`Case Study`

APImetrics use by New Zealand's Ministry of Business, Innovation and Employment

BACKGROUND

The Ministry of Business, Innovation and Employment (MBIE) is the government's lead business-facing agency. Its purpose is to grow the New Zealand economy to provide a better standard of living for all New Zealanders.

Some of MBIE's main public-facing operational responsibilities[1] include:

▶ Provide company registration, intellectual property and insolvency services Regulate the supply and use of radio spectrum, electricity and gas

▶ Provide and enforce consumer, commercial and occupational regulatory frameworks

▶ Deliver immigration services and policy

▶ Lead the Government's health and safety reform programme

▶ Advise on and support employment relations and enforce minimum employment standards

▶ Lead the Government Centre for Dispute Resolution

MBIE and its preceding agencies have been providing public APIs since 2002. It has recognised that APIs are an important method for delivering services and is increasing its efforts in supporting and promoting existing APIs, and providing new and improved APIs across a variety of business areas.

MBIE operates an outsourced ICT model and has a range of vendors responsible for API delivery. There are various layers of monitoring and reporting available from these vendors, but it was felt that independent external monitoring would provide richer information on how its APIs perform from a customer perspective.

Since mid-2015 MBIE has subscribed to APImetrics as the independent API monitoring service.

MBIE'S API MONITORING REQUIREMENTS

MBIE needed external monitoring of some of its key APIs (see https://www.mbie.govt.nz/ for a list of APIs provided by MBIE). The key requirements were:

▶ Ability to get notification of issues in production and test environments

▶ Support for SOAP and REST APIs

▶ Reporting on API performance

▶ Ability to monitor from regional and international locations

▶ Ability to have multiple users under one account

[1] See https://www.mbie.govt.nz/ for a more complete list of roles and responsibilities

USE OF APIMETRICS

MBIE evaluated several cloud services for API monitoring and found APImetrics the best fit for these requirements.

During the initial trial period the APImetrics team were very responsive to questions and proactively made contact with MBIE to provide assistance and training. This, combined with their comprehensive documentation, helped ensure that the capabilities of the product were well understood and that monitoring was set up to provide maximum effectiveness.

MBIE currently has ten different API calls set up in APImetrics to provide targeted testing of API platforms and key services. Each API has at least three deployments to different international locations and hosts (Google, AWS, Azure, and Softlayer). The number of API calls will grow when a new MBIE API platform is launched in July 2016 and as more individual APIs are monitored for performance.

API CALLS FOR DIFFERENT API TYPES

MBIE uses a number of legacy API technologies and is working on consolidating these to a single main API platform over time. APImetrics has the level of support needed to set up tests against MBIE's SOAP and REST services, using different authentication schemes including basic authentication, OAuth1, OAuth2, and WS-Security.

How APImetrics Works
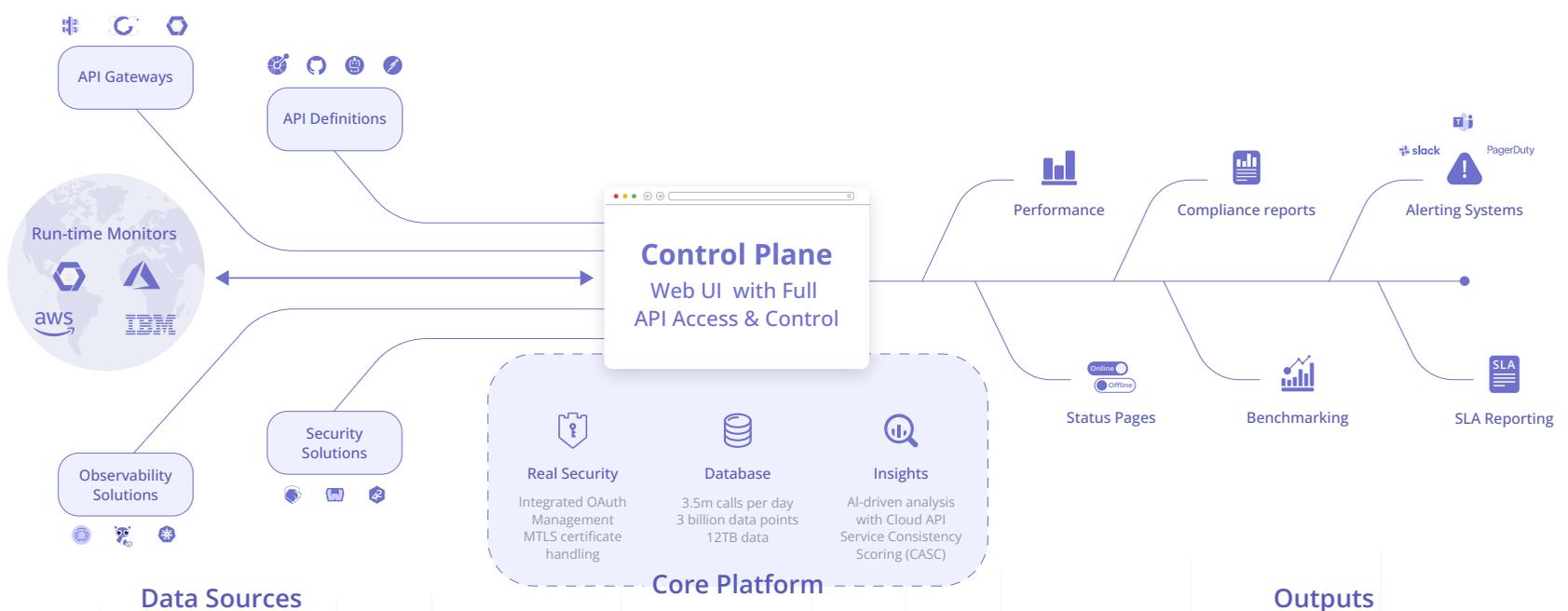
OUTAGE MONITORING

MBIE needs to know as early as possible when there are any outages with its API platforms and APIs, preferably before customers or vendors have to notify that there is a problem. APImetrics provides flexible deployment frequencies and alert settings on each API deployment, which allows MBIE to tailor the alerting for each scenario being monitored.

Higher priority APIs are set up with multiple deployments each running at a 10 or 15 minute frequency, with call times offset so that there is a call being made to the API every three to five minutes. Alerts for these are sent to a specified email address when any failure is received.

Lower priority APIs or test environment versions of APIs are called at a lower frequency and alerts are set up to be sent only when multiple failures in a row are encountered.

Deployments are always set up to originate from different geographical locations and hosts to ensure that problems at the host side can be identified, while allowing monitoring to continue from other locations.

API calls are configured to test for particular response conditions to confirm whether the call was successful or not. APImetrics allows for various conditions to be tested, including HTTP status, header and body content, and response time and size.

These features allow MBIE to set up suitable business monitoring for outages without receiving many false positive alerts.

PERFORMANCE MONITORING AND REPORTING

MBIE includes API performance monitoring sections in internal reports for management. The standard reports that are generated from APImetrics are a suitable form to include without modification.

The reports and dashboards in APImetrics provide a clear visual representation of API performance including pass rates, latency, and whether performance has improved or degraded between reporting periods.

The information in these reports and in the new Insights section is being used by MBIE to baseline performance of current APIs as a comparison for when the new API platform is introduced into production use. This information will also be used to set performance SLAs with MBIE customers in future. Current customer agreements are focussed around legal terms and conditions, with no detail of service availability and performance. APImetrics reporting will ensure that achievable targets are set and can be reported on.

The impact of a customer's geographical location can be easily seen when looking at performance of MBIE APIs from regional locations in the Asia-Pacific area compared to Europe and the United States. The API Insights function visually shows that there is significant additional latency added for the more distant locations, which help with understanding customer issues with MBIE APIs.

APImetrics also offers capabilities for information collation that MBIE intends to use in future after its new API platform is bedded in. This includes the use of an API to retrieve performance data from MBIE's API calls and webhooks for receiving data. These features will allow improved ability to collate APImetrics data for display and analysis alongside other MBIE system reporting.

CONCLUSION

MBIE has found APImetrics to be a very successful tool. The alerting and performance monitoring capabilities have given very useful information to operational teams.

There is still capability that MBIE hasn't yet utilised and it's planned to take advantage of this, and increase the use of APImetrics across a more complete range of APIs, as its API programme grows further.

FEATURES

CORE FEATURES

Security
- ▶ Integrated OAuth handler inc. JWT support
- ▶ FIPS140 compliant HSM & MTLS support
- ▶ Automated token refresh

Importer
- ▶ Postman Newman runner
- ▶ OAI importer
- ▶ cURL importer

Scheduler
- ▶ Run API calls at frequencies from 1 per minute
- ▶ 85 different data centers across AWS, Azure, Google and IBM Clouds

Call Types
- ▶ All REST & SOAP APIs supported
- ▶ Individual or multi-step API calls with conditions & assertions set at a call or project level

Data Storage
- ▶ All calls, meta data & returned content stored as long as you're a customer

Network Breakdown
- ▶ All TCP calls steps logged and stored

REPORTING

Quality Scoring
- ▶ Cloud API Service Consistency scoring (CASC)

API Access
- ▶ Full API access to all results and data sets

Insights
- ▶ AI generated performance insights including call outlier detection

Statistical Analysis
- ▶ Graphing, heatmaps and regional performance data sets

Alerting
- ▶ Webhook integration to Teams, Slack and other critical DevOps workflow tools
- ▶ Email alerts

Reporting
- ▶ Custom report builder including groups and public dashboard options

ORGANIZATION AND PROJECT MANAGEMENT

Collection Management
- ▶ Collections arranged by projects with full feature ROLE based management of projects
- ▶ SSO/SAML support

APImetrics Has You Covered

APImetrics provides run-time API governance solutions for organizations offering API services across the Financial Services, Open Banking, Telecoms, Software, and IoT sectors. By enabling a holistic, end-to-end view of performance, quality, and functional issues across the API surface, we allow organizations to better serve their customers and end users.

Our patented technology automates the process of producing regulator-ready reports for financial services providers around the world.
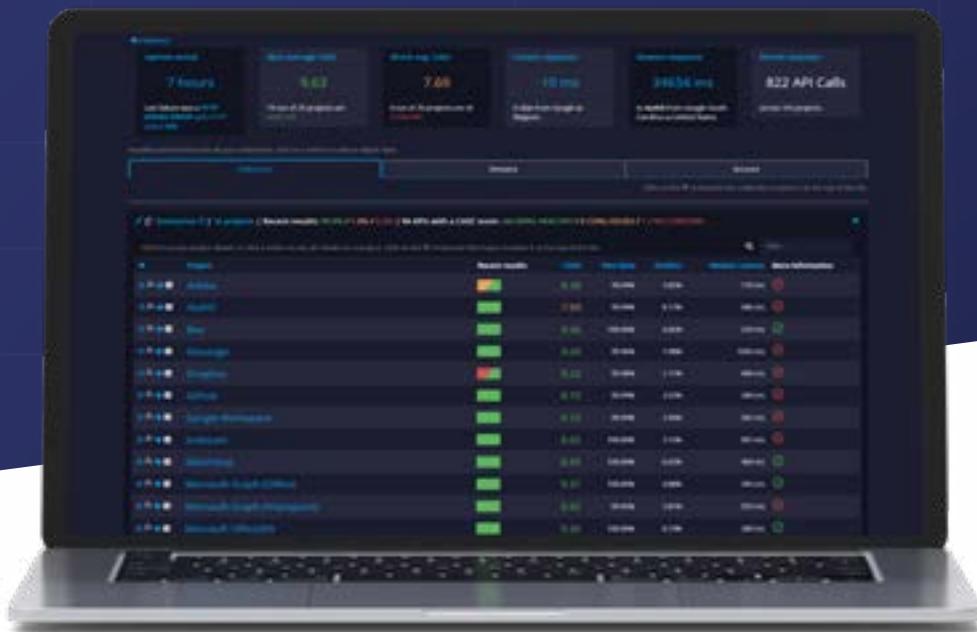
Our active monitoring platform integrates with many of the leading developer operations suites and provides an API-centric view of:

▶ Real-time API performance from more than 80 locations worldwide on four clouds and six continents

▶ Fully integrated security monitoring designed and built for the needs of the financial services industry

▶ Machine learning based analysis driven by a database of more than a billion real API calls

▶ Integrated reporting, analysis, and alerting

▶ 360-degree visibility with Cloud API Service Consistency scoring (CASC), allowing for at-a-glance service and competitor comparisons

Contact Us For A Demo

▶ **To learn more, check out APImetrics and our free performance dashboards at api.expert and @serinusmonitor on Twitter.**

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