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Securely Manage an API exposed by a Cloud Foundry application

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Developer Advocate, ZA

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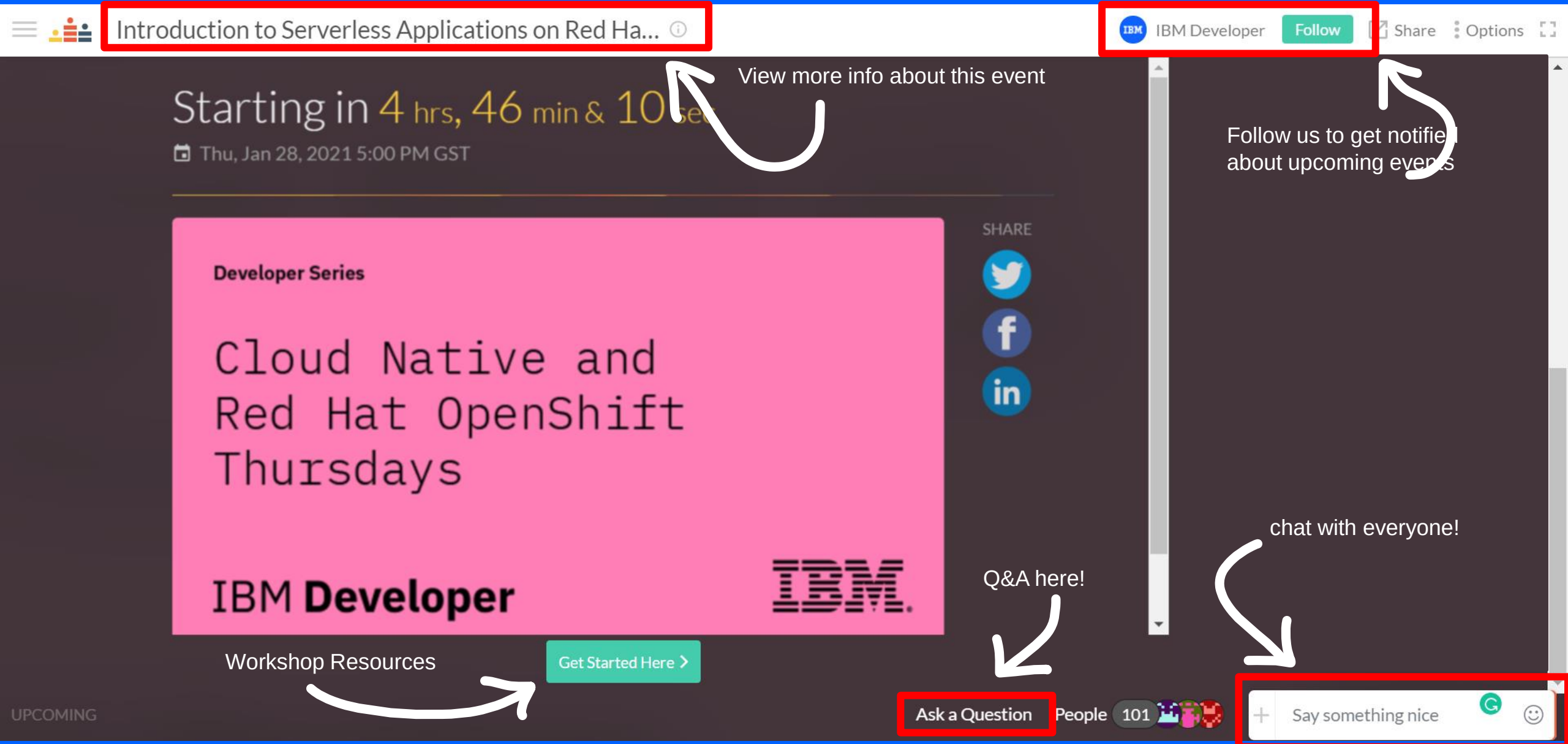
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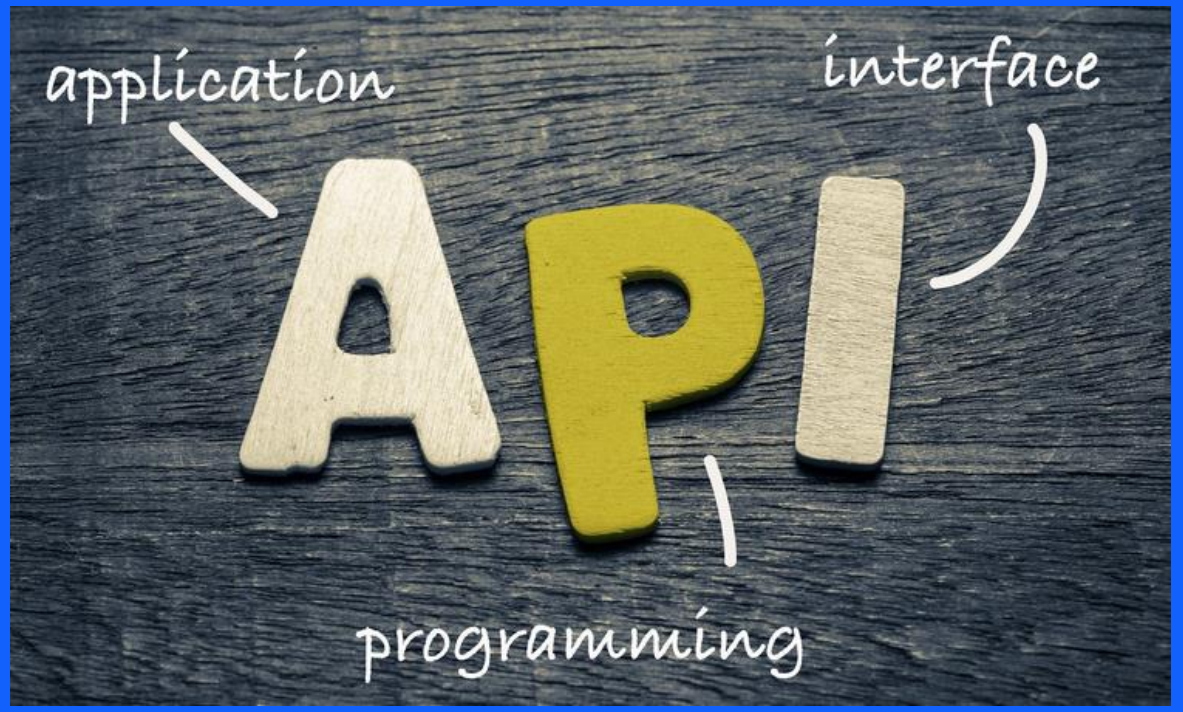
OVERVIEW

- What’s an API?
- API basics
- Types of API protocols
- Styles of API development
- Benefits of API development
- Cloud Foundry and Benefits
- API Gateway and Features
- Hands On

What is an API?

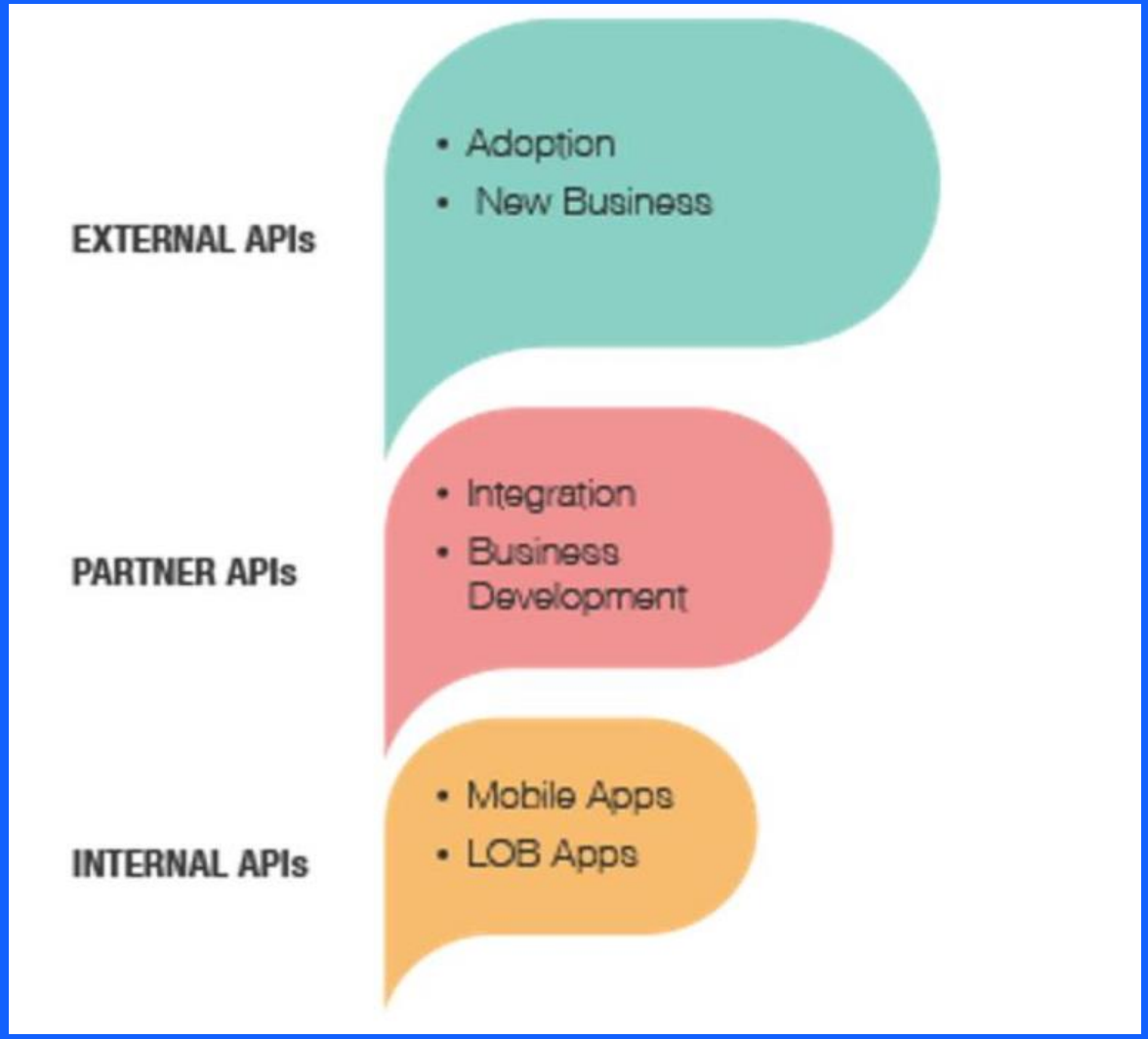


- API stands for application programming interface
- API is to Extract information
- An API is basically a set of definitions and protocols that enable two applications to talk to one another

API basics

Simple APIs, which are available separately

Composite APIs, where multiple data or service APIs are combined



dzone.com

Types of API Protocols

- **REST**
- **SOAP**
- **RPC**

A simple classification of APIs

Web service APIs
- SOAP
- XML-RPC and JSON-RPC
- REST

WebSocket APIs

Library-based APIs
- JavaScript
- TWAIN

Class-based APIs (object orientation)
- Java API
- Android API

OS functions and routines
- Access to file system
- Access to user interface

Object remoting APIs
- CORBA
- .NET Remoting

Hardware APIs
- Video acceleration
- Hard disk drives
- PCI buses

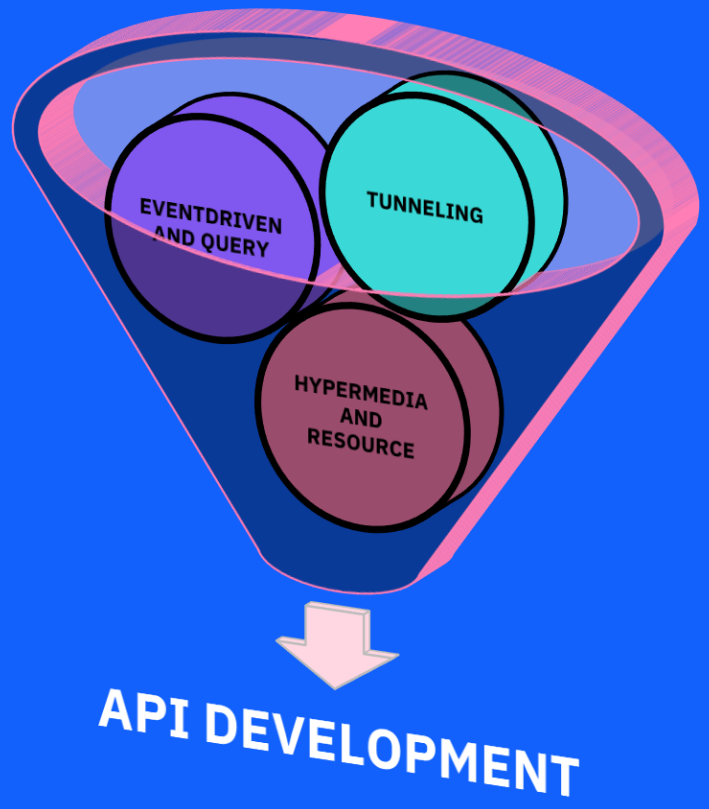
TUNNELING API is a collection of functions that can be called remotely

RESOURCE API is a collection of resources that can be interacted with

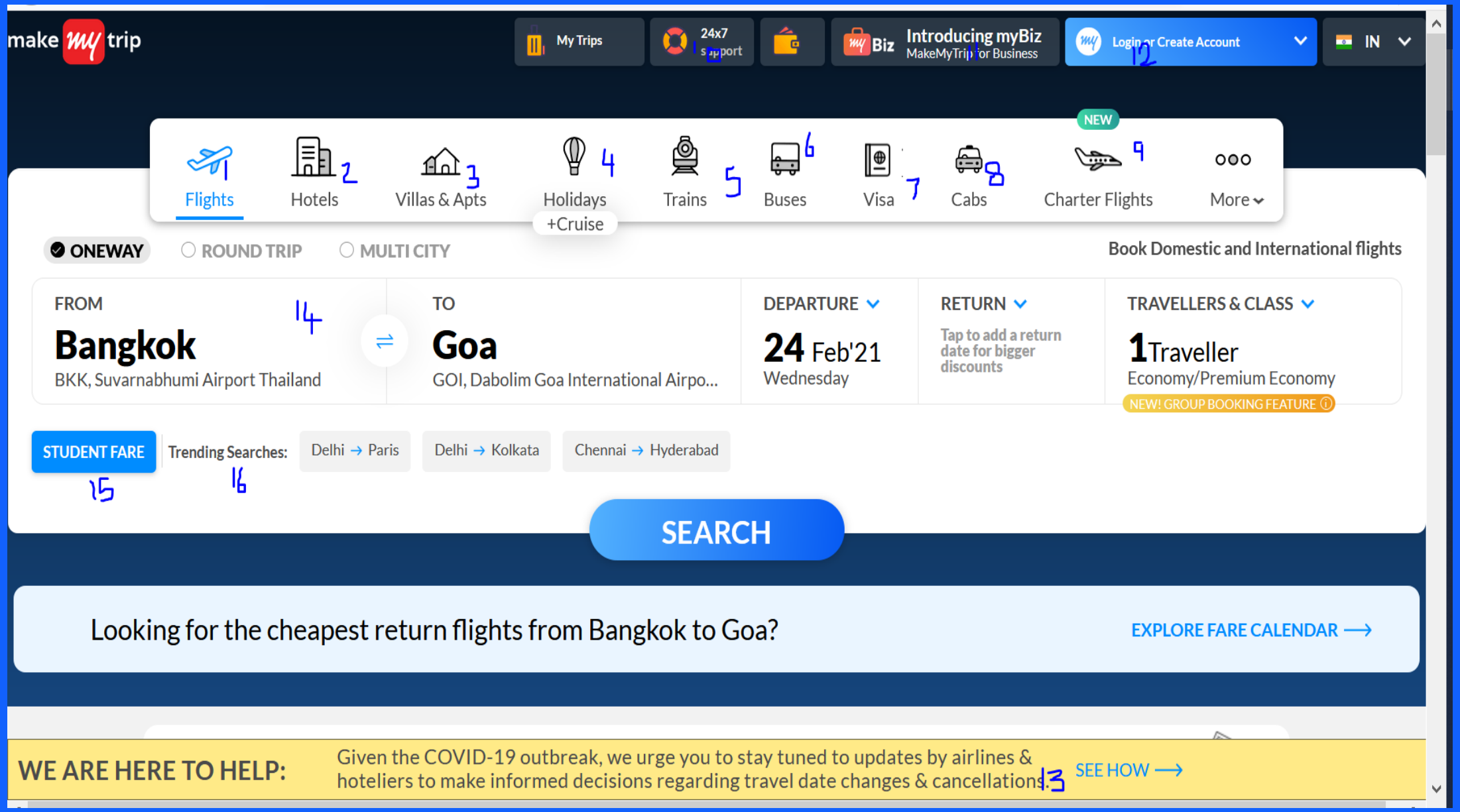
HYPERMEDIA API is a collection of interlinked resources

QUERY API exposes a structured data model that can be queried

EVENT DRIVEN API listens for events instead of asking for information



Example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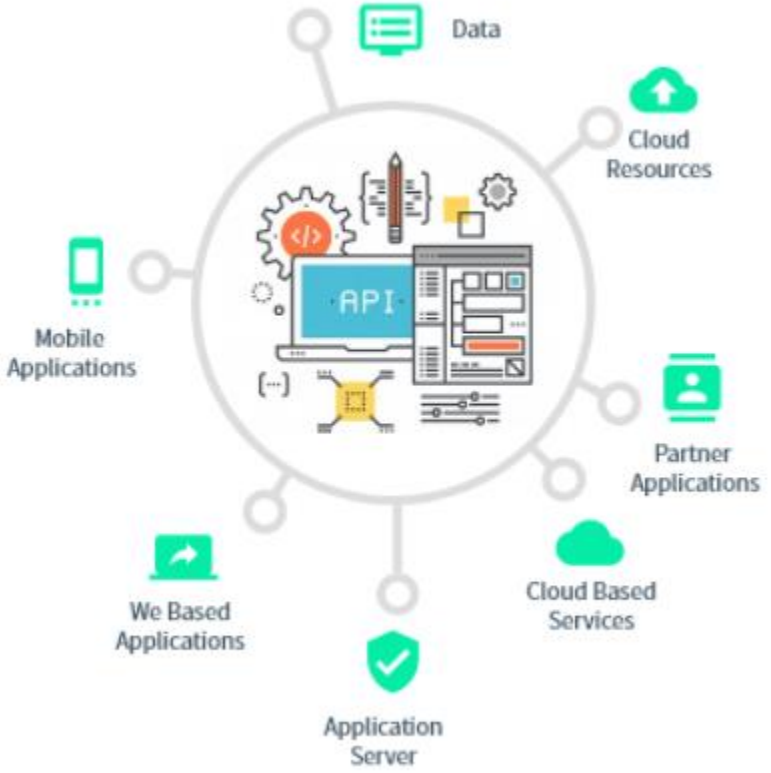
Benefits of API development



APIs Enable Multi-Solution Integration

- Faster innovation
- Time saver
- Businesses rely on API
- Businesses can focus on what they are good at

https://colorwhistle.com/api-development-importance/

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Cloud Foundry

Platform-as-a-Service (PaaS), that ensures the fastest, easiest, and most reliable deployment of cloud-native applications.

Cloud Foundry ensures that the build and deploy aspects of coding remain carefully coordinated with any attached services — resulting in quick, consistent and reliable iterating of applications.

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Cloud Foundry

Benefits of Cloud Foundry

1. Choose your own language
2. Fault tolerant
3. Extend apps with services – eg toolchains
4. Access control
5. Automatic placement

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Cloud Foundry

Benefits of Cloud Foundry (Contd.)

1. Automatic health management
2. Automatic routing
3. High availability
4. Automatic deployment scaling

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API Gateway

An API Gateway service enables you to securely share your APIs with other developers.

Features:

1. Create APIs

Create API proxies and custom APIs backed by IBM Cloud resources. View API gateway logs and short-term API performance and usage statistics during development

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API Gateway

An API Gateway service enables you to securely share your APIs with other developers.

Features:

2. Secure APIs

Secure your APIs by requiring API key/secret and OAuth social login. Apply rate limits to protect your back end applications.

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API Gateway

An API Gateway service enables you to securely share your APIs with other developers.

Features:

3. Share APIs

Share OpenAPI documentation and API keys with other developers both within and outside of IBM Cloud. Brand your APIs by assigning them to custom domains.

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API Gateway

API Gateway offers the following features to control usage, increase adoption, and track statistics about your APIs.

4. Rate limiting

You can enforce a rate limit to manage the number of calls that applications can make to your APIs.

You can specify a rate limit so that only a permitted number of calls are made per second, minute, or hour.

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API Gateway

API Gateway offers the following features to control usage, increase adoption, and track statistics about your APIs.

5. OAuth

To prevent unauthorized access to your data, you can ensure that only users with the correct authentication can access your APIs.

The OAuth token-based authorization protocol allows third-party websites or applications to access user data without requiring the user to share personal information.

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API Gateway

API Gateway offers the following features to control usage, increase adoption, and track statistics about your APIs.

6. CORS (Cross-Origin Resource Sharing)

CORS is a mechanism that uses HTTP headers to allow an app to retrieve data from an API across domain boundaries.

Only those cross-domain API calls that include the appropriate CORS header can be fulfilled. If your API does not enable CORS, then it can return data only to apps within the same domain.

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API Gateway

API Gateway offers the following features to control usage, increase adoption, and track statistics about your APIs.

7. API analytics

API Gateway uses the IBM Cloud LogDNA service to store and display information that is generated during API invocations.

You can use the analytics feature to track call usage. You can also monitor usage to understand how your APIs are being used so that you can make informed decisions about how to update your APIs to increase adoption.

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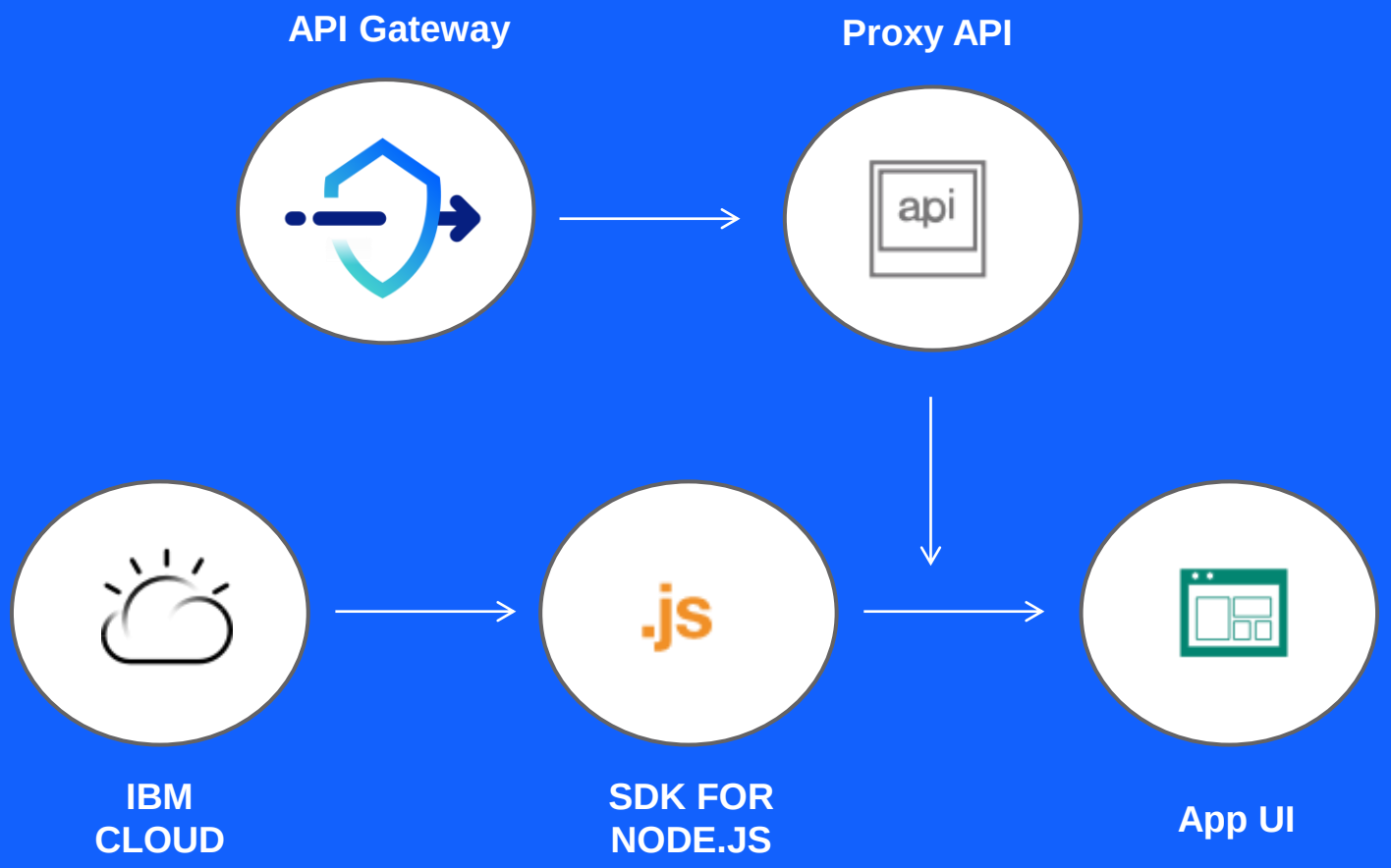
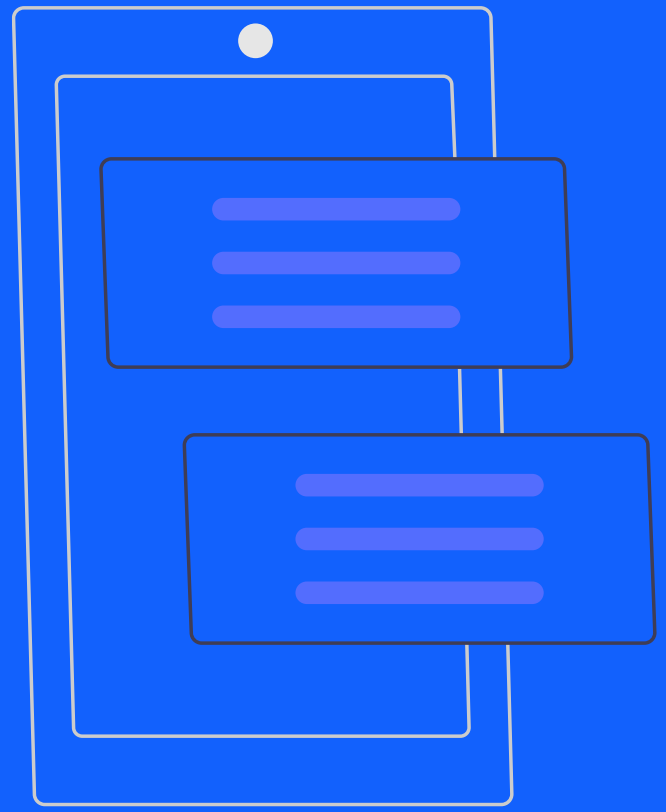
Hands-On


API Gateway
Proxy API
api
.js
IBM
CLOUD
SDK FOR
NODE.JS
App UI

Survey

https://ibm.biz/BdfsKj



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