

Analytics

Hybrid Integration Enablement

October 2017



KPIs for your APIs

Business

- Gain real-time visibility into API program performance
- Perform trend analysis by tracking metrics over time

API Development

- Response time & performance of the APIs
- Error response codes correlation

Operations

- Scale the infrastructure based on resource utilization requirement
- Monitor API availability and uptime

Analytics Behind the Scenes

Analytics Foundation: Behind the Curtain

A circular icon with a light gray background and a thin white border. The text "Elastic Search" is centered in white.

Elastic Search

A circular icon with a dark navy blue background and a thin white border. The text "Logstash" is centered in white.

Logstash

A circular icon with a light gray background and a thin white border. The text "Kibana" is centered in white.

Kibana

Plenty of Events for Comprehensive Analytics

API Events- *Provides details around API invocations from the gateway*

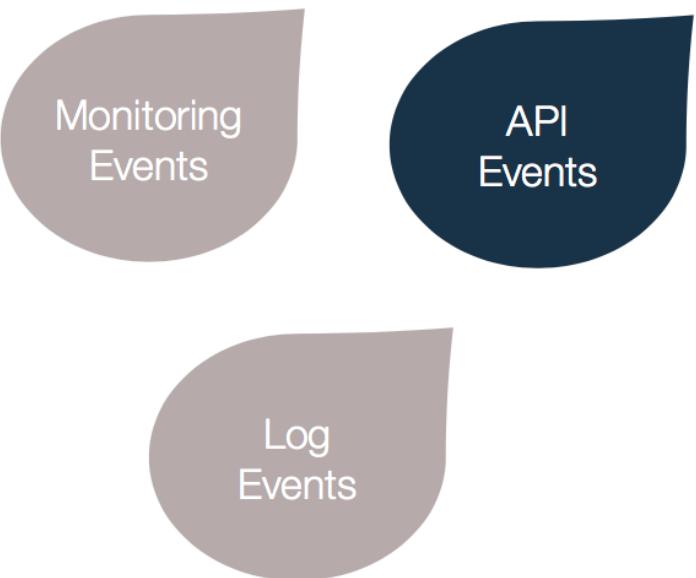
Log Events- *Provides details around logs captured from the gateway*

Monitoring Events- *Provides details around system usage from both gateway and API management nodes*

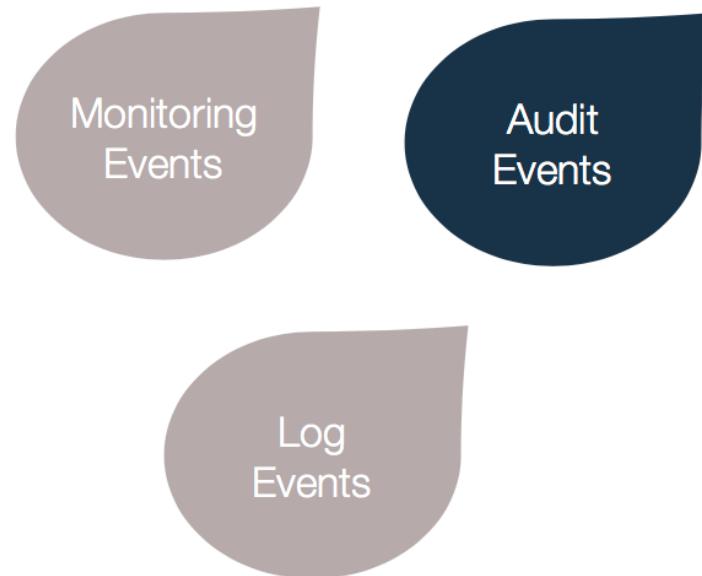
Audit Events- *Provides details around API developer user activity from API management node*

Events Generated By Each Service

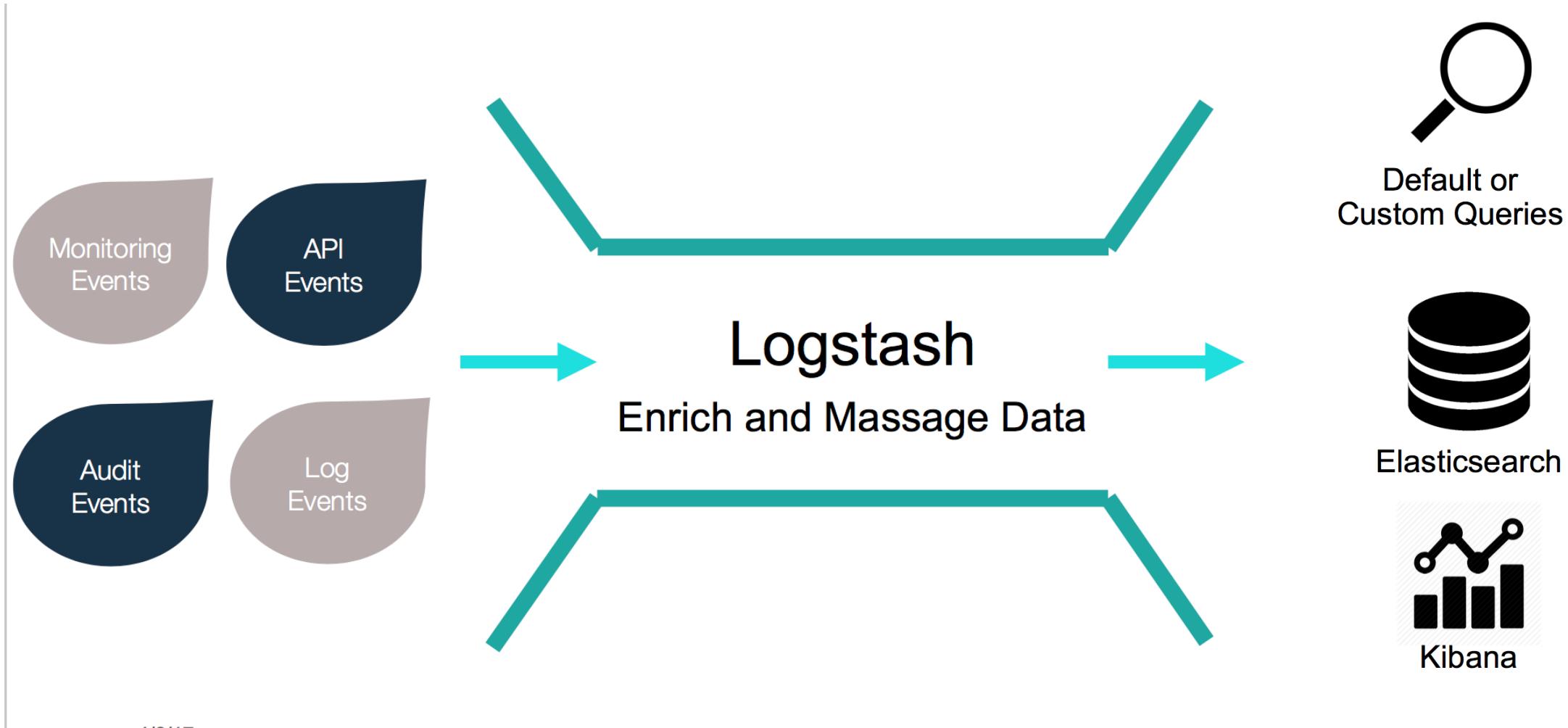
Gateway Service



Management Service



Putting it all together



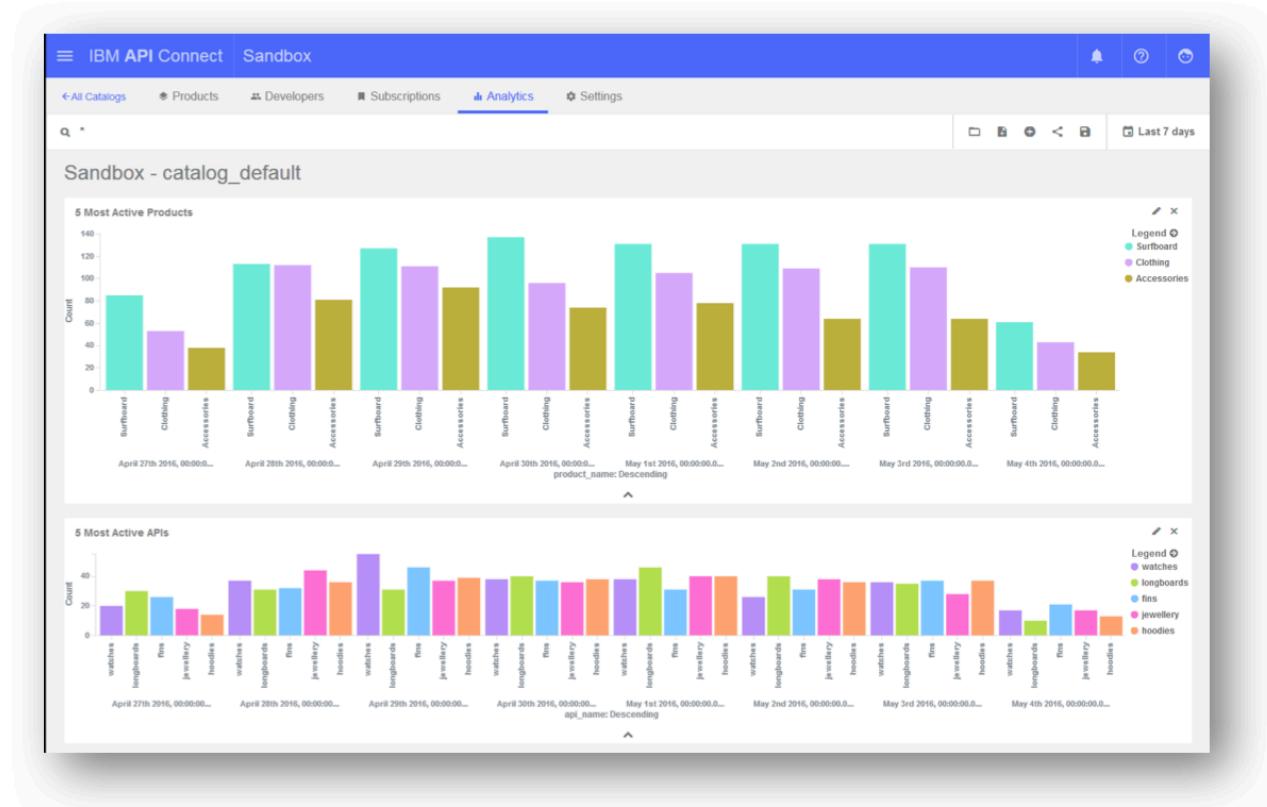
Mapping in to the KPIs

- **API Manager:** for the API Developer and Manager to understand the usage of the various APIs
- **Cloud Console:** focused on providing operational analytics regarding the system's performance
- **Developer Portal:** provides a portal for the App Developer to view their usage for APIs

API Manager Analytics

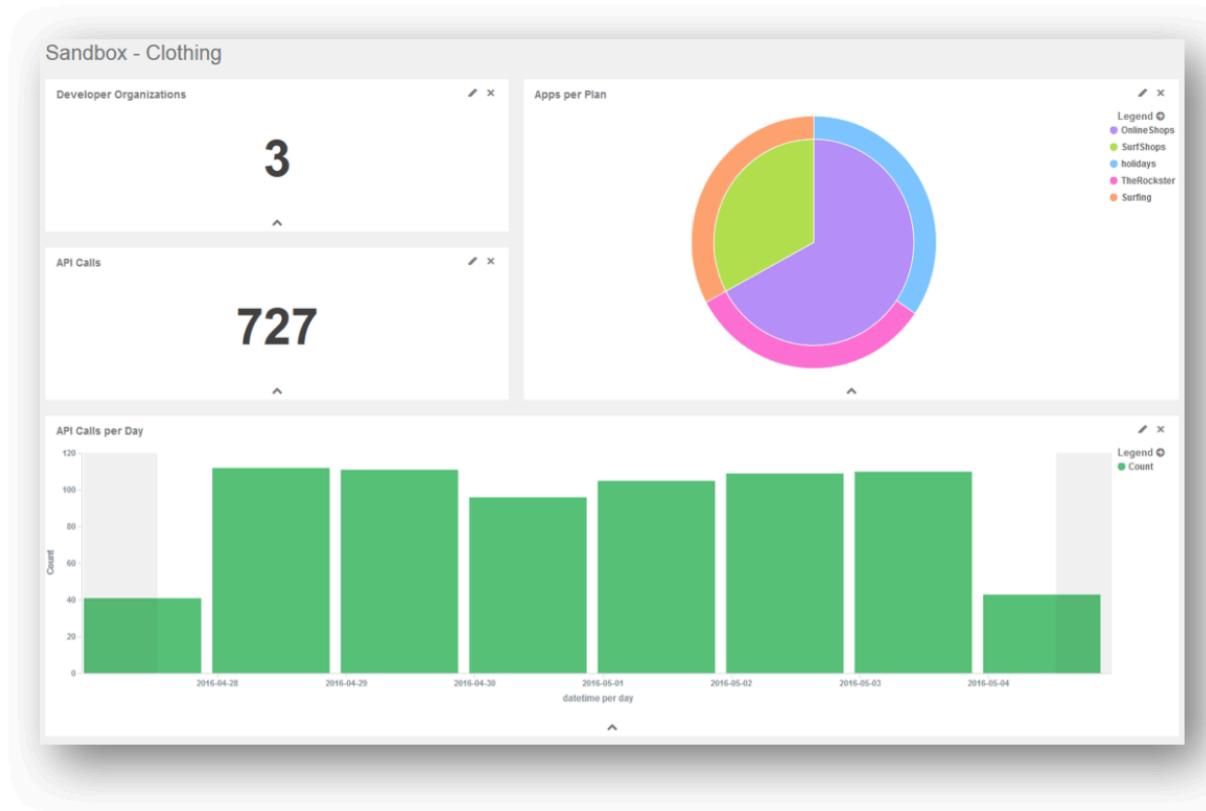
Dashboard

Who & What is Driving my API Business?



Products

*Is my Product's packaging
targeted?*

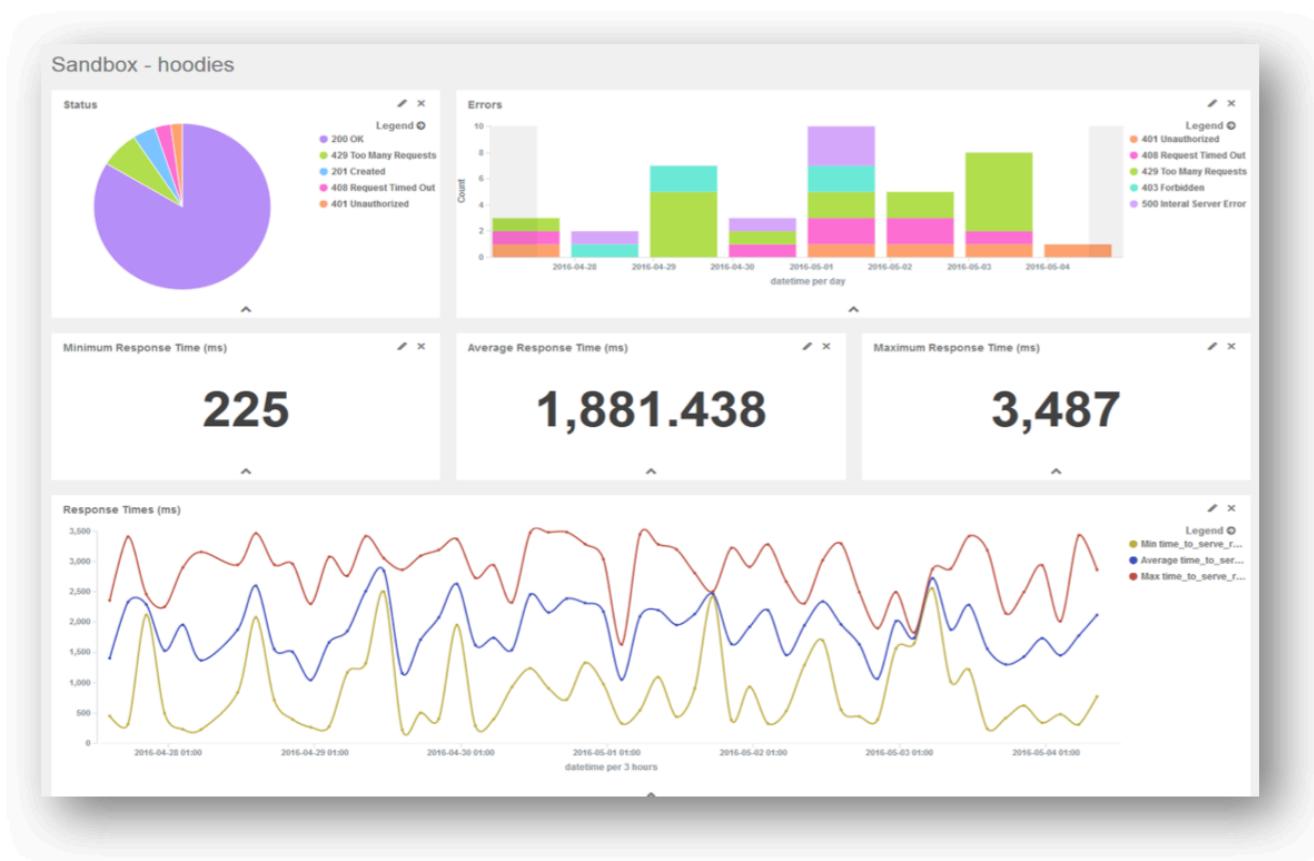


Plans

How effective are the plans in the product?

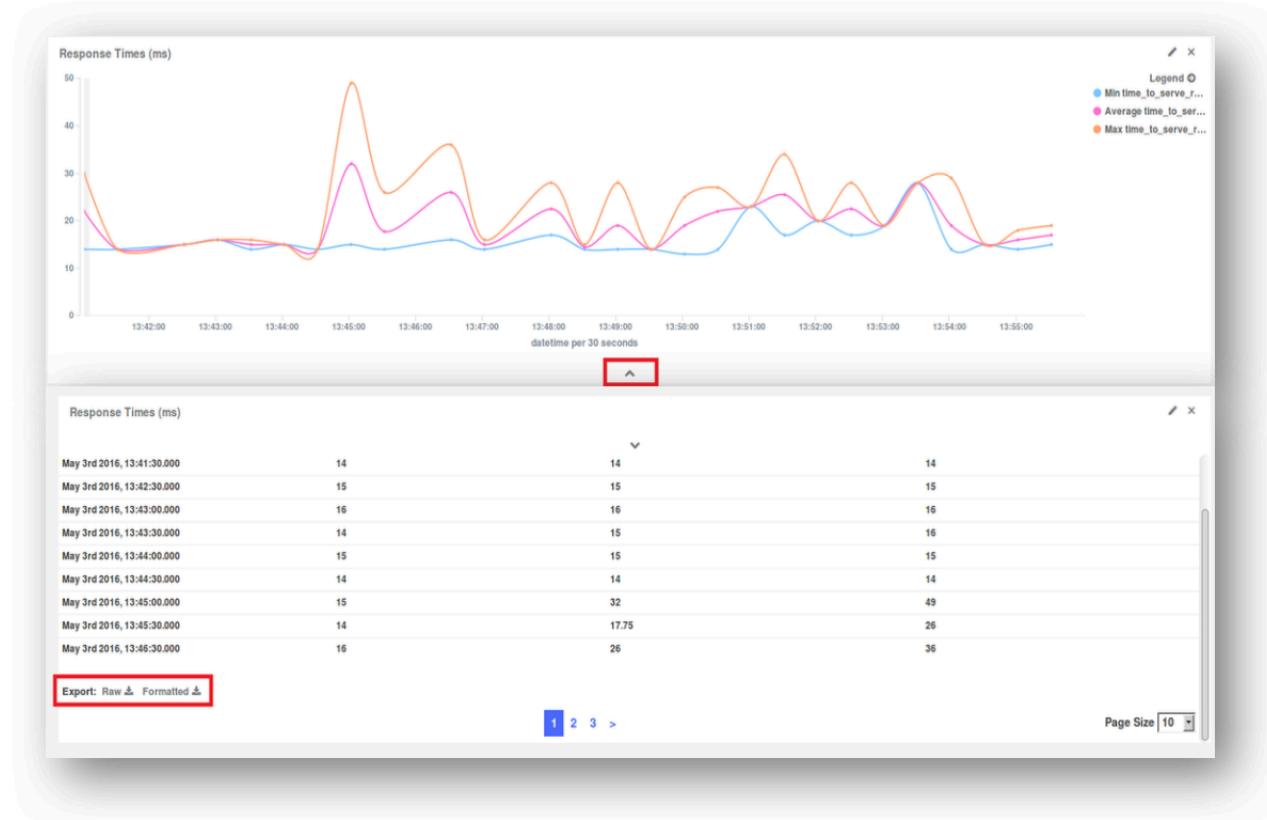


What is the response time of APIs?



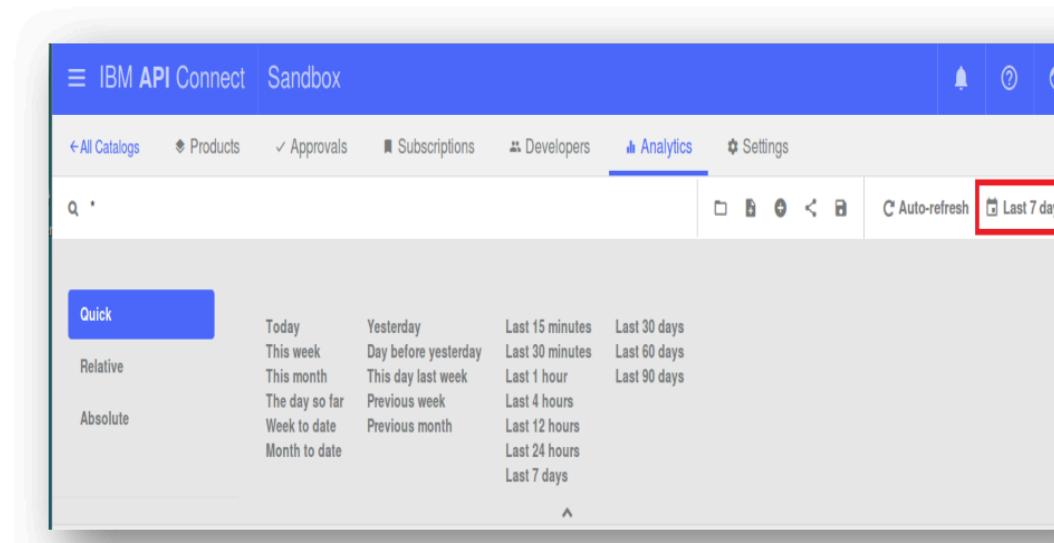
View & Export Tabular Data

View individual API Event Records & export them



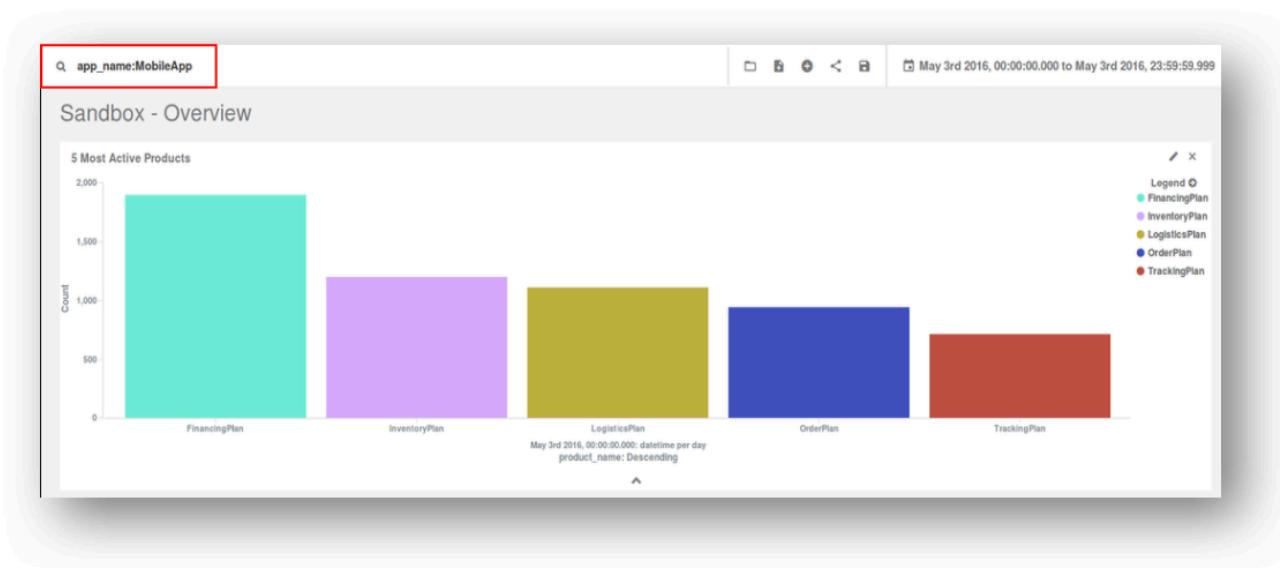
Perform Trend Analysis

View across time horizons to compare & contrast



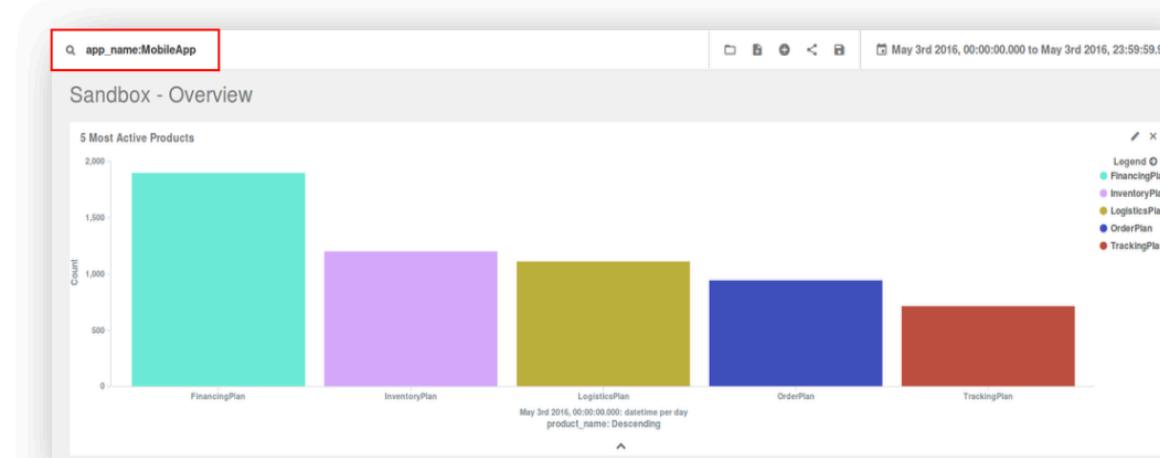
Filter the Results

Filter the results through various parameters. This can be as straightforward as selecting a column in a graph



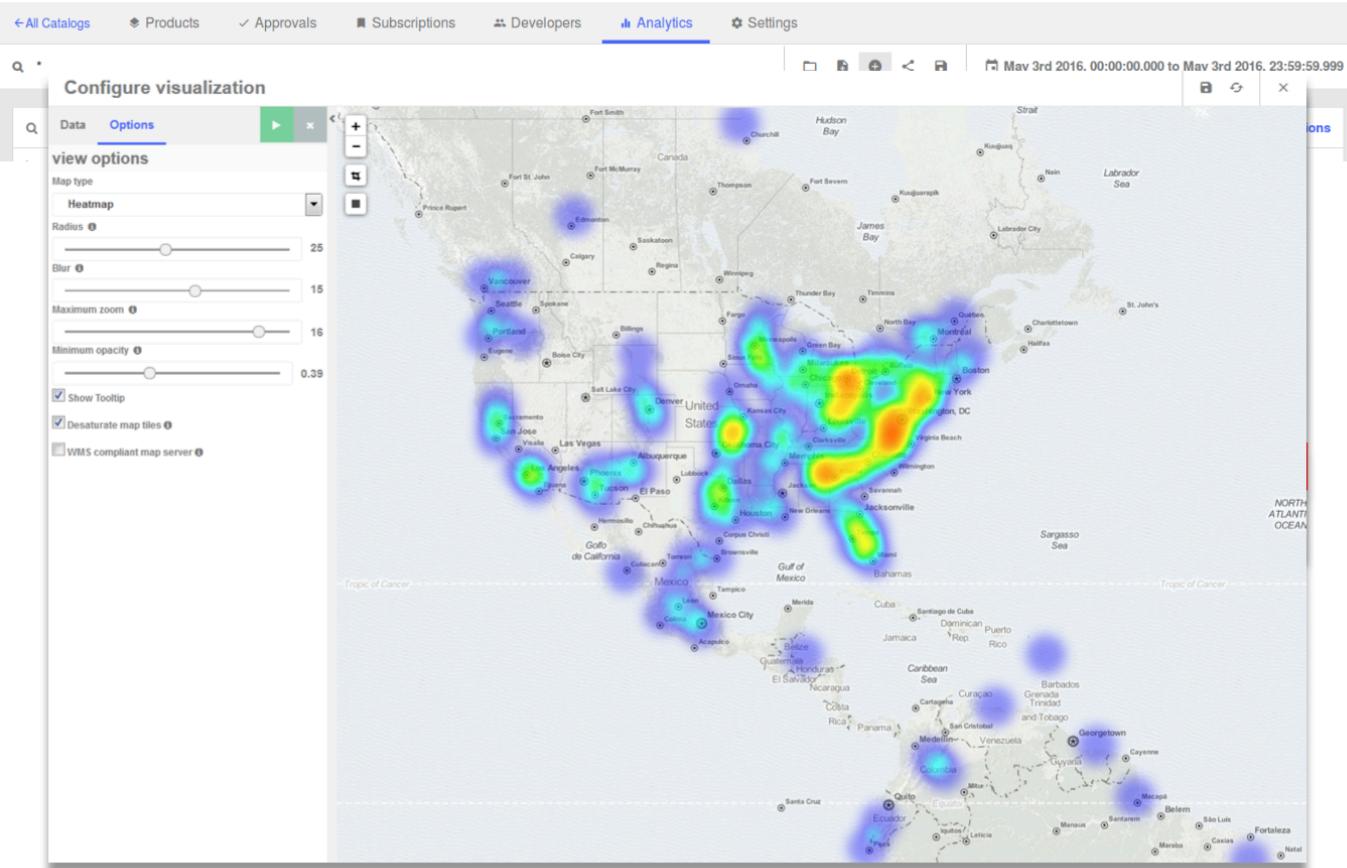
Query your Data

Gather deep insights through complex queries including those on API Payload



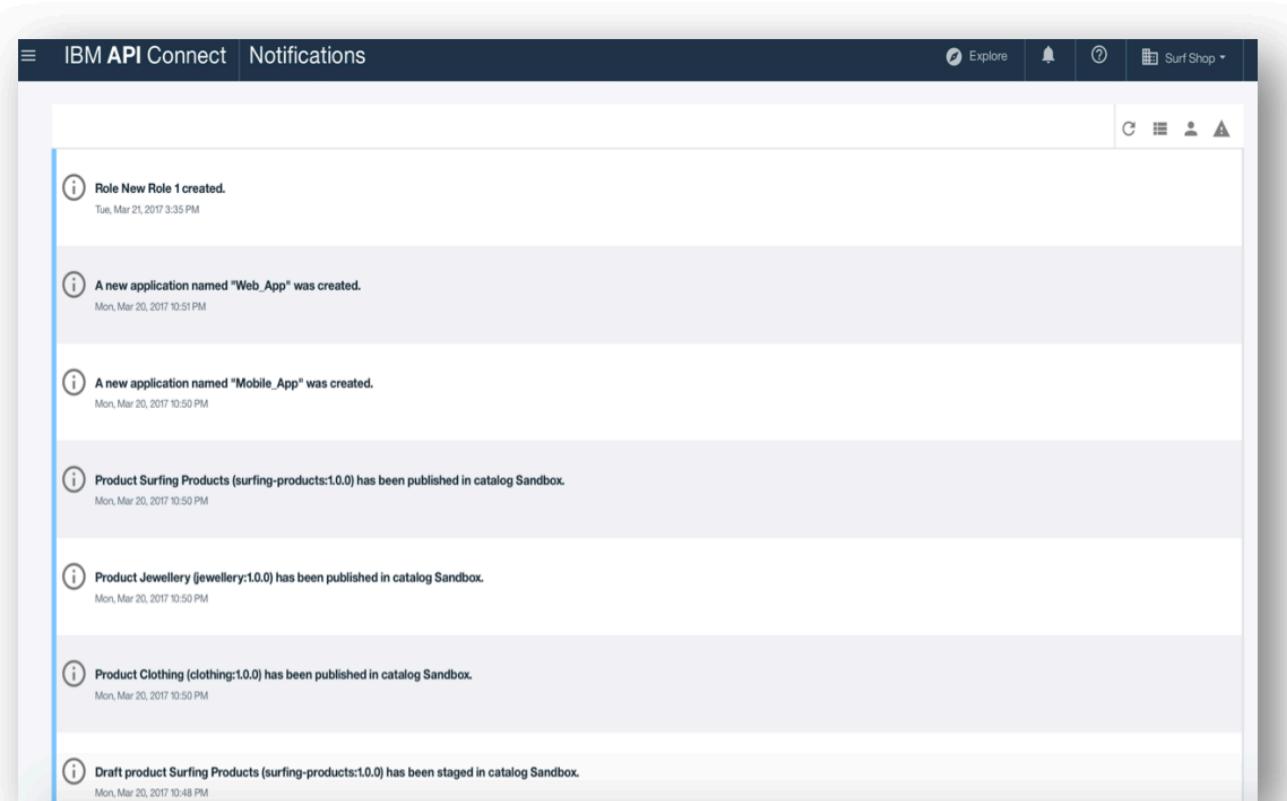
Not Happy with Default Dashboards

*Create your own
custom dashboards &
visualization. Share
them across teams*



Audit Trail

Complete details around who created what and when



The screenshot shows the 'Notifications' section of the IBM API Connect interface. The header includes the IBM API Connect logo, a menu icon, and tabs for 'Notifications' and 'Explore'. On the right, there are icons for 'Explore', 'Surf Shop', and user profile. The main area displays a list of audit log entries:

- Role New Role 1 created. (Tue, Mar 21, 2017 3:35 PM)
- A new application named "Web_App" was created. (Mon, Mar 20, 2017 10:51 PM)
- A new application named "Mobile_App" was created. (Mon, Mar 20, 2017 10:50 PM)
- Product Surfing Products (surfing-products:1.0.0) has been published in catalog Sandbox. (Mon, Mar 20, 2017 10:50 PM)
- Product Jewellery (jewellery:1.0.0) has been published in catalog Sandbox. (Mon, Mar 20, 2017 10:50 PM)
- Product Clothing (clothing:1.0.0) has been published in catalog Sandbox. (Mon, Mar 20, 2017 10:50 PM)
- Draft product Surfing Products (surfing-products:1.0.0) has been staged in catalog Sandbox. (Mon, Mar 20, 2017 10:48 PM)

Role Based Access Control

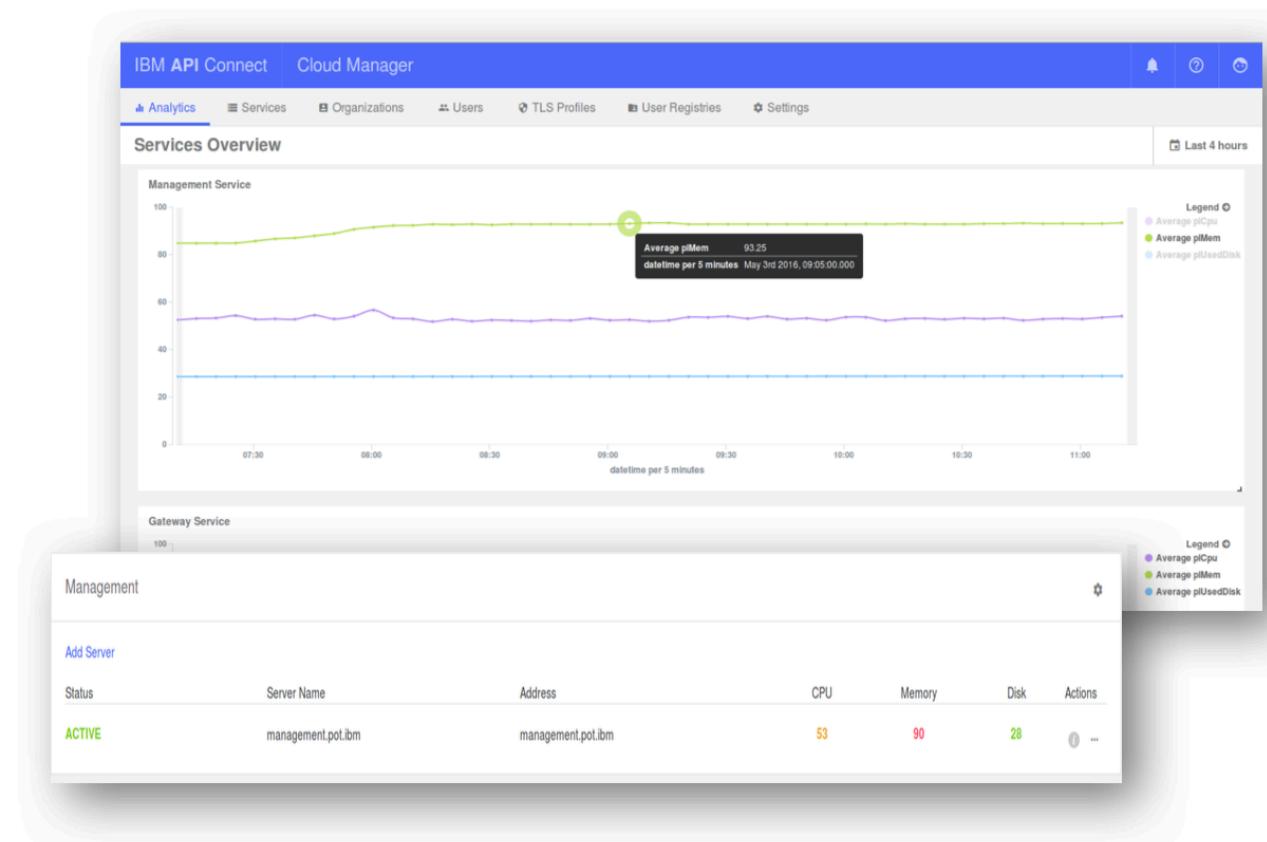
*Manage controls on
who can View and
Manage analytics
dashboards*

Default Catalog Permissions
The role to permission mappings for the following permissions will be used as the default mappings when new catalogs are created.

Catalog Settings View and manage the catalog's configuration settings	<input checked="" type="checkbox"/> View <input type="checkbox"/> Manage
Product Lifecycle Approvals View and approve API product lifecycle state changes	<input checked="" type="checkbox"/> View <input type="checkbox"/> Stage <input type="checkbox"/> Publish <input type="checkbox"/> Deprecate <input type="checkbox"/> Retire <input type="checkbox"/> Replace <input type="checkbox"/> Supersede
Analytics View and manage analytics	<input checked="" type="checkbox"/> View <input checked="" type="checkbox"/> Manage
Subscriptions View and manage subscriptions	<input checked="" type="checkbox"/> View <input checked="" type="checkbox"/> Manage

Cloud Manager: System Health

*Drill down individual servers
and view health status against
various metrics*



Integrating with API Manager Analytics

Analytics API

*Extract API Event records
programmatically using
Analytics REST API*

GET /v1/orgs/{orgId}/environments/{envId}/events

{orgId} is either the URL path segment or the ID of the API provider organization

{envId} is either the URL path segment or the ID of the catalog

Example of API Event Payload

```
{  
  "datetime": "2016-09-29T22:17:43.404Z",  
  "latency_info": [ { "task": "Start", "started": 2 }, { "task": "security-applID", "started": 7 }, { "task": "Plan Limit", "started": 11 }, { "task": "proxy", "started": 12 } ],  
  "api_version": "1.0.0",  
  "product_version": "1.0.0",  
  "product_name": "__INTERNAL_QS__",  
  "plan_version": "1.0.0",  
  "uri_path": "/macs-shackVsb/AccountService",  
  "request_method": "POST",  
  "log_policy": "activity",  
  "request_protocol": "https",  
  "query_string": [],  
  "request_body": "",  
  "response_body": "",  
  "bytes_received": 256,  
  "bytes_sent": 256,  
  "time_to_serve_request": 301,  
  "status_code": "200 OK",  
  "request_http_headers": [],  
  "response_http_headers": [],  
  "org_name": "macs-shack",  
  "api_name": "accountservice",  
  "catalog_name": "sb",  
  "resource_path": "post",  
  "plan_name": "default",  
  "developer_org_name": "macs-shack",  
  "client_geoip": { "ip": "9.20.152.215", "country_code2": "US", "country_code3": "USA", "country_name": "United States", "continent_code": "NA", "region_name": "NC", "city_name": "Durham",  
    "postal_code": "27709", "latitude": 35.994, "longitude": -78.8986, "dma_code": 560, "area_code": 919, "timezone": "America/New_York", "real_region_name": "North Carolina", "location": [ -78.8986,  
      35.994 ] },  
  "gateway_geoip": { "ip": "9.79.12.126", "country_code2": "US", "country_code3": "USA", "country_name": "United States", "continent_code": "NA", "region_name": "NC", "city_name": "Durham",  
    "postal_code": "27709", "latitude": 35.994, "longitude": -78.8986, "dma_code": 560, "area_code": 919, "timezone": "America/New_York", "real_region_name": "North Carolina", "location": [ -78.8986,  
      35.994 ] }  
}
```

Offload to External Systems

Real-Time Analytics Offload to 3rd Party Tools

- Real-time insights into operational & API program analytics
- Easily off-load analytics to popular systems like Splunk and SAP
- Configurable with direct offload or store within API Connect analytics and copy to offload location
- Outputs supported include: Syslog, Kafka, Elasticsearch, HTTP
- Available on-premises, Bluemix Dedicated & Local

