Transforming Enterprise IT with APIs and Integration

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Red Hat

CONTEXT

Source:

Red Hat

COMMON CHALLENGES IN MODERN IT INFRASTRUCTURE

Integrate SaaS Apps

Customer and Partner Access

Enable Customer Facing Apps via Many Channels

Extend Legacy Apps

IoT Devices and Architectures

Data Access for Business Users

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APIs on the Edge, APIs in the Middle

APIS IN ACTION

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What do APIs Really Do?

Provide Stable Reusable Interfaces

MOST COMMON API USE-CASES

Mobile & IOT Support

Customer Integration
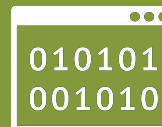
Partner Ecosystem

Content & Transaction Channel

APIs as a Business

Internal Agility

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Lines between Internal and External APIs are Blurring

EXAMPLE RED HAT 3SCALE CUSTOMERS

Customer Depth and Breadth - One of the Largest API Management Vendors Globally.

# INTEGRATION AND APIs DRIVE AIR TRAVEL INNOVATION

APIs

- Well defined, re-usable, and well managed end-points
- Ecosystem leverage

- Schiphol Airport aims for world class traveller experiences
- Using Red Hat JBoss Fuse to create the right API endpoints and then putting them in the hands of partners creates an extended team to deliver innovation
- Flight, baggage, reservation, and other data are available throughout the airport and to all partners
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CAMPELL'S SOUP: APIs LEAD TO A BREAKTHROUGH NEW CUSTOMER CHANNEL

APIs

- Partner Marketing Resource to IoT Backend
- Now Powers Campell's Kitchen
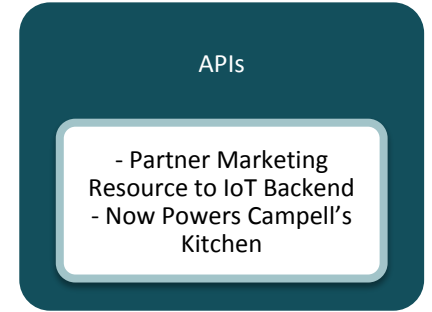
- Initially created a Nutrition and Recipies API to be used by marketing agencies and application designers
- Reaching new audiences with the recipie application "Campell's Kitchen" on the Amazon Echo device.
- Very high value brand interaction in the customers' residence.
- Leading to possible Integration with Amazon shopping cart to provision for recipes

UNIVERSITY CALIFORNIA AT BERKELEY - INTERNAL AND EXTERNAL APIS

- IT Organization but...
- Providing Student Access
- New Apps and Mashups

- API Central Program
- Student and Study information, University Core Systems APIs
- But also filtered access to external APIs such as Dropbox, Google Maps to provide an extensive list of APIs
- Platform for new applications in the student body as well as new new inter-department integrations

HOW DO WE ACTUALLY SUCCEED?

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THE API OWNER'S MANUAL

- Captured learning from successful API teams
- Reinforced by recent experience
- Digital Copy:
  https://engage.redhat.com/3scale-api-owners-s-201706160312
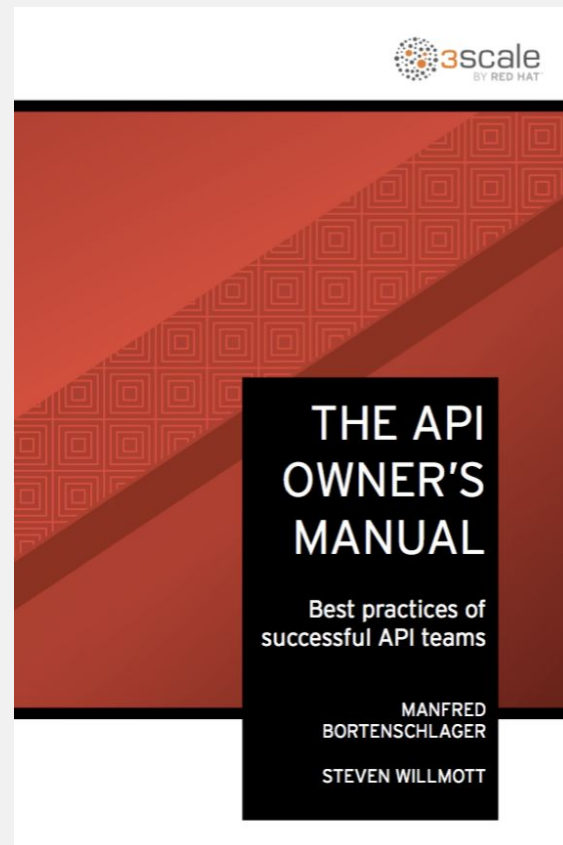
Three Things....

Microservices, Containers, APIs & Integration Days 2018

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1. Focus on True Value
2. Enable rather than Own
3. APIs as a Product

Microservices, Containers, APIs & Integration Days 2018

Red Hat

#1 Focus on True Value

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Many initiatives, all urgent, all intersecting, all conflicting

~~Platform Team~~

Platform Enablement Team

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Jeff Bezos moment?

http://homepages.dcc.ufmg.br/~mtov/pmcc/modularization.pdf

Outcomes

Expected

Prohibited	Design

Undesirable ← → Desirable

Fire Drill	Innovation

Unexpected
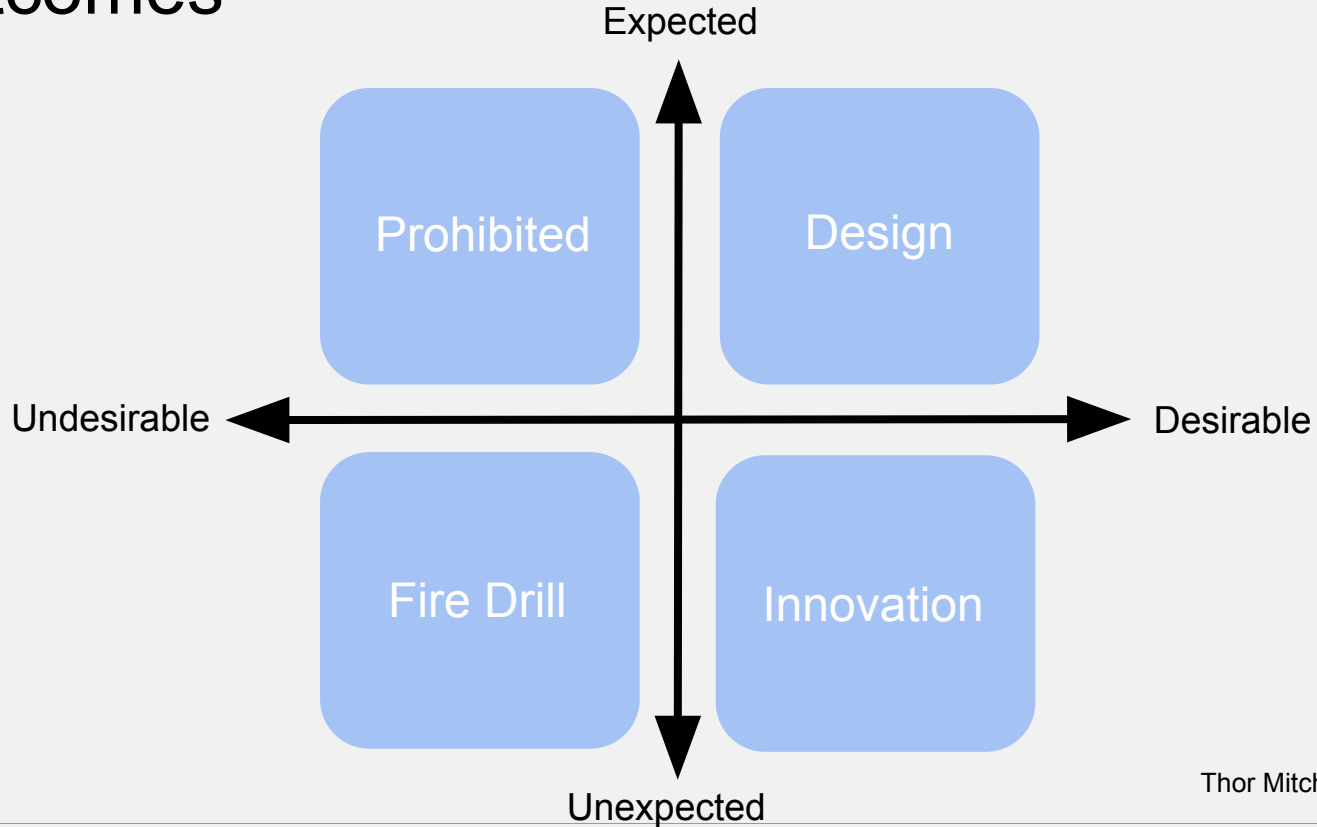
Thor Mitchell / Google / Crowdcube

maps
CREDIT UNION

Major platform investments

Little initial traction

Revisited all processes

EXAMPLE:
MAPS CREDIT UNION

https://www.youtube.com/watch?v=ylX3hUeYr-U (http://bit.ly/SWGA-C)

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Understand the Jeff Bezos moment:

change the way you work, *not the infrastructure you have*

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#1 Focus on True Value
#2 Enable rather than Own

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Bimodal IT …

"Gartner's Bimodal IT considered harmful"

- Phil Wainwright / Diginomica

"Gartner's Recipe for Disaster"

- Jason Bloomberg / Forbes

"This is akin to adding lipstick to the pig"

- Simon Wardley / CSC

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Fundamental misunderstanding of Bimodal IT that it *was about slowing down one of the Modes*

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Actually it is about creating ***stability between*** the modes

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1-1 IT

Internal Systems
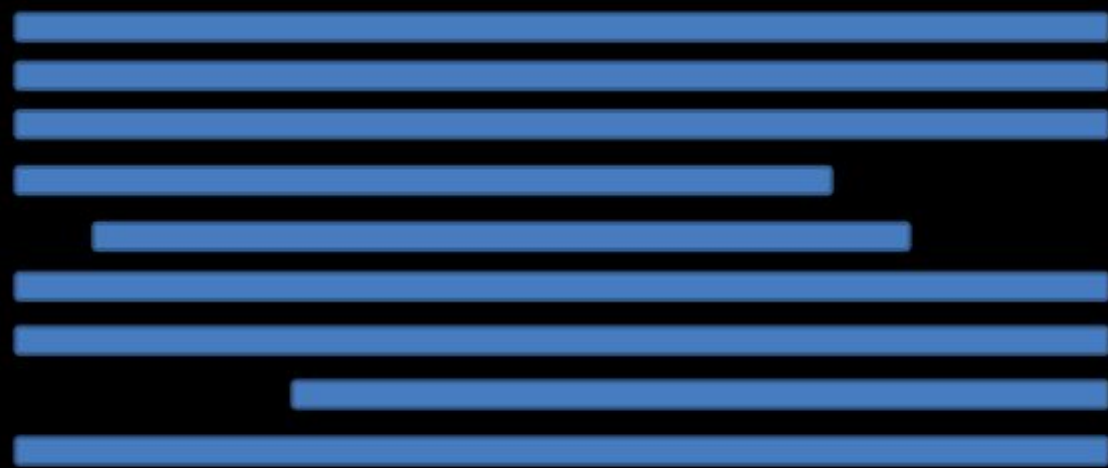
Applications

Need for software innovation drives deep integrations

1-N IT
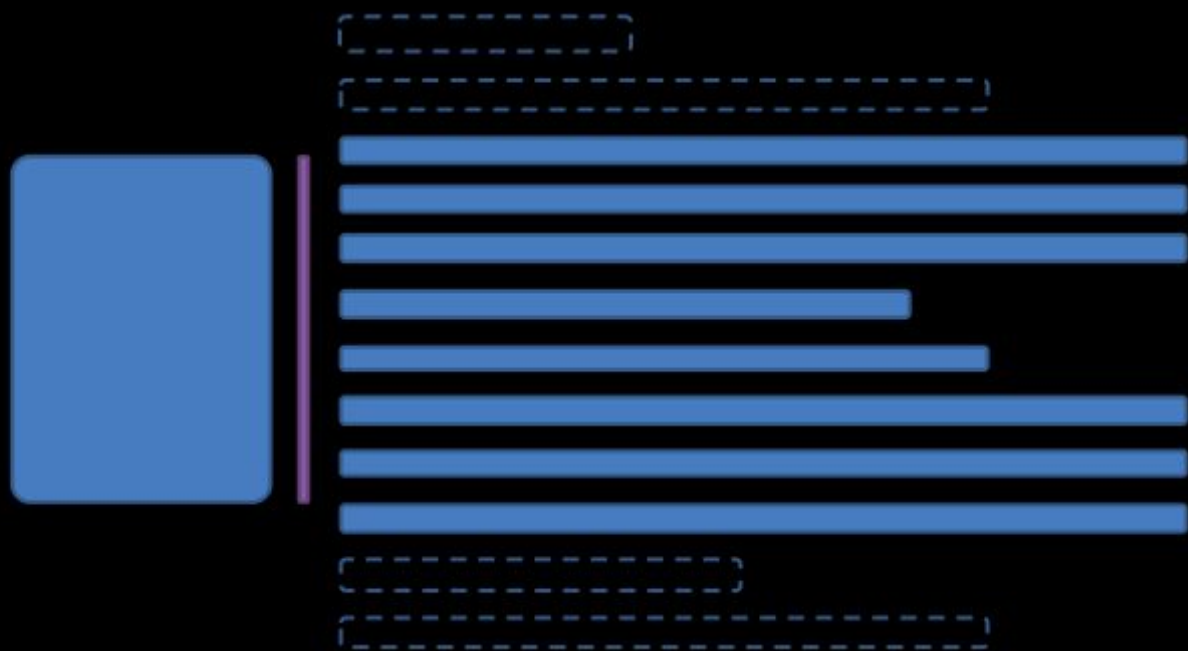
Governance and APIs create reusable anchor points

N-N IT
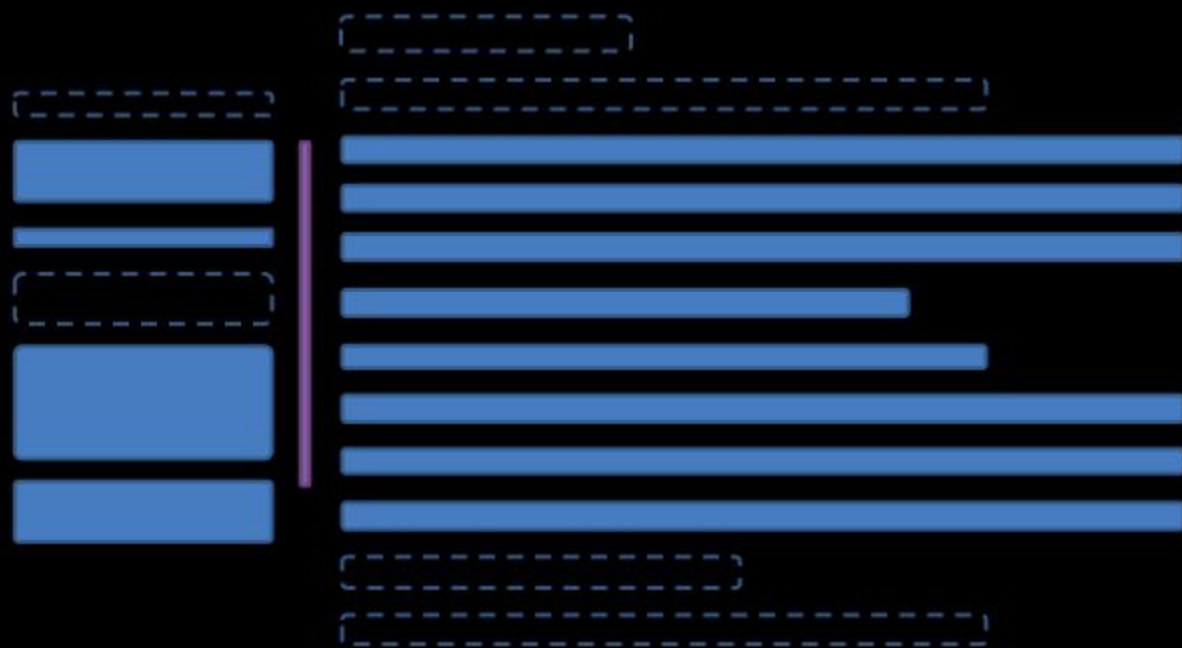
Common governance rules can apply to APIs from anywhere

Encourage deployment but…

Provide Technology Guidance

Impose Stability Requirements

Require Lifecycle Statements

Enforce Documentation Standards

Enforce Security Standards

In other words **ensure stability**

Create the right environment…

Automation is Key

Treat as a Capability to run APIs

Treat APIs as Products

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Lesson:

Enable the platform versus owning the platform

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#1 Focus on true value
#2 Enable rather than own
#3 APIs as a Product

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What is an API?:

REST? RESTful? SOAP? Streaming? ...

It's the <u>Mindset</u> that is Important

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The <u>Product</u> Mindset

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What does that mean?

Clear Ownership and Responsability

Identifiable Audience and User Base

Documentation and Onboarding Help

Service Level Agreements

Proper Lifecycle Management

Recognition that people depend on the API

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fitbit

EXAMPLE: FITBIT

Millions of devices syncing

Robust libraries & dev collaboration

Randomized back off

EXAMPLE:
3SCALE

APIs Matched Product

Only two breaking changes in 10 years

Customer Feedback loop

Noahm Schwartz, APIStra Red Hat

EXAMPLE:
SIMILAR WEB

Web Ranking API

Realized plugins were critical

Plugins now drive majority of business

Noahm Schwartz, API Strategy — Red Hat

Lesson:

Treat APIs a Products. This pushes you into the right interactions

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#1 Help move the puck
#2 Enable rather than own
#3 APIs as a Product
Bonus: What to Measure?

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Bad Metrics

Number of APIs	Number of API Calls	Number of Integrations
Number of Containers	Number of Servers	Number of Lunch & Learns

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Good Metrics

Number of Apps Supported

Number of complete Use Cases

Number of Users

Dollar Value of Business

Speed of Application development

Speed of API Deployment

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TAKE AWAYS...

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- Incremental transformation
- Creating a new organizational capability
- Treating APIs as products rather than resources

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THANK YOU FOR YOUR TIME!

- APIs will very likely be a key architectural component for most organizations
- Red Hat is investing heavily and aiming to be a long term partner
- Agile Integration, Container Management and API Management will be a key architectural pillars for the next 3-5 years

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FOLLOW UP MATERIAL

- Red Hat Integration homepage:
  https://www.redhat.com/en/technologies/jboss-middleware/integrate
- "Inside mind of a successful platform architect / Gartner APPS 2016"
  https://www.slideshare.net/3scale/inside-mind-of-a-successful-platform-architect-gartner-apps-2016
- "API Model Canvas for successful API strategies and programs"
  https://www.slideshare.net/3scale/api-model-canvas-for-successful-api-strategies-and-programs
- "The API Owner's Manual"
  https://www.redhat.com/en/resources/3scale-api-owners-manual-ebook

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Thank you

linkedin.com/company/red-hat

youtube.com/user/RedHatVideos

facebook.com/redhatinc

twitter.com/RedHat

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THREE PILLARS FOR INFRASTRUCTURE AGILITY

Key capabilities for modern software infrastructure agility

DISTRIBUTED INTEGRATION

- LIGHTWEIGHT
- PATTERN BASED
- EVENT ORIENTED
- COMMUNITY SOURCED

FLEXIBILITY

CONTAINERS

- CLOUD NATIVE SOLUTIONS
- LEARN ARTIFACTS, INDIVIDUALLY DEPLOYABLE
- CONTAINER BASED SCALING AND HIGH AVAILABILITY

SCALABILITY

APIs

- WELL DEFINED, REUSABLE, AND WELL MANAGED END-POINTS
- ECOSYSTEM LEVERAGE

RE-USABILITY

Tools and Processes

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MORE CUSTOMER EXAMPLES

INTEGRATION DRIVES CONSISTENT CUSTOMER EXPERIENCE

Distributed integration

- Lightweight
- Pattern based
- Event oriented
- Community sourced

- Avianca built and deployed a faster, more robust and consistent enterprise infrastructure to integrate applications
- Deployed Red Hat JBoss Fuse based integration to support applications for business-critical functions such as sales, ticketing, back office, and maintenance
- Faster integration of new companies and services
- Consistent customer experience across sales, ticketing & back office applications - path towards omni-channel experience

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KEYBANK: SIMPLIFYING AND ACCELERATING DEVELOPMENT CYCLES

Containers

- Retooled development and deployment entirely
- Broader availability and faster rollouts

KeyBank

- Long development cycles. Small under-resourced release team and a wide range of compliance checks required
- Container deployment and management across a broad set of developers. Shrank release times from 2-3 months to 1 week
- Also empowered more people to act and release - key effect on organizational dynamics

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REDHAT 3SCALE PRODUCT ANNEX

CAPABILITIES

Control

- Security
- Key Management
- Rate Limiting
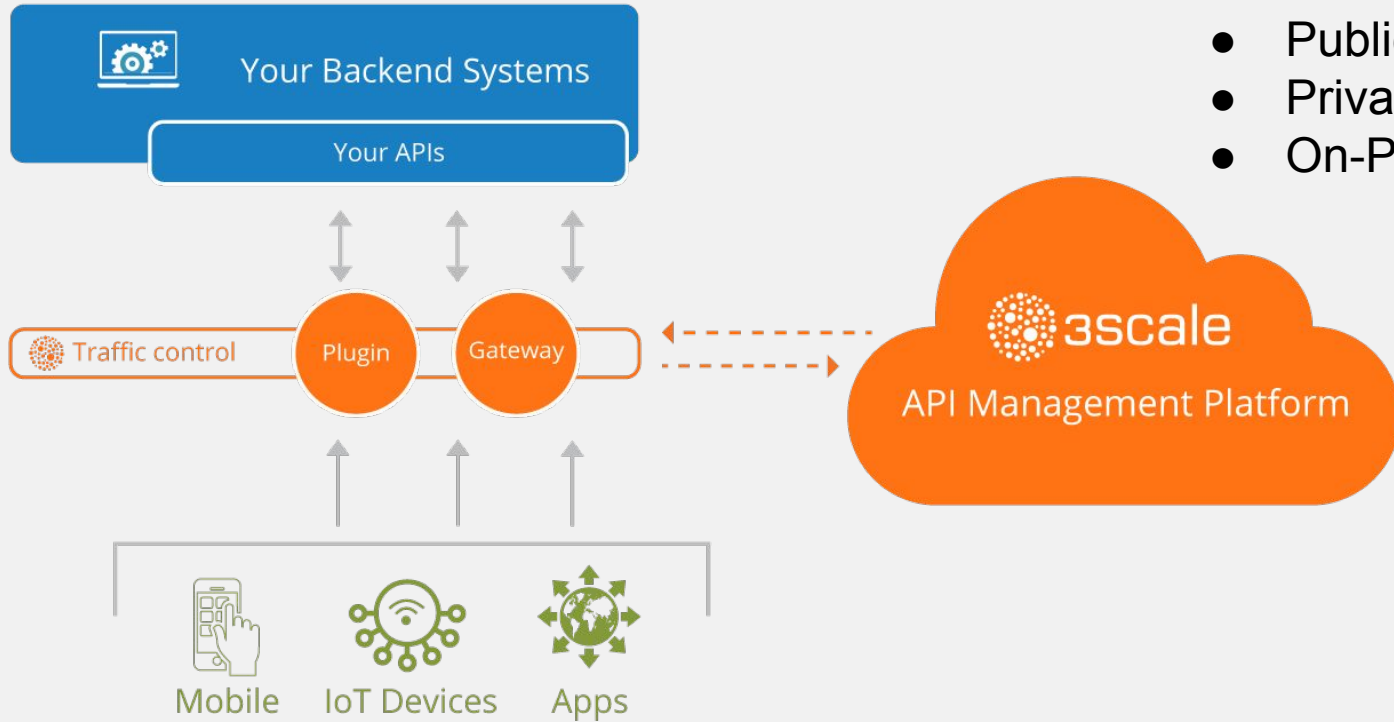- Policy Enforcement
- App & User Management
- Provisioning

Visibility

- Analytics
- App Tracking
- User Tracking
- Traffic Alerts
- Engagement
- Developer Support

Flexibility

- Distributed
- Multi-Department
- Multi-Environment
- Highly Scalable
- Powerful APIs
- Webhooks

Microservices, Containers, APIs & Integration Days 2018

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HIGH LEVEL ARCHITECTURE

Your Backend Systems

Your APIs

Traffic control — Plugin — Gateway

3scale

API Management Platform

- Public Cloud
- Private Cloud
- On-Premises

Mobile   IoT Devices   Apps

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WHY REDHAT 3SCALE

1. **Flexibility/Scalability**: Hybrid architecture, separation of policy management from control nodes. Highly scalable.

2. **Quick time to Value**: Using the SaaS product, get up and running very quickly.

3. **Automation**: APIs, code management for configuration, ready for Ansible/Puppet/Chef, integration(s) coming with OpenShift

4. **Cost Effective**: Generally significantly cheaper than competitors for equivalent volumes

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