

What is a REST API?

What are the benefits and how are they fundamental to your cloud application development?

Nathan Heckman from IBM Cloud explains in this video.

Intro

Let's start with an example to understand REST APIs:

Imagine you work for an ice cream shop and need to build a web application to display the flavors in stock and allow workers to update these flavors. How do you do this? With a REST API.

What does "REST" stand for?

REST stands for **Representational State Transfer**. It is a standardized software architecture style, a specific type of API that is widely known and used in the industry.

Benefits of REST APIs

- Simple and standardized approach to communication.
- Scalable and stateless, making modifications easier as the service grows.
- High performance due to caching support.

REST API Example

For the ice cream shop, the REST API endpoint might look like this: `icecream.com/api/flavors`.

- `api` signifies the API portion of the endpoint.
- `flavors` is a "resource" in the REST API.

Main Building Blocks

The main building blocks of a REST API are:

- **Request:** Sent from the client to the server.
- **Response:** Received back from the server.

Request

Actions or verbs used in REST APIs:

- **CRUD:** Create, Read, Update, Delete.
- **HTTP Methods:** POST (Create), GET (Read), PUT (Update), DELETE (Delete).

Components of a request:

- **Operation:** HTTP method.
- **Endpoint:** The REST API endpoint.
- **Parameters/Body:** Data sent in the request.
- **Headers:** May include API key or authentication data.

Response

Responses are typically in the form of JSON data.

REST API Scenarios

Displaying Flavors in Stock

Operation: GET

Endpoint: `/api/flavors`

Response: An array of flavor resources (e.g., strawberries, mint chocolate).

Updating a Flavor

Operation: PUT

Endpoint: /api/flavors/1 (to indicate the ID of "1" to replace)

Parameter/Body: New flavor (e.g., chocolate)

Response: Confirmation that the flavor was updated.

Creating a New Flavor

Operation: POST

Endpoint: /api/flavors

Parameter/Body: New flavor (e.g., restful raspberry)

Response: Confirmation that the new flavor was created with a new ID.