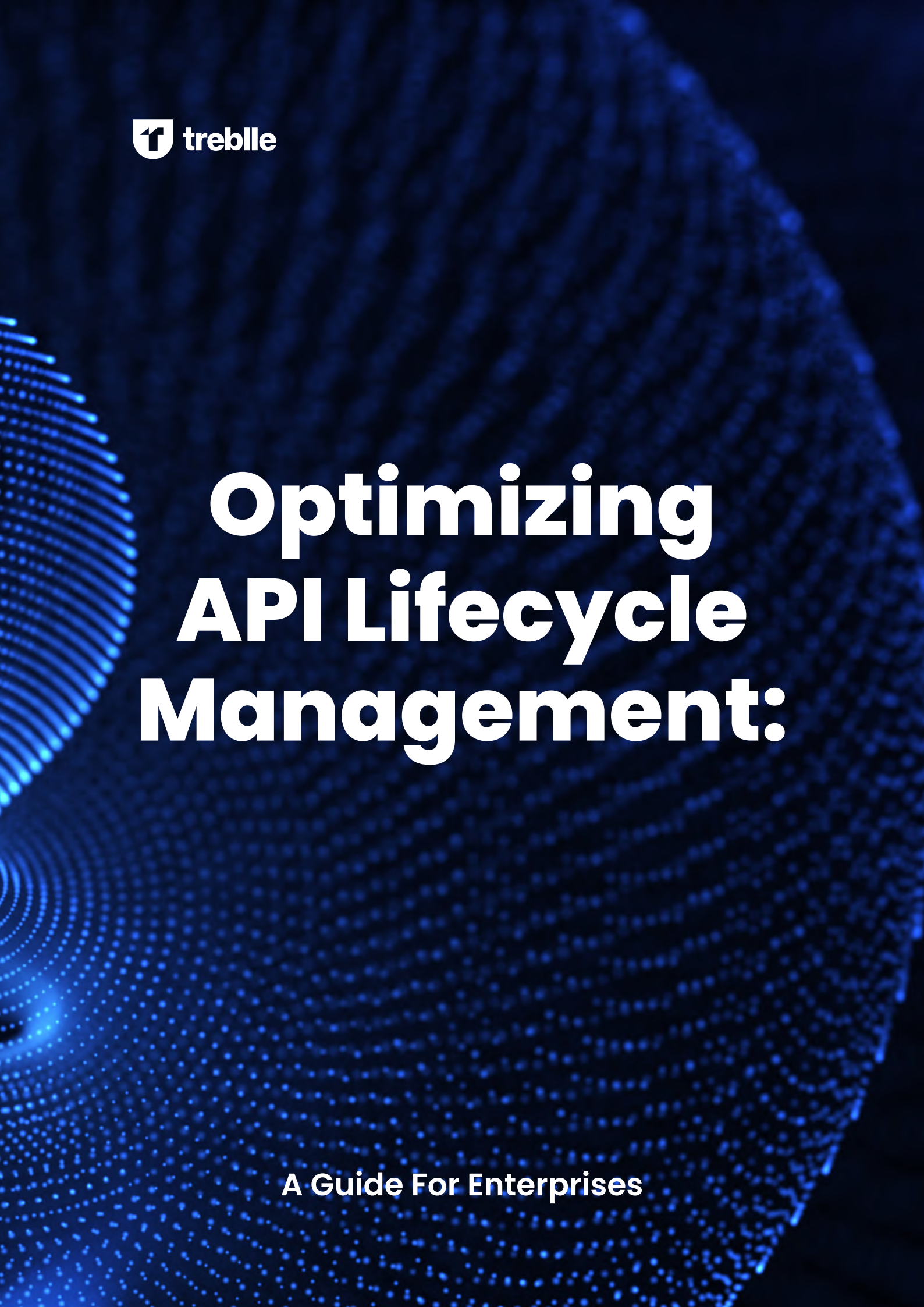
treblle
Optimizing API Lifecycle Management:
A Guide For Enterprises

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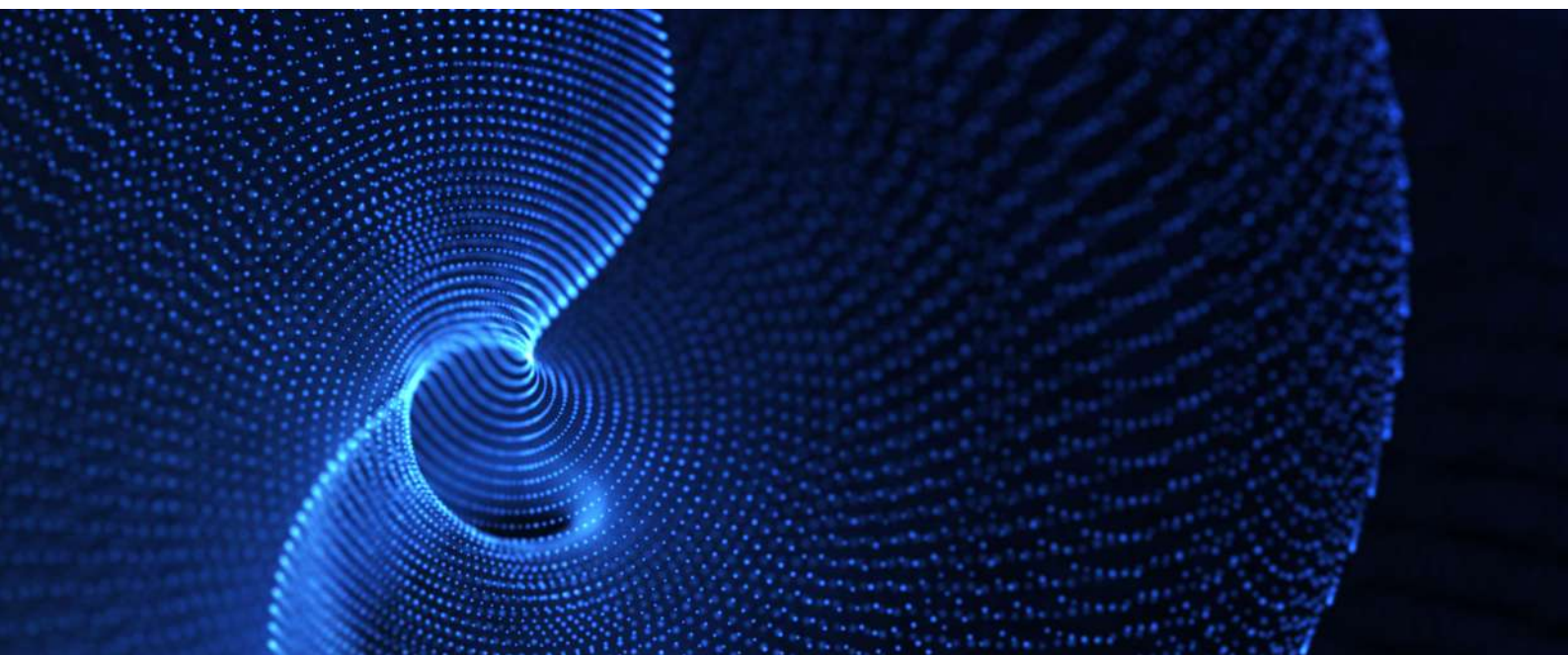


Introduction

APIs are getting a lot of attention recently. In fact, according to Gartner, API-based services make up **more than 80% of all internet traffic** around the world. But, why are APIs getting so much attention, what is API lifecycle management and why does it matter for your enterprise?

We will try to uncover these and several other questions in this ebook.

Why are APIs important for enterprises?

APIs are a hot topic right now and the backbone of almost all enterprises' digital strategy. Why? Because APIs can enable your organization to deliver world-class, consumer-centric digital products and services in a lesser amount of time.

APIs are transforming normally locked-away information silos in a lightweight, modularized, and flexible way, making it easy for your organization to respond more quickly to rapidly changing consumer trends, technology, and innovative disruptors (think AIOps, HealthTech, etc).

"The market is evolving quickly, and API lifecycle management from a single source is becoming less appealing. You must now think more actively about what problems you want to address and how, and then select the appropriate tools. This does not make life easier for API program and platform managers, but it does create a very dynamic ecosystem in which you can always find a vendor who supports your goals. here

Erik Wilde
API industry expert

APIs are the key that **enables safe IT modernization.** Independent reports from Forrester and several other publications validate it. Some reports even predict that event-based APIs and event-driven architectures will grow at a compounded **annual growth rate CAGR of 27.6%** during the forecast period of **2023 to 2030**.

The 3 API lifecycle stages

There are ideally three stages of an API lifecycle;

We will take a high-level overview of each one of them.

Design

The first step in the API lifecycle is design — where the API is created. Designing an API in an enterprise typically consists of two phases:

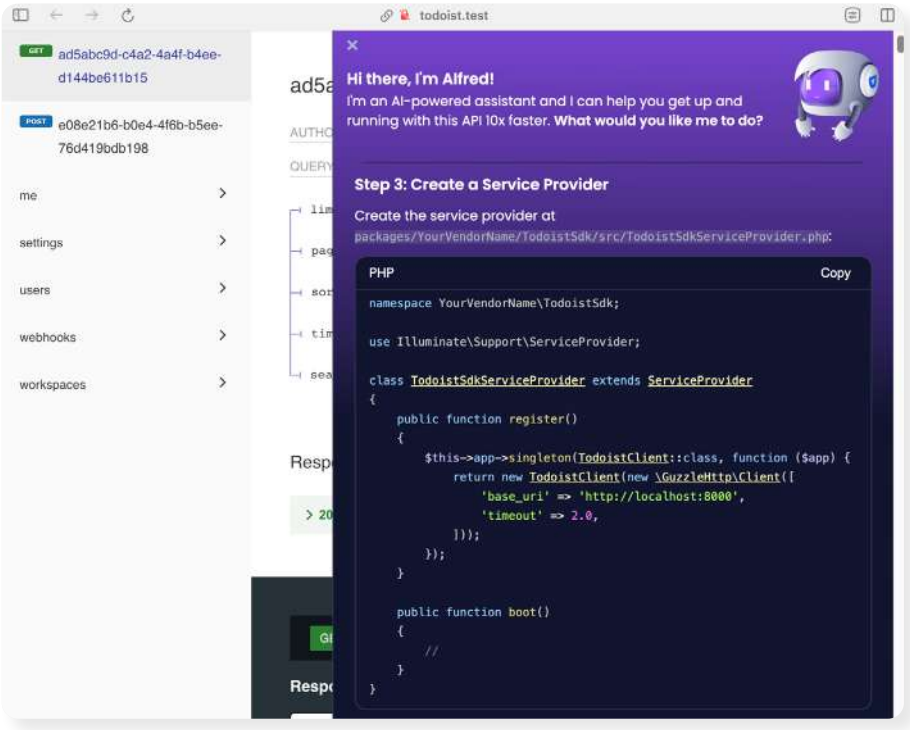
01 Planning

This is the phase where revenue-focused teams and engineers sit together and follow a “design-first” approach to define the end-use case of the API. This helps the engineering team **set the right base for development** to ensure optimal API experience.

02 Designing

This is the stage where API architecture is defined based on inputs from the planning phase. This is the phase where developers begin to code the backend logic.

To speed up the API design phase, you can leverage Treblle’s AI-powered **API assistant, Alfred**. Alfred generates integrations, tests, or SDKs in any language to help you speed up your API design process.



Screenshot of Alfred in Action

Implementation

API implementation is the second most crucial step in the API lifecycle program. Enabling hundreds, and thousands of APIs to be connected down to a backend and **connected to each other is the key**.

We recommend approaching it in a systematic manner (as opposed to point-to-point code). One of the sub-phases here is testing which focuses on verifying the functionality, reliability, performance, and security of APIs locally to ensure they function properly and meet all regulatory requirements.

Treblle **offers a free API testing tool, Aspen**, which lets you test your APIs locally without even signing up. You can simply put in the parameters you want to test and get results in less than a second.

Management

The last phase of the API lifecycle journey is management. It consists of five sub-phases, namely; **secure, deploy, monitor, troubleshoot, and manage.**

01 ▸ Secure

This phase focuses on ensuring that APIs are protected against unauthorized access, data breaches, and other security threats. This involves implementing robust authentication mechanisms, encryption protocols, and access controls to safeguard sensitive data and prevent malicious attacks.

Treblle offers **automated API Security checks** on every request, identifying potential vulnerabilities and assigning threat levels (Low, Medium, High). This proactive approach ensures that your APIs are safeguarded against various threats, including unauthorized access, injection attacks, and data breaches.

02 ▸ Deploy

This phase focuses on releasing APIs into production environments. It involves tasks such as version control, configuration management, and deployment automation to ensure that APIs are deployed reliably, consistently, and efficiently.

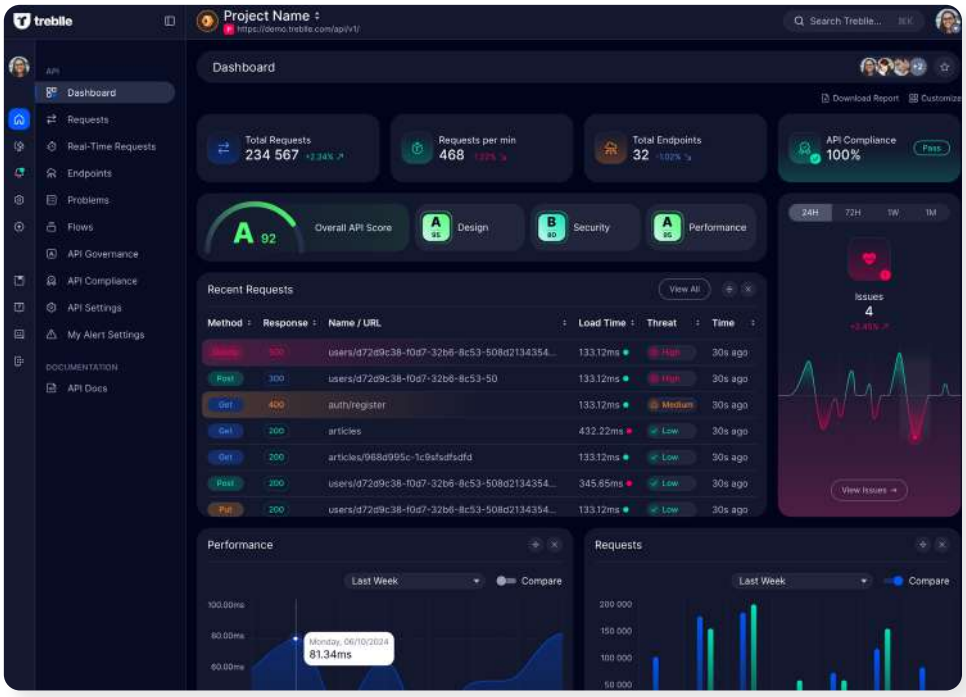
While Treblle doesn't directly help you in deploying your APIs, we do assist you in doing it more quickly and efficiently. Treblle's **automated documentation** capability simplifies deployment tasks while ensuring that stakeholders have access to up-to-date API documentation with each release.

Treblle helps you maintain compatibility across different API versions to enhance the developer experience and minimize disruptions.

03 ▸ Monitor

Monitoring APIs is essential to track their performance, availability, and usage metrics in real time. This phase involves setting up monitoring tools and dashboards to monitor key performance indicators (KPIs), detect anomalies, and proactively identify and address issues that may impact API functionality and user experience.

Treblle helps you get **real-time insights into API performance**, usage patterns, and potential issues. It also allows you to monitor key metrics such as average load time, requests per day, error rates, geological information, and more to proactively identify and address performance bottlenecks.



Screenshot of the Treblle dashboard

04 ▸ Troubleshoot

Troubleshooting is a critical aspect of API management that involves identifying, diagnosing, and resolving issues and errors that arise during API usage.

Treblle, being an all-in-one APIOps tool, offers an **API observability** feature that gives you logs, metrics, and trace data about the errors in your APIs so you can debug issues faster and improve your mean time to resolve (MTTR).

05 ▸ Manage

This last phase encompasses various activities, including API versioning, documentation, governance, and performance optimization.

This phase involves managing API lifecycles from design and development to retirement, ensuring compliance with standards, optimizing API performance, and aligning APIs with business goals and objectives.

Treblle, along with the above-mentioned features also offers **API governance** which scores your API based on industry standards. This score helps you compare your API's code quality and security.

Challenges of API Lifecycle Management

Here are some of the major challenges associated with API lifecycle management along with potential solutions to overcome them:

01 Versioning

Any new version can potentially break your end users' experience if developers don't ensure API stability. Some new versions are seamless and don't require any major changes while some versions require changes and updates in the API interface along with proper documentation.

Using managed solutions like Treblle, and Postman or open-source solutions like Laminas can **help you take the manual documentation off** your plate.

02 Security

APIs expose sensitive business data. Businesses must provide secure interfaces for API users to interact with APIs that protect this data.

While Treblle, can not offer you a portal to allow access to your APIs to your client, what it does offer is allowing you to monitor how your clients are using your APIs. It also **helps you detect unnatural API calls and unwanted consumption**.

Alternatively, you can also check out other solutions like Akamai, Postman, and Traceable. These tools offer API security as a by-product of their main platform.

03 Documentation

One of the most time-consuming processes of any API development process is documentation. Documentation helps the consuming developers understand the functionality and application of the API.

Luckily, with tools like Treblle, his **tasks can be automated**. With our auto-documentation feature, you can auto-generate the docs, SDKs, and other important things.

04 Governance

Governance ensures that your API adheres to best practices and standards. It goes beyond just design consistency to include all standardization practices for the API throughout the API lifecycle, from design, development, and monitoring, to troubleshooting.

Treblle also offers you an API Governance score which **benchmarks your API against industry standards for performance, security, and quality**.

MuleSoft, Apidog, and Postman are some other vendors that also offer API governance.

05 Scalability

The scalability of an API is defined by its ability to support increased API usage without sacrificing performance.

One of the ways to test the scalability of your APIs is to stress test it in pre-production for the potential load it will witness in production.

Treblle's Aspen **can help you test your APIs locally and in production**.

06 Analytics

Analytics are the foremost important element for senior engineering management folks. Analytics gives you a high-level overview of the current state of your APIs, their performance, their errors, and more in one unified dashboard.

Treblle **lets you build your own custom dashboard** to keep track of metrics that matter for your business. Alternatively, you can use tools like SwaggerHub, Kong, and Postman for this purpose.

Best practices in API lifecycle Management

Following are some of the best practices you need to follow to make your API lifecycle management program a success:

Don’t cut corners in the Design Phase

One of the major reasons behind failure of the most API lifecycle programs is teams cutting corners over the planning and design phase. Before writing a single line of code, **ensure the API’s business objectives are fully articulated**. The design phase produces functional and non-functional requirements, data models, and an API style guide. All of these will help you create APIs that foster a better user experience.

Choose the right API Management tools

API management tools can help you manage your entire API lifecycle. But, it’s really important to choose the right tool based on your business requirements. Ideally, we recommend evaluating an **API management tool based on these factors**:

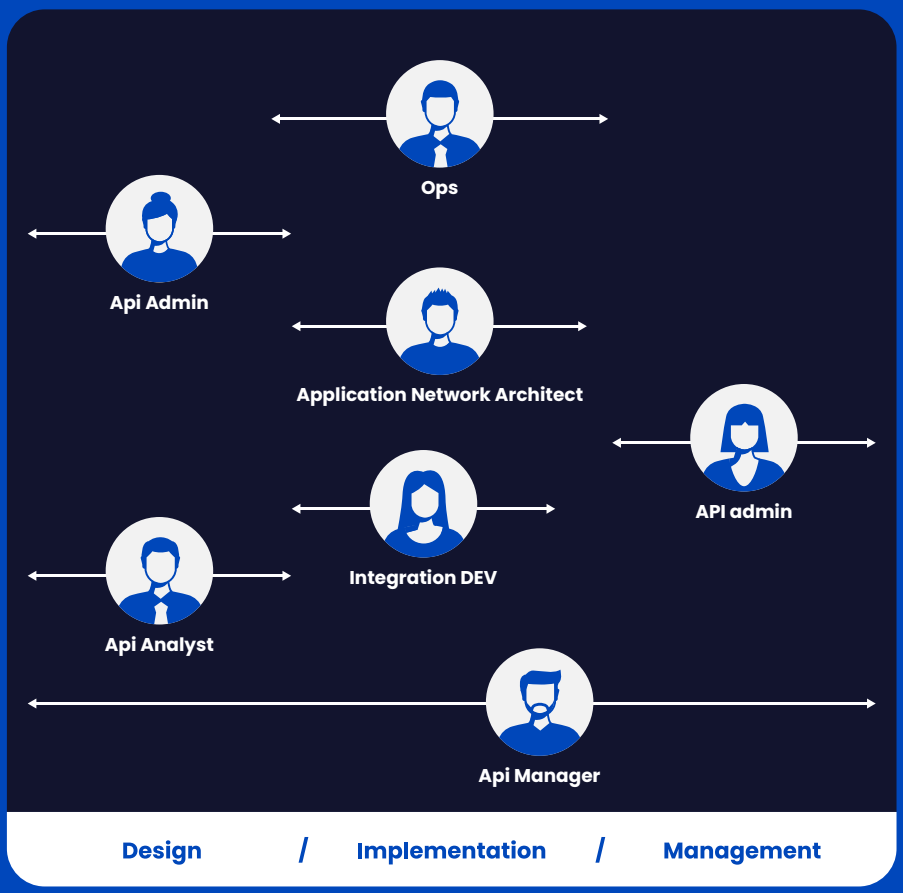
- Your API goals and requirements.
- The tool’s architecture and integration.
- The tool’s features and functionality.
- The tool’s pricing and licensing.

Evaluating a tool based on these factors will help you make an informed decision.

Assign a dedicated API Development Team

Having a dedicated API development team can **allow businesses to build and maintain their APIs** while ensuring consistency through a governance program.

An API development team generally contains many people responsible for accessing and managing APIs. Here’s a visual representation of the involvement of multiple teams during the API lifecycle.



Prioritize Mobile Friendliness

While building APIs, ensure that your team follows the **"mobile-first" philosophy** (similar to responsive web design). An API governance score can help you ensure that your API components consistently support the API's usage for mobile development.

Monetize Legacy Services

Businesses have the opportunity to generate revenue from their existing backend services by making them accessible via public web services. API lifecycle management facilitates this transformation through a change in perspective.

Previously, these services might not have been utilized as they were not considered as "products" with lifecycles.

However, with the rise of public APIs, businesses are now able to transform these legacy services into marketable products. By treating these services like standard software, businesses can continuously **improve their APIs based on user feedback**, ensuring they evolve effectively over time.

Treblle: An End-To-End API Lifecycle Management Tool

Treblle is an end-to-end API management tool that helps you manage your entire API lifecycle with ease. To sum it up for you, here are the major features that Treblle offers and how they help you manage your API lifecycle:

01

API Assistance

Treblle's Alfred, an AI-powered API assistant lets you speed up your API design phase so you can focus more on what matters more for your business.

02

API Documentation

Treblle takes the manual documentation process off your plate so your team can focus on building and delivering amazing API experiences instead of manually writing API docs with every new release.

03

API Testing

Treblle offers Aspen, an API testing tool that lets you test your APIs locally. Aspen is completely free. Simply put in the parameters you want to test and get results in less than a second.

04

API Security

Treblle helps you keep your APIs safe by doing 15 security checks on every single API request and gives it one of three threat levels: Low, Medium, or High.

05

API Observability

Get logs, metrics, and traces about your APIs so you can manage them better. Treblle analyzes 40+ different API-specific data points across every single request.

06

API Governance

Treblle helps you ensure that your API adheres to best practices and standards. Get scores for your API's quality, security, and performance, and download auto-generated governance reports in PDF.

07

API Analytics:

Treblle lets you create a fully customizable dashboard (with simple drag and drop) to keep an eye on the metrics that matter for your business.

Closing Thoughts

When it comes to API lifecycle management, **success comes from using the right tools and strategies for each phase.**

By embracing best practices, leveraging the right tools, adopting automation, prioritizing security, and fostering collaboration, **you can unlock new possibilities and deliver exceptional API experiences that drive business growth and customer satisfaction**.

Remember, API management is not just about tools; it's about mindset, strategy, and continuous improvement. And if you're curious about **how Treblle can help**, get in touch with us and we can show you exactly how.

Get in touch!