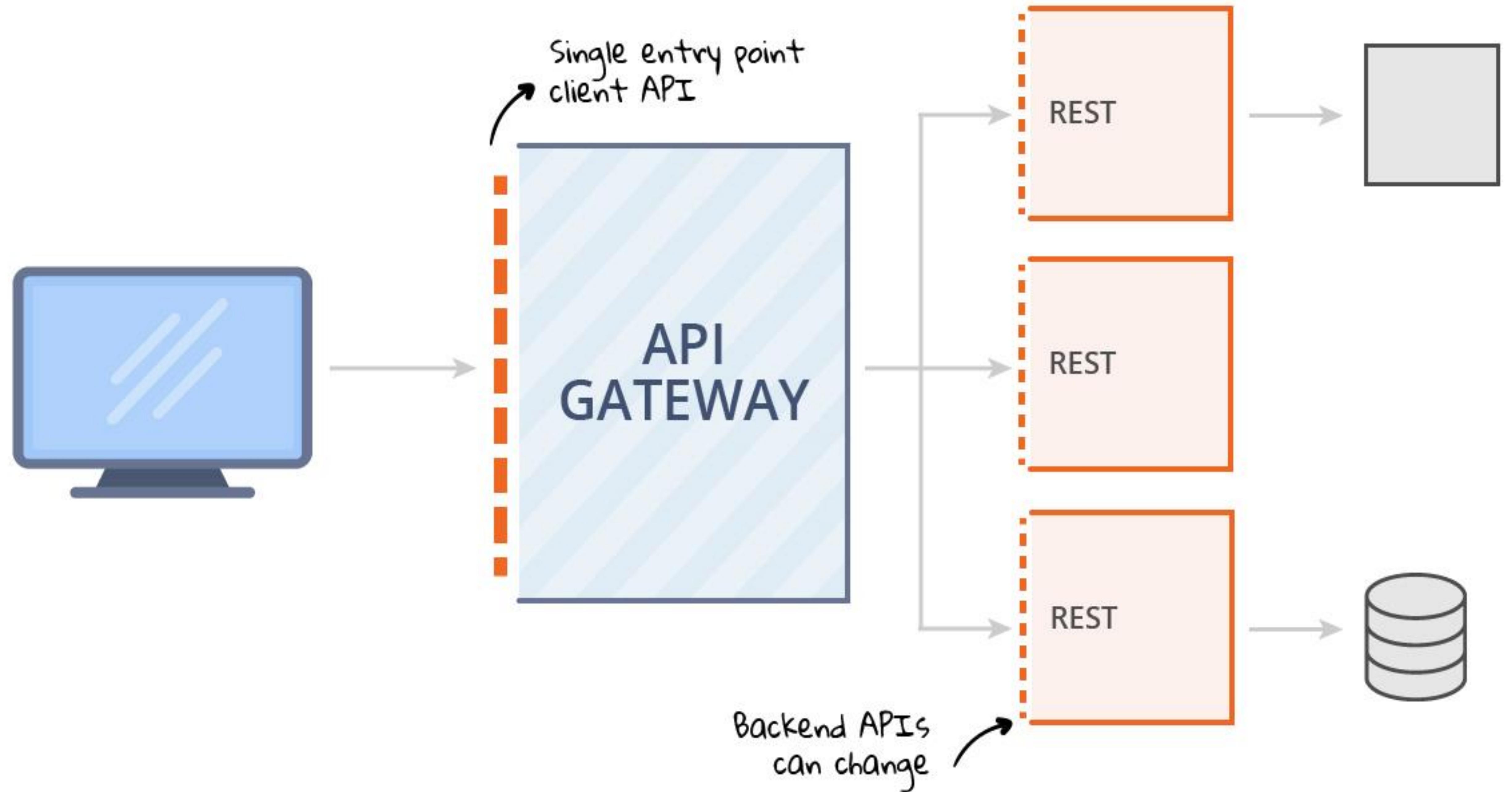


What's the easiest way to make your APIs observable?

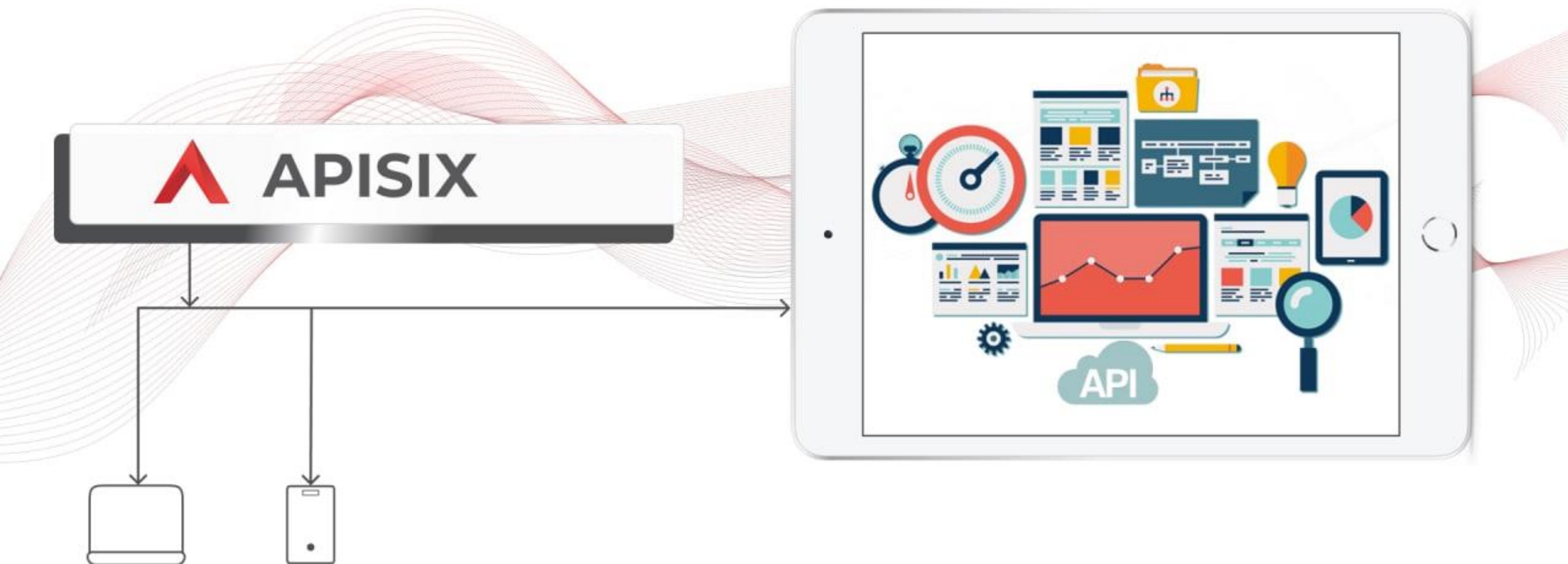
API Gateway

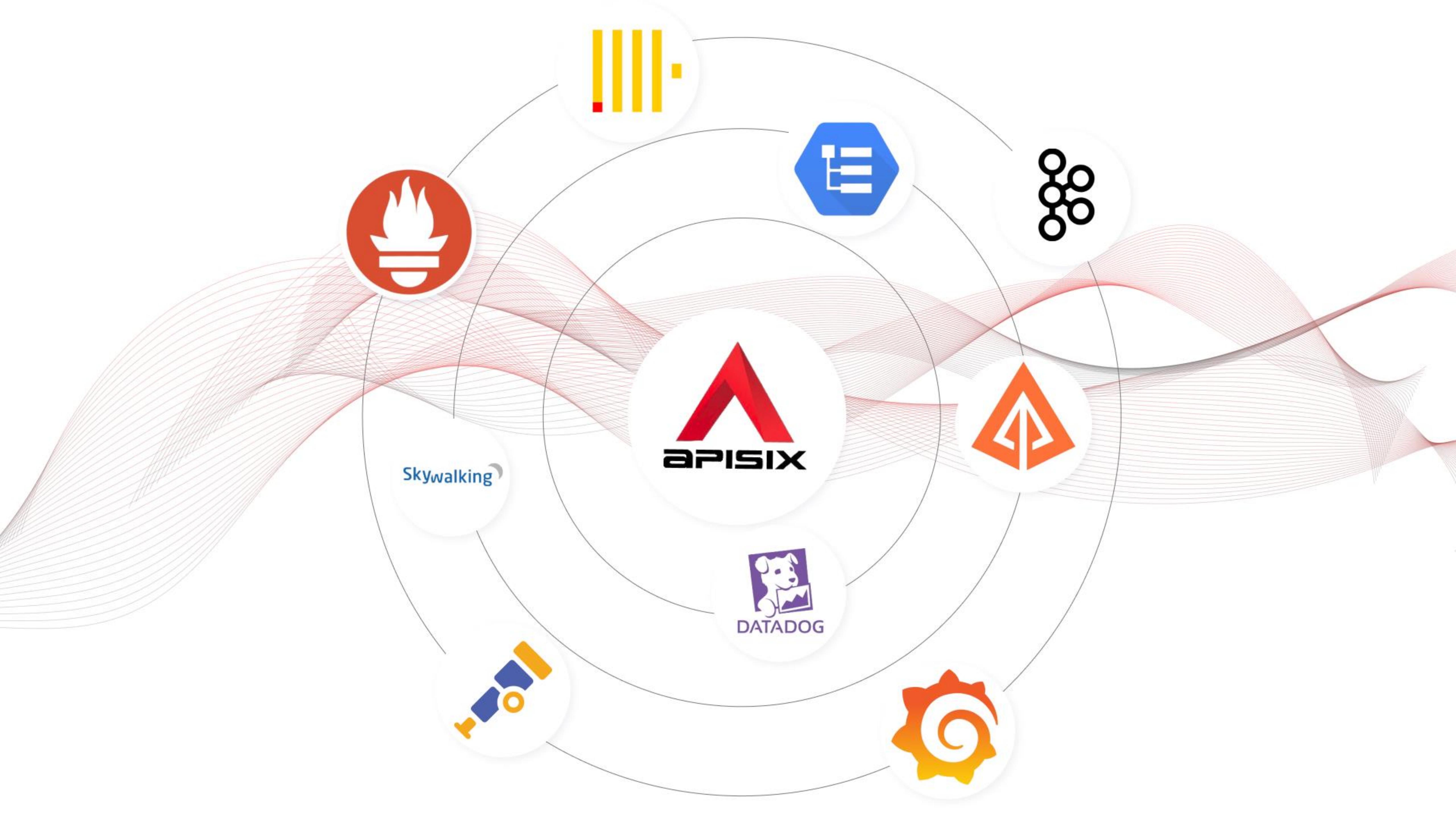
An API gateway is an API management tool that sits between a client and a collection of backend services.





A central point for APIs observation





What is Apache APISIX?

- One of the fastest-growing top projects of the [Apache Software Foundation](#) in 2022.
- Cloud native API gateway.
- It has rich traffic management features.
- Many well-known organizations use APISIX in production.
- APISIX has a user-friendly dashboard.
- It supports plugin hot reloading.
- You can write custom plugins.



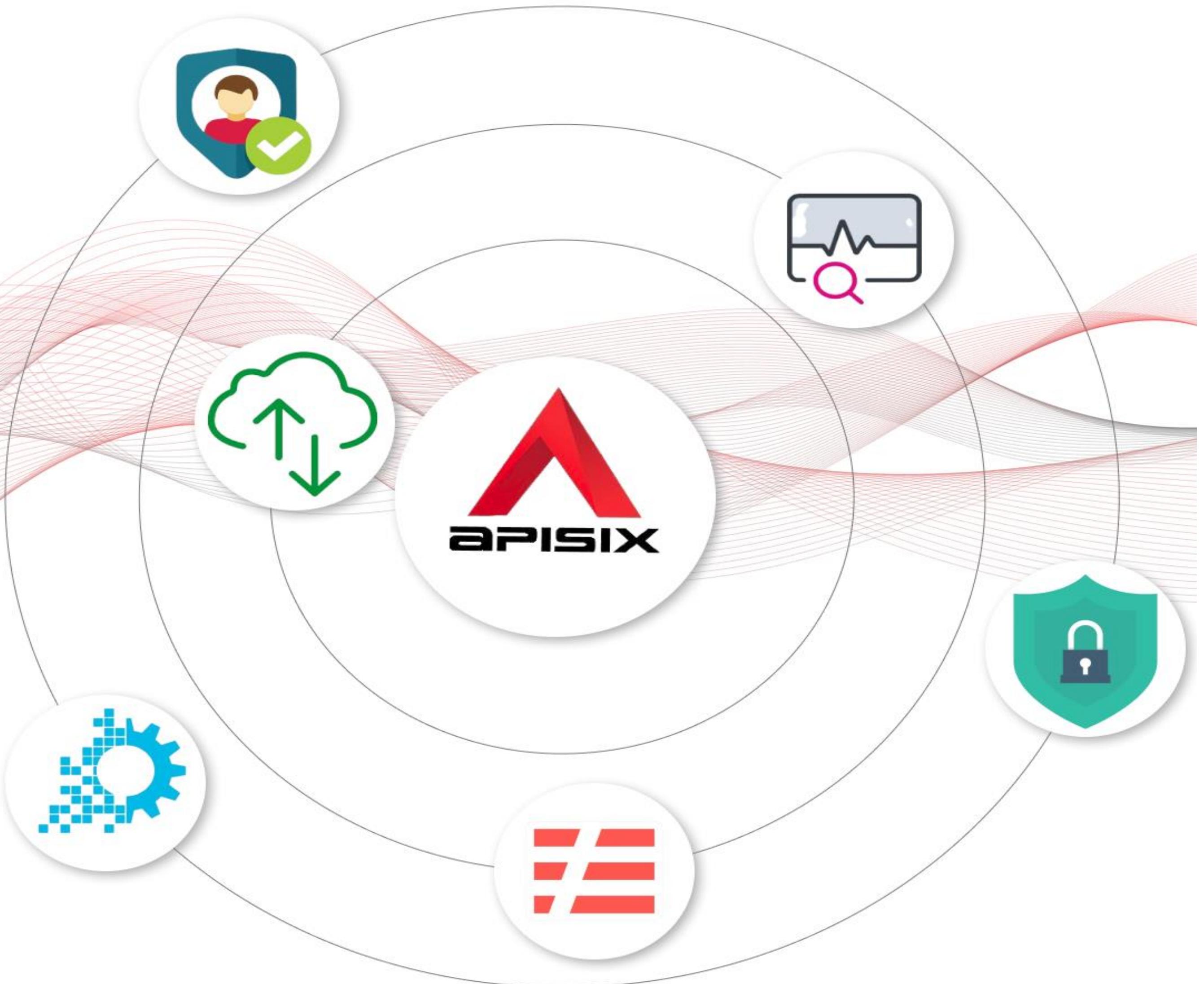


Apache APISIX now

- 1k open-source contributors.
- 9.8k stars on GitHub.
- 1.8k forks.
- Twice a month new release at least.
- The number of Apache APISIX downloads from Docker Hub is nearly 5M+.

API Gateway Plugins

- Authentication
- Security
- Traffic Control
- Observability
- Serverless
- Transformation
- Other



Custom plugin development



APISIX Dashboard

APISIX User



Dashboard

Route

Upstream

Service

Consumer

Plugin

SSL

System Info

Configure Route

3

Plugin Config

4

Preview

Define API Request

Define API Backend Server

Normal

Orchestration

Available Nodes

Search plugin by name

General

Start

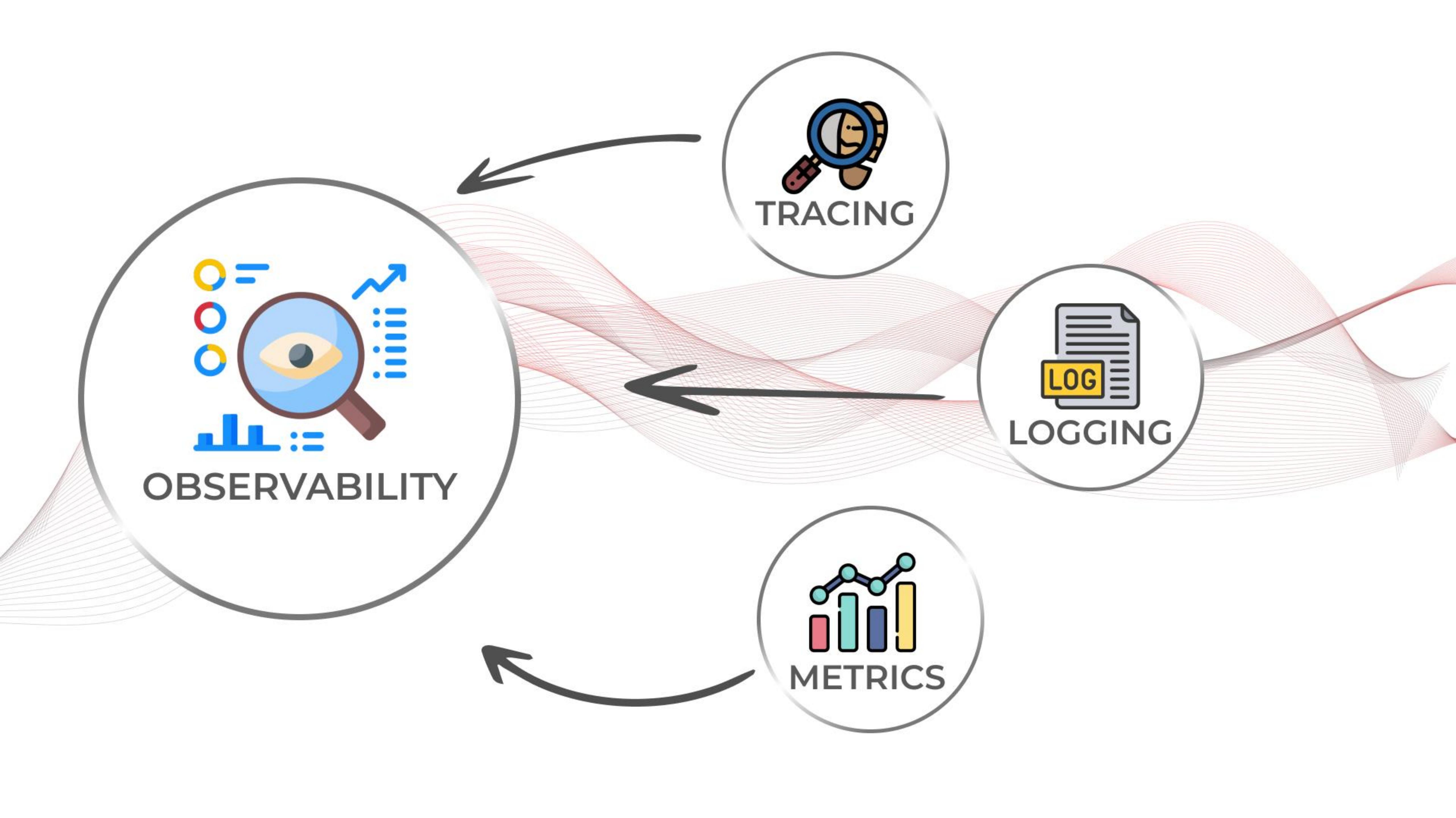
Condition

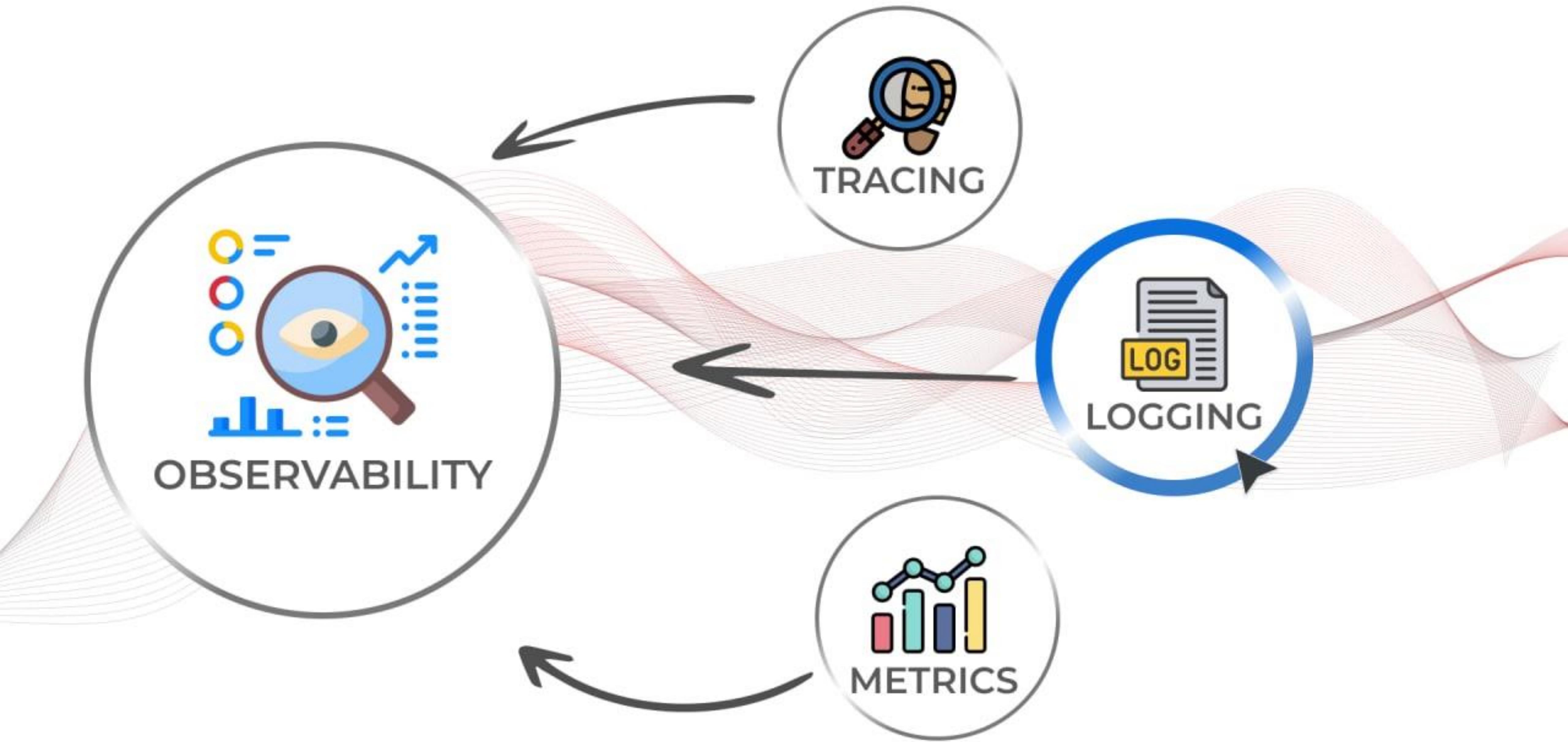
Authentication

openid-connect
openid-connectbasic-auth
basic-auth

Previous

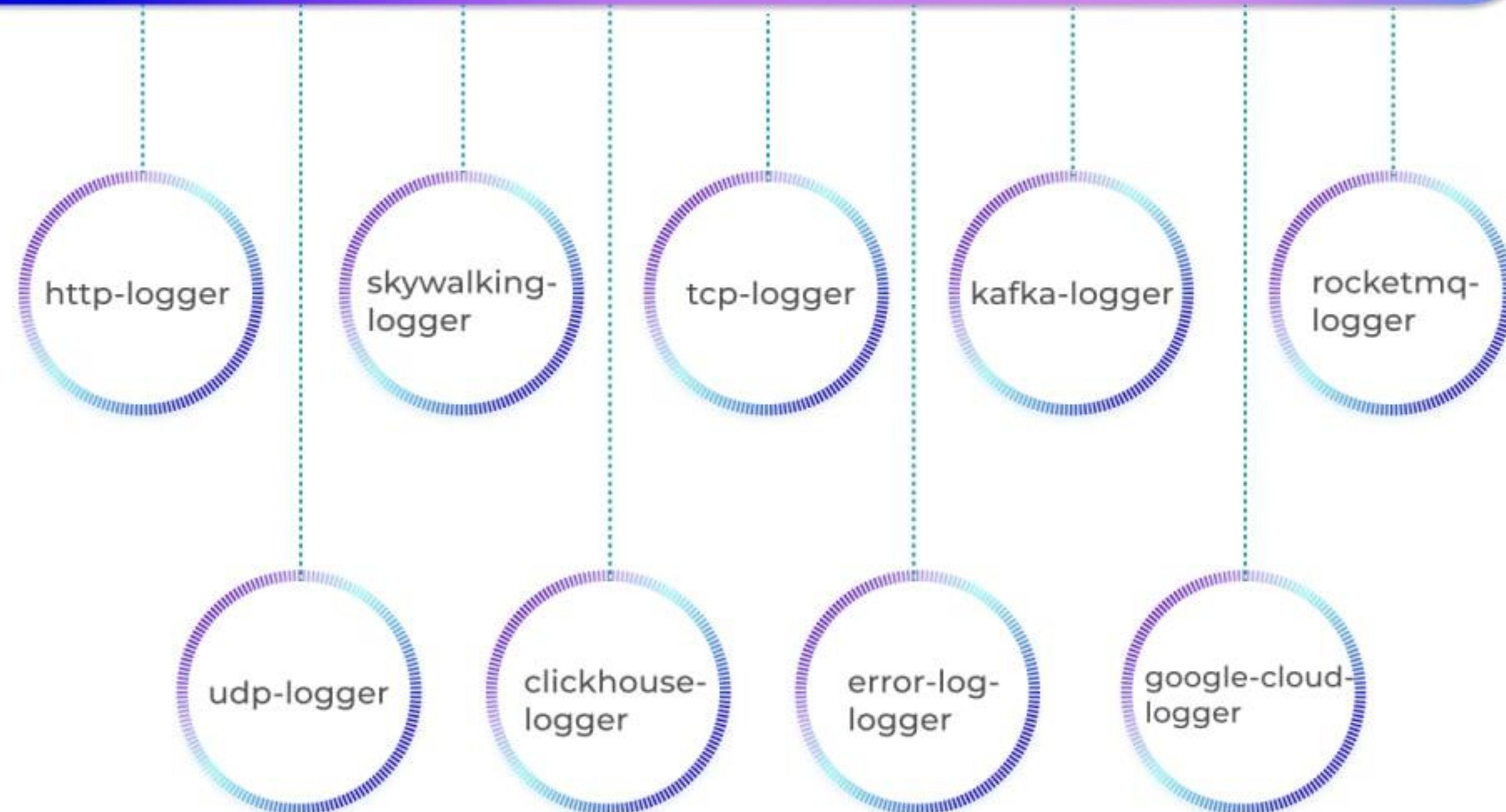
Next





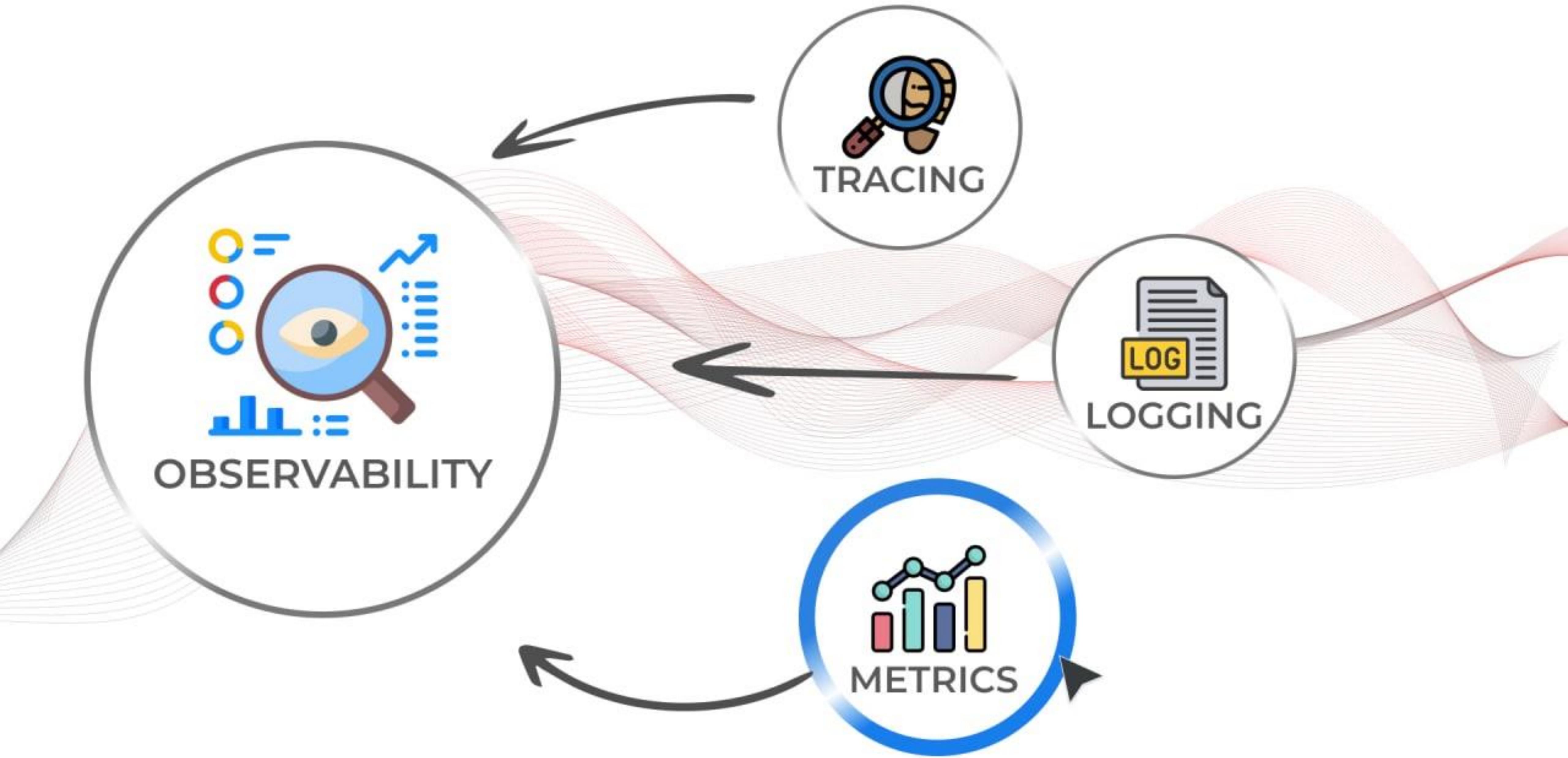


LOGGER PLUGINS



[HTTP logger Plugin](#) pushes Log data requests to HTTP/HTTPS servers or sends them as JSON objects to Monitoring tools.





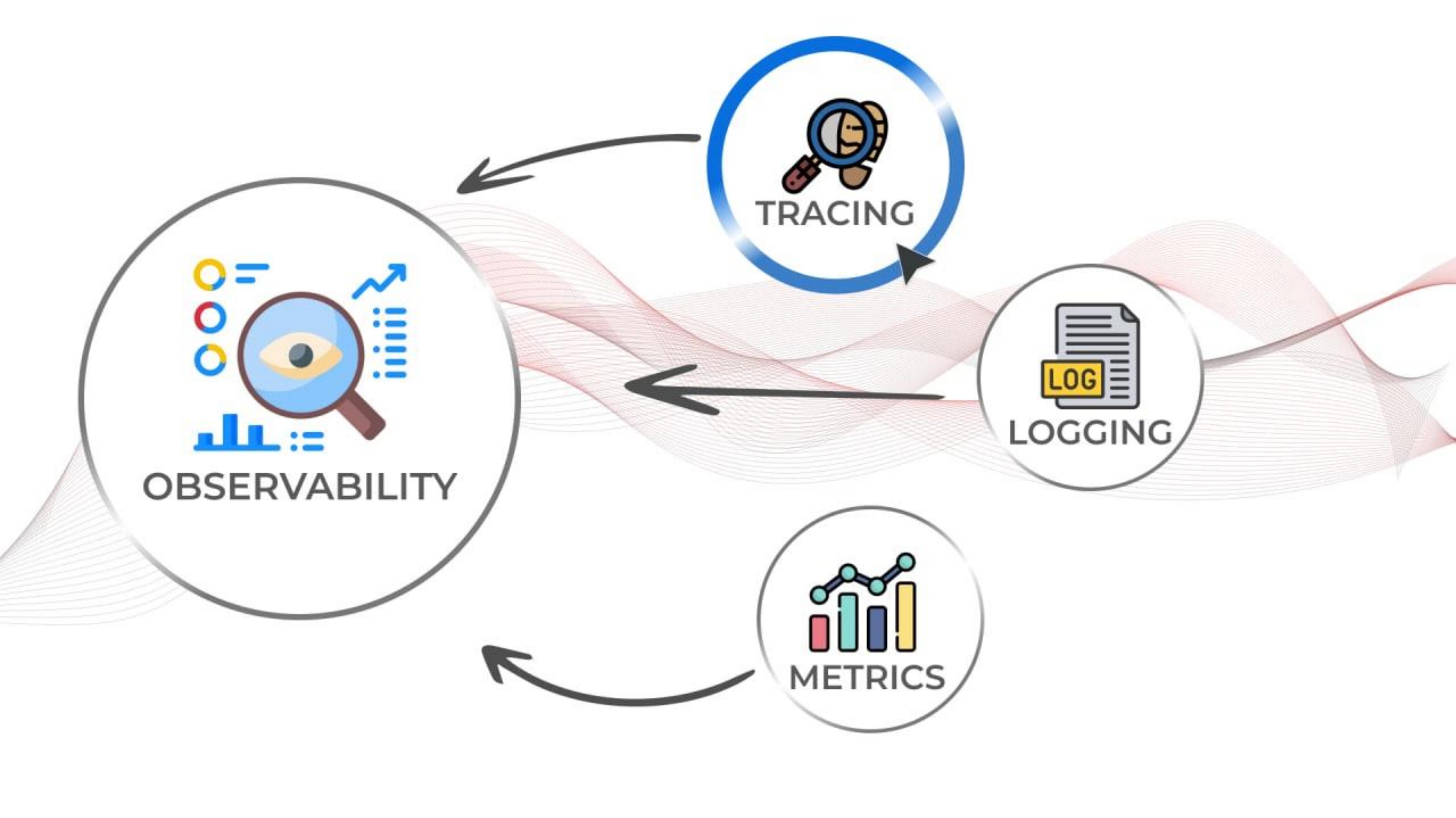
Prometheus plugin can fetch API

metrics data and you can show metrics

exported by the plugin in Grafana.



+ .



[Zipkin](#) an open-source distributed tracing system. [APISIX Zipkin plugin](#) is supported to collect tracing and report to Zipkin Collector based on [Zipkin API specification](#).





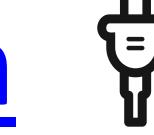
API Gateway Observability Plugins demo



Observe ASP.NET Core WEB API with APISIX

- Multi-container app (*backend, db, apisix and etcd* together) with [Docker compose](#).
- Configure APISIX an upstream and a route for Product API.
- Enable Http-logger, Prometheus and Zipkin plugins.
- <https://github.com/Boburmirzo/apisix-dotnet-docker> source code on GitHub and check out the branch *api-observability*.

Enable a traffic management

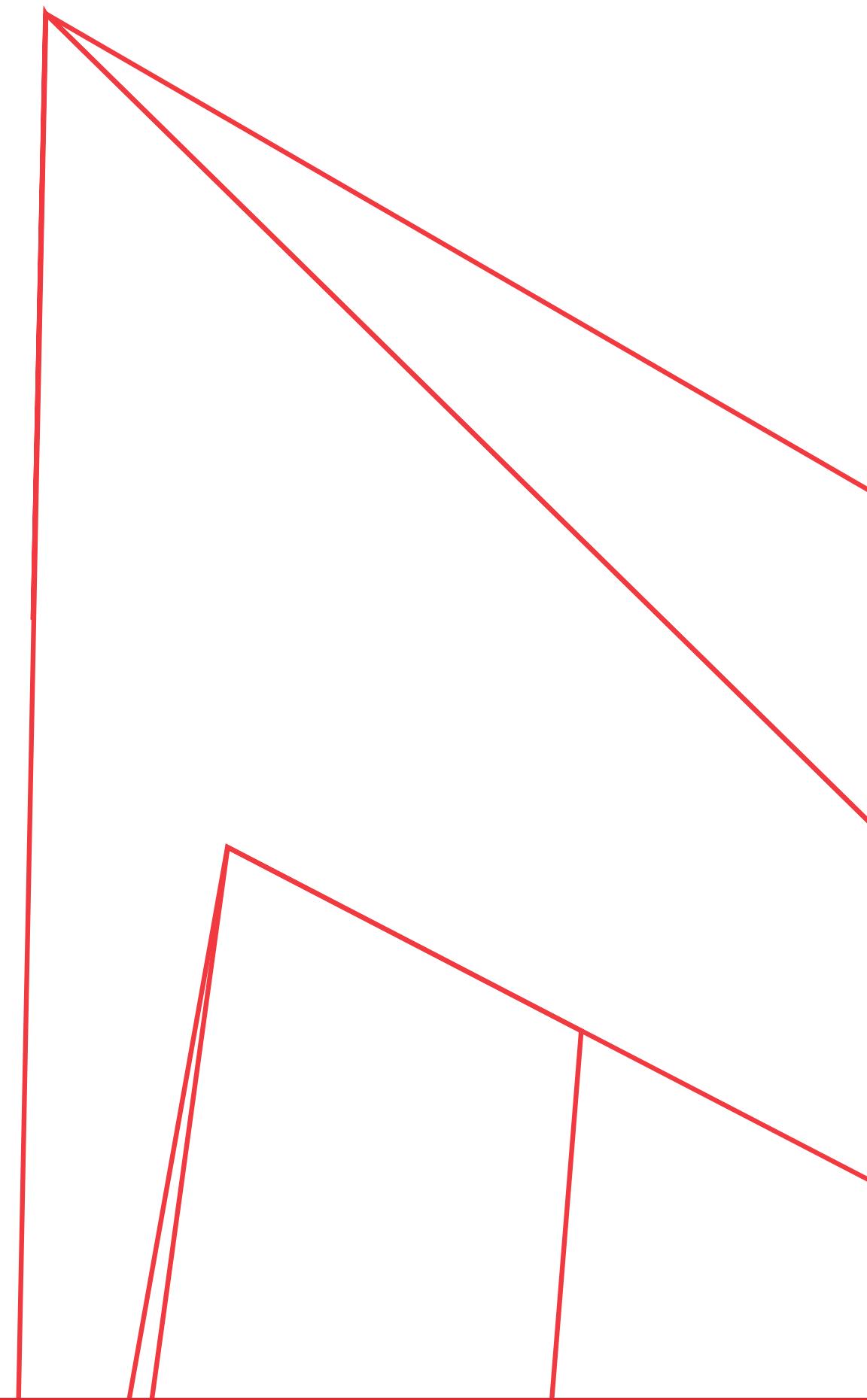
The [Limit count plugin](#)  is one among many limiting plugins. It limits the request rate by a fixed number of requests in each time window.



References

- [Apache APISIX official website](#)
- [Apache APISIX GitHub repo](#)
- Read [Getting Started](#) guide
- Watch Video Tutorial [Getting Started with Apache APISIX](#)
- [Download Apache APISIX](#)
- Read the full written [guide on](#) our docs
- View the complete [Apache APISIX documentation](#)
- [Read the blog posts](#)
- Learn [plugin development](#)
-  Join the [Apache APISIX Community](#)
-  Follow us [onTwitter](#)
-  Find us on [Slack](#)
-  Mail to us with your questions: dev@apisix.apache.org

Questions?





Bobur Umurzokov



@BoburUmurzokov



@Boburmirzo