Application Performance Management

Product Introduction

Product Documentation

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Product Introduction

Overview

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Application Performance Management (APM) offers performance analysis and automatic troubleshooting capabilities for distributed application architectures. With APM, you can collect data and monitor your different applications in real time, helping you guarantee the stability and availability of your complex business system. In this way, you can quickly locate performance problems, shorten the mean time to repair (MTTR), stay up to date with the application performance, and improve the user experience.
APM is developed based on the open-source OpenTracing protocol and supports a wide variety of frameworks and programming languages for you to easily monitor the application performance at one stop.
Note:
OpenTracing is a platform-independent, vendor-neutral API tool for distributed tracing. Under its open tracing specifications, you can add or replace tracing systems arbitrarily.

Benefits

Out-of-the-box service

Monitor your application out of the box with non-intrusive probes, with no business/code logic modifications and configurations needed.

High compatibility

Enjoy good compatibility with the OpenTracing protocol and many open-source components to leverage the experience of global developers.
Cover popular programming languages such as Java, Go, Python, C++, and PHP, with more to come.

Multidimensional drill-down analysis

Continuously observe the calls of each service, API, and service instance and discover the call data of the middleware in the corresponding systems.
Easily stay informed of the system running status in various dimensions and drill down based on key monitoring metrics like throughput, response time, and error rate.

Open-source compatibility

Migrate your monitoring service from SkyWalking and Jaeger to APM by simply modifying data reporting configurations. APM supports protocols in diverse programming languages and is compatible with OpenTracing, a

widely used standard in the industry. This eliminates the need for complicated Ops and reduces development costs.

High stability and reliability

Enjoy stable and reliable tracing capabilities based on Tencent Cloud's big data capabilities and many years of experience in microservice monitoring and tracing.

Features

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Call Tracing

Multidimensional trace query

APM supports filtering call traces by API, response time, sampling time, error status, and duration. It helps you quickly locate database query traces containing specific exception information among massive amounts of trace data and then swiftly troubleshoot errors.

One-Stop call trace analysis

APM's tracing feature can automatically build the complete path of each request across services in a microservice architecture. It collects diverse information from request parameters, transaction data, errors, and exceptions to method stacks and underlying instance environment information, enabling full-trace analysis from one platform and improving the troubleshooting efficiency. This solves troubleshooting challenges like difficult aggregation of scattered logs in non-standard formats as well as difficulties in associating upstream/downstream service logs.

Application Performance Analysis

Automatic discovery of application dependency topology

APM automatically discovers application logic topologies through the distributed call tracing model and then draws global topologies at the application level. This visually displays complex dependencies between applications and enables you to quickly locate application or component bottlenecks through real-time data drill-down and smart application status analysis. APM can also display the upstream/downstream dependencies of an application to show how the upstream load may affect downstream services, so that you can comprehensively analyze the health status and performance metrics of the application.

Top N API analysis

On top of the three golden metrics of application monitoring, APM adds Apdex metrics to scientifically evaluate the user satisfaction. By leveraging the rich experience of TCOP in visual reports, it further allows you to flexibly switch between comparison curves and accurately determine application conditions and change trends. In addition, it intelligently monitors the top 5 time-consuming or erroneous APIs to help you troubleshoot issues fast and focus more on your users, so you can accurately track the performance of your applications.

Multidimensional analysis

APM actively aggregates performance and exception metrics in various dimensions such as API, exception, and database call to help you swiftly identify slow APIs, SQL statements, and frequent exceptions. By leveraging the quick trace drill-down feature, you can greatly shorten the MTTR.

Database Call Monitoring

APM can comprehensively monitor many types of databases such as MySQL, Oracle, MongoDB, and Redis. It automatically collects the database performance metrics relevant to the business system, helping you stay on top of slow SQL statements, calls, and read performance in your database and accurately locate database performance problems.

Use Cases

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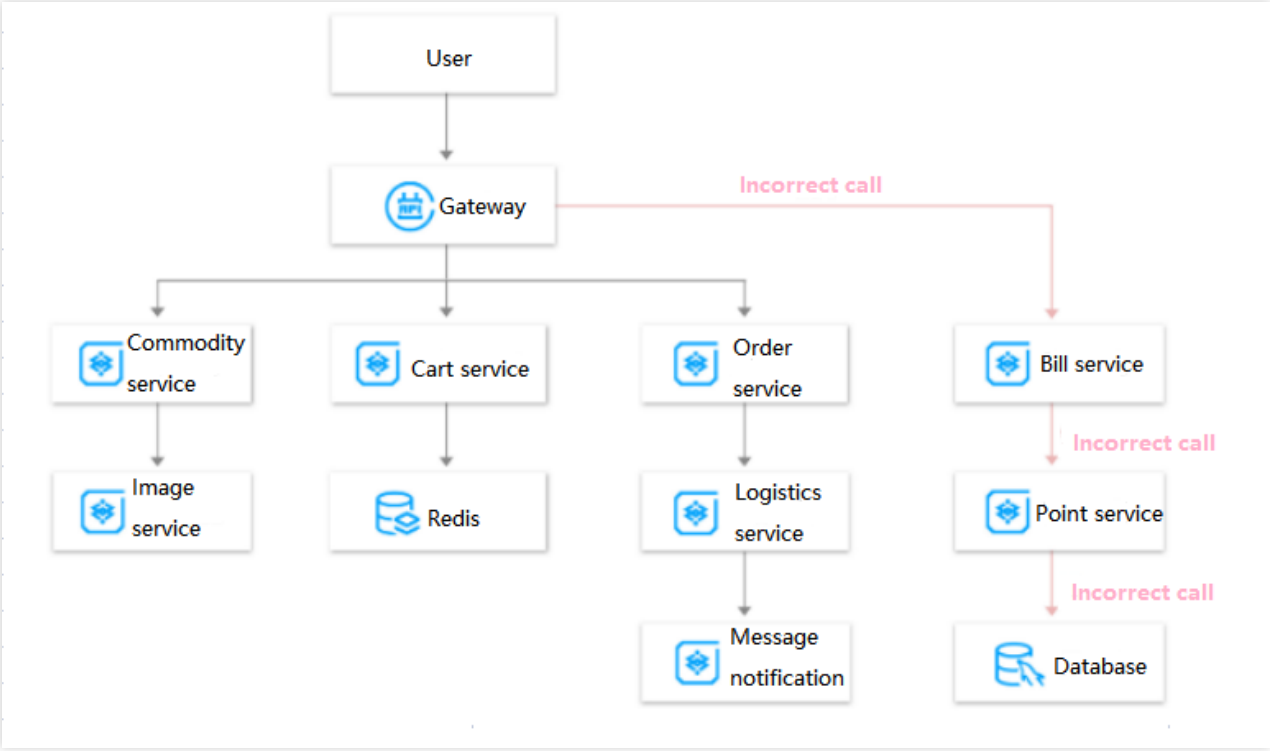
Locating Performance Bottlenecks

Challenges

As the business grows, the business logic and service call become increasingly complicated, making it harder to analyze and locate application performance problems and bringing huge challenges to monitoring and Ops:
Dependencies between applications are complicated and hard to sort out.
Call traces are too long to easily locate and troubleshoot problems.
API and database call relationships are complex and difficult to manage.

Solutions

APM locates performance bottlenecks through automatic application topology discovery.
It optimizes the application performance based on key performance metric comparison.
It allows you to configure alarms for metric changes and detect exceptions promptly.



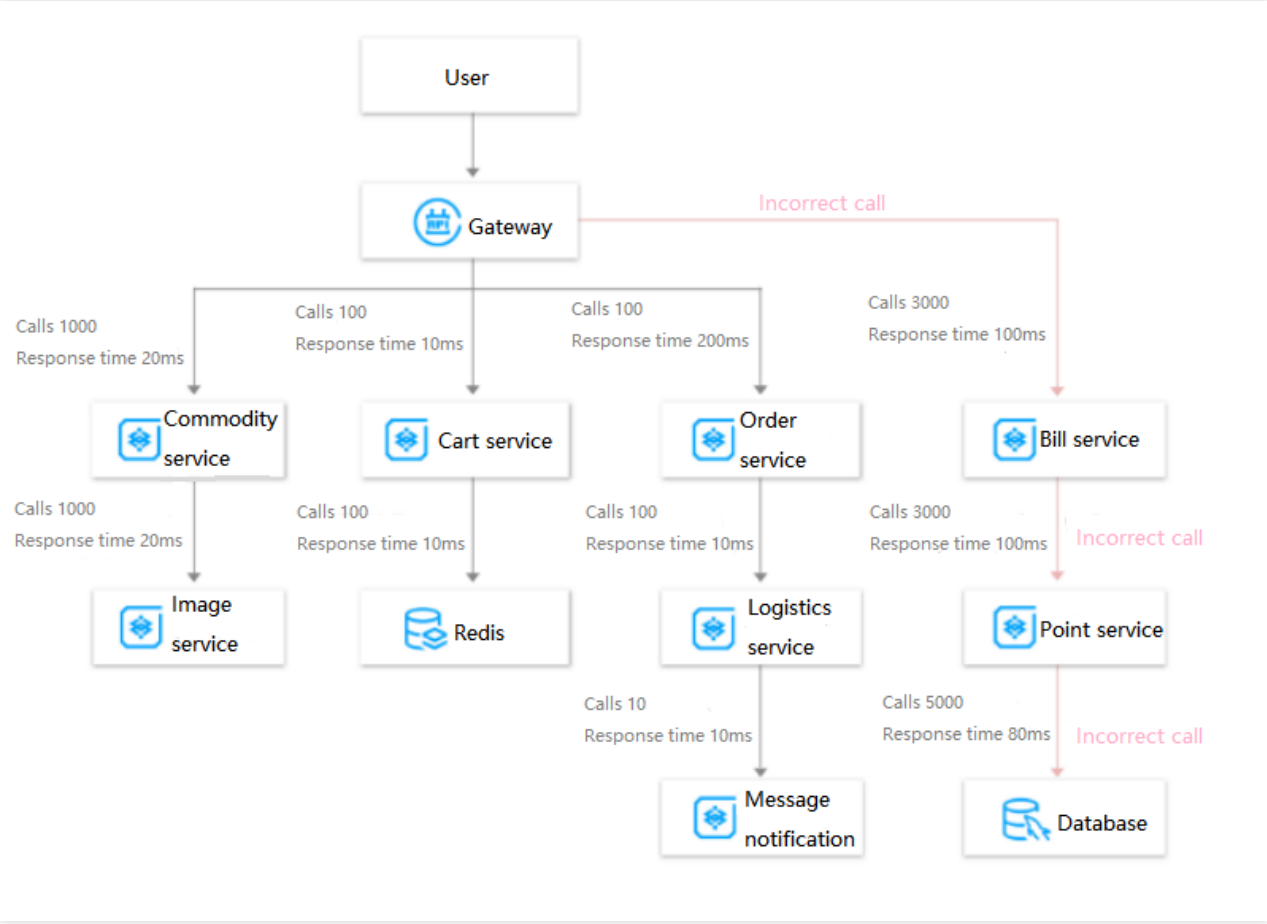
Optimizing Application Performance and User Experience

Challenges

When the business volume increases suddenly, various issues may occur, such as slow cross-application calls and API loading, resulting in a poor user experience. The complexity of cross-application calls makes it hard to analyze application performance issues.

Solutions

APM offers the dependency topology feature. You can analyze the number and duration of calls of each application to identify services with high load and low load and then reasonably allocate resources.
APM aggregates and summarizes all call information to analyze the calls and responses of each application.
It enables you to quickly discover critical service paths and API paths in the entire system call topology.
It helps you identify unreasonable calls such as frequent database operations and dependency loops.



Strengths

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