Overview and Introduction to API Connect

```
GET /ibm
{

    "title" : "WW Technical Sales Specialist",
    "org" : "Hybrid Cloud Integration",
    "products" : [ "API Connect", "DataPower", "StrongLoop", "NodeJS" ],
    "email" : "jbhurston@us.ibm.com",
    "voice" : "+1 (404)-326-8239",
    "twitter" : "@jbh1122"

}
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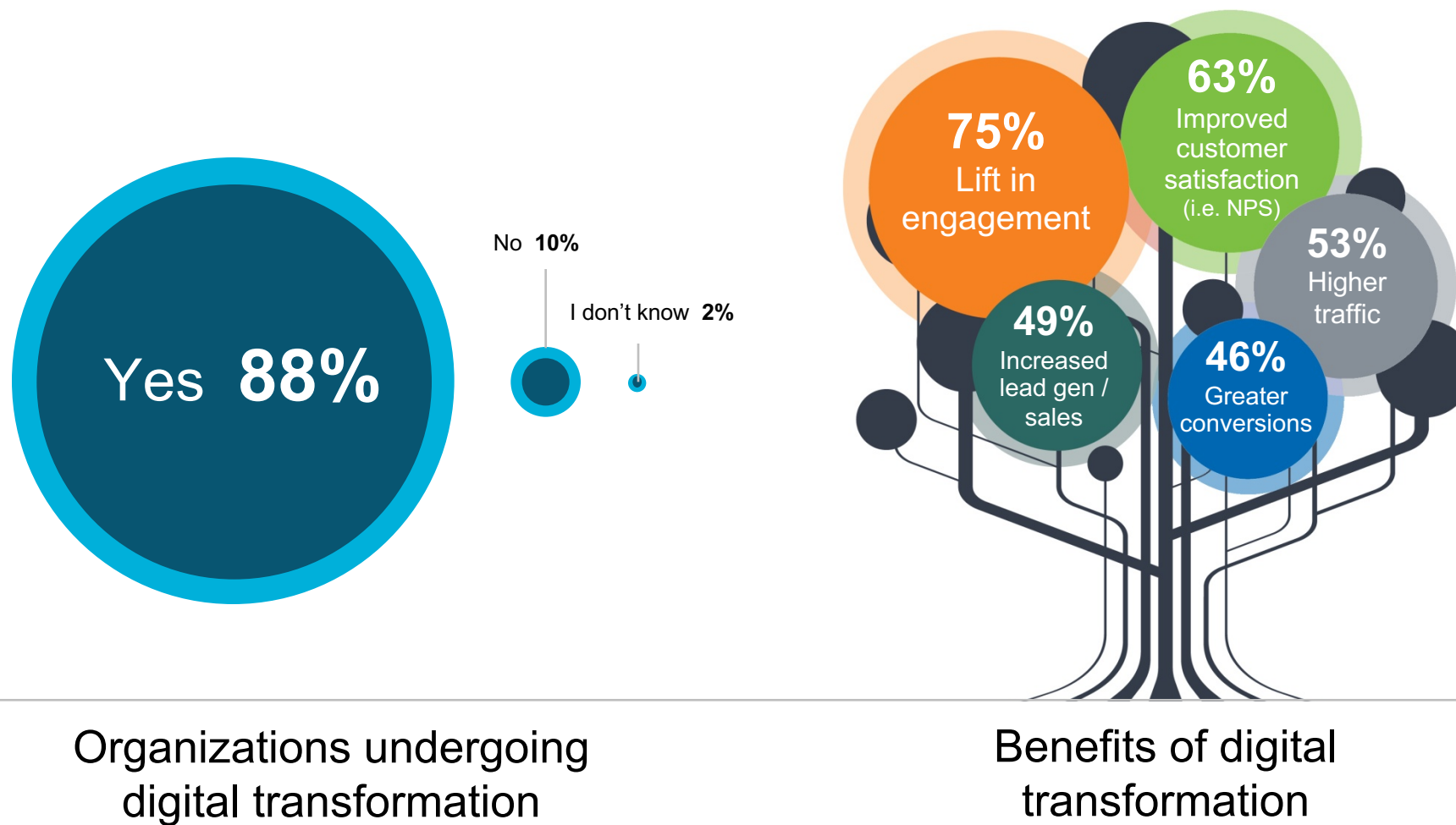
Organizations are undergoing digital transformation

Yes **88%**

No **10%**

I don't know **2%**

75% Lift in engagement

63% Improved customer satisfaction (i.e. NPS)

53% Higher traffic

49% Increased lead gen / sales

46% Greater conversions

Organizations undergoing digital transformation

Benefits of digital transformation

Source: Altimeter Group Digital Transformation Survey, 2014. N=59.

Digital transformation is revolutionizing our customer experience

Before	After

Before

Wait in line

Wait …

Order

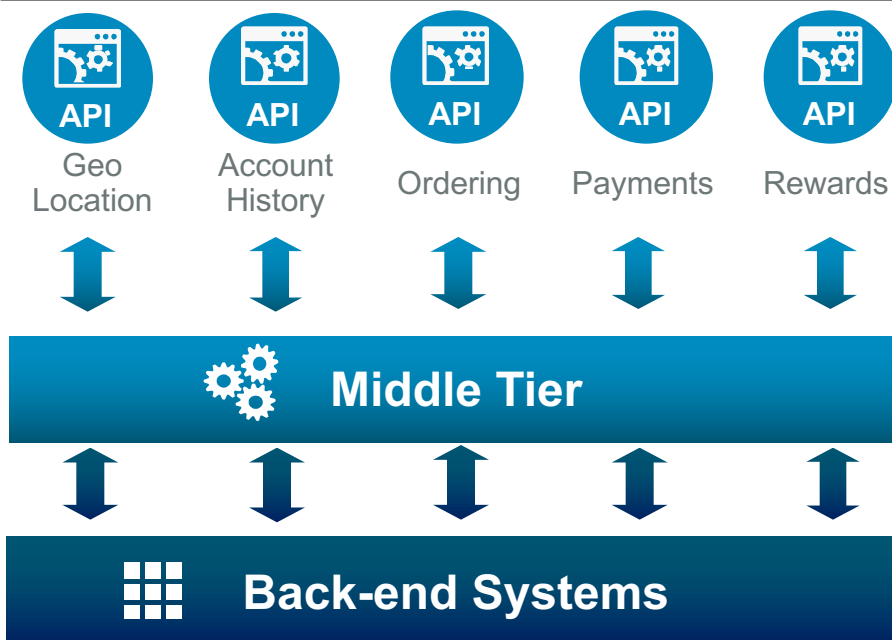Pay

Wait some more …

Coffee ...
finally

After

- Launch app
- Automatic Geolocation
- One click order and payment
- Personalized experience

Great Coffee. **No wait.**

Rockstar experience!

Digital transformation is fueling the API Economy

APIs power the new
digital customer experience

API	API	API	API	API
Geo Location	Account History	Ordering	Payments	Rewards

Middle Tier
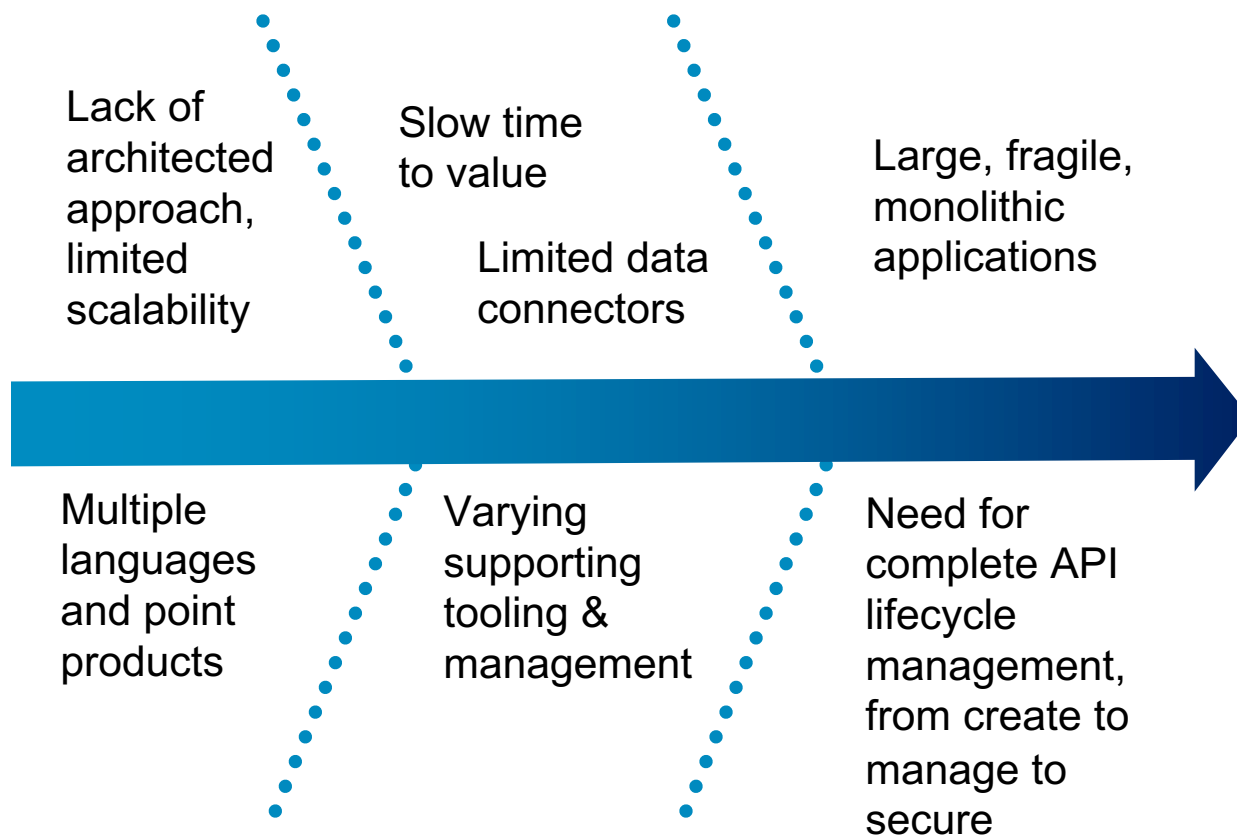
Back-end Systems

Massive Scale Requirements

5B connected devices

to grow to 25B over next 5 years

Gartner

API Dynamics

API's present challenges	Programming models are shifting

Lack of architected approach, limited scalability

Slow time to value

Limited data connectors

Large, fragile, monolithic applications

Multiple languages and point products

Varying supporting tooling & management

Need for complete API lifecycle management, from create to manage to secure
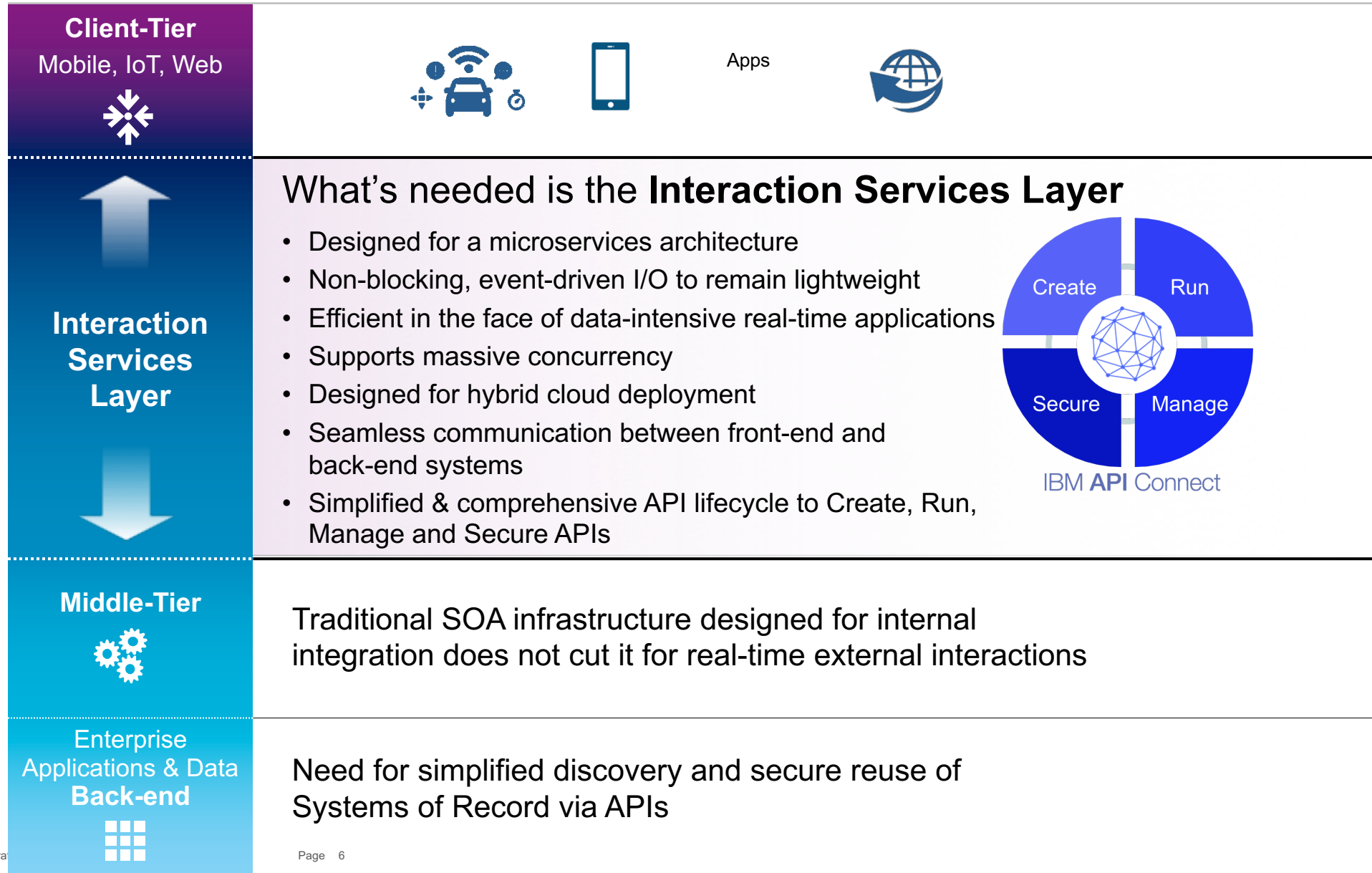
- Node.js is the emerging standard for APIs / Microservices
- JavaScript #1 ranked language (closely followed by Java)*
- Need for seamless API creation, lifecycle support and back end data connectors

*The RedMonk Programming Language Rankings: June 2015

Digital transformation demands a new architecture

Client-Tier
Mobile, IoT, Web

Apps

Interaction Services Layer

What's needed is the **Interaction Services Layer**

- Designed for a microservices architecture
- Non-blocking, event-driven I/O to remain lightweight
- Efficient in the face of data-intensive real-time applications
- Supports massive concurrency
- Designed for hybrid cloud deployment
- Seamless communication between front-end and back-end systems
- Simplified & comprehensive API lifecycle to Create, Run, Manage and Secure APIs

Create | Run

Secure | Manage

IBM **API** Connect

Middle-Tier

Traditional SOA infrastructure designed for internal integration does not cut it for real-time external interactions

Enterprise
Applications & Data
Back-end

Need for simplified discovery and secure reuse of Systems of Record via APIs

IBM API Connect: Simplified & Comprehensive API foundation

What is API Connect?

An integrated creation, runtime, management, and security foundation for enterprise grade API's and Microservices to power modern digital applications

What does API Connect provide?

- Automated, visual and coding options for creating APIs
- Automated discovery of system of records APIs
- Node.js and Java support for creating Microservices
- Integrated enterprise grade clustering, management and security for Node.js and Java
- Lifecycle and governance for APIs, Products and Plans
- Access control over API's, API Plans and API Products
- Advanced API usage analytics
- Customizable, self service developer portal for publishing APIs
- Policy enforcement, security and control

Create   Run

Secure   Manage
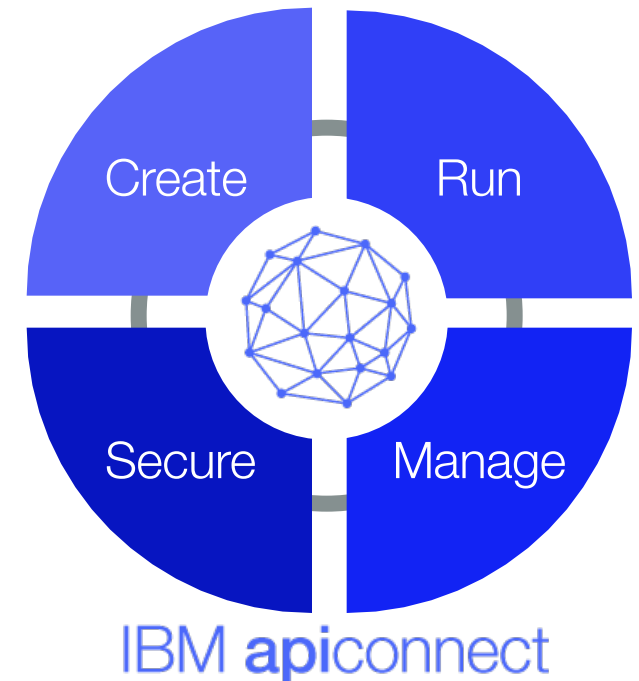
IBM **api**connect

IBM API Connect: Simplified & Comprehensive API foundation

Four Primary Roles

DIANA
API DEVELOPER

- Create and test APIs from existing services
- Add value with Gateway policies
- Stage completed APIs into Catalogs

OLIVIA
API OPERATIONS

- Approves subscriptions that require authorization
- Monitors the Operational Analytics dashboards
- Creates custom analytics reports
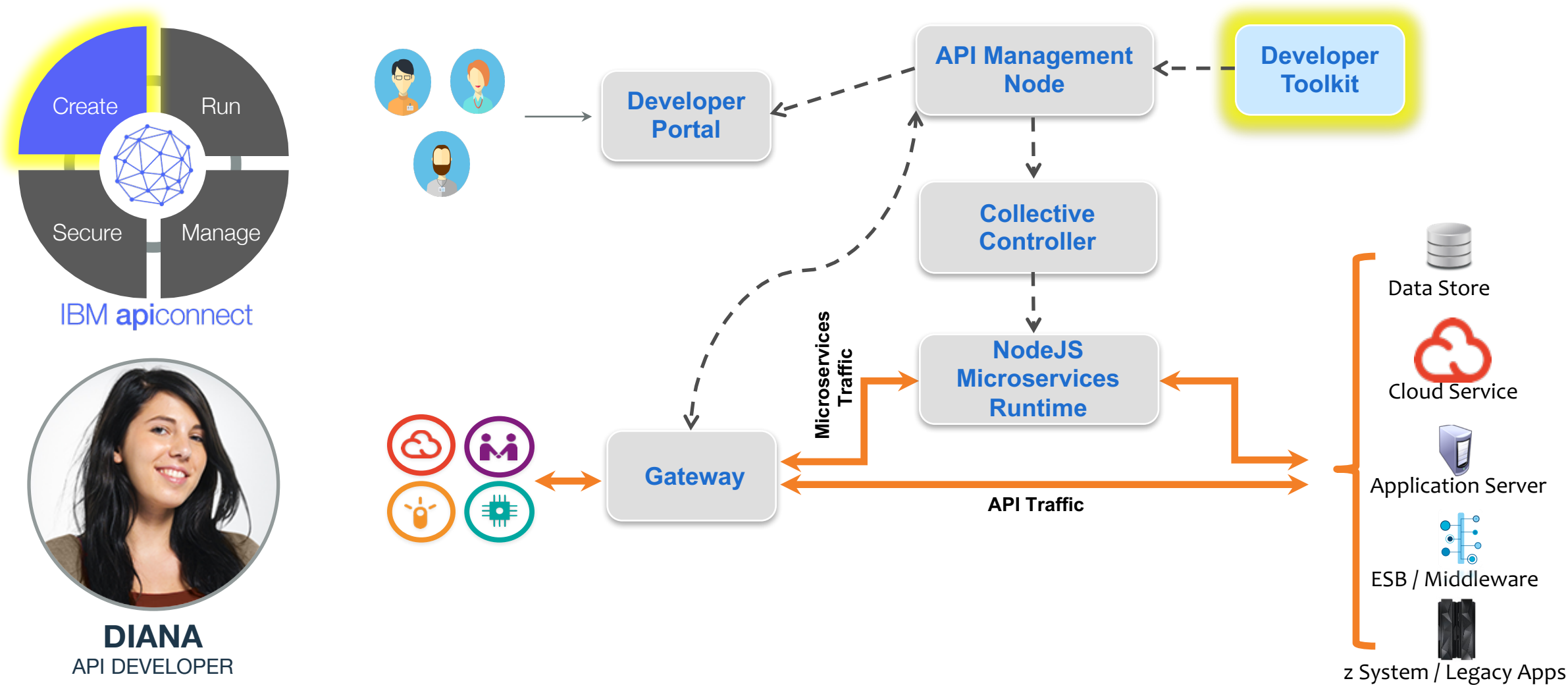
SHAWN
API PRODUCT MANAGER

- Bundle APIs into consumable Products
- Create Plans and determine SLAs
- Publish Products and Plans into developer Portal

DEREK
3rd-PARTY DEVELOPER

- Reviews and tests available API Products
- Registers apps in the Developer Portal
- Subscribes to a specific Plan for an API Product

# IBM API Connect: Comprehensive Polyglot API Creation & Runtime

Create
Run
Secure
Manage

IBM **api**connect

DIANA
API DEVELOPER

Developer
Portal

API Management
Node

Developer
Toolkit

Collective
Controller

NodeJS
Microservices
Runtime

Microservices
Traffic

Gateway

API Traffic

Data Store

Cloud Service

Application Server

ESB / Middleware

z System / Legacy Apps

IBM API Connect: Creating APIs

➢ **Write API's in Java, or use LoopBack API Framework**

✓ Open Source Framework

✓ Built on top of ExpressJS making it familiar to majority

of Express developers

✓ Development via rich UI or full-featured Command

Line Interface

✓ Growing list of IBM developed Connectors

✓ Build APIs from top down, bottom-up or meet-in-the-

middle approach.
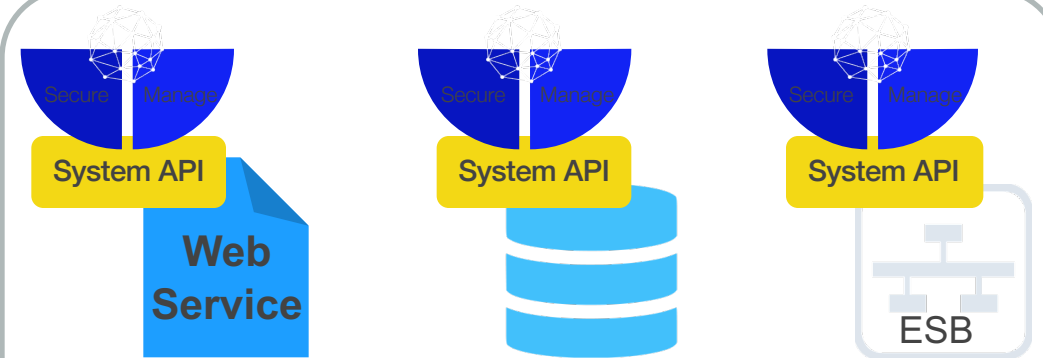
IBM API Connect: Wrap Existing System & Interaction APIs

System API — Web Service | System API | System API — ESB
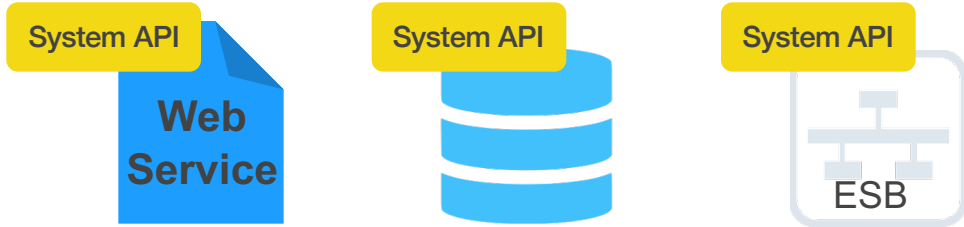
Organizations already have web services, which can be exposed as APIs

Software vendors are adding API support to existing products to pass through data from a system of record unchanged; aka System APIs
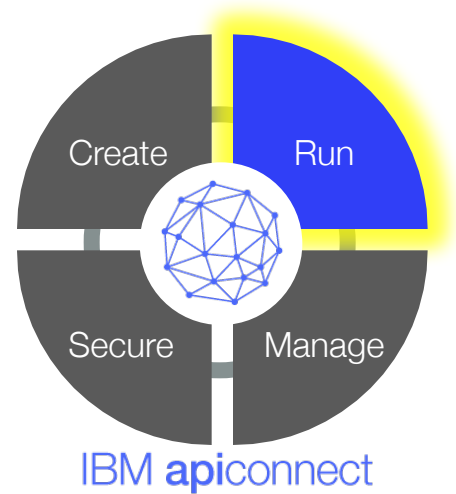
Vs.

System API — Web Service | System API | System API — ESB

Secure Manage

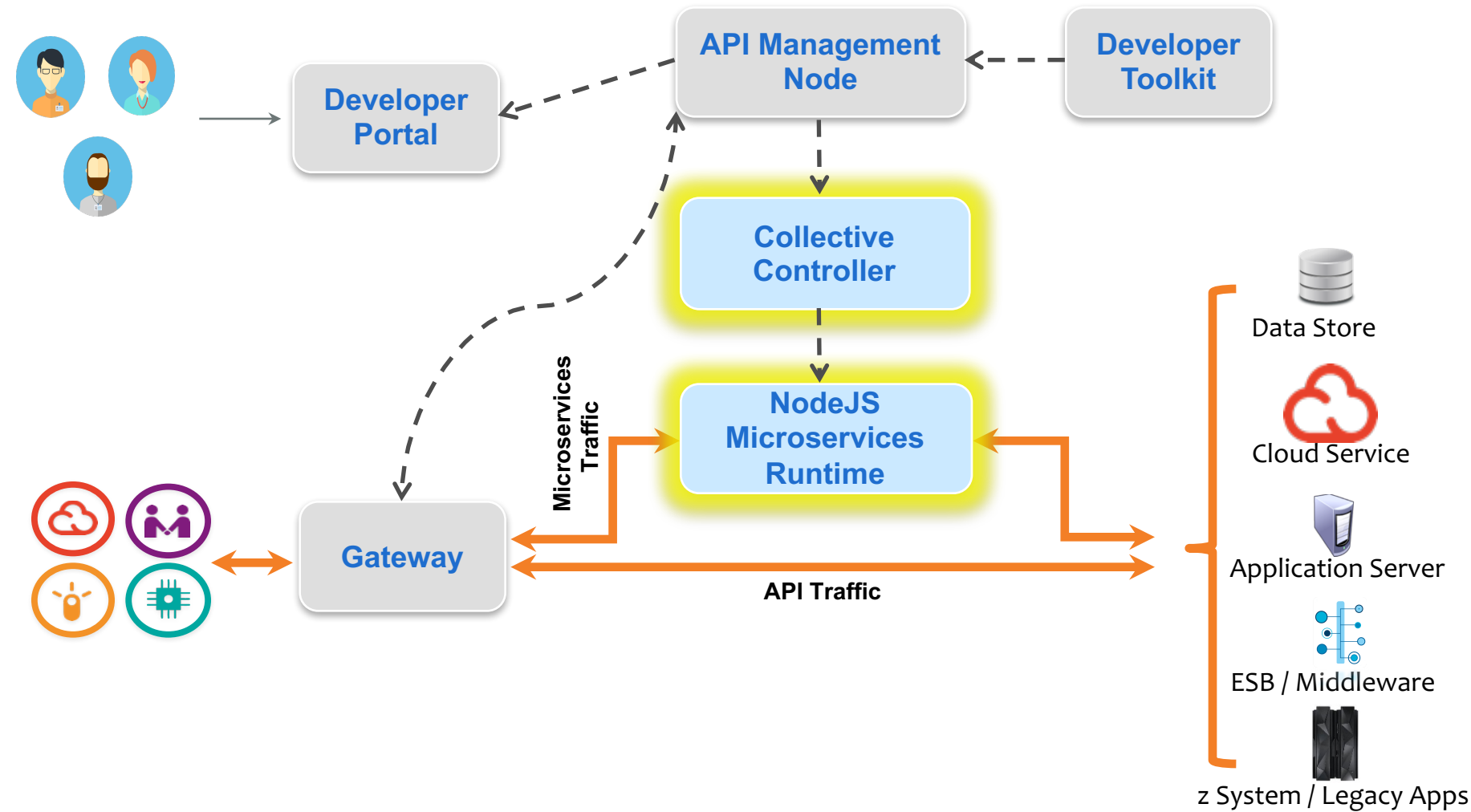Added Management & Security to protect enterprise assets

System APIs should be **managed** and **secured** to protect enterprise systems:

Where can developers can discover them? Who can have access? Which applications can access them? How frequently? At what cost? Etc…

IBM API Connect: Managing / Scaling API Runtimes

IBM apiconnect

OLIVIA
API OPERATIONS

Developer Portal

API Management Node

Developer Toolkit

Collective Controller

NodeJS Microservices Runtime

Gateway

Microservices Traffic

API Traffic

Data Store

Cloud Service

Application Server

ESB / Middleware

z System / Legacy Apps
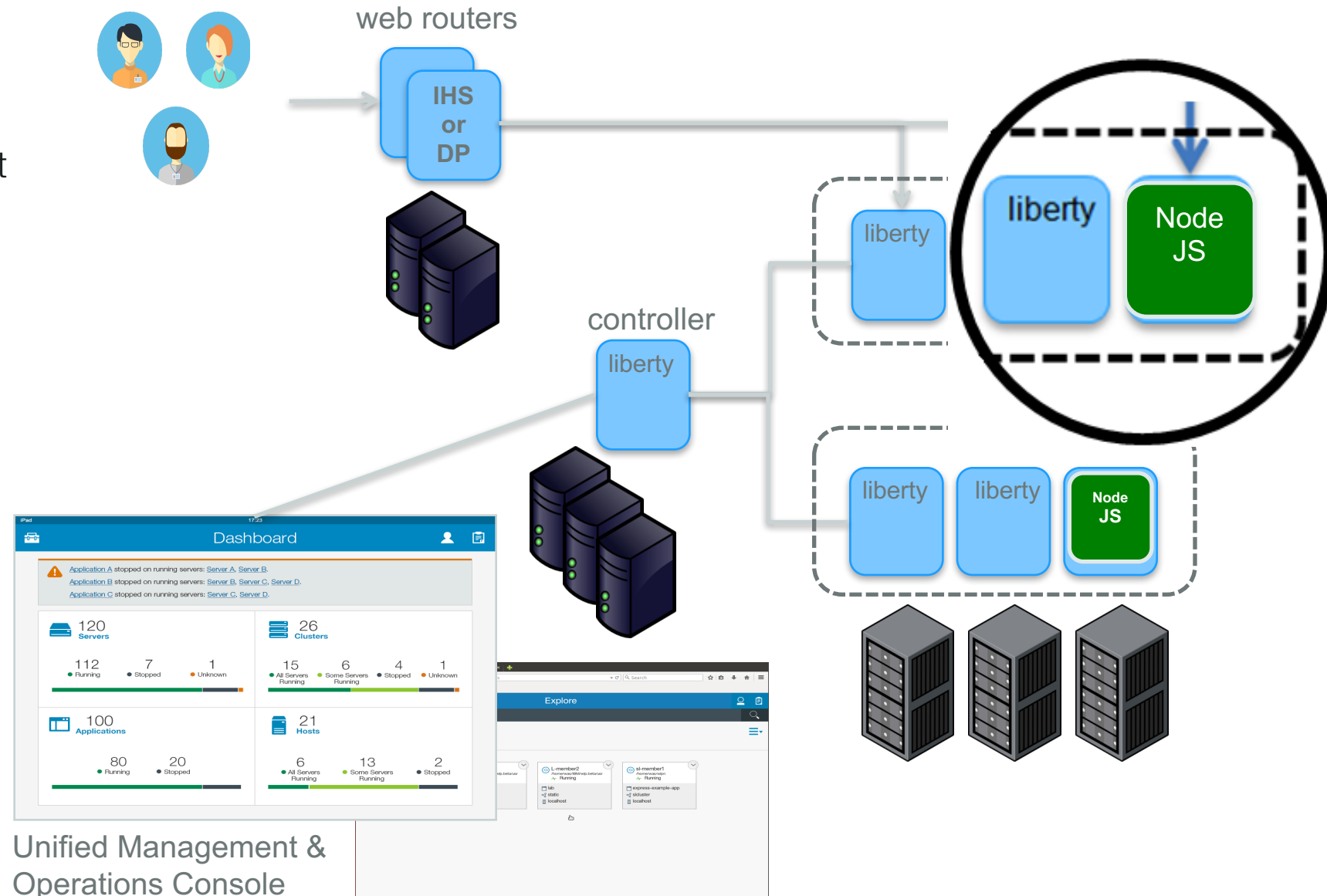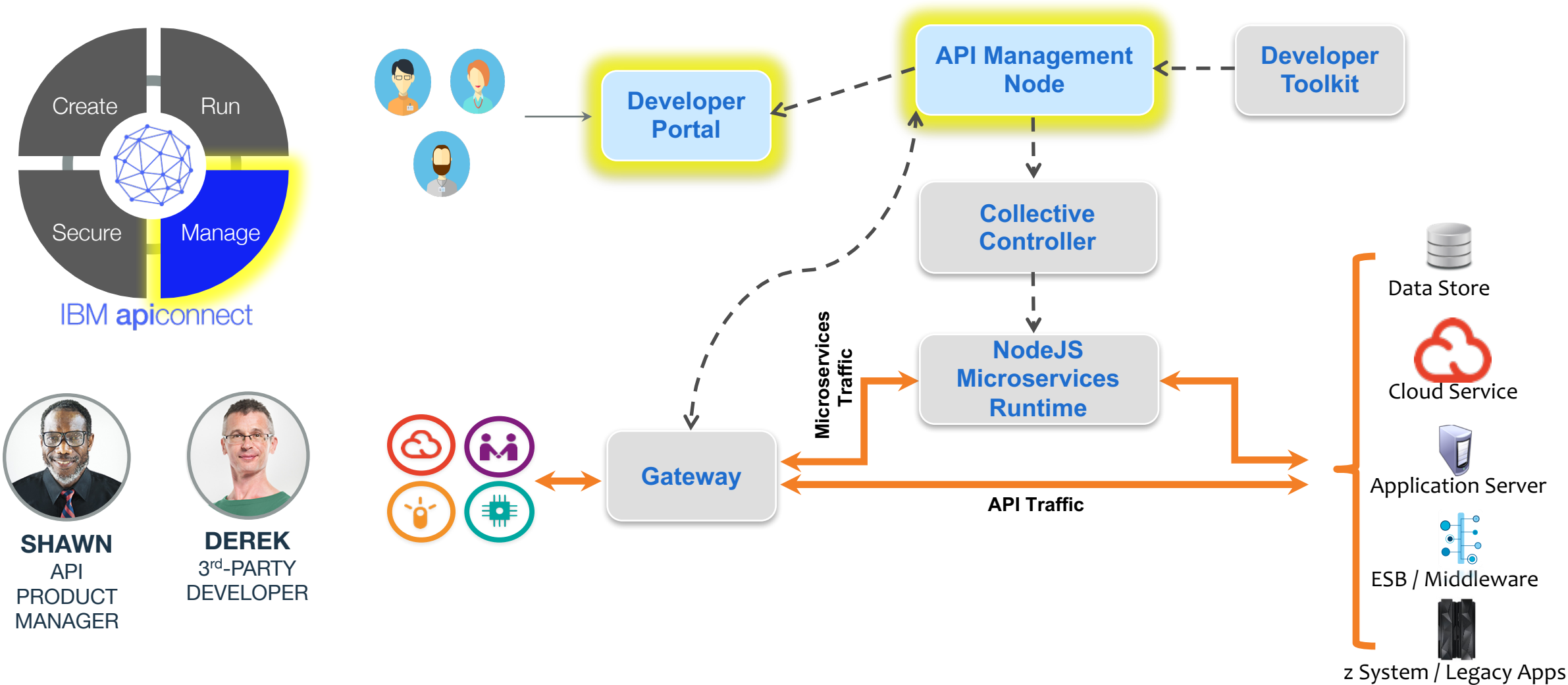
IBM API Connect: Collectives – Polyglot Runtime Management

Connect Collectives

✓ Polyglot Runtime Management

(Node.js, Liberty (Java)

✓ Unified Console: start, stop,

delete applications

✓ Enterprise Clustering & scaling

web routers

IHS or DP

controller

liberty

liberty

liberty

liberty

Node JS

liberty

liberty

Node JS

iPad   17:23

Dashboard

⚠ Application A stopped on running servers: Server A, Server B.
Application B stopped on running servers: Server B, Server C, Server D.
Application C stopped on running servers: Server C, Server D.

120 Servers

112 Running   7 Stopped   1 Unknown

26 Clusters

15 All Servers Running   6 Some Servers Running   4 Stopped   1 Unknown

100 Applications

80 Running   20 Stopped

21 Hosts

6 All Servers Running   13 Some Servers Running   2 Stopped

Explore

Unified Management &
Operations Console

IBM API Connect: Managing APIs

Create | Run | Secure | Manage

IBM apiconnect

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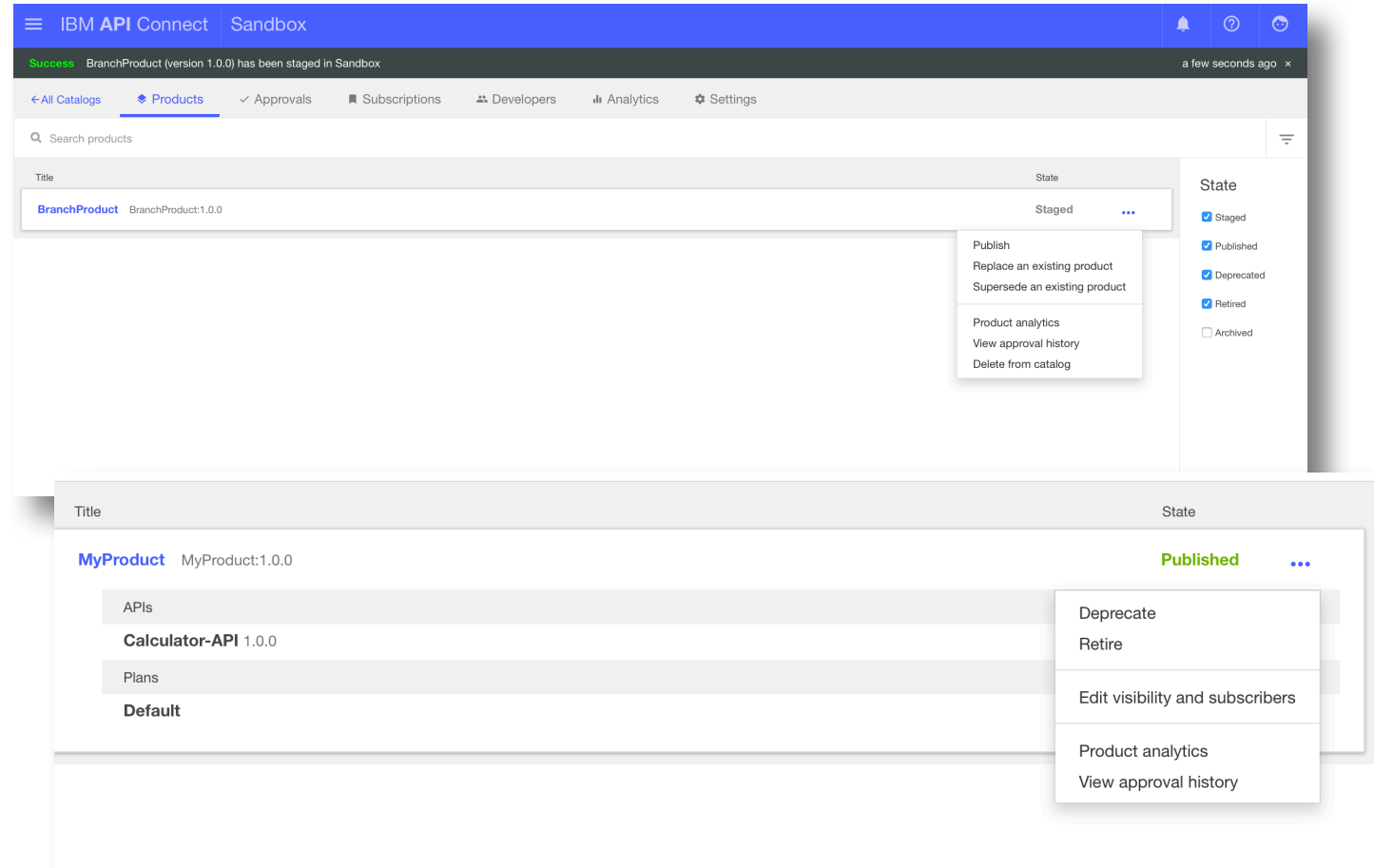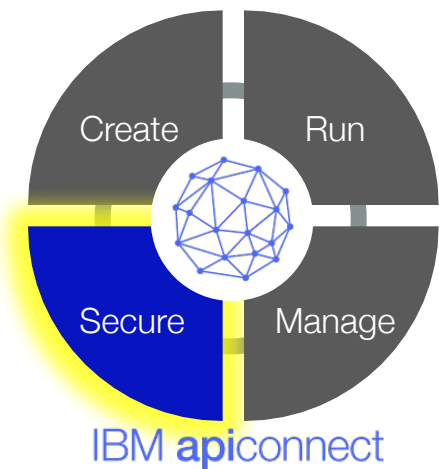
IBM API Connect: Managing APIs

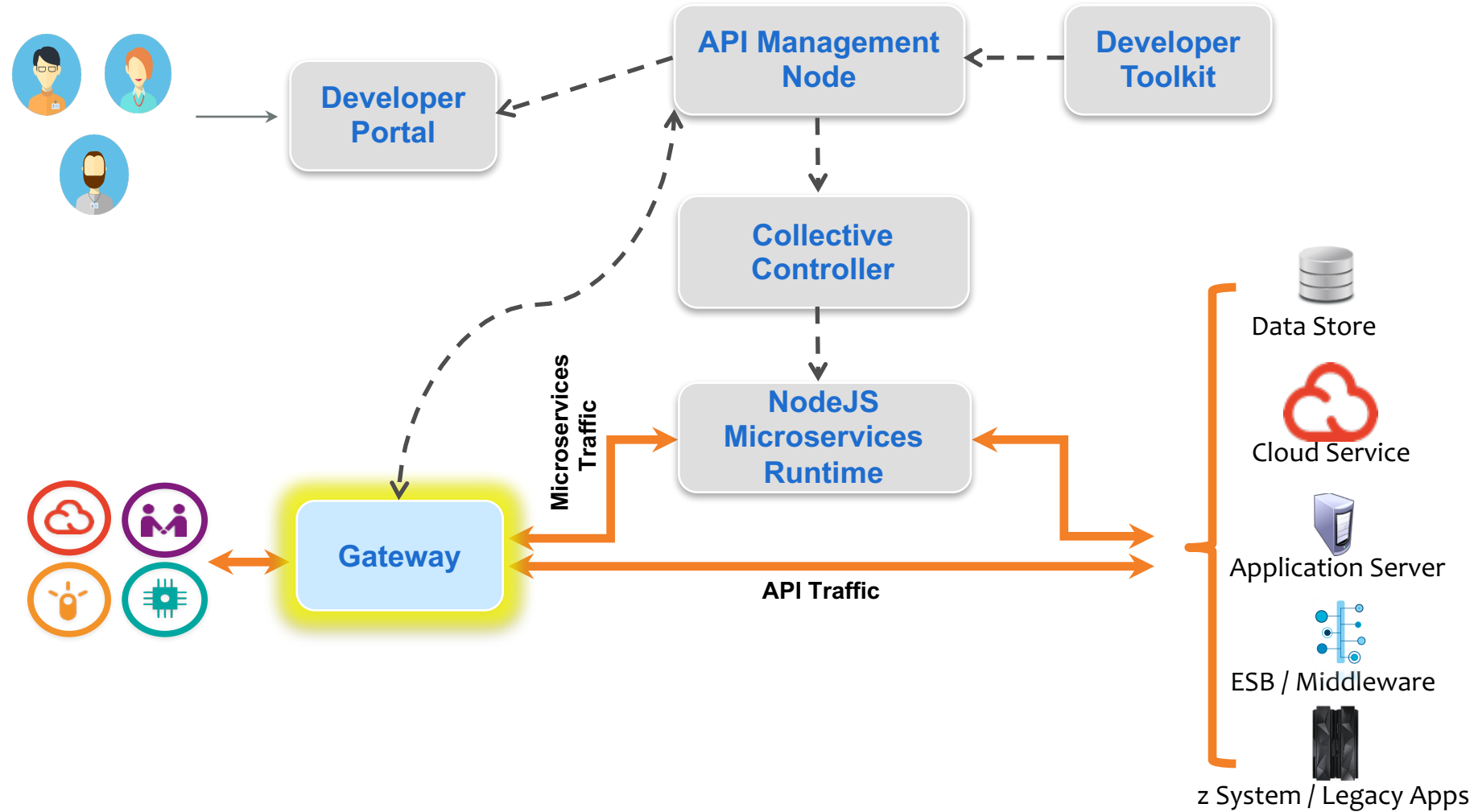➢ **API Management Node & Developer Portal**

- ✓ API discovery

- ✓ API, Plan & Product policy creation

- ✓ API, Plan & Product lifecycle mgmt.

- ✓ Self-service, customizable, developer portal

- ✓ Advanced Analytics

- ✓ Subscription & community mgmt

IBM API Connect: Securing APIs

Create

Run

Secure

Manage

IBM **api**connect

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IBM API Connect: Which Gateway is for me?

➢ **DataPower Gateway** (Enterprise API Gateway)

   ✓ Built for Departments & Cross Enterprise usage

   ✓ Enterprise-grade security, performance & stability

   ✓ Low touch gateway without external dependencies

     (Physical, Virtual, Cloud, Docker form factors)

   ✓ Comprehensive set of security, traffic management,

     mediation & acceleration functionality

   ✓ Supports multiple catalogs per instance/cluster

➢ **Micro Gateway** (Basic API Gateway)

   ✓ Built for Developers & Single Projects

   ✓ Programmable using JavaScript (built on Node.js)

   ✓ Embedded into native developer experience

   ✓ Basic set of security & traffic management

     functionality

   ✓ Supports single catalog per instance/cluster

IBM API Connect: Simplified & Comprehensive API foundation

Create. Run. Manage. Secure.

Comprehensive API Solution

End-to-end integrated experience across API lifecycle - create, run, manage, secure, socialize & analyze APIs through a single offering on-premise, in the cloud or hybrid

Built-in Assembly UX & Policies

Use a visual tool to compose API policy flows & utilize new built-in policies to secure, control & optimize API traffic without writing custom code or touching the gateway

New Intuitive Interface

Modernized user experience to reduce complexity, improve performance and allow quicker creation, management, and enforcement of APIs

Create & Run APIs & Microservices

Rapidly create Microservices, connect to data sources, and expose them as REST APIs via model-driven approach. Run Node.js & Java runtimes via unified operations & management

First Class Developer Experience

Empower developers to create and test APIs locally on their laptops in minutes and stage it to on-premise or cloud deployment

Developer Toolkit

Enable automated scripting & DevOps automation through a command line environment for defining, managing & deploying APIs

Enterprise focused

Developer focused

IBM API Connect: Grows with your Business Needs

API Connect Essentials

- For Developers

- No charge / Forum Support
- 50K API calls/mo
- Micro Gateway
- Analytics
- Microservice Application Compute (Node.js/Java)

API Connect Professional

- For Departments with a single API project
- Paid, with IBM support
- 5 Million API calls/mo
- Micro Gateway
- Analytics
- Microservice Application Compute (Node.js/Java)

API Connect Enterprise

- For Departments & Cross Enterprise
- Paid, with IBM support
- 25 Million API calls/mo
- Micro & Advanced Gateway
- Advanced Analytics
- Microservice Application Compute (Node.js/Java)

- IBM Support
- Additional API calls
- HA requirements
- Additional Microservice App Compute

- Additional API calls
- Advanced Analytics
- Advanced API Gateway Policies
- Advanced HA requirements
- Additional Microservice App Compute

Deploy where is most convenient for you – IBM Cloud, 3rd Party clouds, or on-premise

IBM API Connect: Let's See It In Action!

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THANK YOU!

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    "title" : "WW Executive, Technical Sales Specialist",
    "org" : "Hybrid Cloud Integration",
    "products" : [ "API Connect", "DataPower", "StrongLoop", "NodeJS" ],
    "email" : "jbhurston@us.ibm.com",
    "voice" : "+1 (404)-326-8239",
    "twitter" : "@jbh1122"

}
```

IBM

Services & Training to Ease Your API Economy Journey

Need help understanding what APIs means to my business

Learn to expose and manage APIs, - Discover how you can implement API Economy

Skilled team ready to implement first Use Case

Moving from Pilot to Program

Highest Level of Automation

Briefing
- Economy
- Value
- IBM

Quick Start
- APIM Deep Dive

Discovery & Planning Workshop
- API Considerations
- Best Practices
- Architecture
- Develop Use Cases
- Next Steps

Quick Win Pilot
- Running
- Measure
- Validate

Enable & Integrate
- LOBs
- Go Live
- Secure

Digital Transform
- Applications
- Agile
- ROI
- Production

Managed Services
- As a Service
- SLA