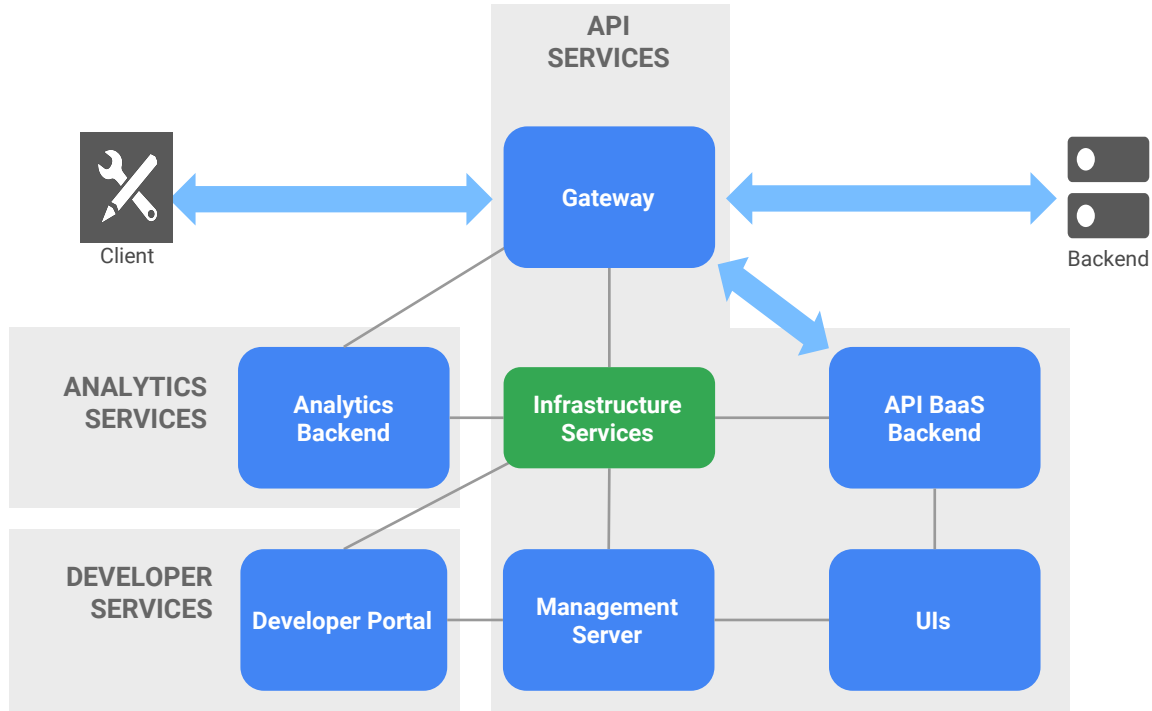


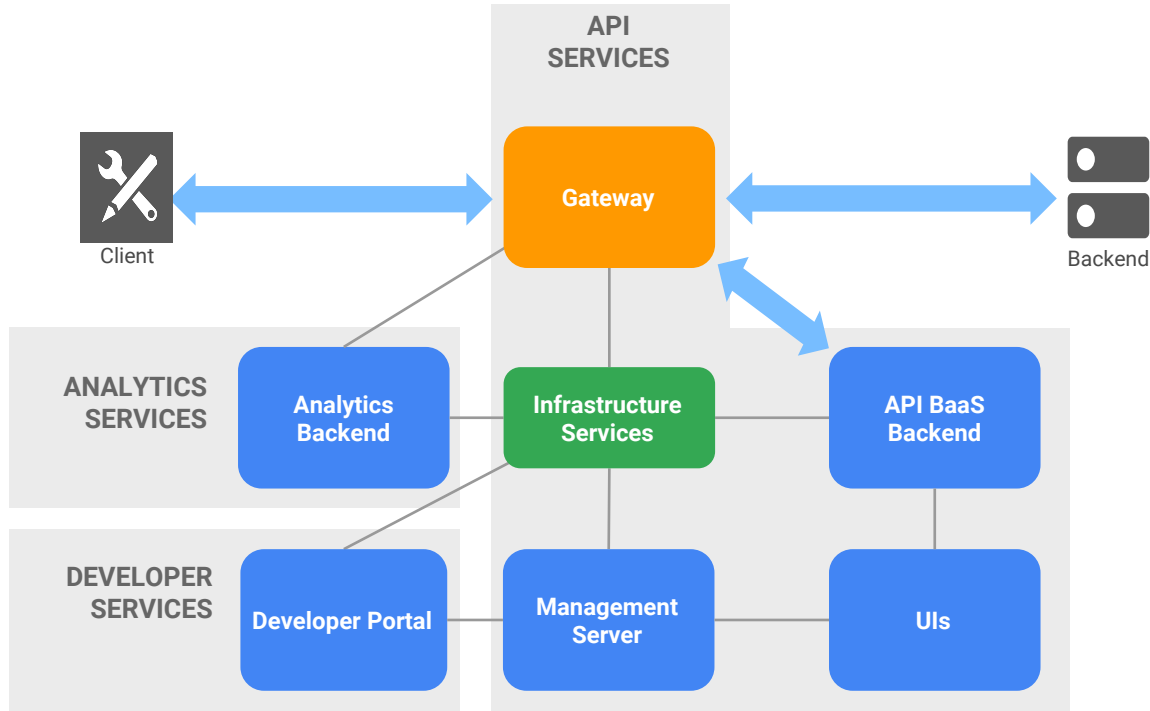


Apigee Edge Technology Stack

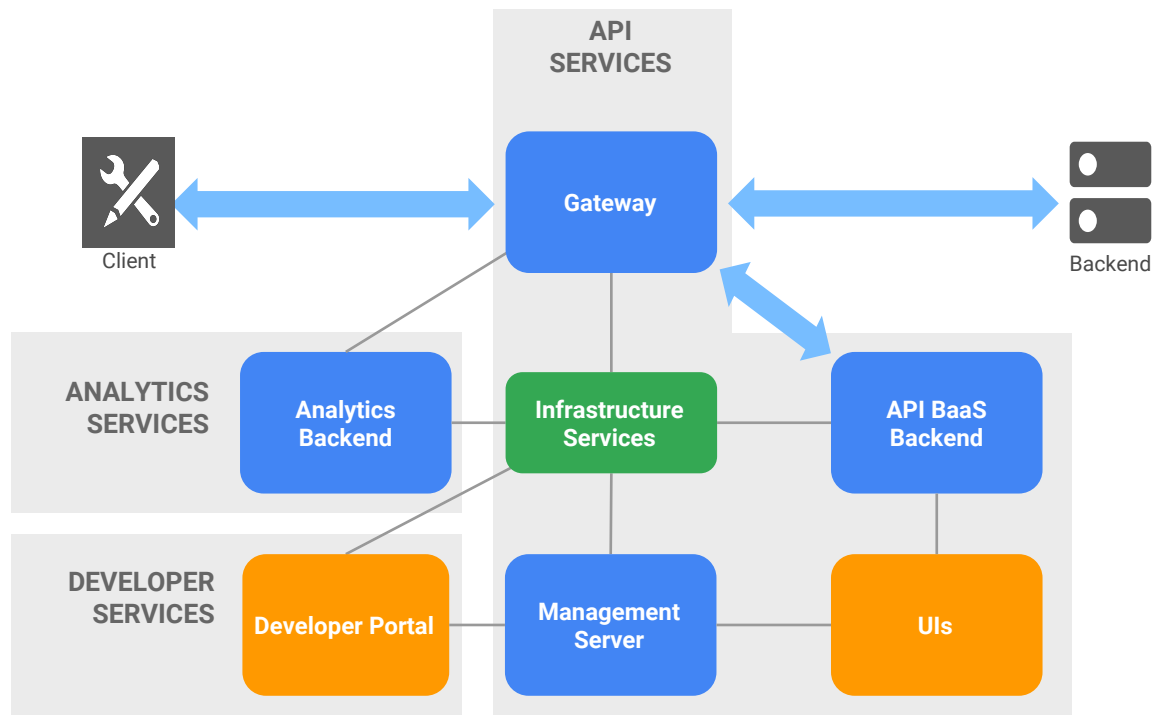
Capabilities



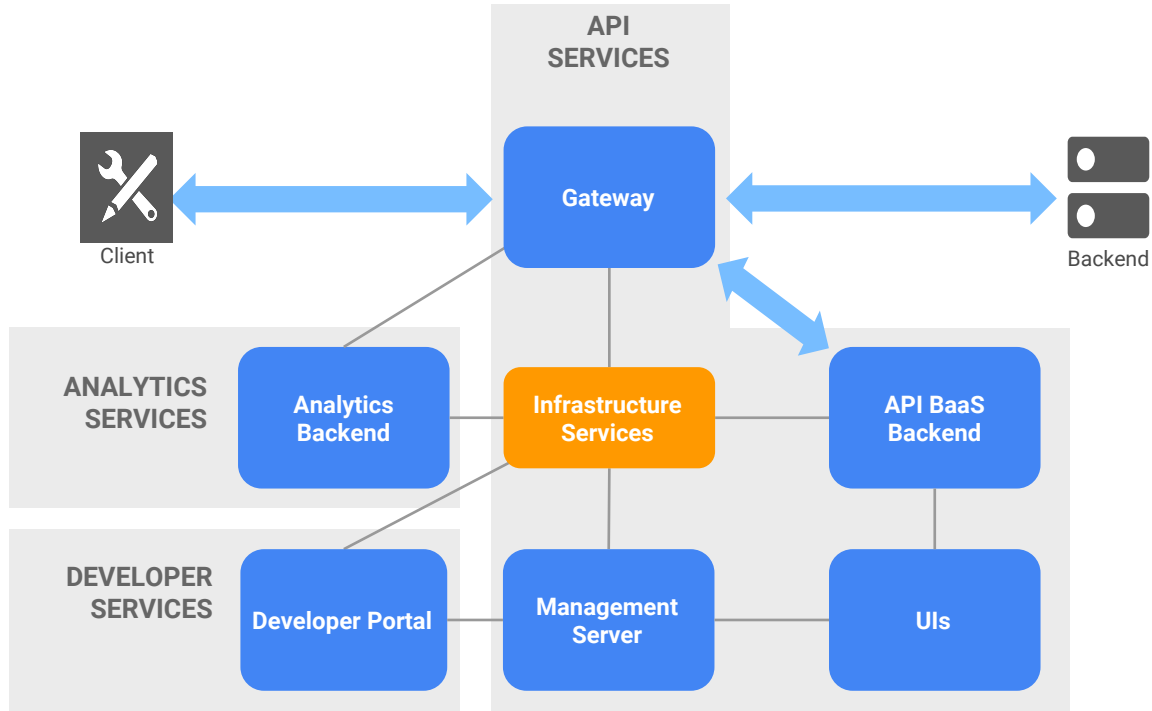
Capabilities



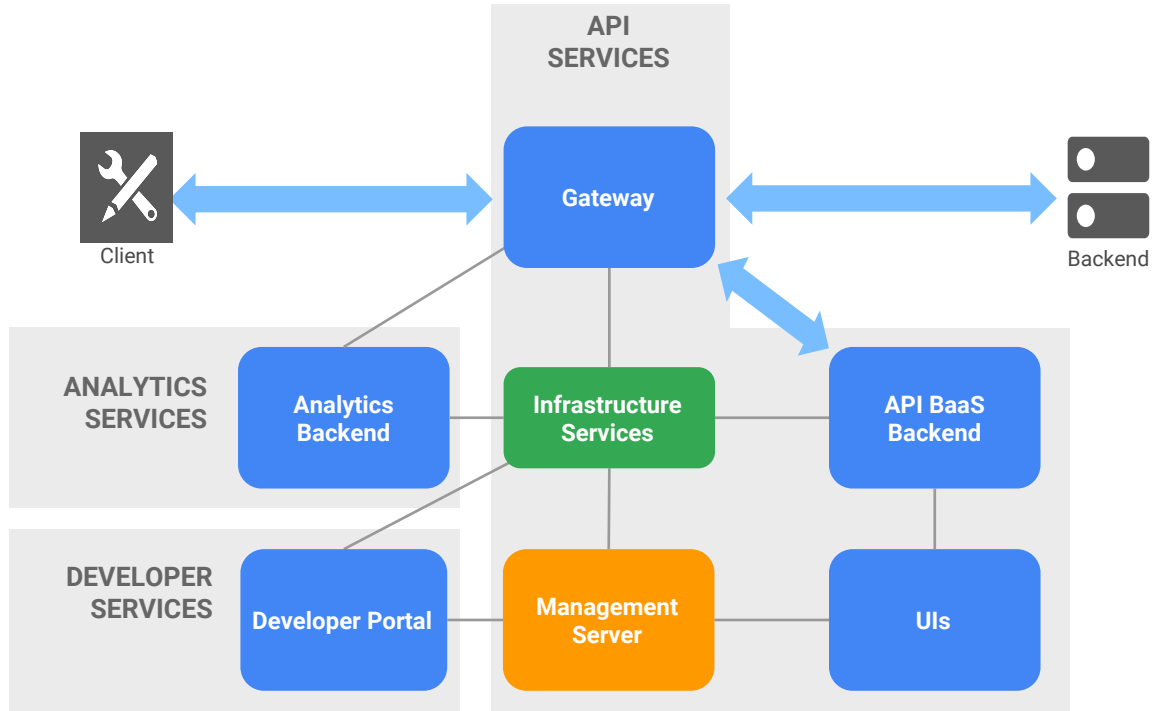
Capabilities



Capabilities

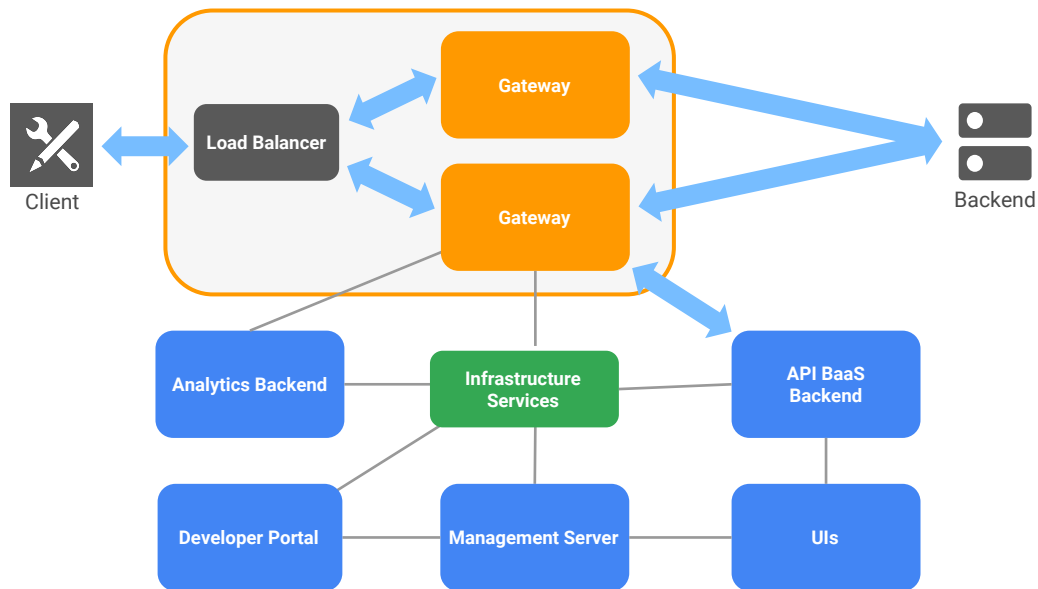


Capabilities



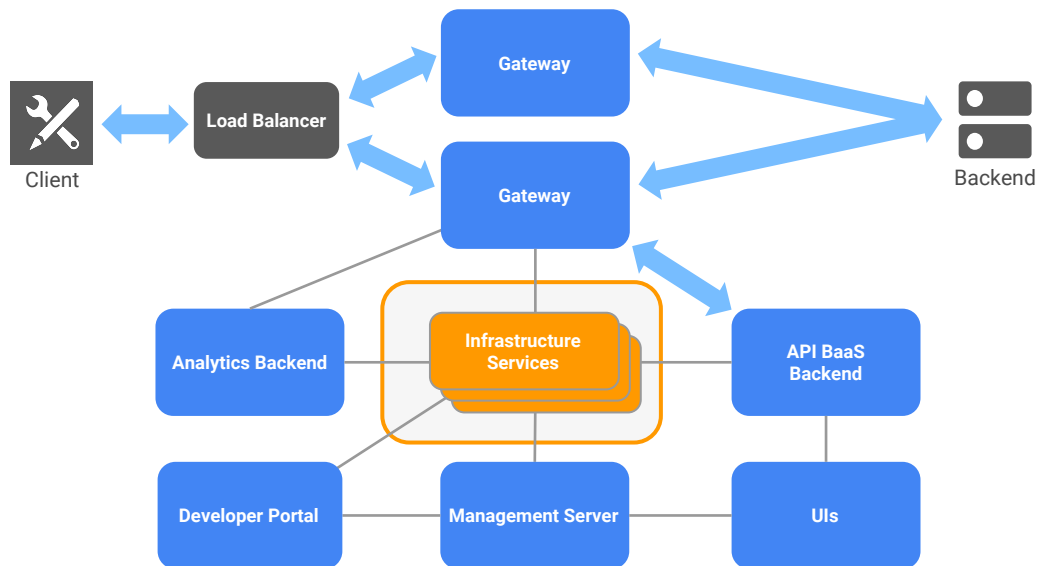
Scalability

Additional gateway components



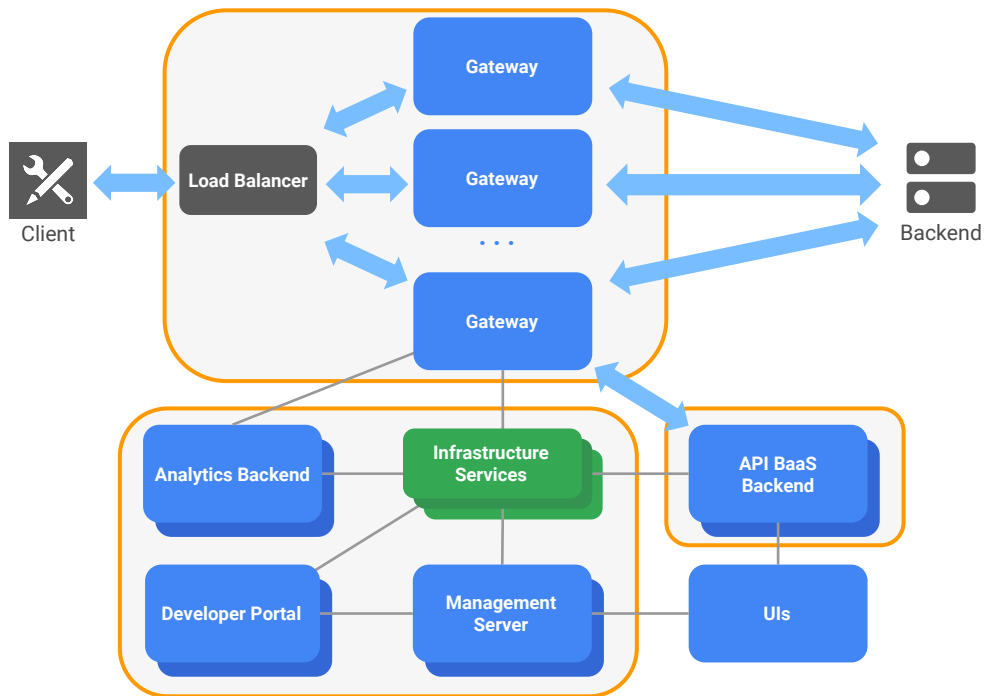
Scalability

Additional gateway components



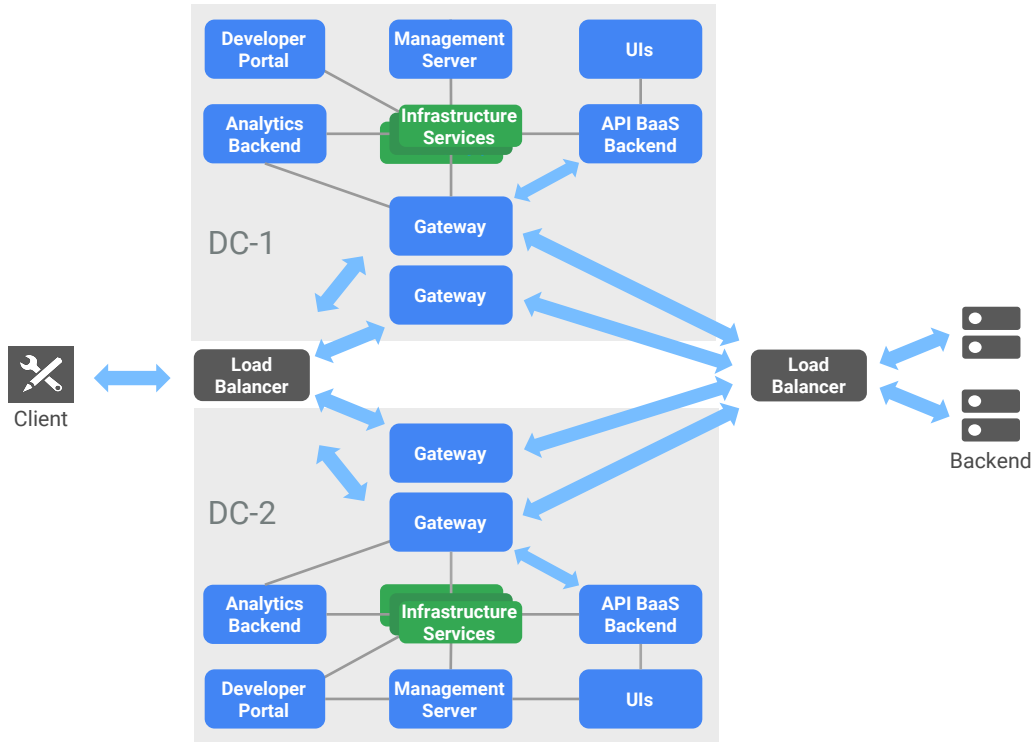
Scalability

Highly scaled infrastructure



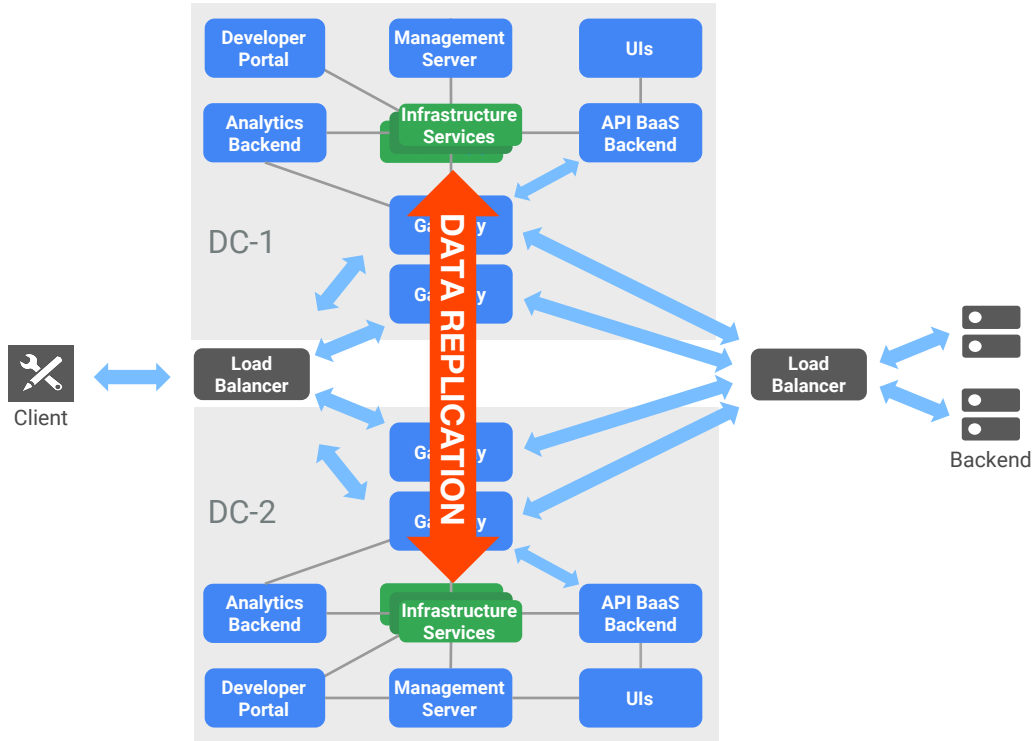
Scalability

Multi-Datcenters and Disaster Recovery

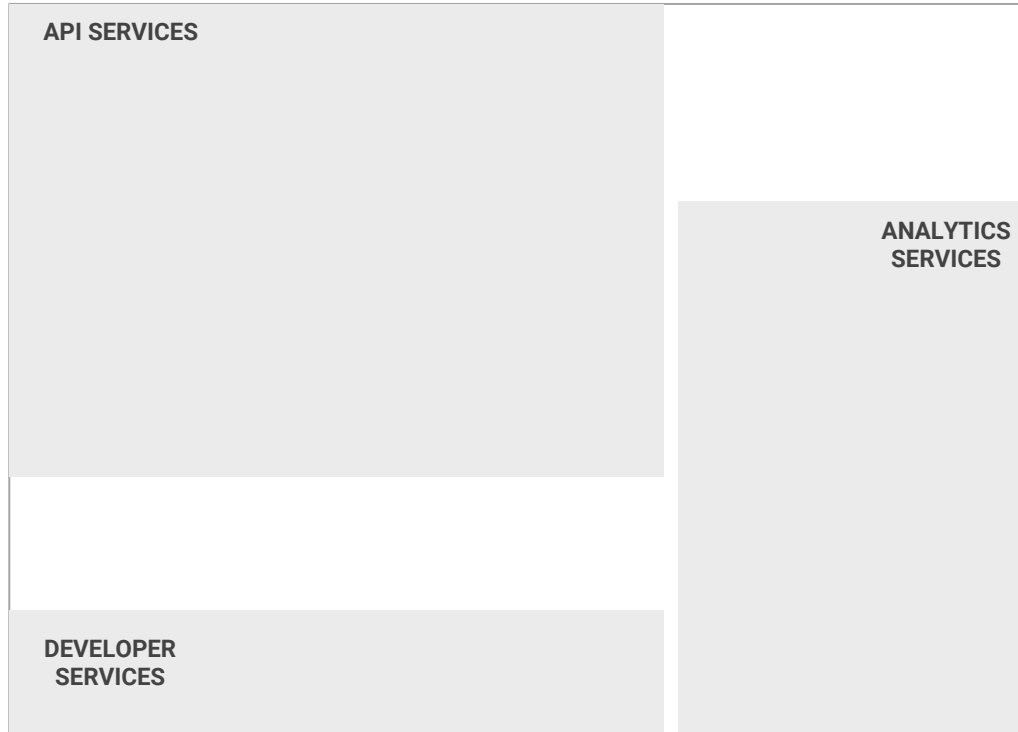


Scalability

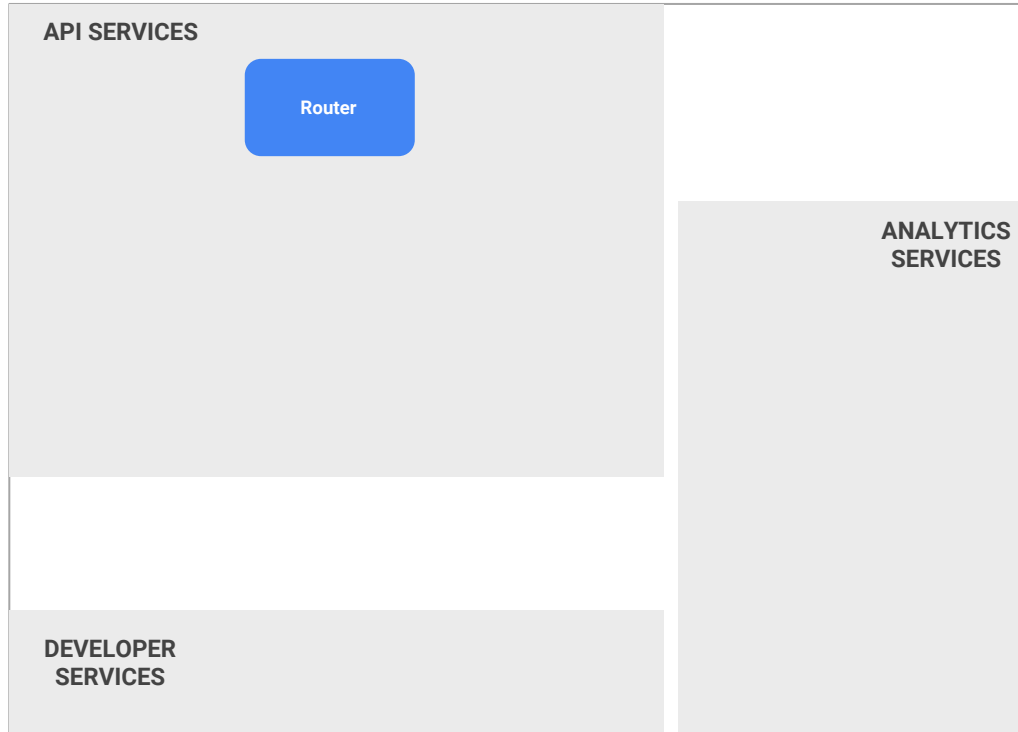
Multi-Datcenters and Disaster Recovery



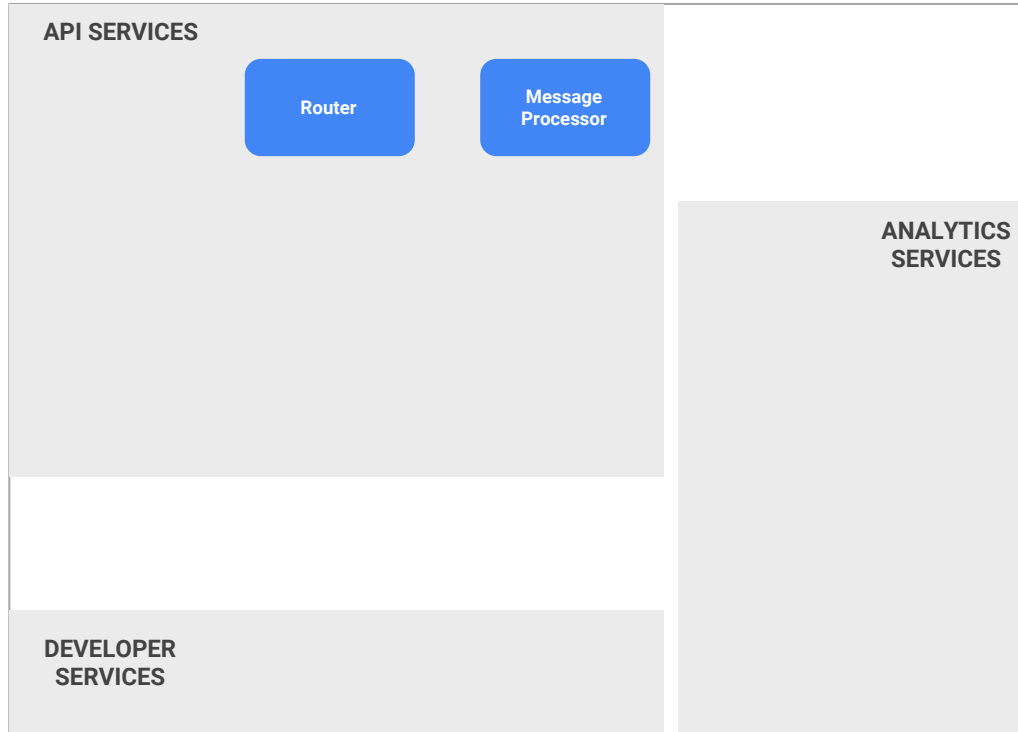
Components



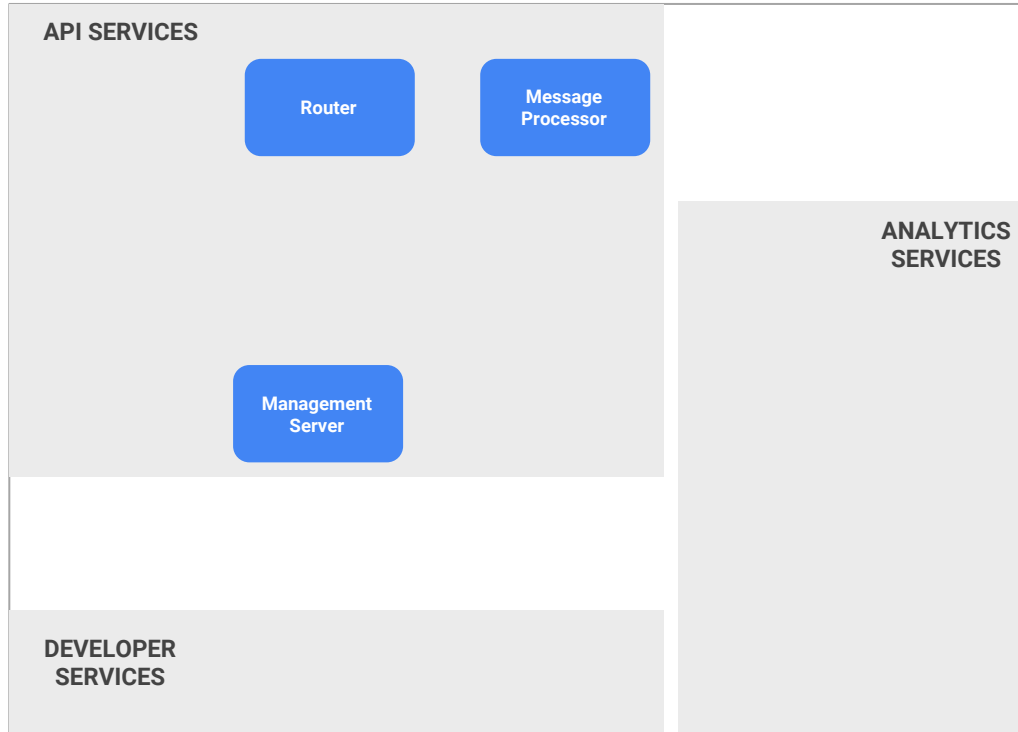
Components



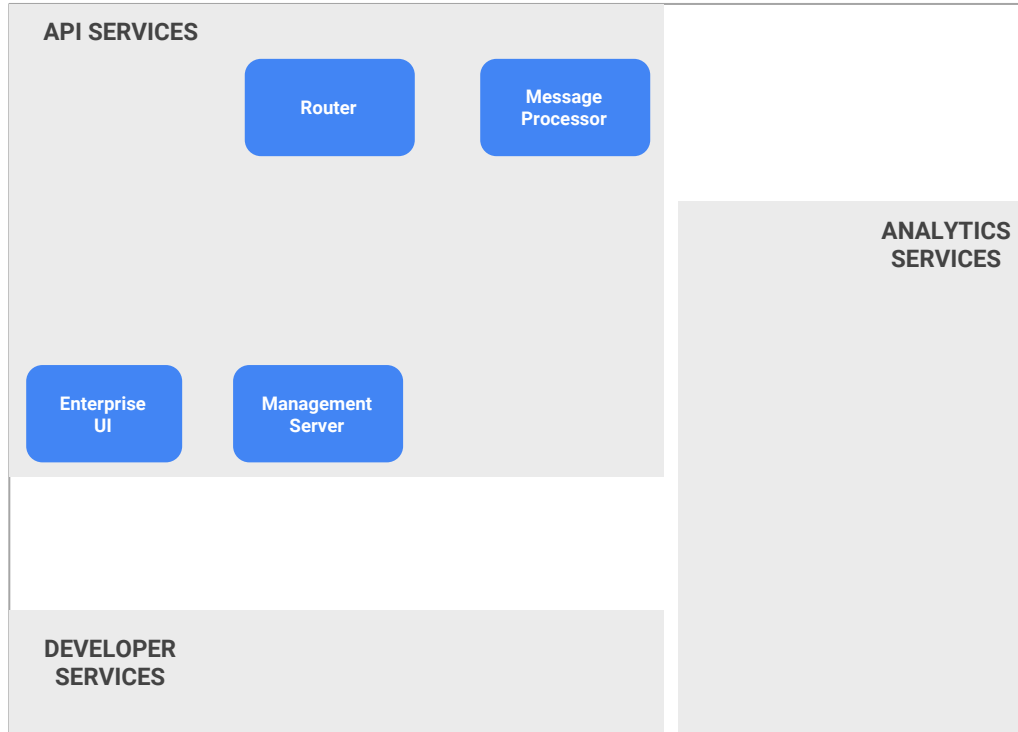
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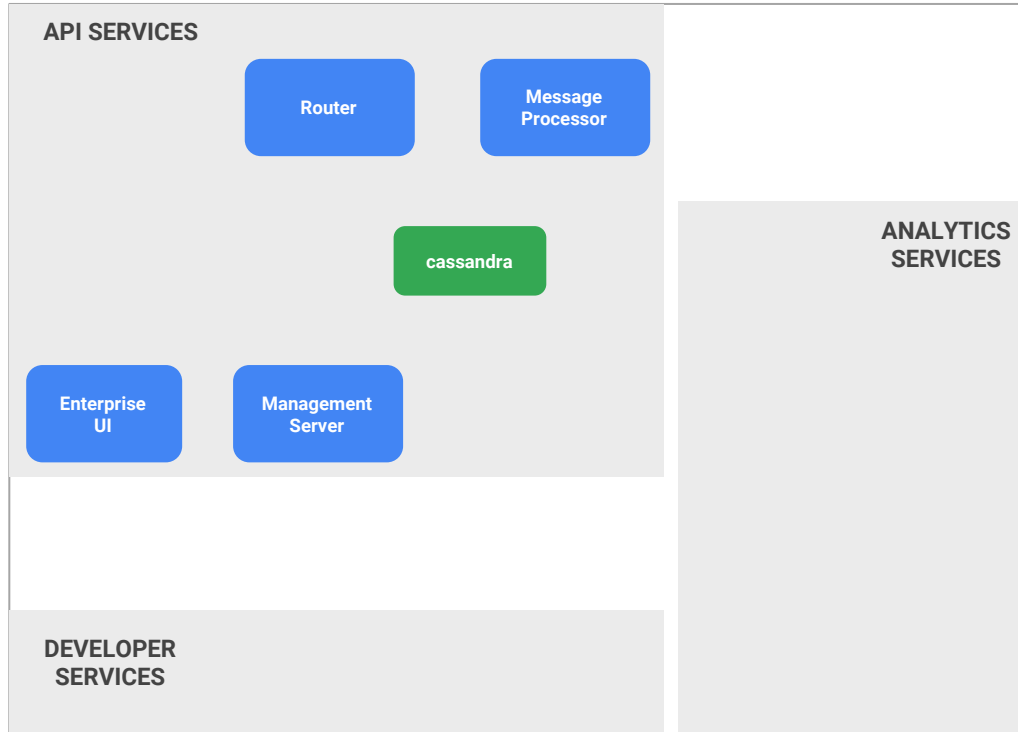
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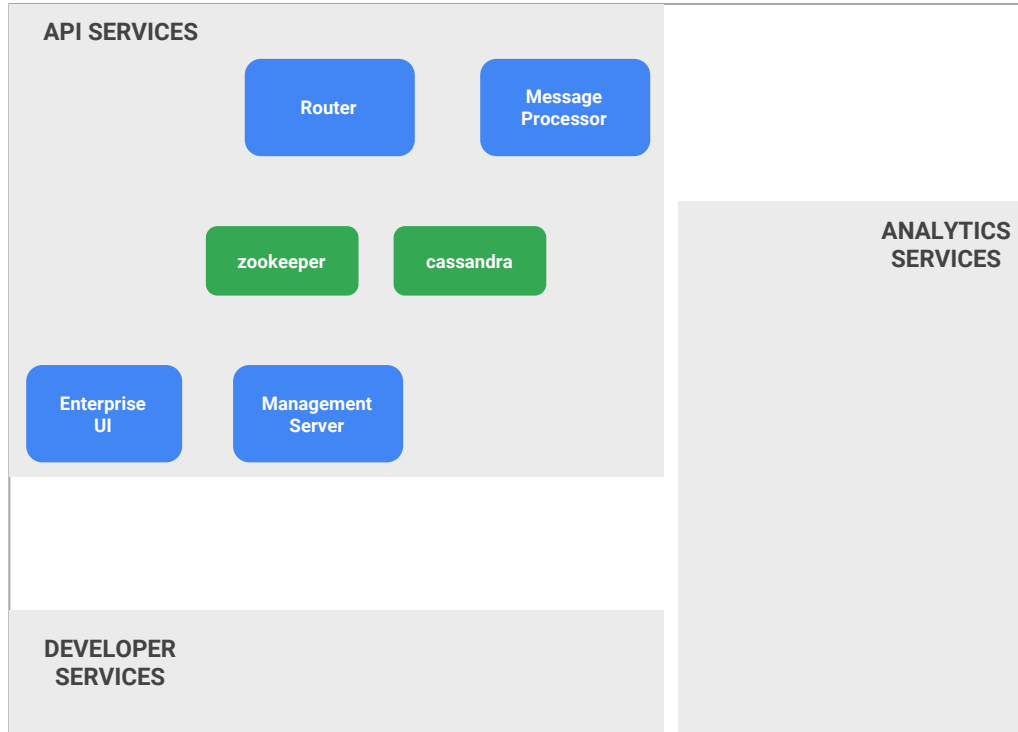
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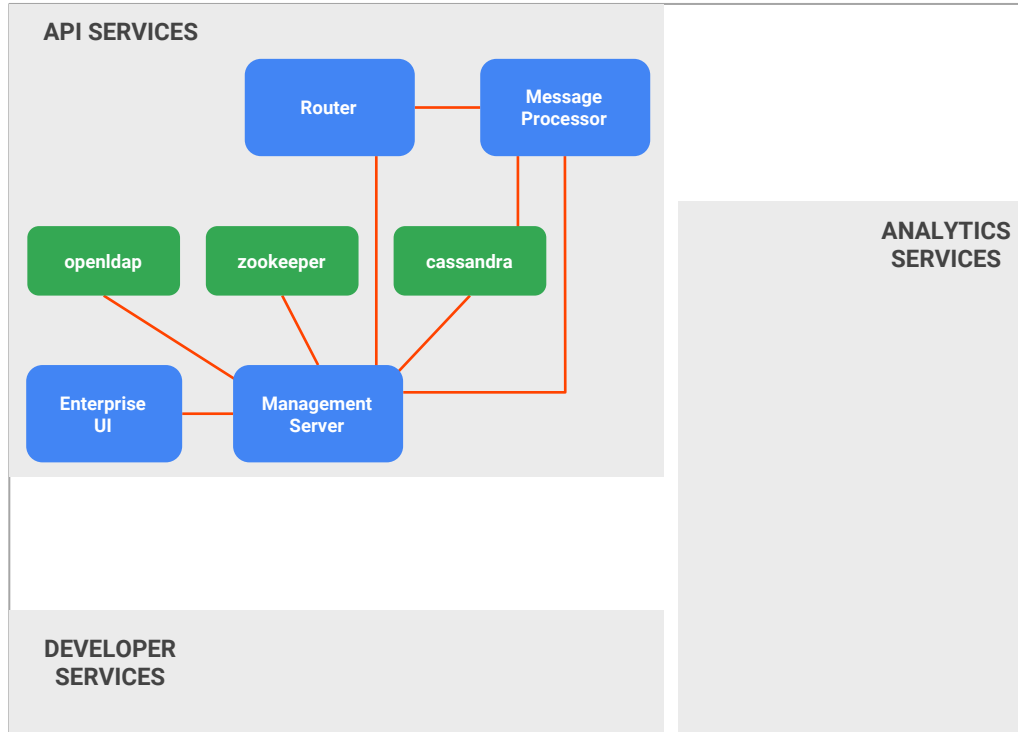
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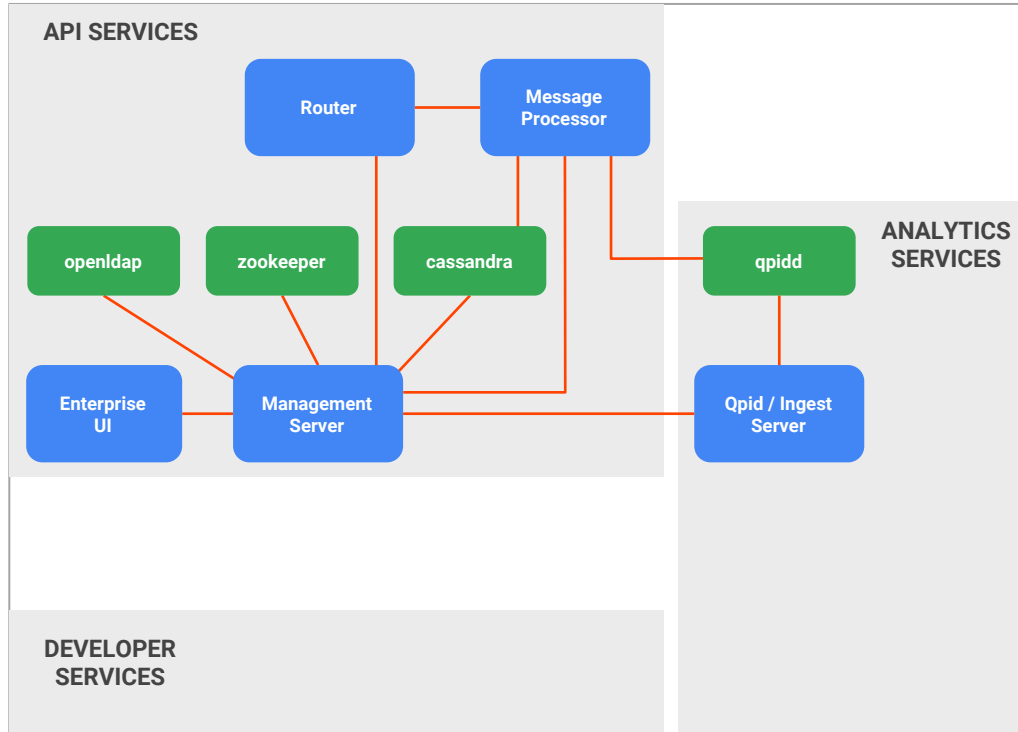
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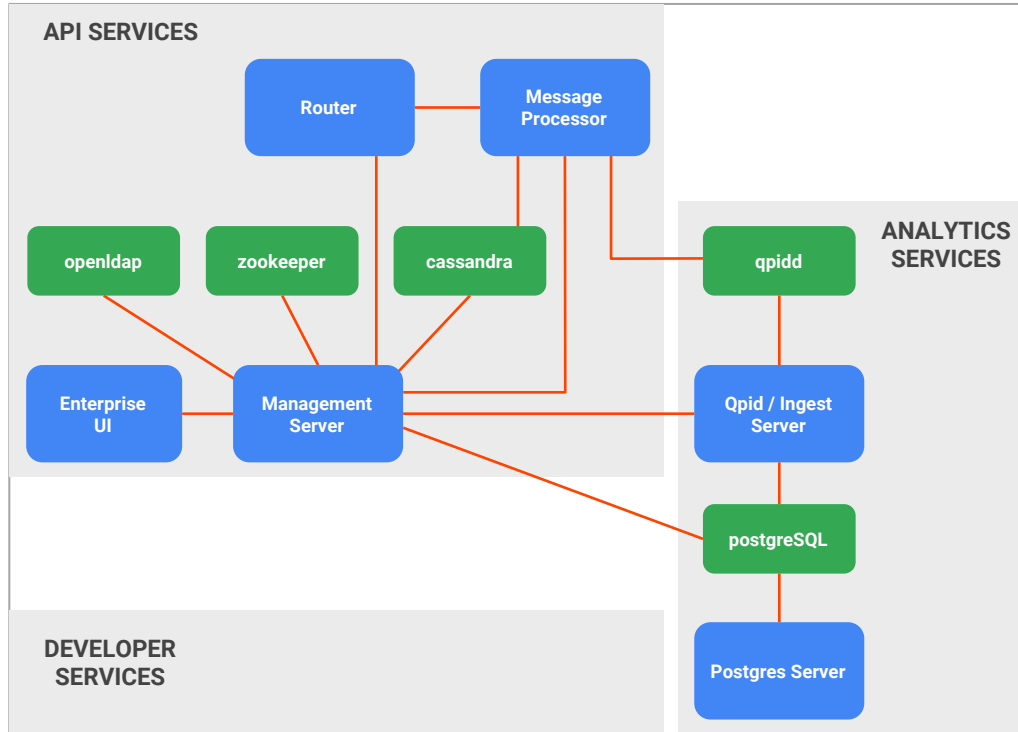
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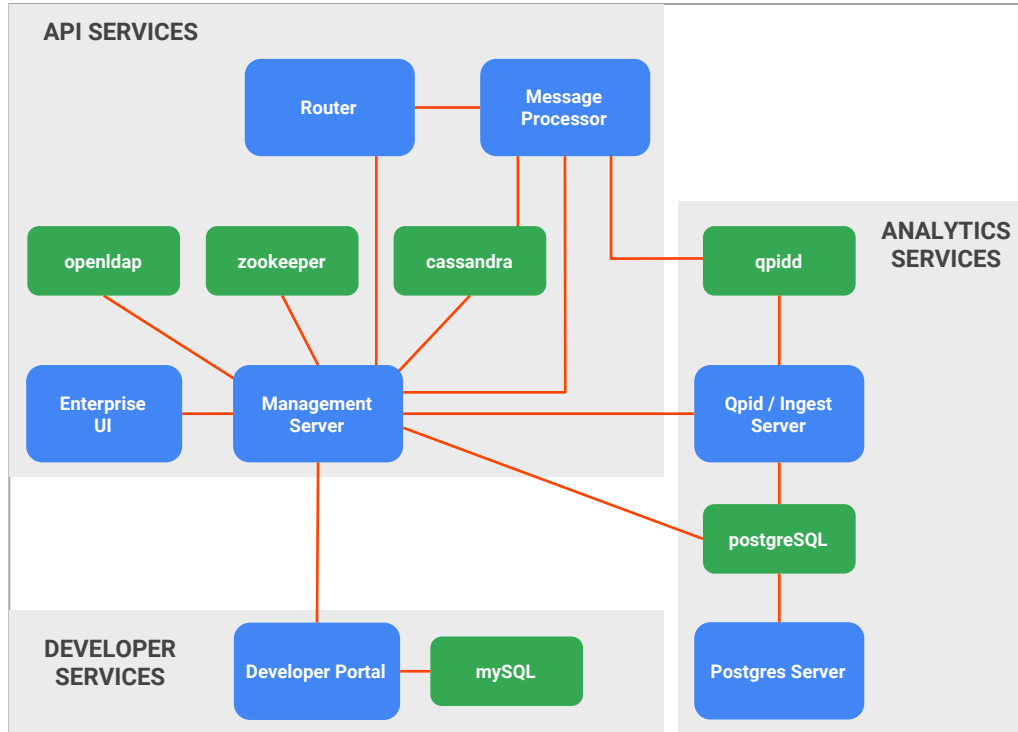
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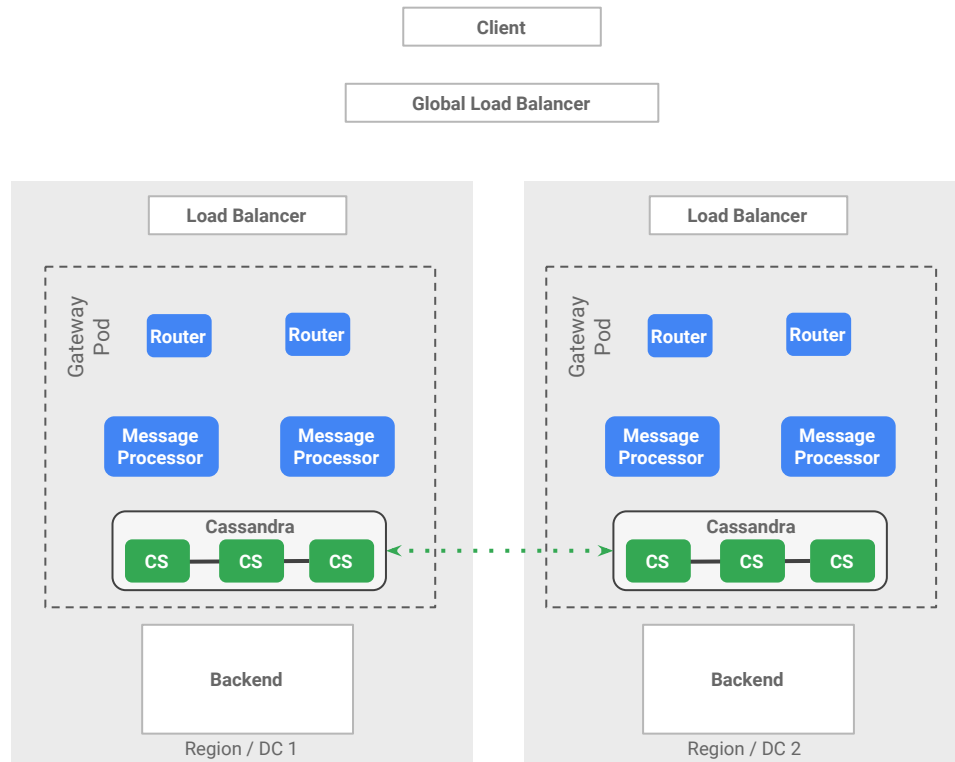
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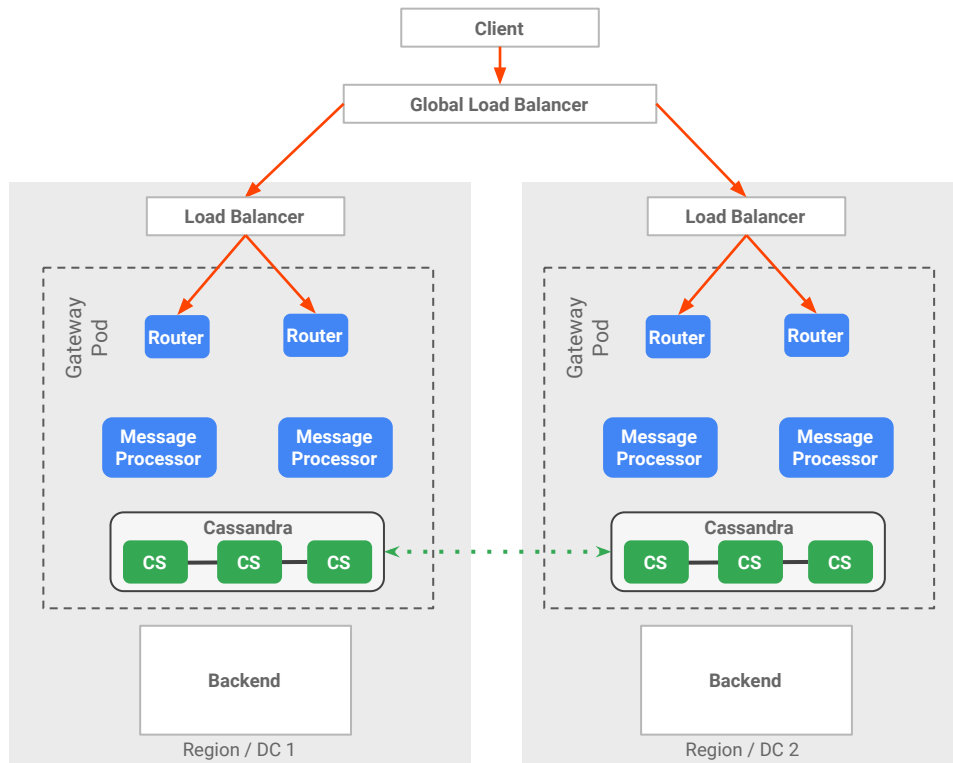
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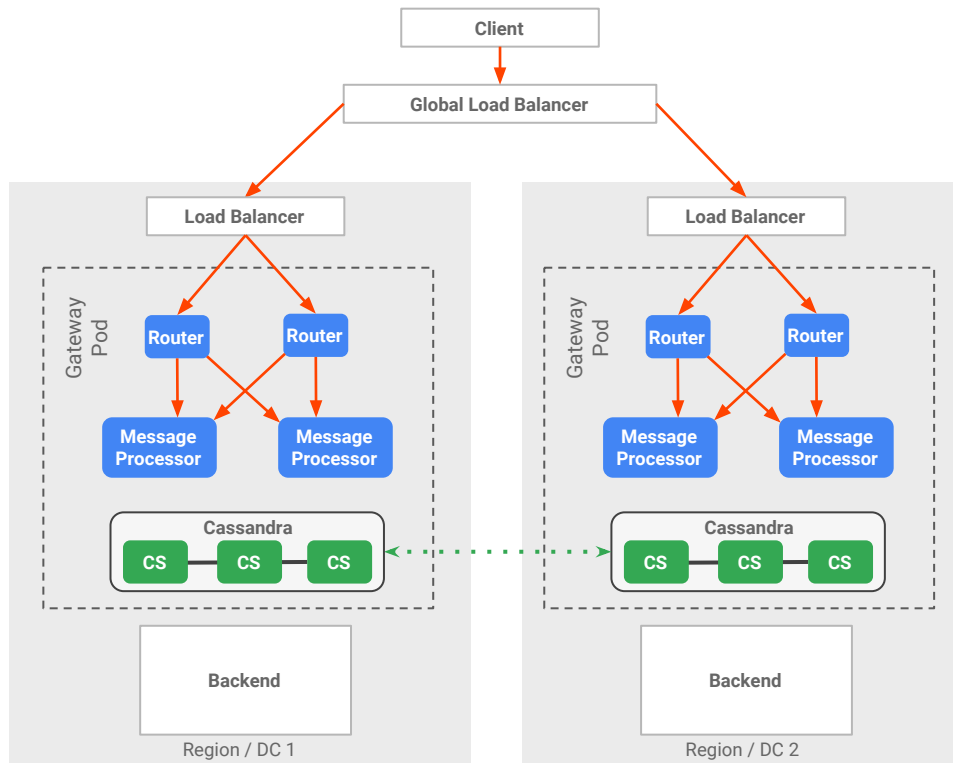
API traffic data flow



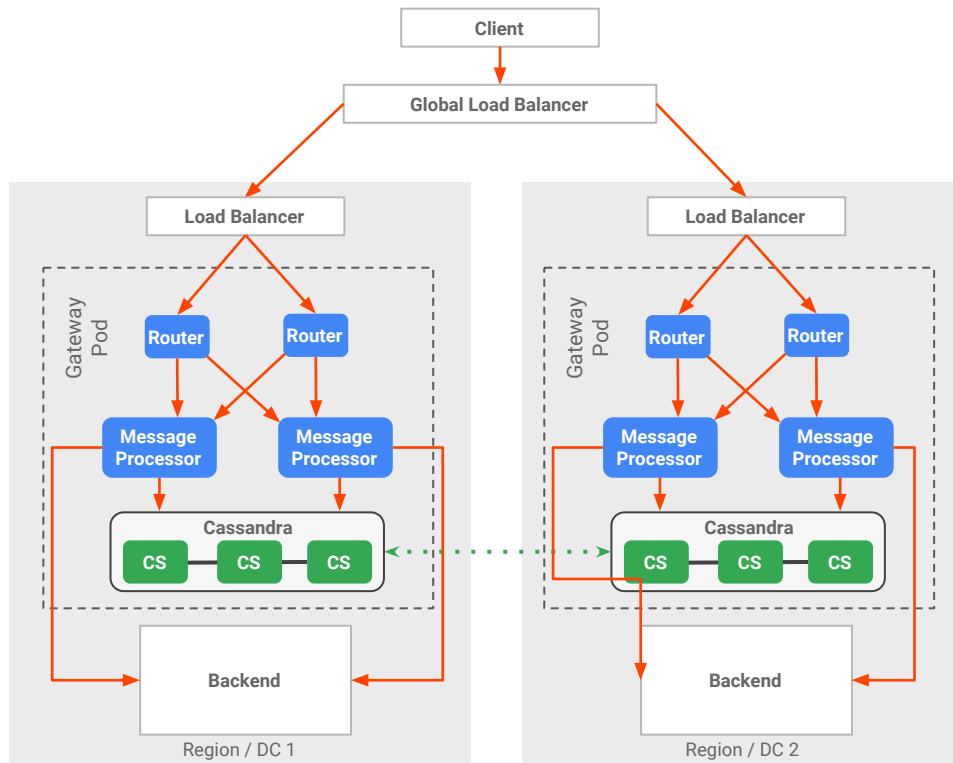
API traffic data flow



API traffic data flow



API traffic data flow



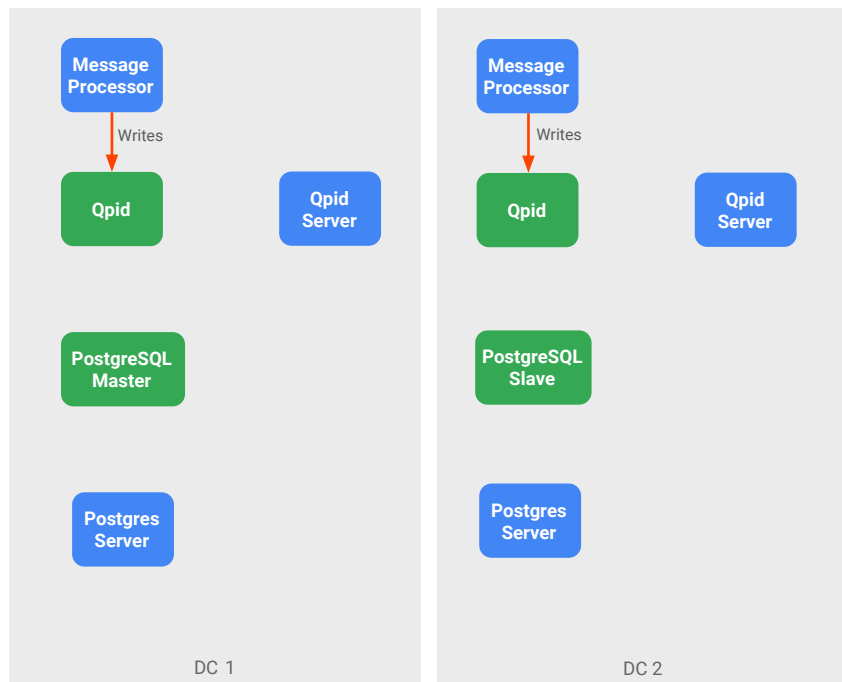
Analytics data flow

Master/Slave



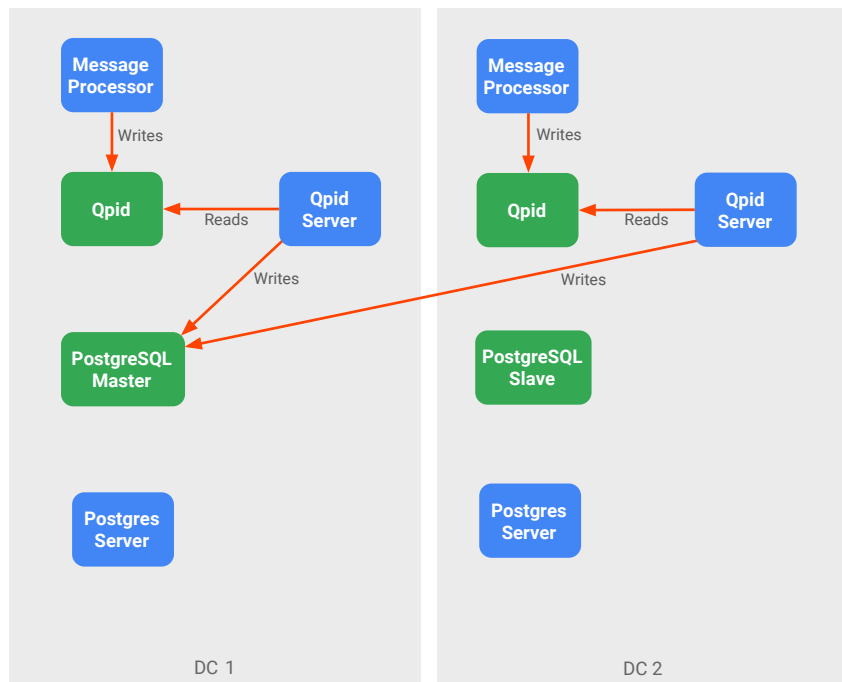
Analytics data flow

Master/Slave



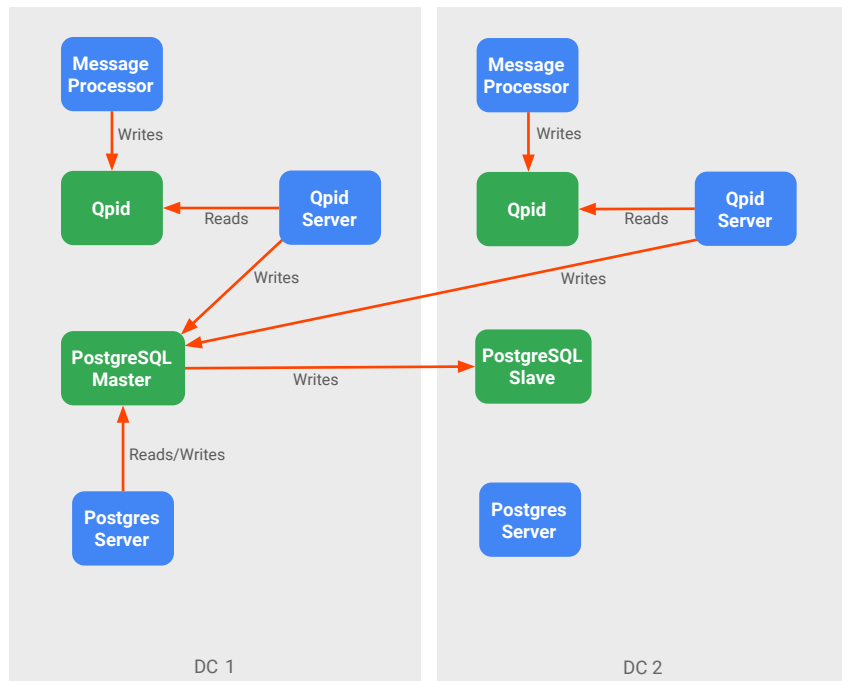
Analytics data flow

Master/Slave



Analytics data flow

Master/Slave





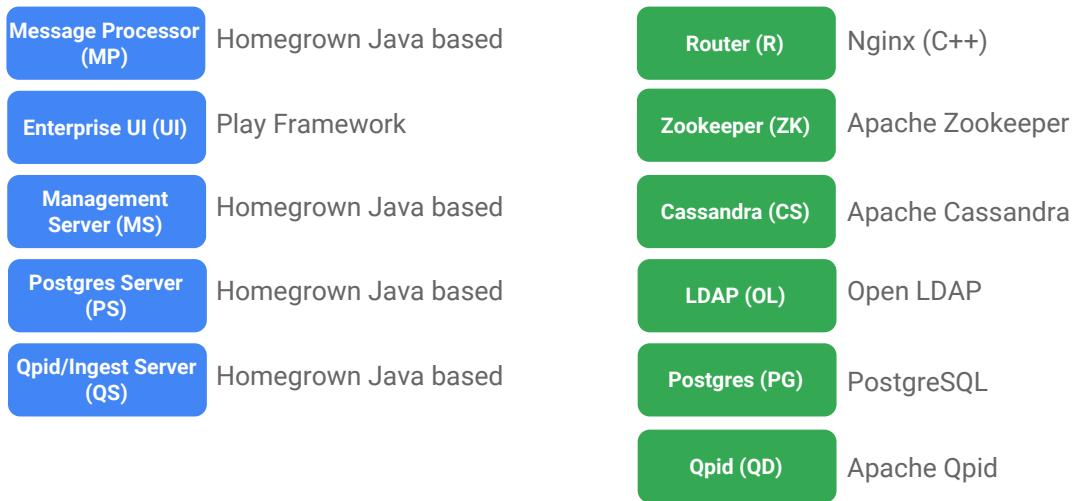
Thank You

Agenda

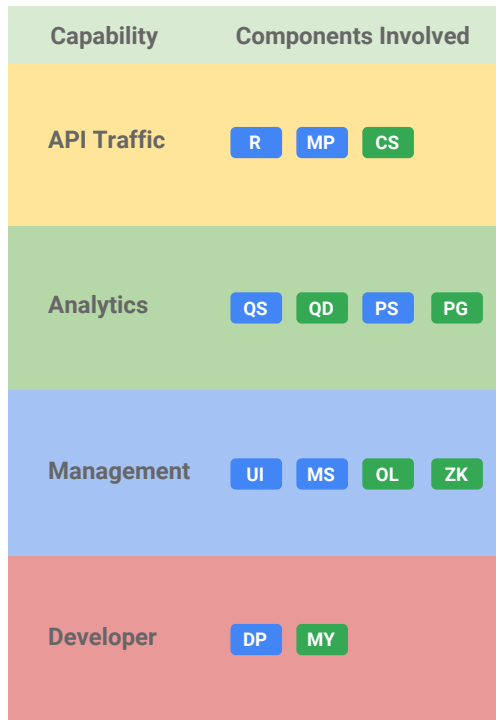
- Capabilities
- Edge
 - Technology stack and Components
- API BaaS:
 - Technology stack and Components

Technology Stack

Edge components are, in general, Java based. Most components are based on a homegrown technology stack that leverages best in class open source technology under it. Below we highlight some of the underlying technologies used as building blocks.





Scaling by capability

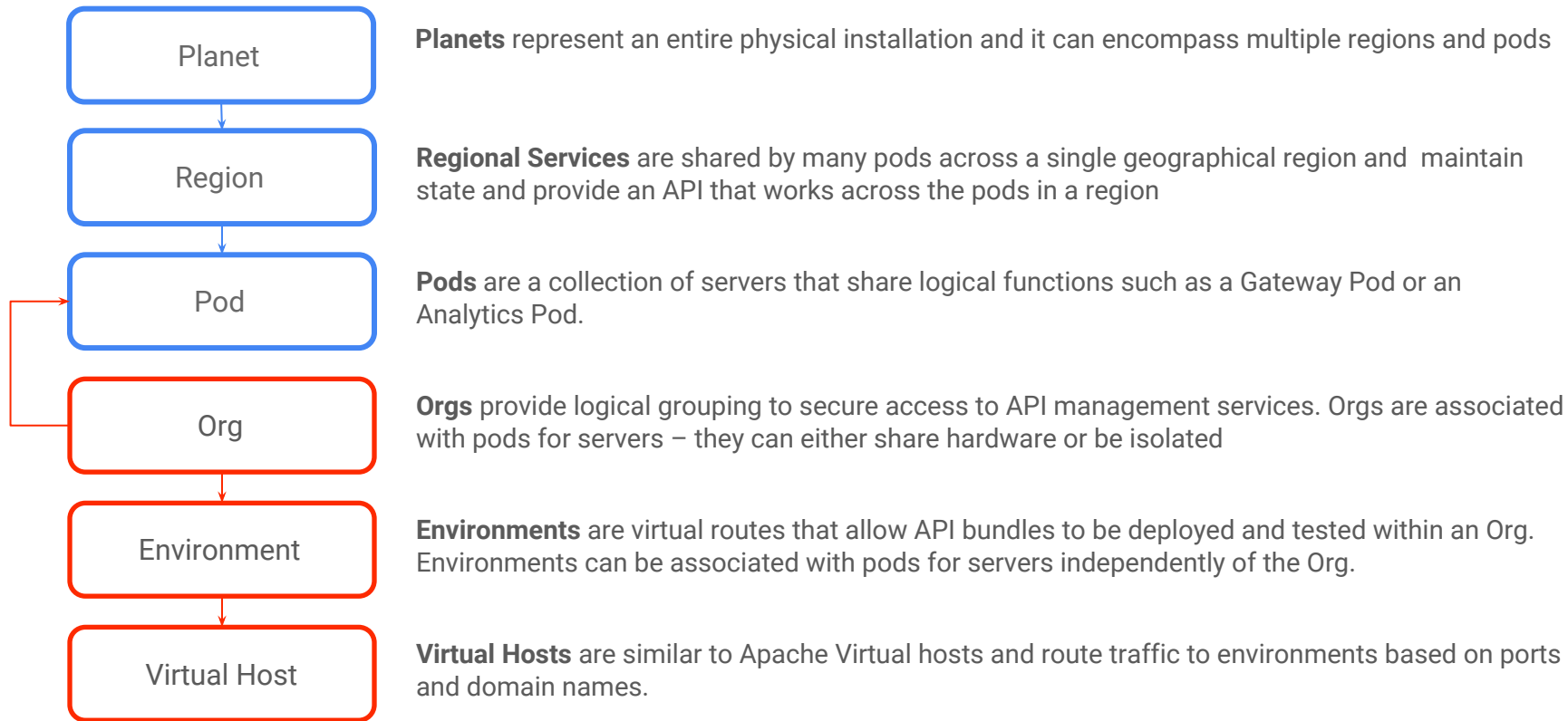


- Given the responsibility and capabilities offered by each component, scalability requirements and how they are implemented may vary.
- In most scenarios, scaling to accommodate higher API volume may impact only components serving live API traffic.
- Analytics data components may have to be scaled in response to increased API traffic and/or raw analytics data retention policy.
- Other components may grow in number mostly driven by high availability requirements for those capabilities.

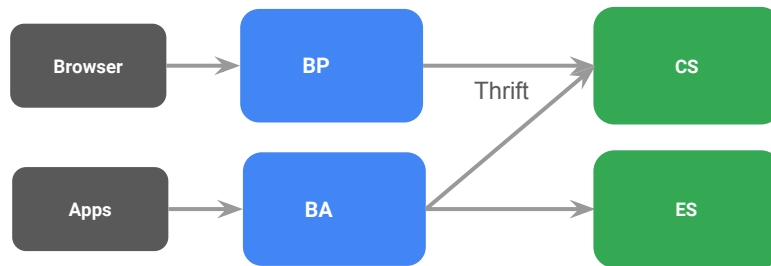
Legend:

R Router	MS Management Server	DP Developer Portal	MY MySQL	OL OpenIdap	ES Elastic Search
MP Message Processor	PS Postgres Server	BA API BaaS Stack	ZK Zookeeper	PG PostgreSQL	 Server/Virtual Machine
UI Enterprise UI	QS Qpid/Ingest Server	BP API BaaS Portal	CS Cassandra	QD Apache Qpid	 POD

Multitenancy



API BaaS



API BaaS Stack

- Data storage & management
- Flexible data querying
- Social
- User management
- Geolocation
- Push notifications
- Configuration management

API BaaS Portal

- Management UI.
- Allows creation and maintenance of organization, collections, users and other entities.
- Error & performance monitoring

Cassandra

- Apache Cassandra provides distributed eventual consistent data storage.

Elastic Search

- Elasticsearch provides indexing and searching.
- <https://github.com/elastic/elasticsearch>

<http://usergrid.apache.org/>

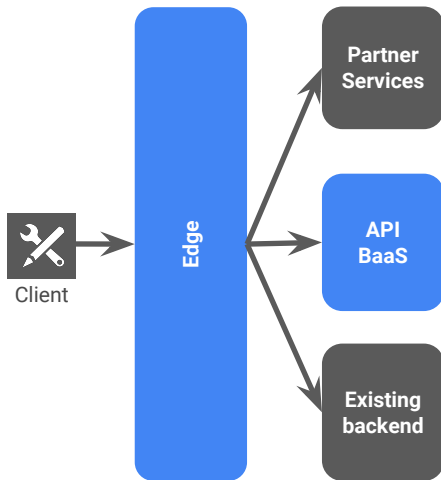


Legend:

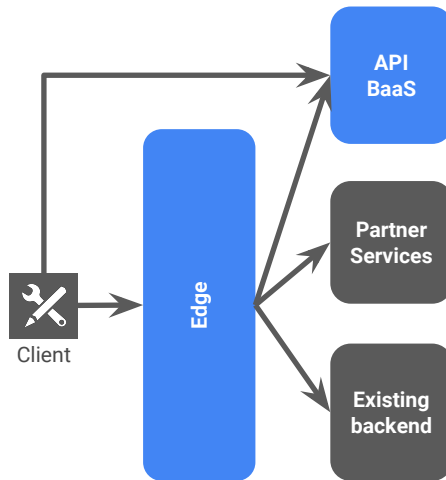
R Router	MS Management Server	DP Developer Portal	MY MySQL	OL OpenIdap	ES Elastic Search
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UI Enterprise UI	QS Qpid/Ingest Server	BP API BaaS Portal	CS Cassandra	QD Apache Qpid	POD

API BaaS – Where it fits on the architecture?

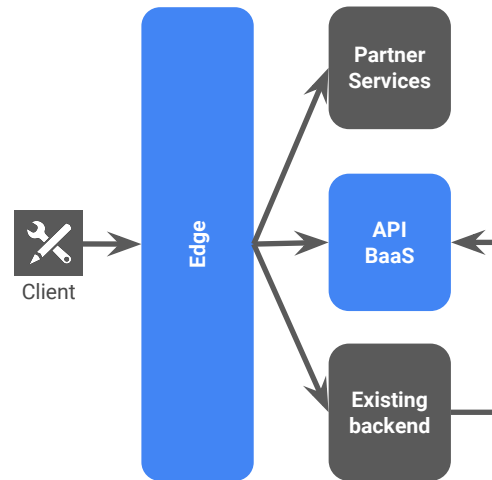
1. As Edge target



2. Direct access from Mobile

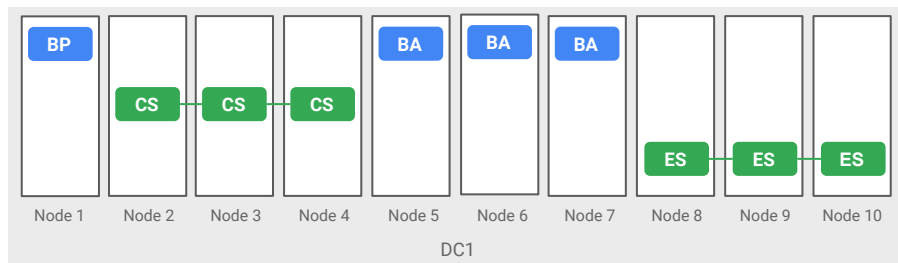


3. As complement to existing backend systems



API BaaS Components

- Footprint is driven by requirements. Transaction volumes, availability and reliability among others drive components stacking and number of nodes.
- BA, ES and CS are critical components to handle live API BaaS API traffic.
- API BaaS Analytics provided by BP.
- Cassandra can be a dedicated ring for API BaaS or shared with Edge.



Legend:



Router



Message Processor



Enterprise UI



Management Server



Postgres Server



Qpid/Ingest Server



Developer Portal



API BaaS Stack



API BaaS Portal



MySQL



Zookeeper



Cassandra



Openldap



PostgreSQL



Apache Qpid



Elastic Search



Server/Virtual Machine



POD