Google Cloud

API BaaS

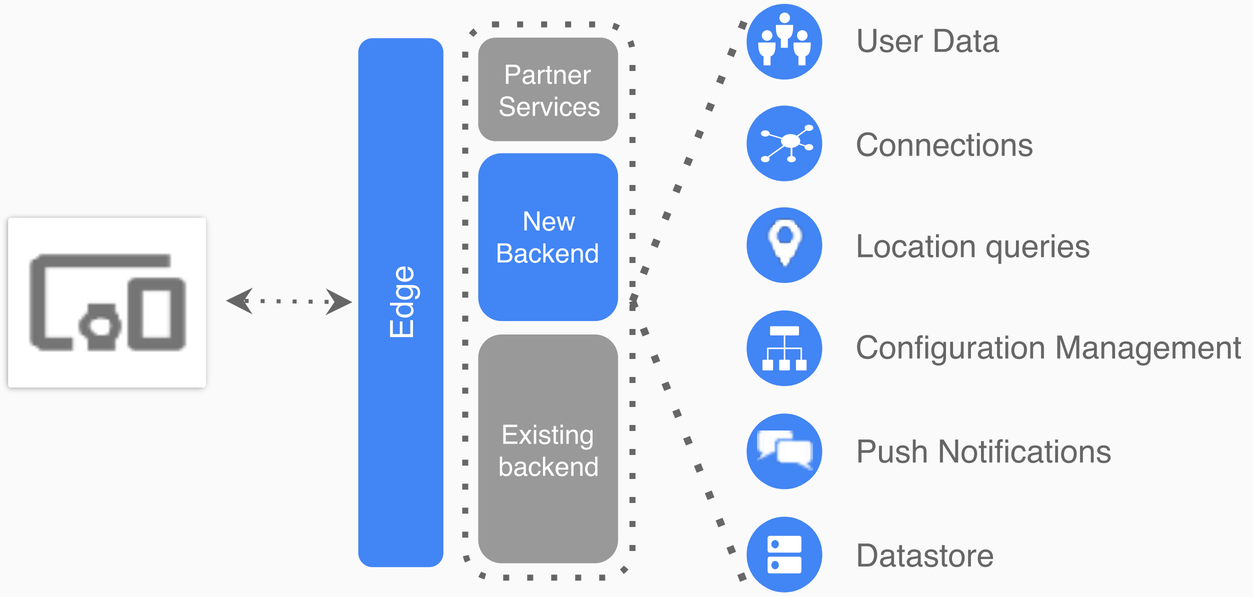
Overview

Product overview

- API BaaS is a service that makes it easy to store, retrieve , and query your data.
- Leverages Usergrid (2+ years in open source, 500+ stars, 200+ forks, 35 contributors) with Cassandra NoSQL database.
- Create new data services required by apps and exposed as APIs
- SDKs for
  - iOS, Android, JavaScript
  - Ruby, Node.js, Microsoft .Net

Scalable Datastore	Accelerate App Delivery
User Data	Simplify Management of Users & Preferences
Location	User Location Relevance
Push Notifications	Proactively Engage Users
Connections and Social	Bring Social Context to Apps

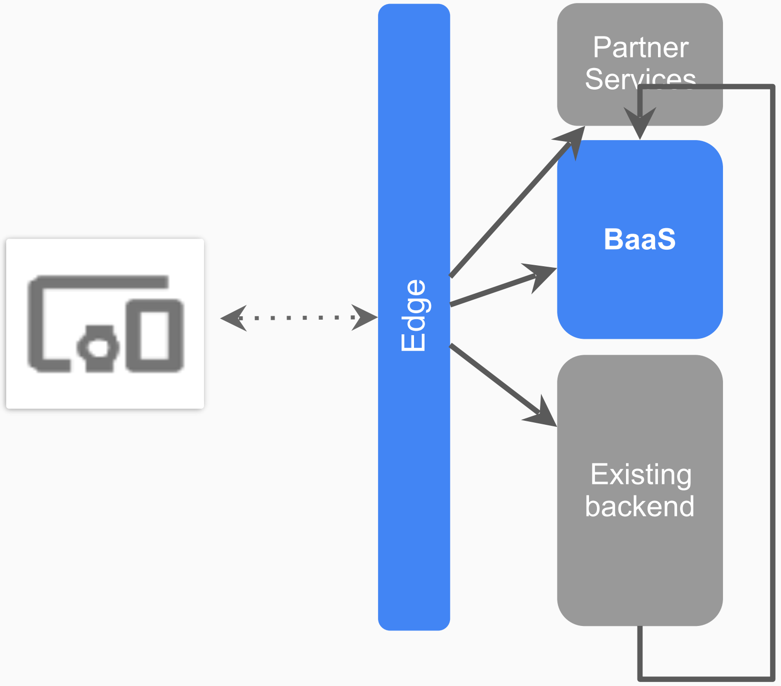
API BaaS - Features



Built in back-end as a service to store data for your apps and provide out of box social login, push-notifications, activity streams and more.

API BaaS – Typical use cases

- Source of record for data generated by new API clients (Mobile, IoT, etc) that don't have a formal place on existing backend systems
- Act as data integrator for multiple backend data sources like databases, ESB, SOA services
- Temporal data store for static or semi-static data that needs to be distributed and placed close to the gateway
- Geolocation queries support
- Push notifications



API BaaS – Capabilities

API BaaS

User Data	• Authorization • Authentication • Multiple devices per user
Connections	• Activities • Follower / Following relationships • Social login
Location queries	• Based on latitude/longitude • “LOCATION WITHIN” queries • Applicable to any entity
Config Management	• Remote configuration management • Target subset of users • Deliver real time fixes and improvements
Push Notifications	• One or subset or all devices • Send based on query and • entity relationships
Datastore	• Collection-oriented access • Entity relationships • Complex queries

Data storage

What database technology is used? Cassandra

- Fast writes to the data store
- A distributed architecture that means no single point of failure
- Flexibility in data model design (schema-less)
- Linear scalability

Different types of data can be stored inside of BaaS:

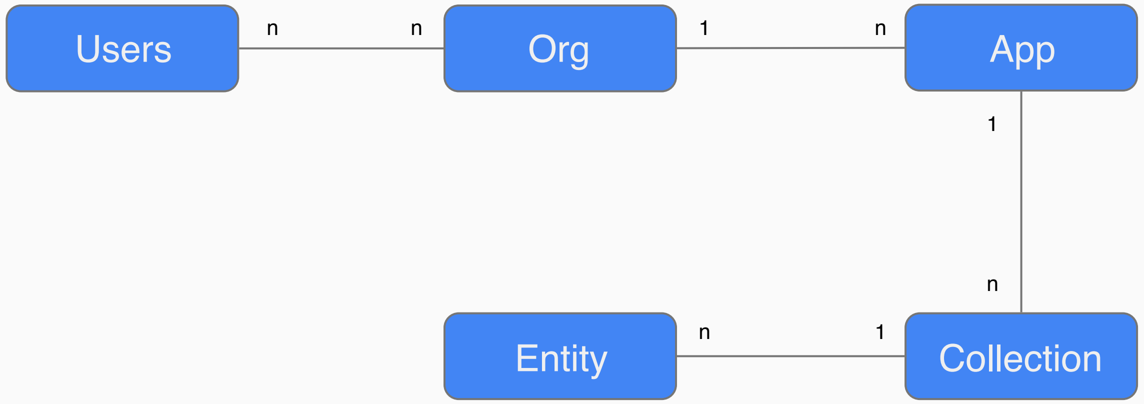
- **Application data** – e.g. listing of houses, a library catalog of books, or even a social graph. This data can be queried using SQL-like query language
- **Asset data** – Image, video, binary, audio files, etc.

UI walkthrough

- Web Portal
- Org Administration
  - Applications
  - Organization API credentials
  - Organization Administrators
- Users
- Monitoring
- Push

- Data
  - Add Collection
  - Add Data
  - Update Data
  - Query Data
  - Data from API
- Activities
- Configure
- Shell

Orgs, Apps, Collections, Entities



Security & authentication

API BaaS provides for Client Credentials and Resource Owner Password Credentials (or password) grant type tokens out of the box

Password

- Application user – based on user entities, based on the roles and permissions assigned to the user
- Admin user – based on admin users at API BaaS management layer

Client Credentials

- Organization client auth – For org-level access to API BaaS. Found at Org Administration screen
- Application client auth – For individual app access. Found at Getting Started -> Server App Credentials

Security & authentication best practices

Sandbox account

Created by default, but does not require tokens to access. Any data in the sandbox application is completely unsecured.

Permissions in apps

Review all roles and permissions and remove any Guest permissions.

Review test accounts

Delete the ones you don’t need!

Use HTTPS rather than clear text

both to get tokens and get data

Better to use password grant type tokens rather than client credentials grant type tokens, as it is more secure.

How to deploy prod and non-prod

Without the concept of separate environments, how do we do prod and non-prod deployments?

If possible, a completely separate API BaaS stack provides ultimate data separate between prod and non-prod. Alternatively, you can use organizations to logically separate the data/credentials/users for prod/ non-prod purposes.

Copy over or recreate data that is similar from prod to non-prod. There are scripts to help do this.

Use similarly named apps and entities between prod and non-prod so gateway code can remain similar.

THANK YOU