

What is API Management and why do I need it?

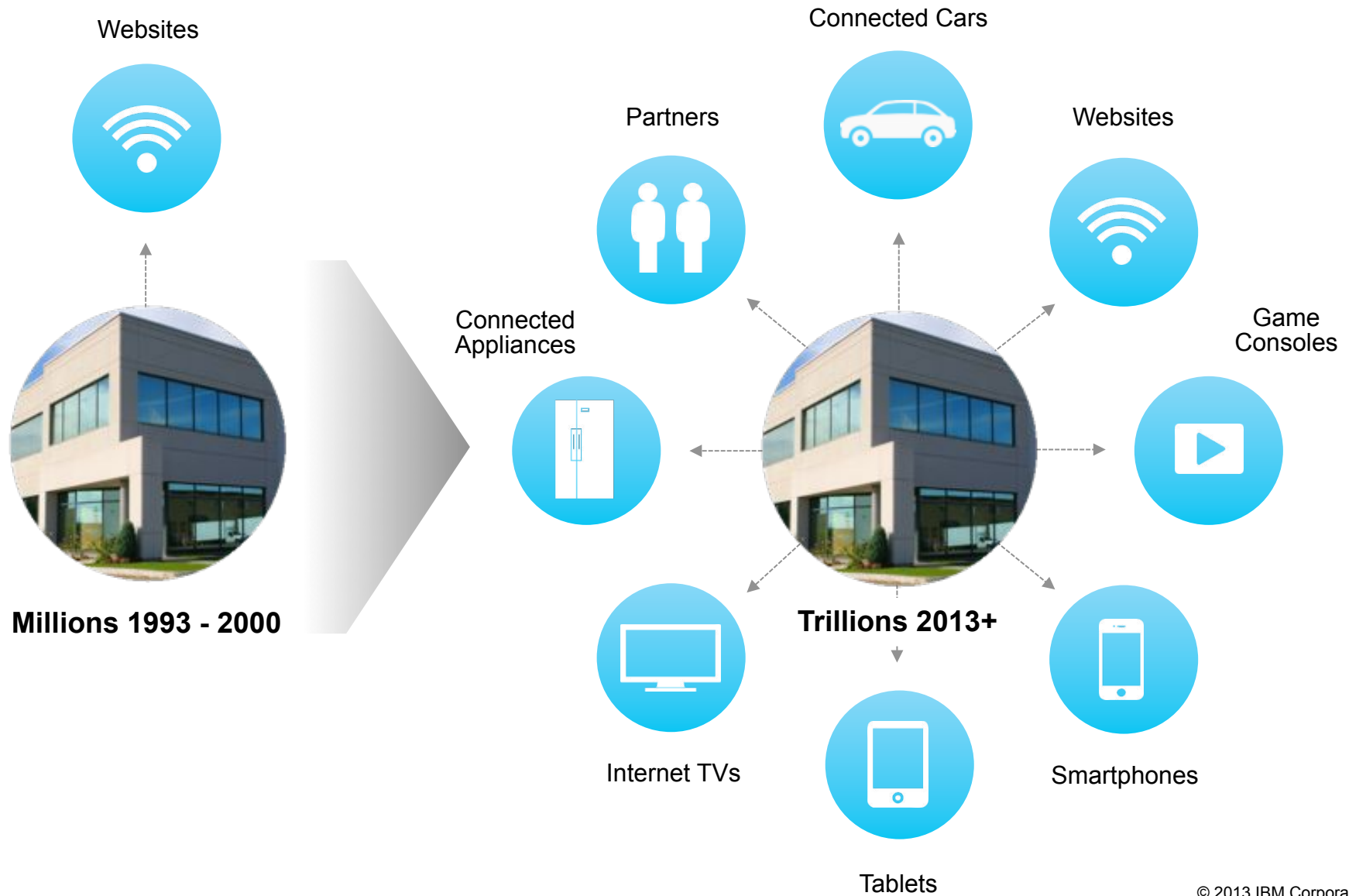
IBM API Management 2.0 Overview



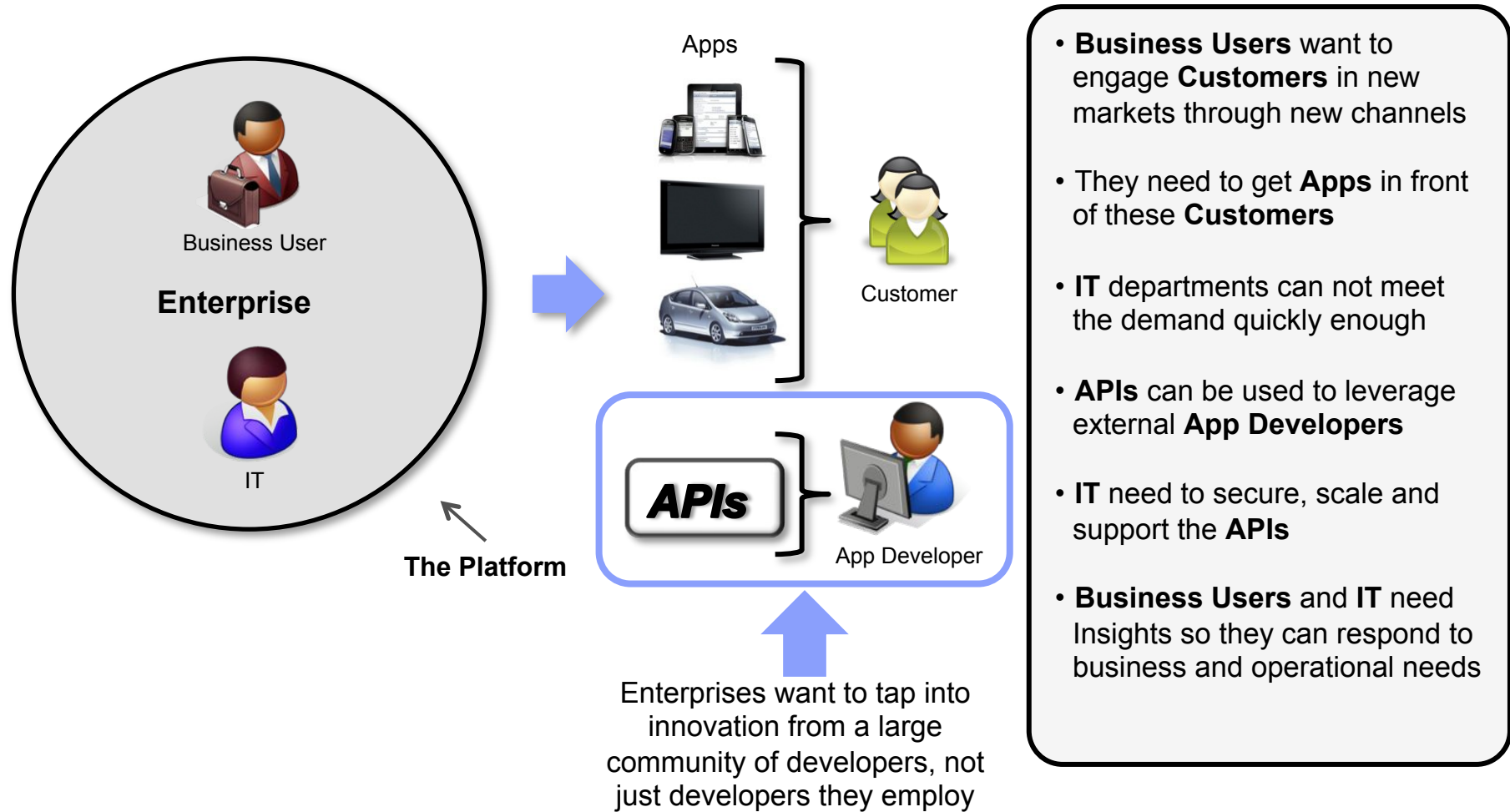
Agenda

- How can APIs help my business?
- Why do I need an API Management Solution?
- What features does IBM API Management offer?
- Further information
- Questions

The way we work and reach customers is evolving

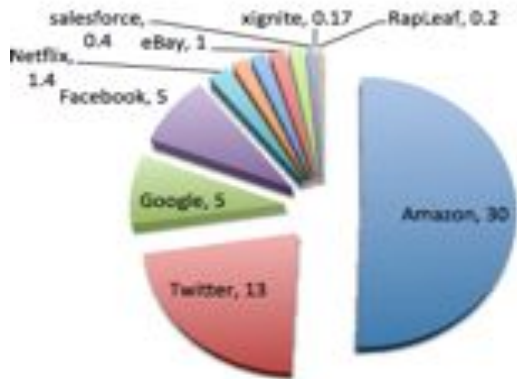


Companies need APIs to leverage external developers

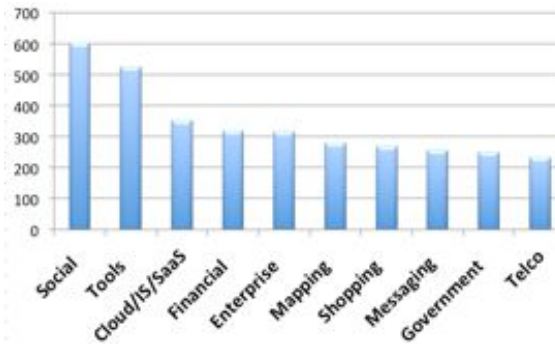


APIs adoption is exploding and is already big business

+80B API Invocations per day



APIs registered across a multitude of business areas



Example players in the new services economy



\$1.5B revenue of 10K+ affiliates



Expecting **\$10B** mobile transactions in 2012



40% total units sold by outside sellers

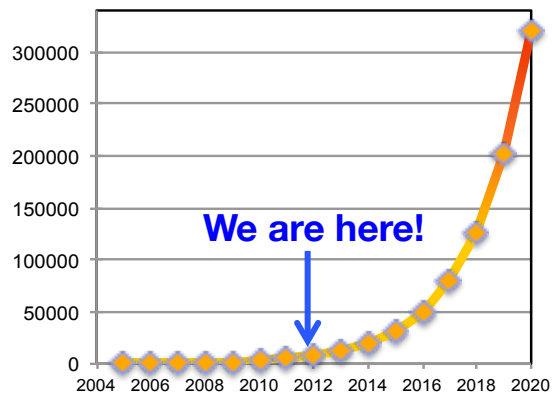


40% new business comes from non-CRM offerings

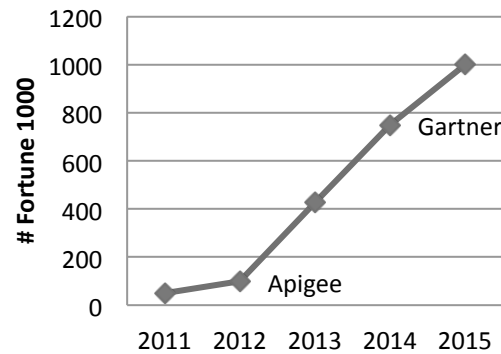


API only company reaches **150,000** developers and **1.5M** calls a day

Projected +300k APIs by 2020



All Fortune 1000 companies will have APIs by 2015



Success Requires Addressing Needs of Multiple Stakeholders



STEVE

the API Product Manager

- How can I rapidly release & update my APIs?
- How do I publicize my API?
- How do I measure success?



ANDRE
the app developer

- Where do I access APIs?
- How do I understand the APIs?
- How do I measure success?



SHAVON

creates and monitors the APIs

- How do I assemble APIs?
- How do I manage security?
- Will the infrastructure scale?
- How do I measure performance?



Will

the environment operations lead

- How do I manage all the API Environments that are being requested?
- How can I scale each environment
- How can I easily find and fix issues

Introducing IBM API Management – a single, comprehensive solution to create, socialize and manage APIs

**Fully on-premise,
multi-tenant solution**

Create your APIs



**Analyze
Results**

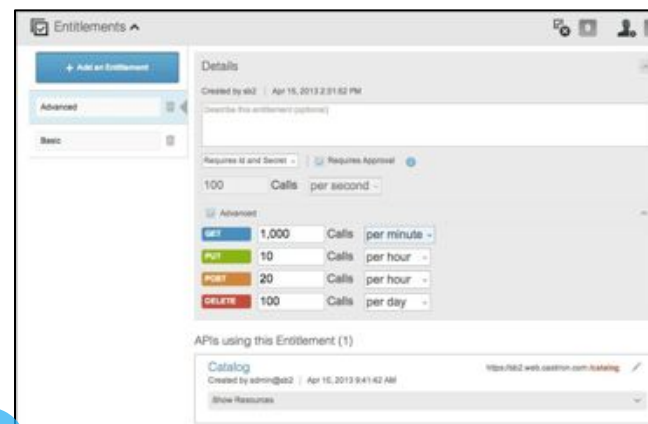
**Publish a developer
portal**

Use Case: an API at ACME Airlines...



Design your API

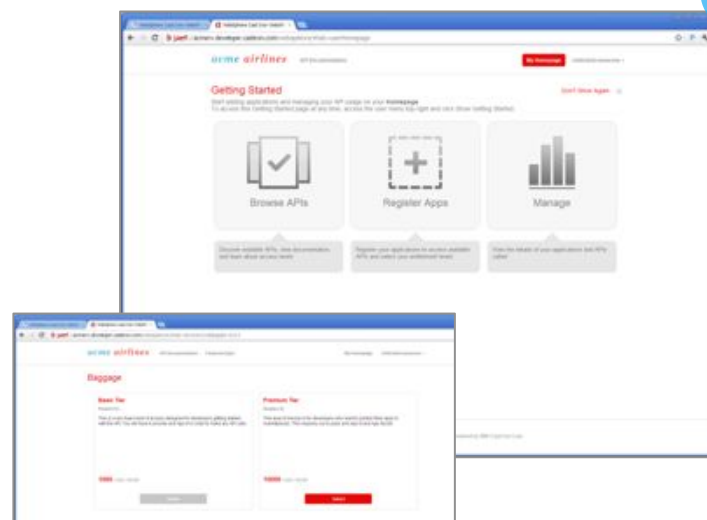
1



Set entitlement and security levels

2

Configure ACME's dev portal



3

Activate API and monitor use and SLAs

4



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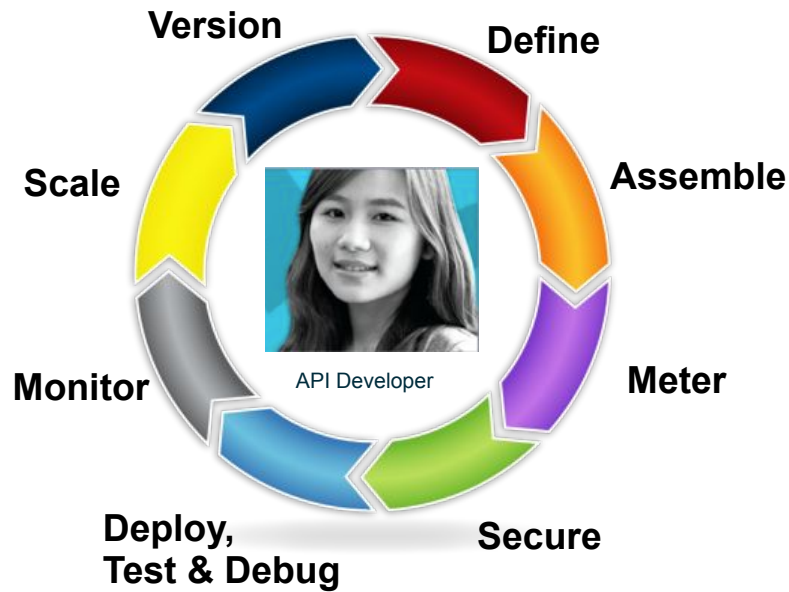
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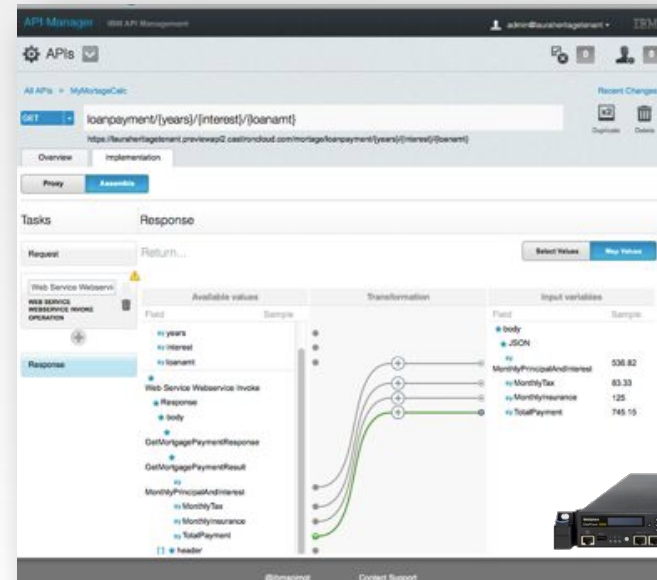
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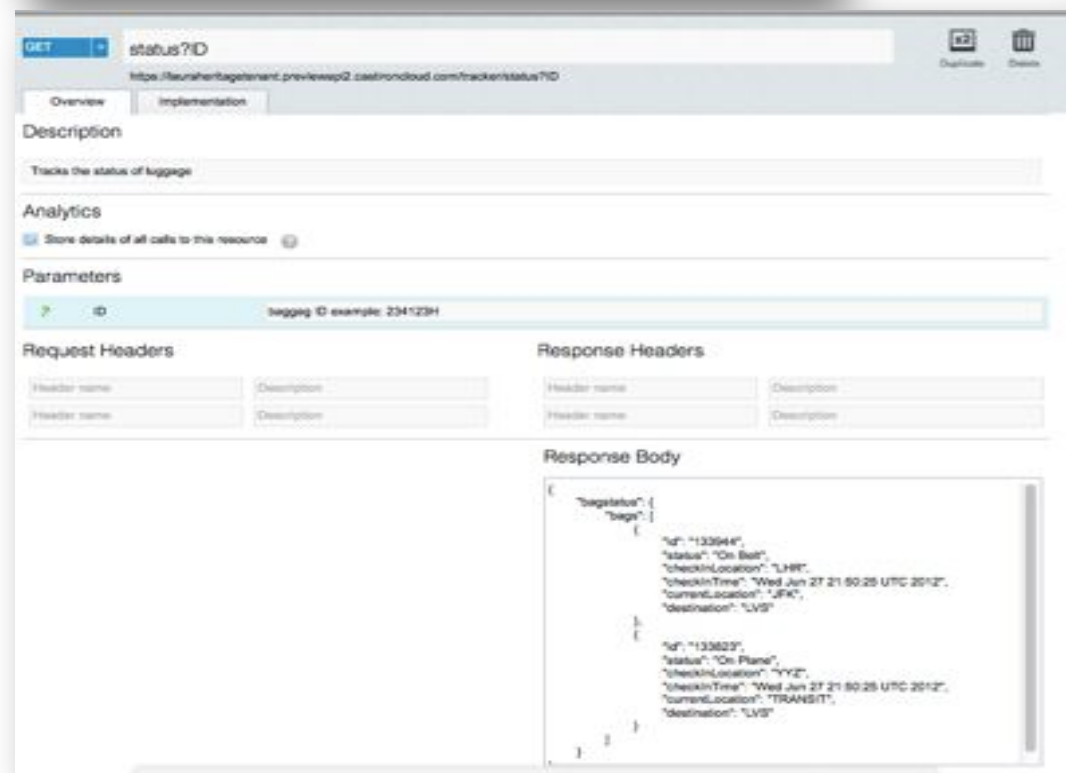
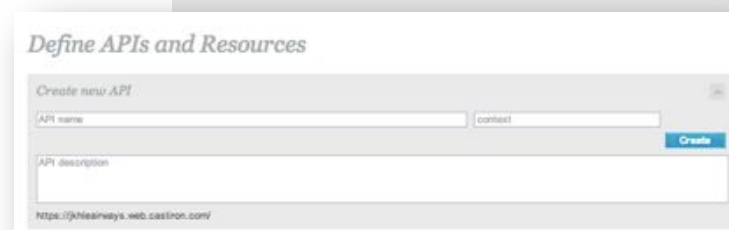
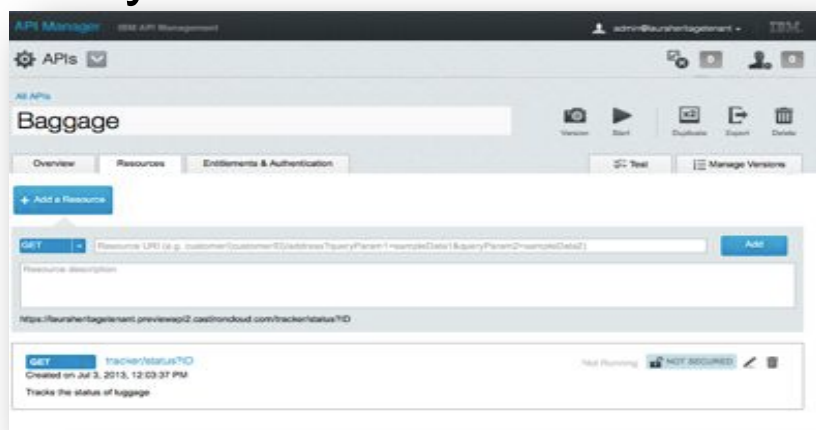
Create & Secure... *Simple interface accelerates iterative development and deployment of APIs*



- Intuitively and iteratively **define** APIs and associated policies
- Rapidly **assemble** APIs via configuration, not coding
- Minimize risk with industry leading **security & scalability**



Easily Define APIs



- Define the API you wish to expose
- Then configure the API by proxying an existing REST API or assemble a new API
- Provide examples of the request and response messages, headers and parameters

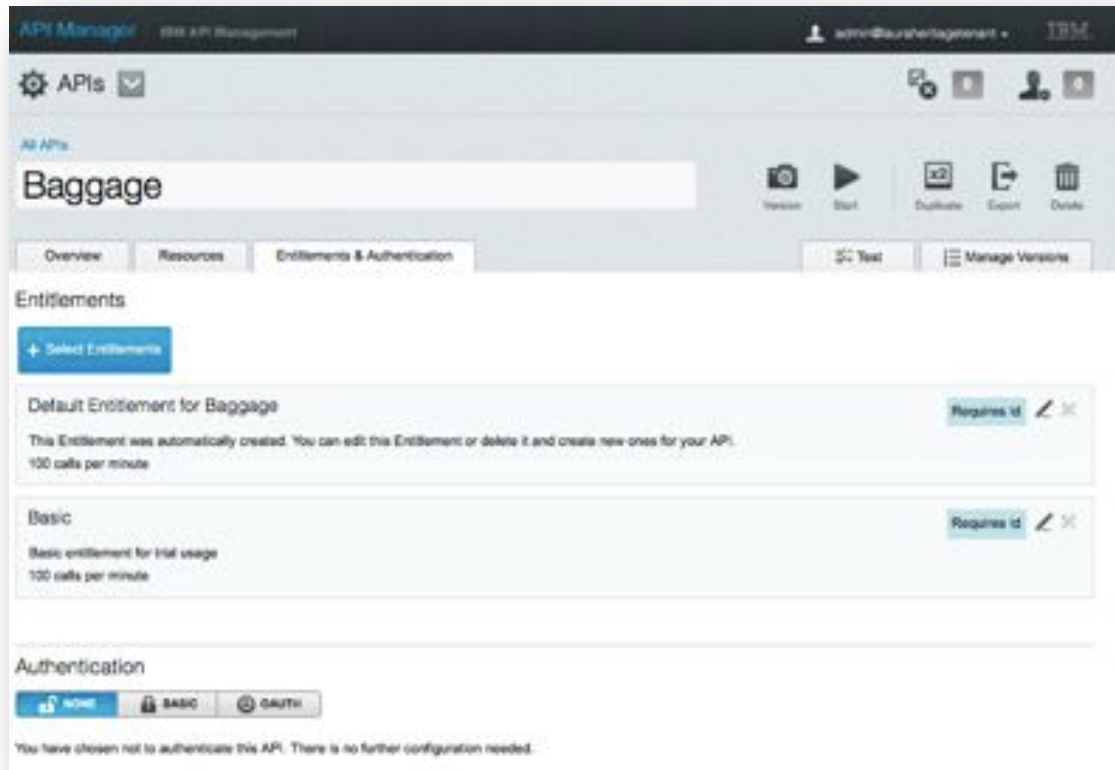


Assemble New APIs Through Configuration

The screenshot shows the 'Assemble' configuration page in IBM API Management. It features a 'Request' pane on the left with a 'Web Service Webservice' component. The main area is divided into 'Available values' and 'Input variables' panes. The 'Available values' pane lists fields like 'xy years', 'xy interest', and 'xy loanamt'. The 'Input variables' pane lists fields like 'xy body', 'xy MonthlyPrincipalAndInterest', 'xy MonthlyTax', 'xy MonthlyInsurance', and 'xy TotalPayment'. Lines connect the 'Available values' fields to the 'Input variables' fields, indicating the mapping of data between the request and response.

- Connect to one or more datasource
 - DB2
 - Oracle
 - Salesforce.com
 - SOAP to REST
 - HTTP
- Drag and connect linking the request and response messages
- Transform the message elements with a click

Meter through API Entitlements



Specify Entitlement:

- Limit based on number of calls
- Per period of time
- Specify requirements for App Key, and Secrets
- Specify an request approval is needed to use this entitlement level

Management of Entitlements:

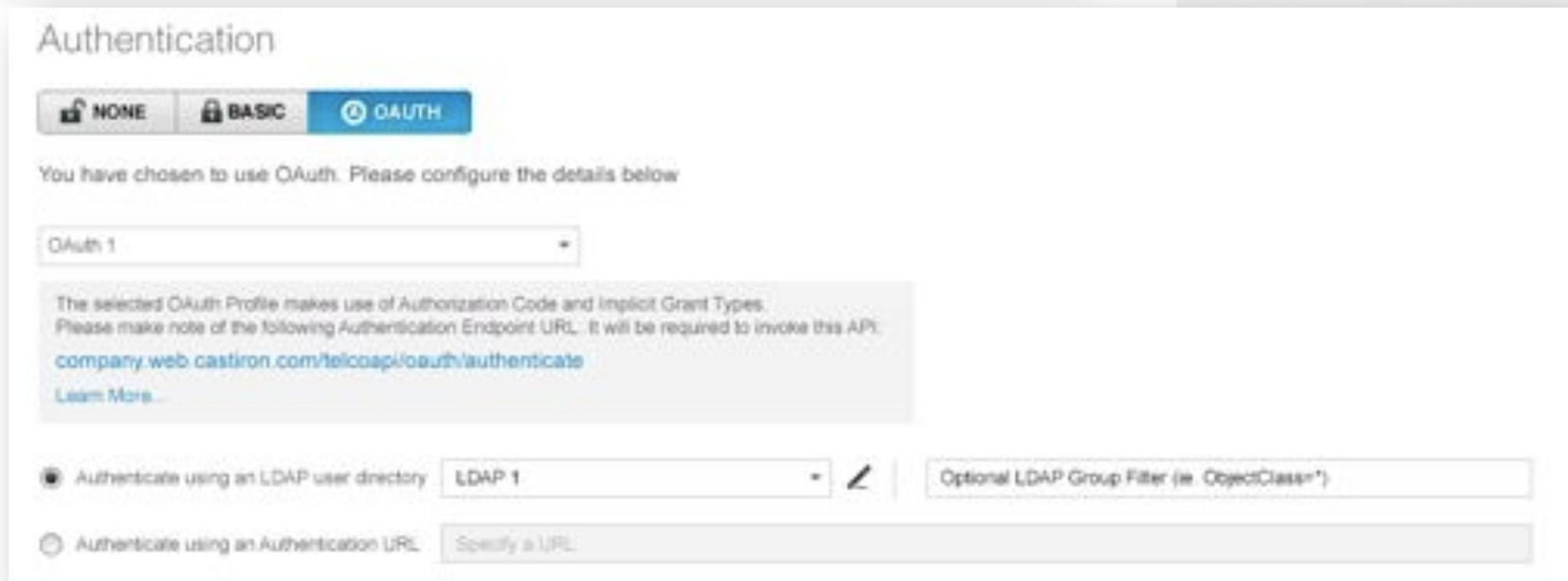
- Create an Entitlement once and reuse across several APIs
- Easily change existing entitlements and activate the changes
- View which APIs the Entitlements are applied to.

Secure with Industry Leading Technology

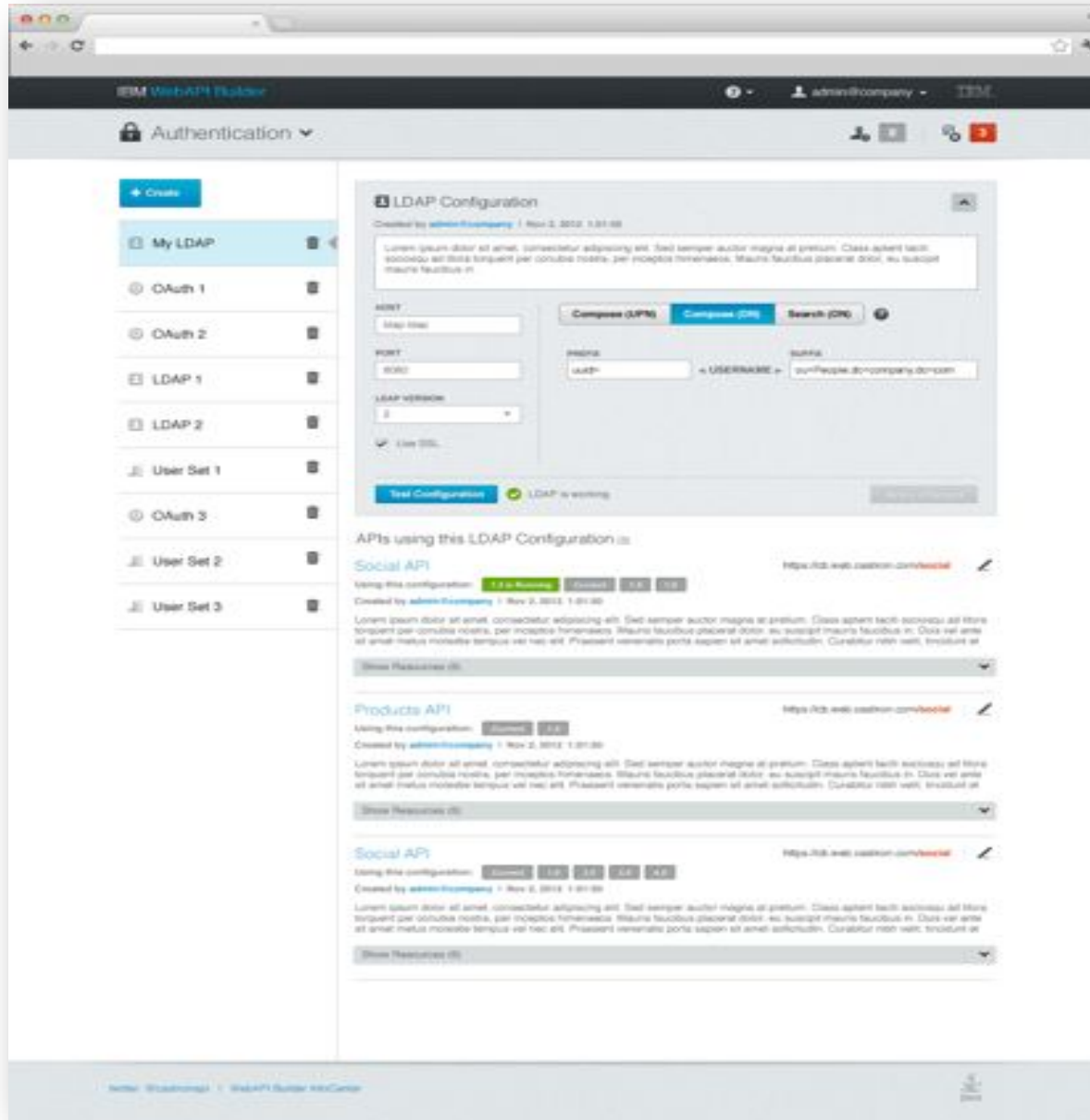


Basic Auth Support

- LDAP
- Authentication URL



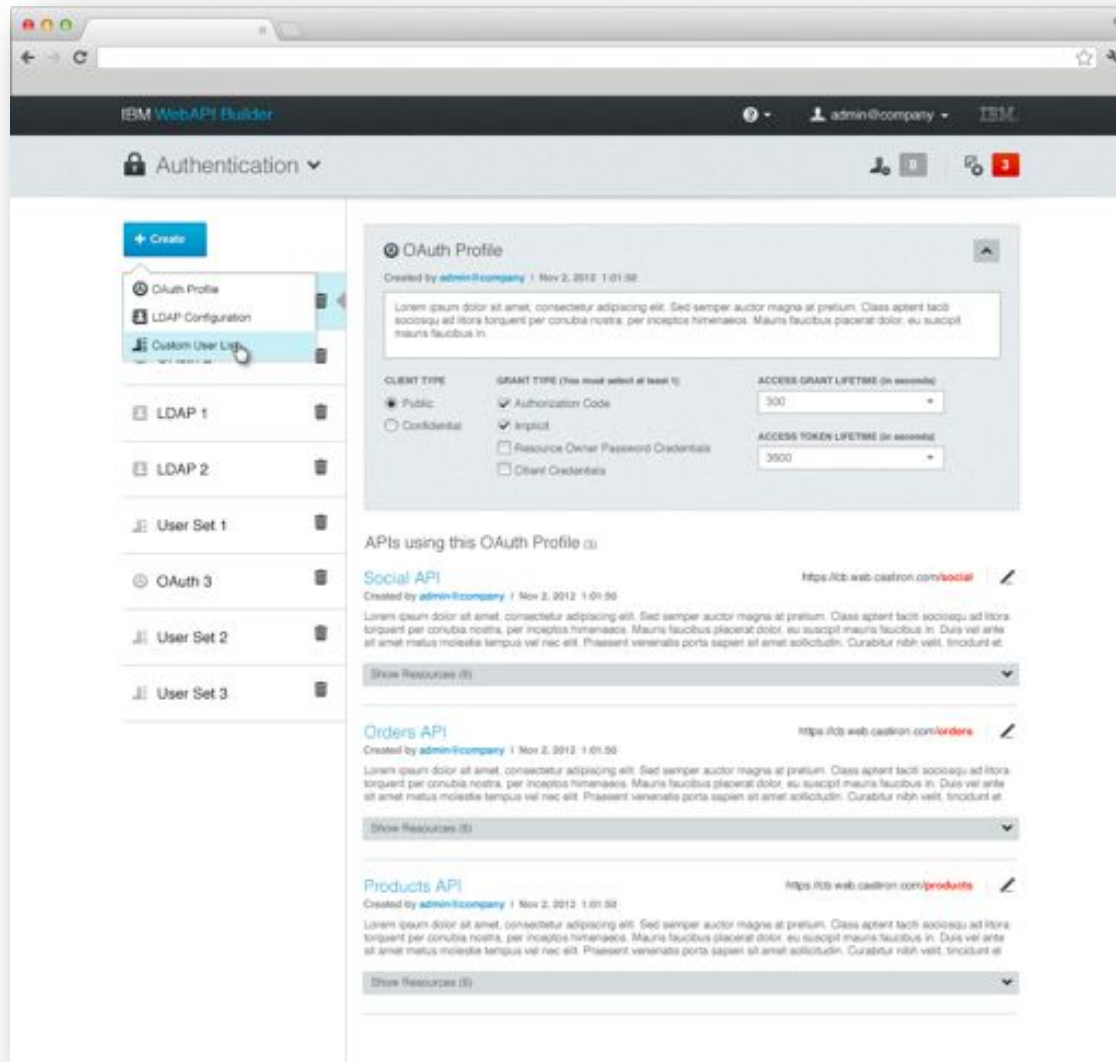
Secure with Industry Leading Technology



- Configure your LDAP Server inline or globally and reuse configuration
- See which APIs are leveraging the LDAP Server



Secure with Industry Leading Technology



Simplified OAuth 2.0 through a Configuration Approach

- Configure an OAuth Profile that can be applied to the APIs
- View APIs which leverage the OAuth Profile



DataPower Hooks for Advanced Use Cases

Use Cases Such As:

- Filter (including schema validation for JSON and XML, AV scanning using ICAP, & other non-schema based filtering)
- Alternate Authentication and Authorization mechanisms
- Message level security (encryption & decryption of entire parts of the messages, Digital Signature Verification or Signing)
- Message enrichment (add pieces of data)
- Message Transformation
- Additional Entitlements
- Traffic Shaping





Test APIs Without Leaving the Management Center

- Get instant feedback on the API

The screenshot shows the IBM API Management console interface. At the top, there's a navigation bar with 'APIs' and a search bar. Below that, the 'Baggage' API is selected. The interface has tabs for 'Overview', 'Resources', and 'Entitlements & Authentication'. A 'Test' button is visible. The test configuration shows a GET request to 'status?ID' with a 'Test application' selected. The response shows a 200 OK status with headers and a JSON response body.

Returned Response
200 OK

Response Headers
Cache-Control: public, max-age=600
Connection: Keep-Alive
Content-Type: application/json
Date: Wed, 03 Jul 2013 17:12:17 GMT
ETag: "20ag00"
Expires: Wed, 03 Jul 2013 17:22:17 GMT
Server: Google Frontend
Transfer-Encoding: chunked
X-Backside-Transport: OK OK

Response Body

```
{
  "baggage": {
    "tags": [
      {
        "id": "132644",
        "status": "On Bell",
        "checkinLocation": "LHR",
        "checkinTime": "Wed Jun 27 21:50:25 UTC 2012",
        "currentLocation": "JFK",
        "destination": "LVS"
      },
      {
        "id": "132623",
        "status": "On Plane",
        "checkinLocation": "YYZ",
        "checkinTime": "Wed Jun 27 21:50:25 UTC 2012",
        "currentLocation": "TRANSIT",
        "destination": "LVS"
      }
    ]
  }
}
```

Debug an Assembly and Supply Custom Error Message



Activity Feed Manage Secure Connectors

Monitor Activities

11 ALL ACTIVITY 6 API ACTIVITY 0 ALERTS 1 - 6 of 6 | Page 1

✓ Resource "GET_24602_statusAssembly" completed processing GET request, and returned the following response.
 Mon Jan 7 15:15:04 2013 Job id: BF0C8D989F31EE024390CAE8510142F2

Request: HTTP GET Operation
 GET http://kheairways.appspot.com/baggage.json

Request Body: No body Response Body:

```
{
  "bagstatus": {
    "bags": [
      {
        "id": "1133944",
        "status": "On Sale",
        "checkinLocation": "LHR",
        "checkinTime": "Wed Jun 27 21:50:25 UTC 2012",
        "currentLocation": "JFK"
      }
    ]
  }
}
```

Inputs: RequestParameters

✓ Resource "GET_24602_statusAssembly" completed processing...

- **Inspect** request, assembly and response messages
- **Define** custom error messages

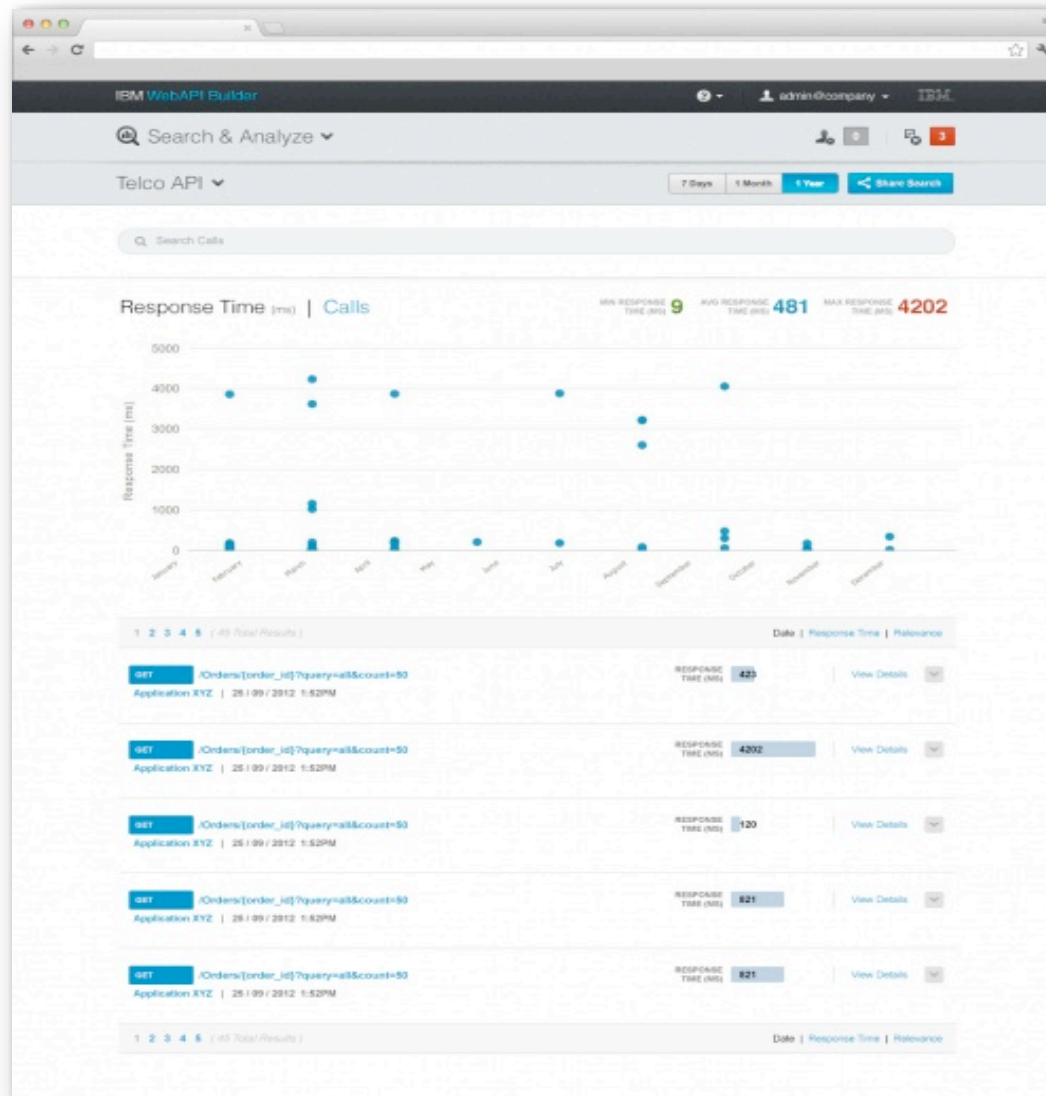
HTTP GET Operation

CONNECT DEFINE CONFIGURE REVIEW

Error Handling

When Error Code is	Return this HTTP Code	and Take this action
Operation error	417 Expectation Failed	Send Message
Enter an messages here... <input type="text"/>		
For ALL other cases Return this HTTP Code		and Take this action
Select the HTTP Code	Select Action	

Monitor Your APIs to Ensure You Meet the QoS You Defined in Your Entitlements



- Pinpoint fluctuations
- Details of the Response time of each API
- Number of Call Received
- Export the Analytics

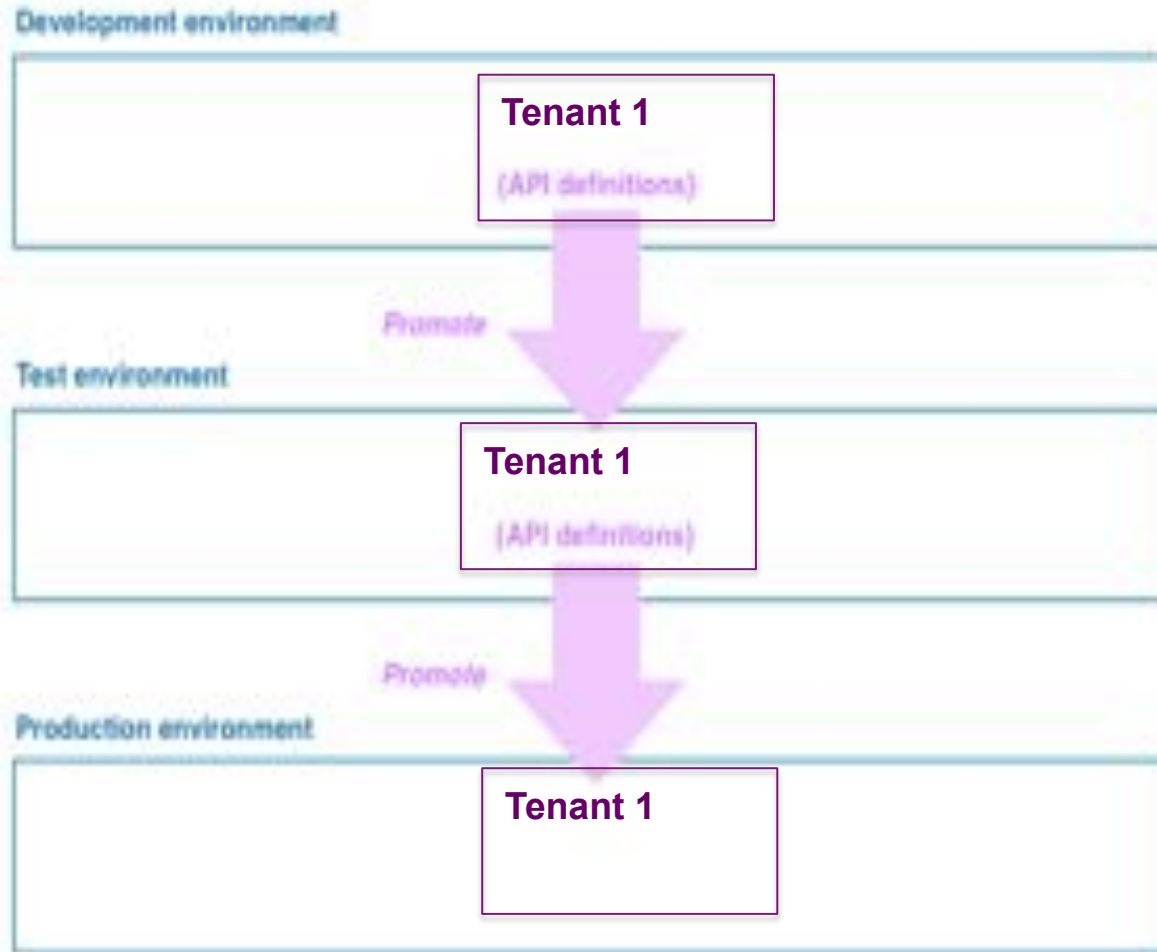


Version and Snapshot for Simplified Management

The screenshot shows the IBM API Management console interface. At the top, it says 'API Manager' and 'IBM API Management'. The user is logged in as 'admin@sunshertagetenant'. The main area displays the 'Baggage' API configuration. There are tabs for 'Overview', 'Resources', and 'Entitlements & Authentication'. A 'Manage Versions' button is visible. Below the tabs, there are three version entries: 'Current Version is running...', 'Version 1.2', and 'Version 1.1'. A modal dialog is open in the foreground, titled 'Revert to Version 1.3'. The dialog asks: 'You have not created a named version with your current changes. Would you like to do that now?'. There are two radio button options: 'YES. Create a version with the current changes and then revert' (which is selected) and 'NO. Discard and Revert'. The 'YES' option has a text input field with '1.4' and a text area with '- Changes to Lorem Ipsum Dolor'. At the bottom of the dialog are 'Revert' and 'Cancel' buttons.

- Edit an API configuration while the API is actively running
- Push minor changes out to consumer with out large disruptions
- Version the API Configuration
- Revert prior version
- Create a duplicate of the API for a major version change or to create a similar API

Multi-Tenant Solution with Ability Promote APIs To Various Environments



- Promote API definitions to various environments through export and import features

Success Requires Addressing Needs of Multiple Stakeholders



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the API Product Manager

- How can I rapidly release & update my APIs?
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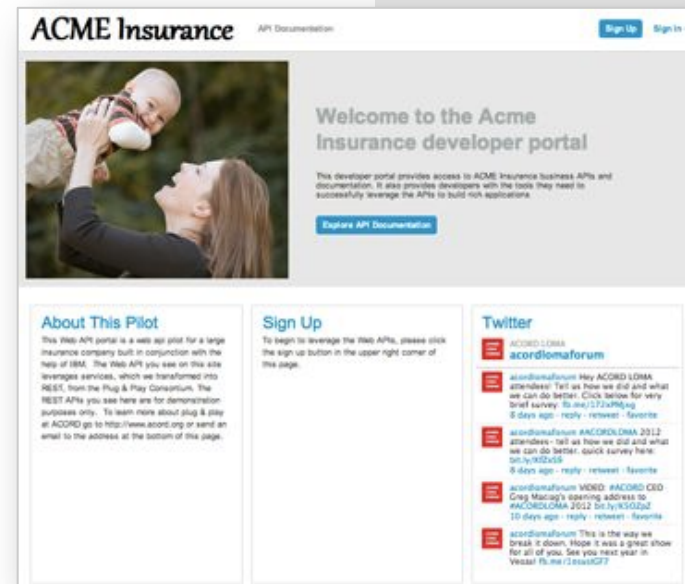
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Socialize... Expose your APIs through a Branded Developer Portal



- Branded to your company look and feel through configuration
- Quick exploration of API
- Easy developer sign ups
- Features apps built by the developers
- Hooks into social communities
- Enables developers to manage their applications



The screenshot shows a web browser window displaying the 'acme airlines' API Management user homepage. The browser's address bar shows the URL 'acmerv.developer.castron.com/web/apistore/#tab=userHomepage'. The page header includes the 'acme airlines' logo, 'API Documentation', a 'My Homepage' button, and a user profile 'jstivak@youwrote'. The main content area is titled 'Getting Started' and includes instructions: 'Start adding applications and managing your API usage on your Homepage. To access this Getting Started page at any time, access the user menu top-right and click Show Getting Started.' Below this are three primary actions: 'Browse APIs' (with a checkmark icon), 'Register Apps' (with a plus icon), and 'Manage' (with a bar chart icon). Each action has a corresponding descriptive text box below it: 'Discover available APIs, view documentation, and learn about access levels', 'Register your applications to access available APIs and select your entitlement levels', and 'View the details of your applications and APIs called'. The footer contains links for 'Acme Airlines', 'Terms and Conditions', 'Contact Us', and 'Powered by IBM Cloud Open Life'.





The screenshot displays the IBM API Management developer console for 'acme airlines'. The main content area is titled 'Getting Started' and includes a 'One more thing...' section with instructions on OAuth client ID and secret usage. It shows the 'App ID' as 8173e452-d746-4d50-a747-2c56b30cd2b3 and the 'App Secret' as Y3Nx7W5saNXgc8UjCK90. A 'Register an Application' form is visible on the left, and a 'Manage' button is on the right. A yellow message box at the bottom states 'There are currently no applications...'. The footer includes 'Powered by IBM Cloud Open Liberty'.



Getting Started

Start adding applications and managing your API usage on your **Homepage**. To access this Getting Started page at any time, access the user menu top-right and click Show Getting Started.

One more thing...

If you are using any OAuth secured APIs with this Application, please use the App ID as the OAuth Client ID and the App Secret as the OAuth Client Secret.

Your application id is the unique identifier for your application. You will need to send this for any APIs requests.

Your application secret is the security key for your application. You will need this for any APIs requests. It will only be displayed again, but you may want to save it for future reference.

Remember your secret and keep it safe

Register an Application

Track My Bags

See exactly where your bags are as they travel

Submit Image (100 x 100)

Provide a URL link (Optional)

There are currently no applications...

Add applications using the form above. You will receive an application id to use with your application. You will also receive an application secret, which may be required to call an API based on your entitlement.

Baggage

Basic Tier

Requires ID

This is a very basic level of access designed for developers getting started with the API. You will have to provide an App ID in order to make any API calls.

1000 Calls / Month

Select

Premium Tier

Requires ID

This level of service is for developers who want to publish their Apps in marketplaces. This requires you to pass an ID and App Secret.

10000 Calls / Month

Select

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Manage API's with Business Controls

Entitlements

Details

Created by bob | Apr 15, 2013 2:31:52 PM

Describe this entitlement (optional)

Requires ID and Secret - Requires Approval

100 Calls per second

Advanced

GET 1,000 Calls per minute

PUT 10 Calls per hour

POST 20 Calls per hour

DELETE 100 Calls per day

APIs using this Entitlement (1)

Catalog
Created by admin@bob2 | Apr 10, 2013 9:41:42 AM | <https://b02.web.castron.com/catalog>

Show Resources

Manage API Entitlement

- Define entitlement criteria
- Assign Entitlements to APIs and Resources

Manage External Experience

- Self documenting APIs
- Ability to add samples and tutorials
- Control Visibility Of APIs

Cast Iron Web API

APIs Dashboard App Developers Activities admin@Odon IBM

All APIs

Acme HR API

API VISIBILITY: PUBLIC PRIVATE

+ Add authentication LRI

This API provide access to HR information

admin@Odon | Jun 20, 2012 4:22:57 PM | <https://don.web.castron.com/home>

Resource Definition More Documentation Entitlements Test Metrics

Add Additional Documentation

Upload a File or Provide a URL List

Name File or URL

Describe File or URL

EmployeeAPI Test Cases.docx
Test Cases
This document provides test cases for the API

MPJ/xxxx.github.com/home
Sample application
This is a sample application showing the use of the API

Manage Developers

- Approve entitlement requests
- Send email
- Block a developer
- View usage

Cast Iron Web API

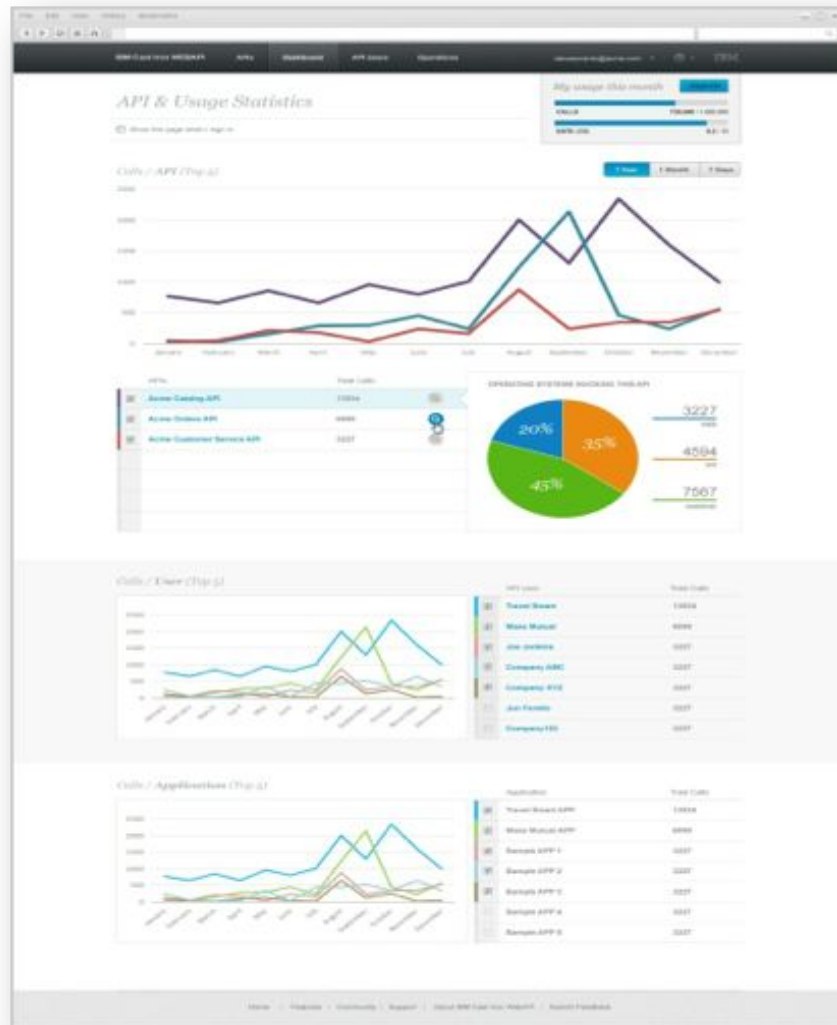
APIs Dashboard App Developers Activities admin@Odon IBM

App Developers

1 REQUESTS 2 ALL DEVELOPERS

Name	Email	Active Since	Notifications (via Email)
Advanced Level			
Hi, I would like access to the entitlement 'Advanced Level'. Thank you.			
Request Approve			
scramble@2008 IBM	scramble2008@gmail.com	Jun 11, 2012 8:14:29 PM	20
Policy API		Jun 18, 2012 3:11:03 PM	0
Client API		Jun 11, 2012 6:18:41 PM	0
Registry API		Jun 18, 2012 3:18:41 PM	0
QWC SAMPLE API		Jun 20, 2012 9:09:49 AM	15
Acme HR API		Jun 20, 2012 4:49:49 PM	0
scramble@ IBM	scramble@normal.com	Jun 12, 2012 7:37:20 AM	0
Policy API		Jun 12, 2012 7:38:36 AM	0
Client API		Jun 12, 2012 7:38:36 AM	0

Manage the APIs with Business Insight through Analytics



Pinpoint **key market fluctuations** and find **correlations** related to your business

- Business Analytics for both API provider and application developer:
 - Top traffic producing API
 - Top App producing traffic
- Structured Filtered Search across analytics for example
 - country:USA, color:red
- Saved Searches and Filters for easy and consistent retrieval
- Billing for API consumption by developers
 - Export as CVS files for audit trails

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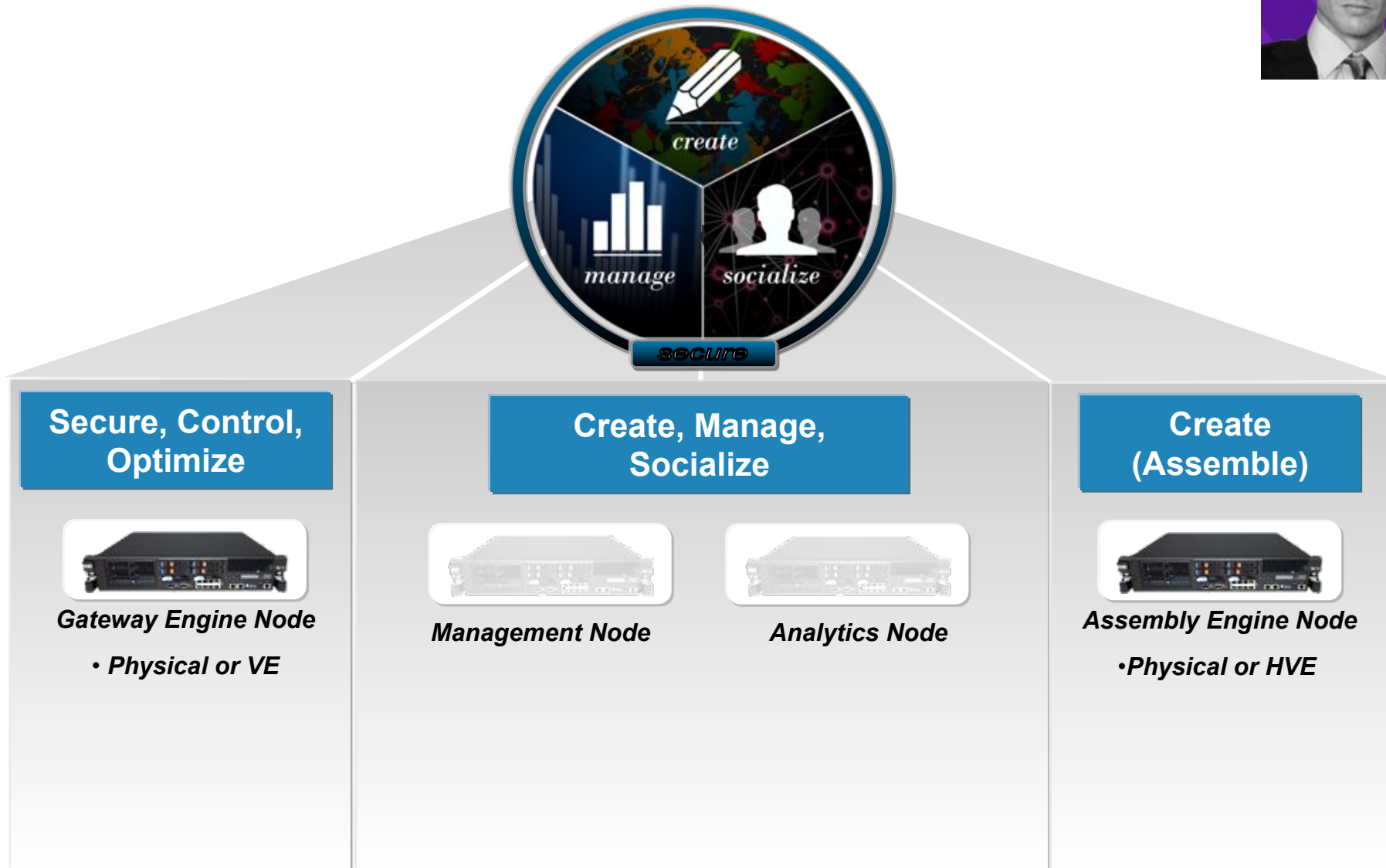
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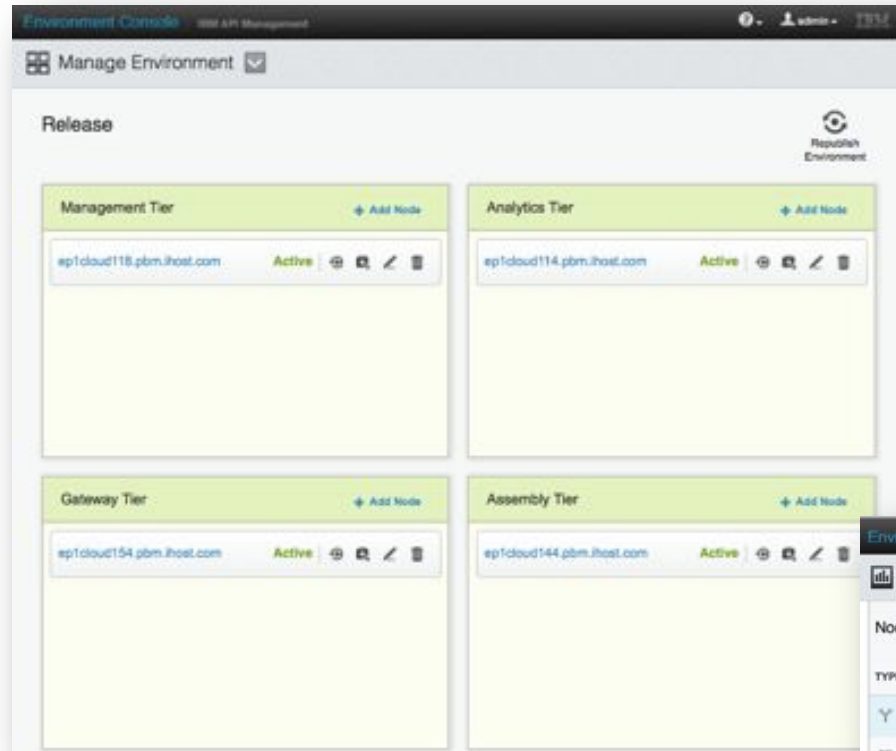
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Leveraging your existing IBM DataPower investment

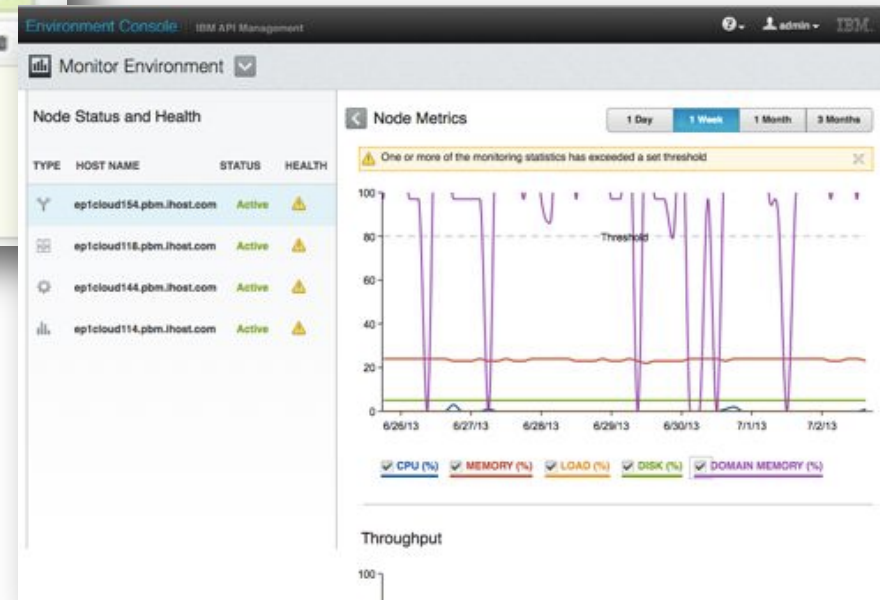




An Environment Console for Easy Management



- Easily **configure and scale** your API Management environment with the new Environment Console
- **Create and manage** the environment's tenants



Key capabilities in IBM API Management solution

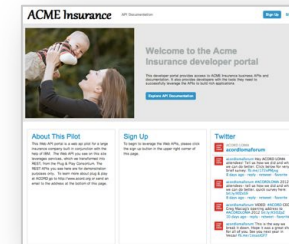


Industry best security and integration in one solution

- Based on IBM market leading DataPower gateway
- Available as a service, providing risk free, full featured, no hassle 90 day trial
- Sign in and begin deploying APIs in **less than 5 minute**

Configuration, no coding

- Create and deploy a new API in **just minutes**
- Create a developer portal in minutes, and socialize your APIs to developers
- **ROI in a matter of days** instead of months and years



Out of the box business analytics and operation insight

- Ability to **pinpoint key market fluctuations and find correlations** related to your business
- Drill down debug inspections of request and response **messages reduce the time to problem determine** of orchestrated APIs in production and development time.

Support for continuous iterative development

- Provide updates to the APIs with minimal to no interruption to your consumers.
- Test out minor fixes and push to production in **matter of minutes**
- **Revert to a previous snap shot** to restore last know good configuration at the touch of a button



API Developer

Further information

- Product Page: <http://www-03.ibm.com/software/products/gb/en/api-management/>
- Information Center: <http://pic.dhe.ibm.com/infocenter/apimgmt/v2r0m0/index.jsp>
- YouTube Channel: <http://www.youtube.com/user/IBMAPIManagement>
- SlideShare: <http://www.slideshare.net/ibmapimgmt>
- Twitter: @ibmapimgt

