API-First Design & Management with Oracle

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WHY APIS MATTER
In a Digital World, APIs Connect It All

- Social (Facebook, Instagram, Twitter, LinkedIn, WhatsApp)
- Financial (Venmo, PayPal)
- Transportation (Uber, Lyft)
- Health
- Productivity (Slack, Twilio)
What is an API?

- An API is an **interface** that provides **controlled** access to a business process or data

- Example: booking an Uber ride from an airline’s mobile app
  - **Uber benefit:**
    - more exposure ➔ more customers ➔ more revenue
  - **Airline benefit:**
    - cool mobile app feature ➔ happier customers ➔ more revenue
Significant shift in Business to an API Economy

In a 2002 internal memo, Jeff Bezos (Amazon) mandated:
• All teams use service interfaces
• Teams must communicate through service interfaces
• No other form of interprocess communication allowed
• Runtime technology does not matter
• All service interfaces, without exception, must be externalizeable

The mandate closed with:
“Anyone who doesn’t do this will be fired.”
API FIRST STRATEGY
Important Definitions

API Management
The process of publishing, documenting and overseeing application programming interfaces (APIs) in a secure, scalable environment.

API-First Development
API-first is a fundamental paradigm shift where APIs are designed, tested, and built before applications and mirror the goals and objectives of the company.

API Design
The process of engaging all stakeholders to define in human language the APIs to create a “contract” of what will be delivered before expensive development begins.
Why Does API Management Matter?

- Approach **design** with the end in mind
- Ensure **security** of your APIs
- Improve **agility** & quickly meet user demand
- Gain **visibility** & define the right metrics
DAY IN THE LIFE OF AN API
API Lifecycle
From Ideas to Engagement
Traditional API Lifecycle

Slow & Costly

Build / Test

Deploy / Secure

Do we have a place to deploy the API? How do we secure?

Multi API Needle in the Haystack
Debugging! Who is using?

Manage / Monitor

Discover / Consume

No way to discover / understand / use API’s

Many iterations of design, build, test, redesign

TIME
The API-First Lifecycle

- **Design / Document / Mock-Test**
  - Prototype quickly to collaborate & align faster

- **Build / Test**
  - Create APIs & check against contracts

- **Deploy / Secure**
  - Flexible gateway deployment & built-in security

- **Manage / Monitor**
  - View operational API metrics

- **Discover / Consume**
  - Document & publish APIs for reuse

**TIME**

**Faster Time to Market**

**Lower Cost**
THE ORACLE SOLUTION
Building Great APIs
Complete Lifecycle

- For teams who build APIs and want to focus on delivering great products
  - Only solution that supports the complete API Lifecycle
  - Allows developers, architects and business to work together
  - Superior to traditional API Management tools that take too much effort to stitch together and maintain
270,000+ API Developers
3M+ API Consumers
API Platform Cloud Service

Next-gen, hybrid architecture

- End-to-end capabilities to
  - Design
  - Publish
  - Build
  - Consume
  - Secure
  - Monitor
  - Deploy

Easy to use

- Completely new, simplified API management experience
- Support changing business demands
- Clear visibility into who is using APIs
- Operational flexibility – gateways can be deployed in the Cloud or on-premises
Oracle Apiary, a Perfect Starting Point

APIARY TOOLS

- APIARY Editor
- Interactive Documentation
- Mock Server
- API Inspector
- GitHub Sync
- GitHub Integration
- Automated Testing
- Apiary CLI
- GitHub Enterprise (GHE) Integration
- Integrated Code Examples
- Embed Documentation
- API Style Guide
- Troubleshooting GitHub Sync and Integration

272,634 HEROES ARE WORKING ON 365,901 APIS BEING CONSUMED BY 3M+ DEVELOPERS
API Platform Cloud Service

Oracle Cloud

Manager Portal

Developer Portal

Analytics

Identity Cloud Service

Services

Firewalls & Load Balancers

Oracle Cloud

Amazon Azure 3rd Party Clouds

On Premises

API Managers & Gateway Teams

API Consumers

API Designers

API Consumers
Oracle Apiary Customer Success
SCENARIO OF DEMONSTRATION

DESIGN FIRST, IMPLEMENT AND EXPOSE SERVICE
Options In Exposing Externally
Options In Exposing Externally

API

Develop

Mediation

Adapter

App

Design API
(API Platform)
Options In Exposing Externally

- Develop
- Create Service, Mediate
- Mediation Adapter
- Design API
- App Dev
- API

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Options In Exposing Externally

Create Service, Mediate
(Integration Platform)

Design API
(API Platform)
Options In Exposing Externally

Expose and manage API
(API Platform)

Create Service, Mediate
(Integration Platform)

Design API
(API Platform)
"orgName":
"contactFirstName":
"contactLastName":
"contactEmail":
"country":

"orgID":
"status":

REST (Request header / Input)

REST (Response header / Output)
DEMONSTRATION:
DESIGNING & DOCUMENTING APIS, APIARY
INTERACTIVE DOCUMENTATION, APIARY MOCK SERVER
Stage - Point To Point Integrations
Stage - Service Buses
Stage - Service Buses

Runtime of synchronous interfaces and mediation
Stage - Gateways

Runtime of centralized exposure

Runtime of synchronous interfaces and mediation
API Gateways
API Gateways

Runtime of centralized external exposure

Runtime of synchronous interfaces and mediation
DEMONSTRATION:
CREATE API, DEPLOY API, MANAGE POLICIES, API ANALYTICS
Governance With API Management

- **Runtime (policy) governance**: Policy enforcement and metering and security access control.
- **API lifecycle management governance**: Governs the interface’s lifecycle (stakeholders, feedback in every phase), not the implementation.
- **API design time governance**: Defining interface standards, to aid in the creation of consistent, well-formed APIs.
- **Operations management governance**: Capacity and Availability Management, Root cause and Impact Analysis - Track transactions from the API where they enter your business to the back end. End-to-end Security – Use the appropriate security models and standards for services and APIs even if they are different.
DEMONSTRATION:
PUBLISH API AT THE DEVELOPER PORTAL