



#GCPSketchnotes

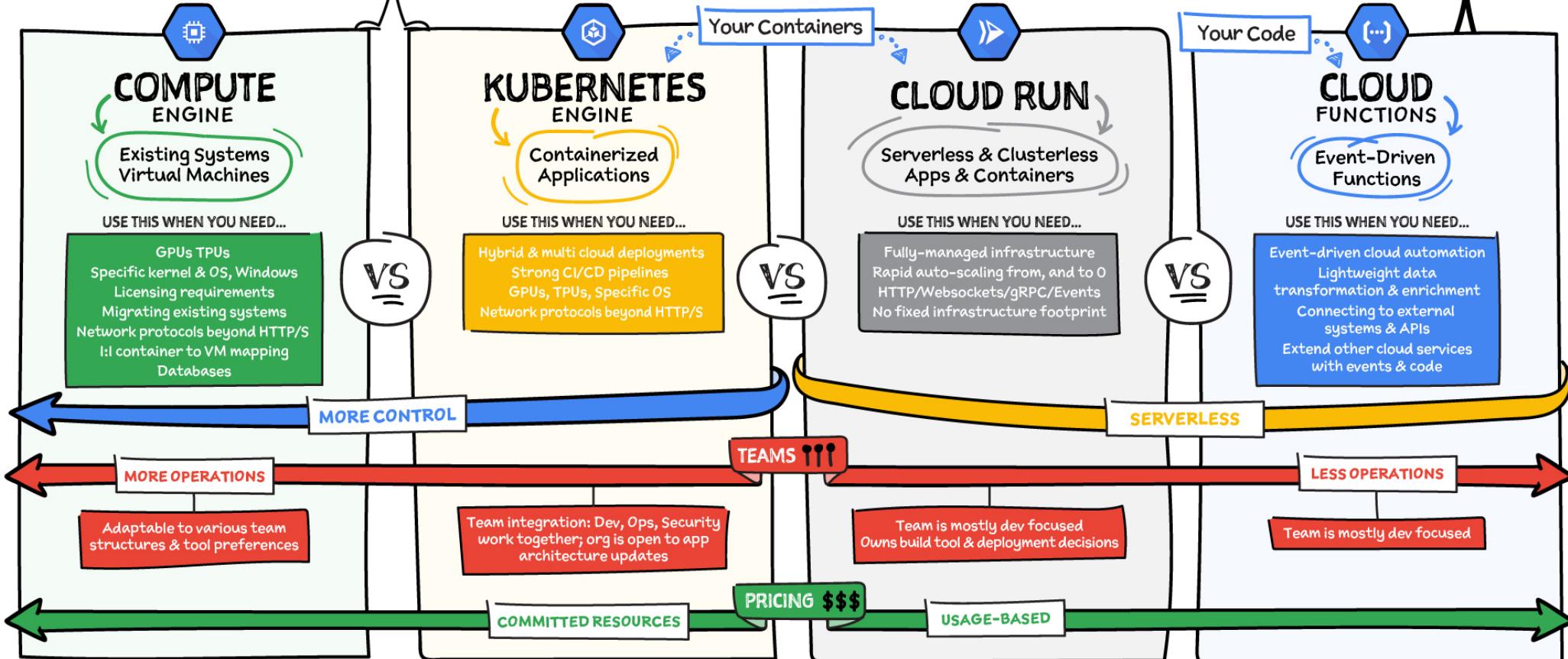
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# Where should I run my stuff? IT DEPENDS...



PRO TIP: YOU CAN USE THEM TOGETHER



# Virtual Private Cloud (VPC)

#GCPSketchnote

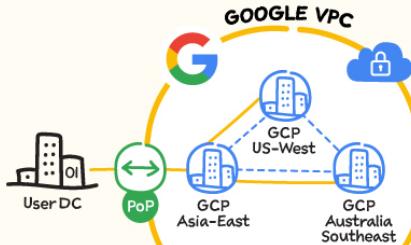
 

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## What is VPC network?

### MANAGED NETWORKING

- ✓ SHAREABLE across org
- ✓ EXPANDABLE increase IP space
- ✓ SECURITY Firewall & IAM
- ✓ CONNECTIVITY to on-prem



25+ REGIONS, 1 GLOBAL VPC

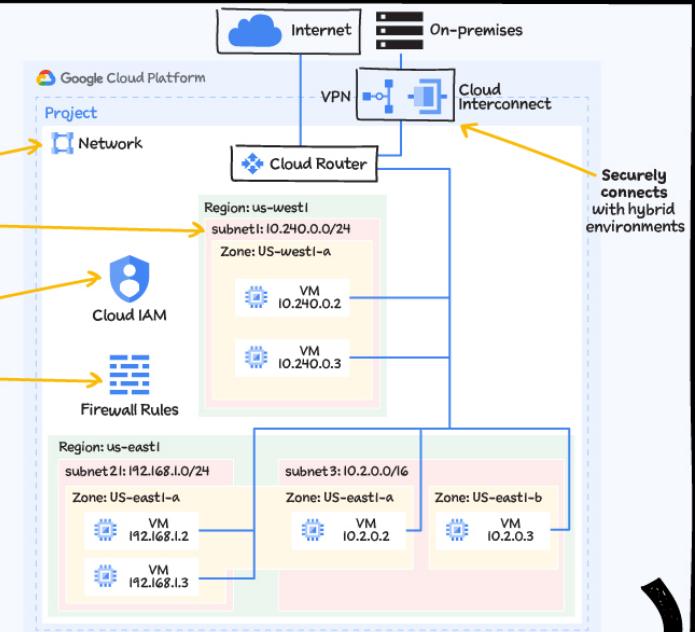
## FEATURES OF VPC NETWORK

VPC Networks: Global resource

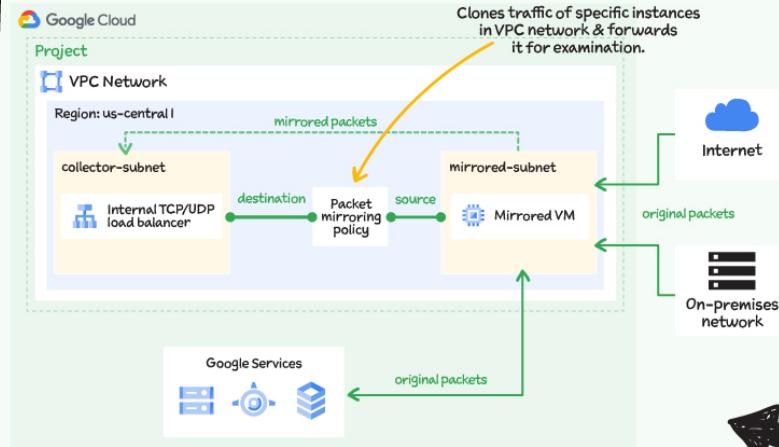
Subnets: Regional IP Address range connected by global WAN

Network Admin: Secure using IAM

VPC Firewall Rules: Allow/deny connections to/from VMs



## VPC PACKET MIRRORING



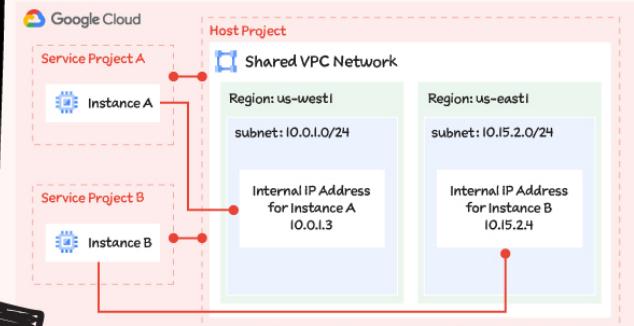
## VPC NETWORK SHARING & PEERING

### SHARED VPC

A Shared VPC Admin for the organization has created a host project and attached two service projects to it.

### PEERING

VPC Peering allows internal IP address connectivity across two mutually authorized VPC networks regardless of whether they belong to the same project or the same organization.



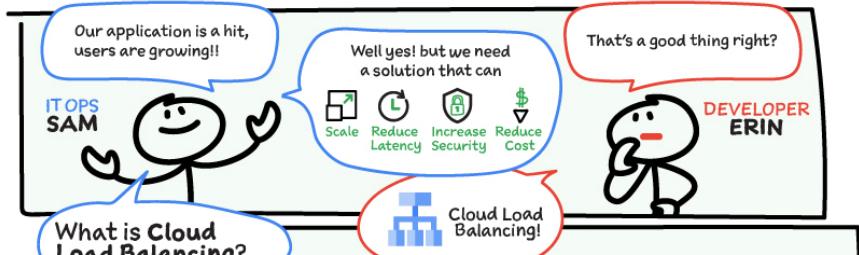
Already Peered



# Cloud Load Balancing

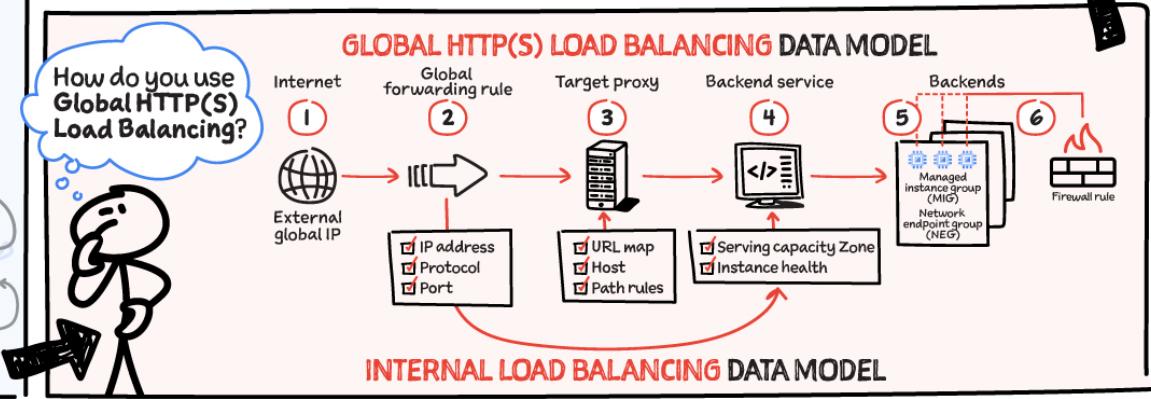
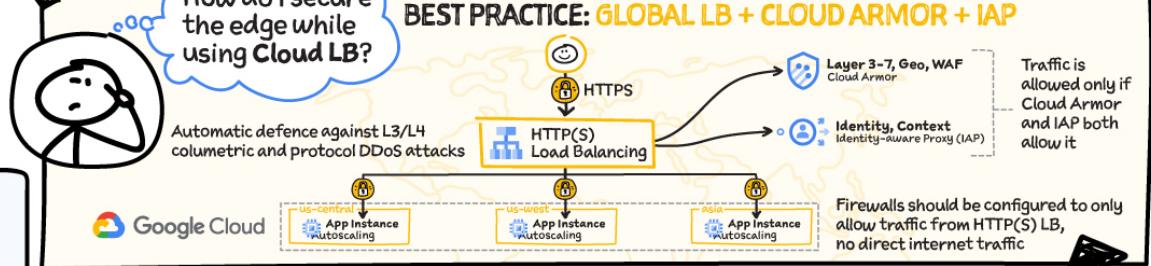
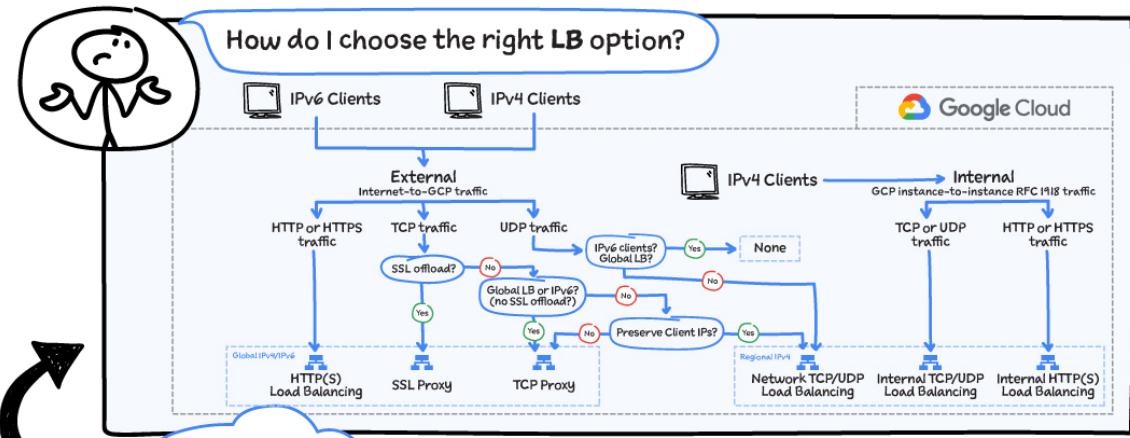
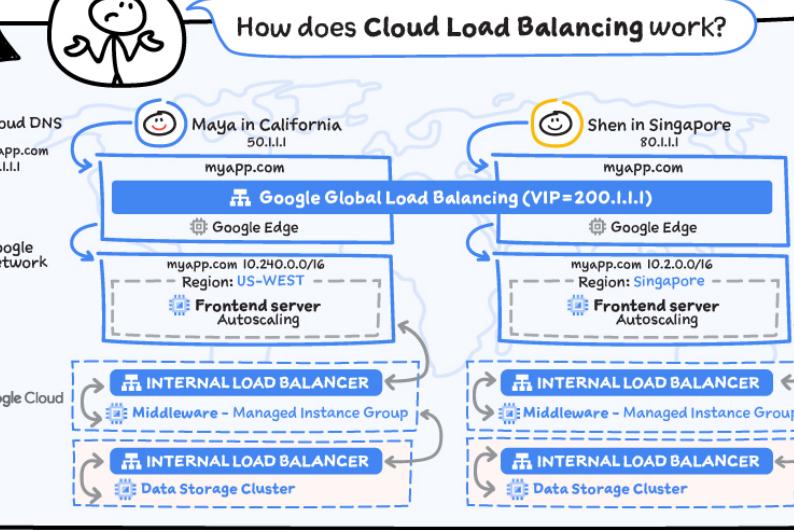
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10.5.2020



## FULLY DISTRIBUTED SOFTWARE DEFINED NETWORKING (SDN)

- Single Global Anycast VIP (IPv4/IPv6) across region
- Fast autoscaling
- Worldwide Capacity
- Single point to apply global policies
- Cross-region failover and fallback
- 1 Million+ QPS





# Cloud CDN

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9.21.2020

Our website is slow, cost is high and users are frustrated!!



We need a tool that helps

- Reduce Latency
- Reduce Cost
- Reduce Load



It's because our users are across the globe and servers are only in the US.

SYS ADMIN SAM

DEVELOPER ERIN

Cloud CDN!

What is Cloud CDN?

**CONTENT DELIVERY NETWORK**  
=ACCELERATE WEB & VIDEO CONTENT



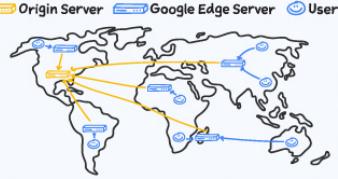
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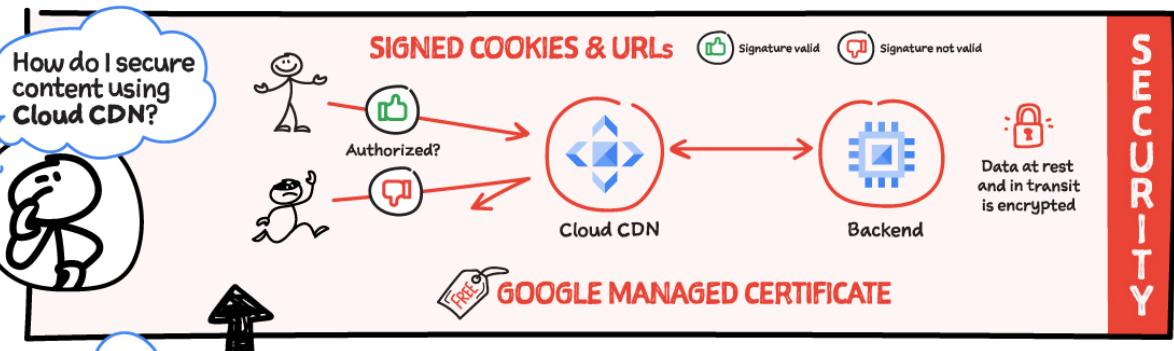
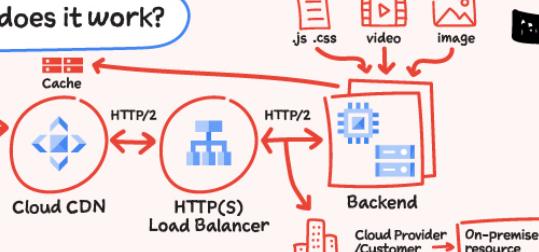
video



image



But how does it work?

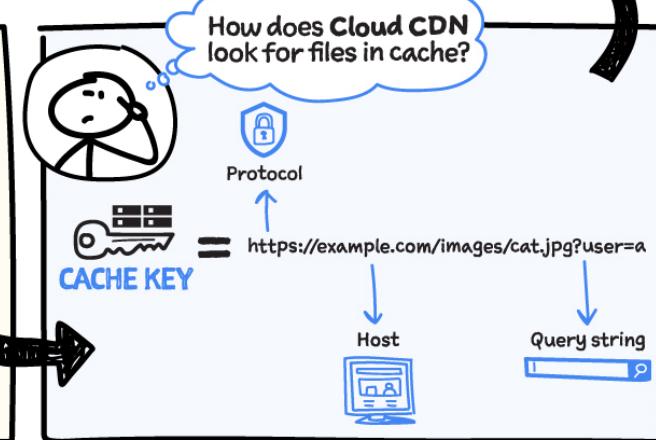
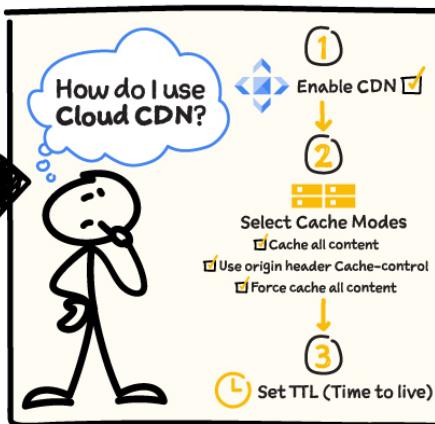
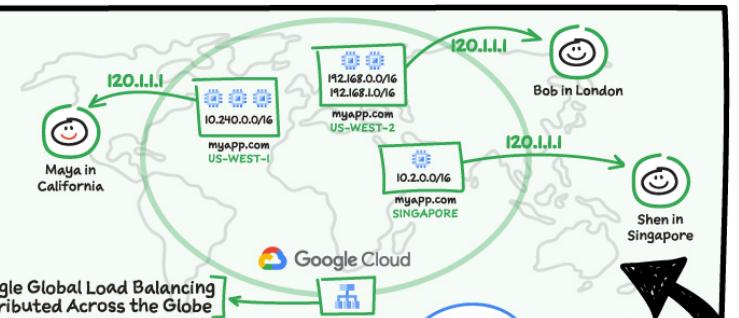


How is Anycast IP helpful?

**SINGLE IP GLOBAL REACH**  
Intelligent Anycast

DNS

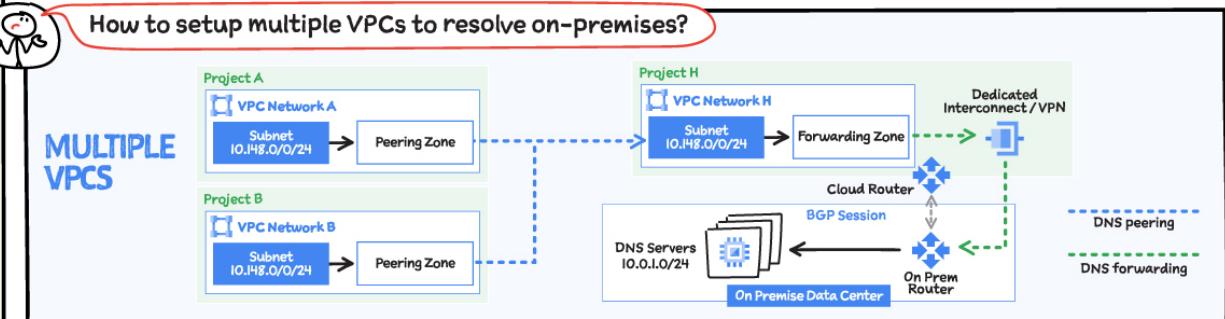
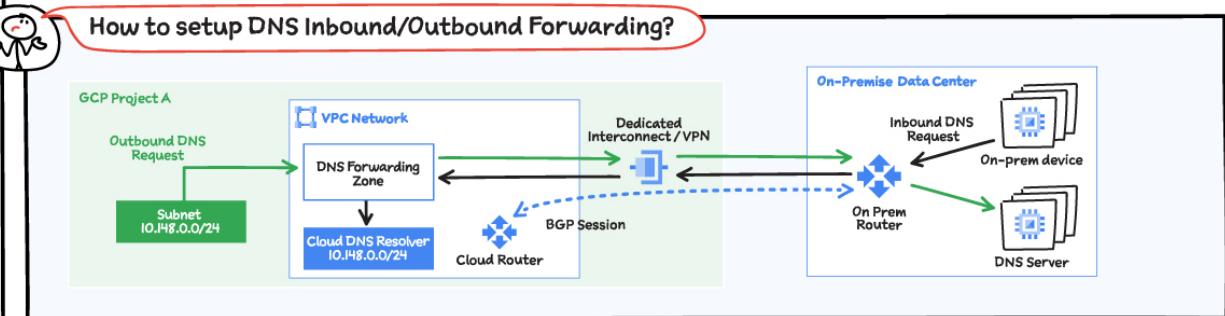
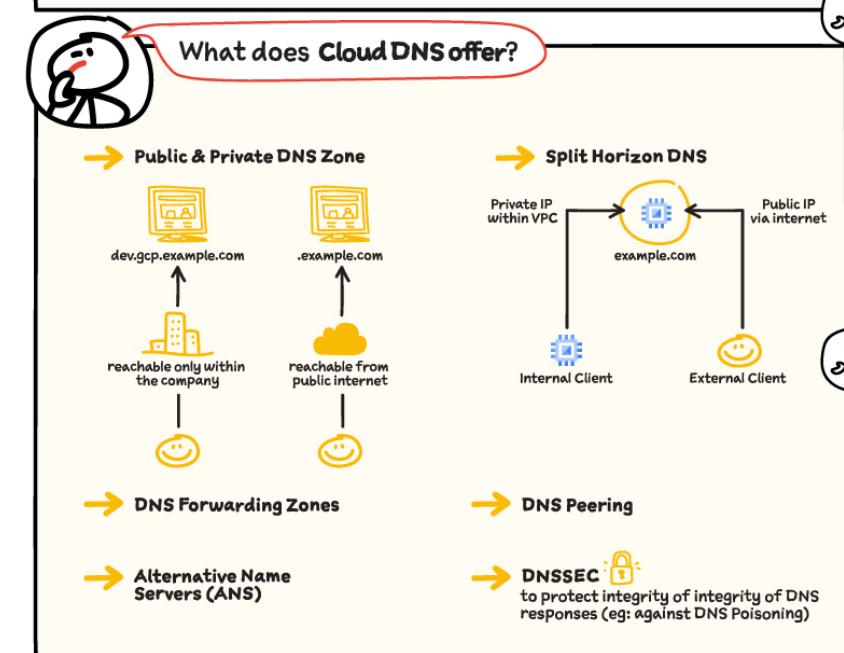
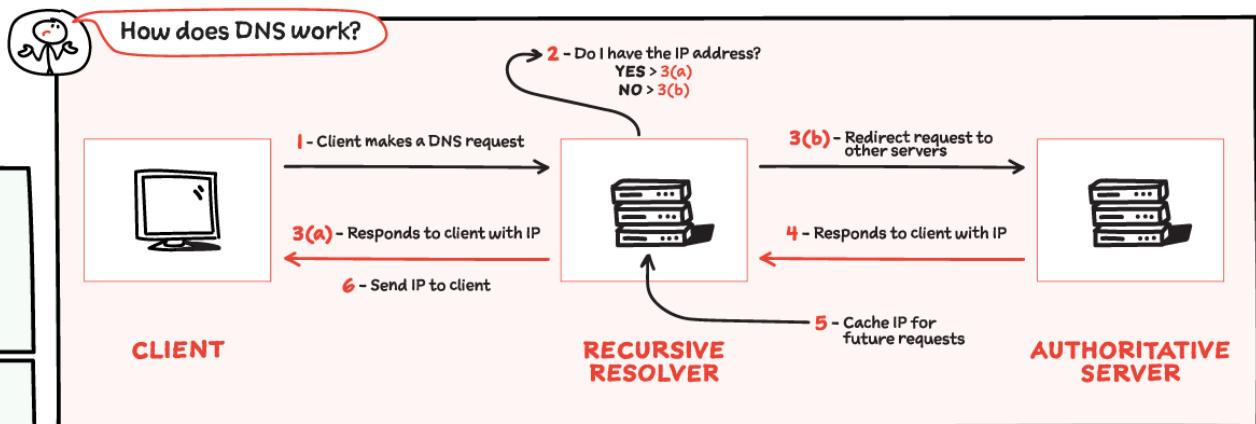
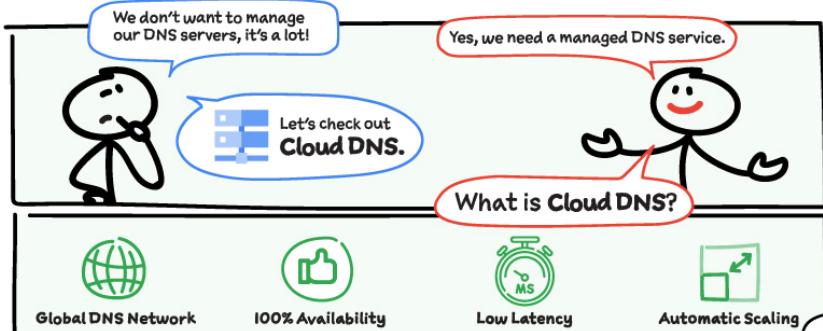
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# Cloud DNS #GCPSketchnote

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# Which Database or Storage should I use?

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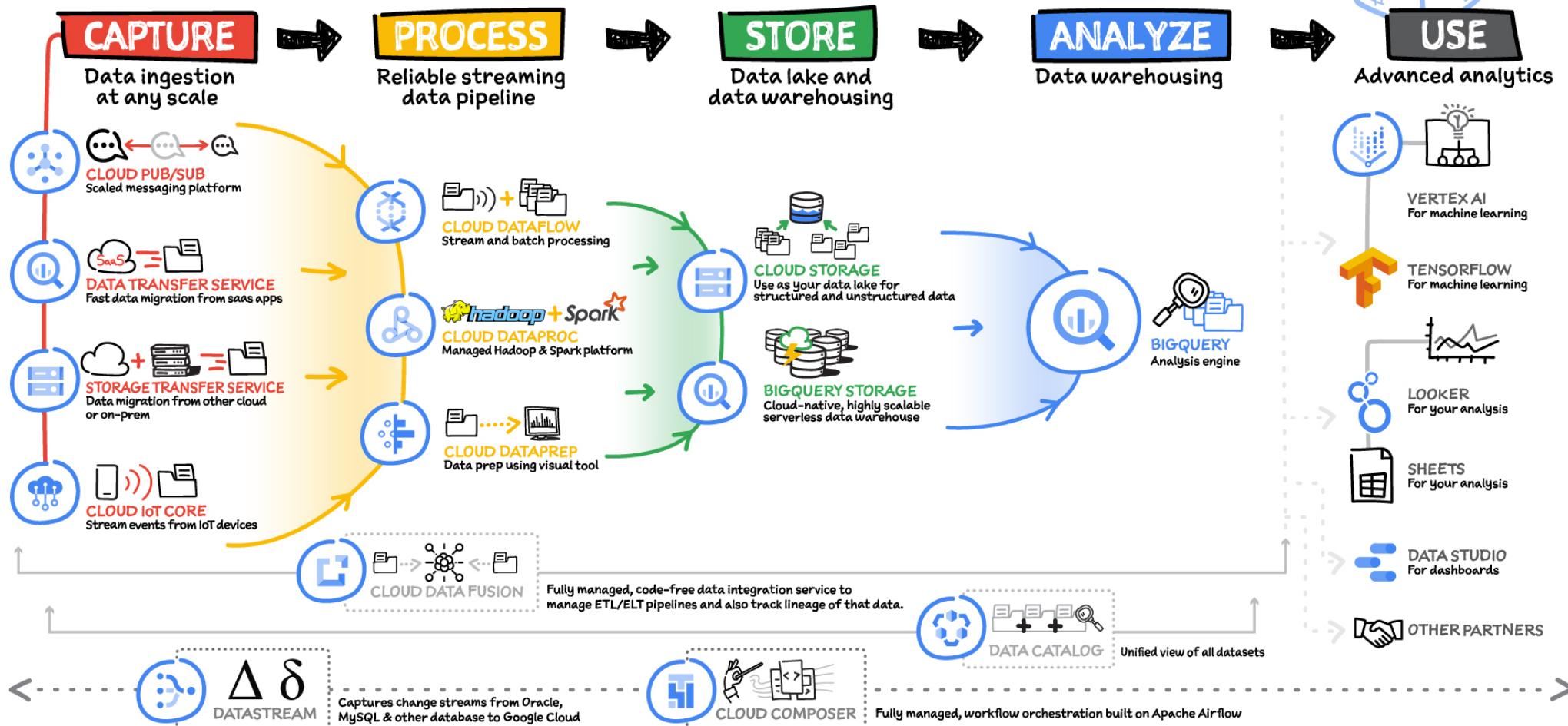


RELATIONAL	NON-RELATIONAL (NO SQL)		IN MEMORY	WAREHOUSE	OBJECT	BLOCK
 <b>Cloud SQL</b> Managed MySQL, PostgreSQL, SQL Server	 <b>Cloud Spanner</b> Cloud-native with large scale, consistency, 99.999% availability	 <b>Bare Metal</b> Lift and shift Oracle workloads to Google Cloud	 <b>Firestore</b> Cloud Native, serverless, NoSQL document database, backend-as-a-service, global strong consistency, 99.999% SLA	 <b>Cloud Bigtable</b> Cloud-native NoSQL wide-column store for large scale, low-latency workloads	 <b>Memory Store</b> Fully managed Redis and Memcached for sub-millisecond data access	 <b>BigQuery</b> Serverless, scalable, cost-effective multi-cloud data warehouse
Good For:	Good For:		Good For:	Good For:	Good For:	Good For:
General purpose SQL DB	RDBMS+ scale, HA, HTAP	RDBMS+ scale, HA, HTAP	Large scale, complex hierarchical data	Heavy read + write, events	In-memory and Key-value store	Enterprise data warehouse & Datalake
Use Case:	Use Case:		Use Case:	Use Case:	Use Case:	Use Case:
 Web frameworks  ERP  CRM  Ecommerce and web  SaaS application	 Gaming  Global financial ledger  Supply chain/inventory management	 Legacy applications  Data center retirement	 Mobile/web/IoT applications  Real-time sync  Offline sync  Personalized apps	 Personalization  Adtech  Recommendation engines  Fraud detection	 Caching  Gaming  Leaderboard  Social chat or news feed  Session store  Personalization  Adtech	 Predictive Analytics  Real-time SQL based Machine Learning  Dashboards  NLP based
 Stream videos  Image and web asset libraries  Data lakes  Backups/archives  Long-tail content	 Disks for VMs  Share read-only data across VMs  Rapid, durable backups of running VMs	 Flash-optimized databases  Hot caching layer for analytics  Application scratch disk				



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# How to build a scalable DATA ANALYTICS PIPELINE





# Pick Your AI/ML Path



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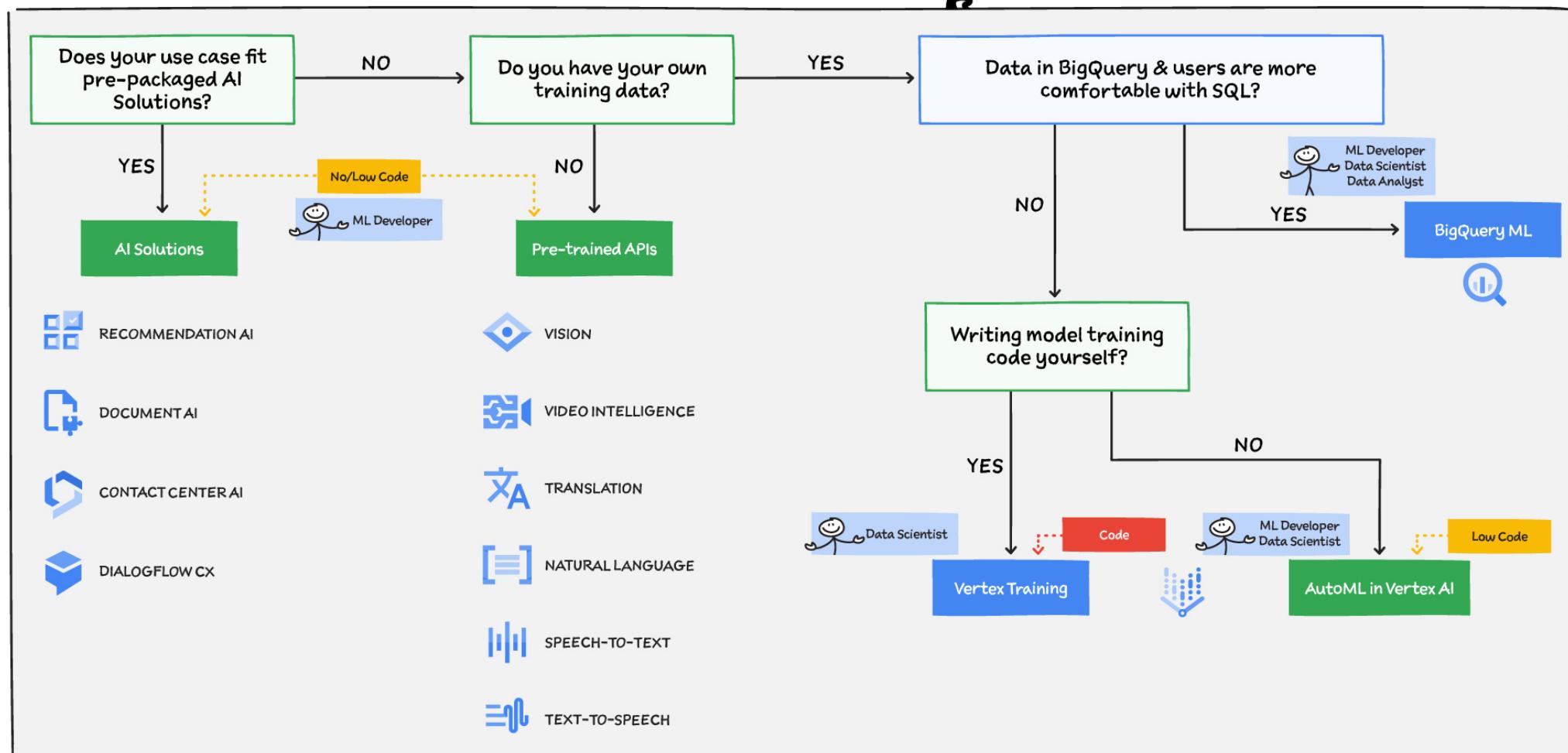


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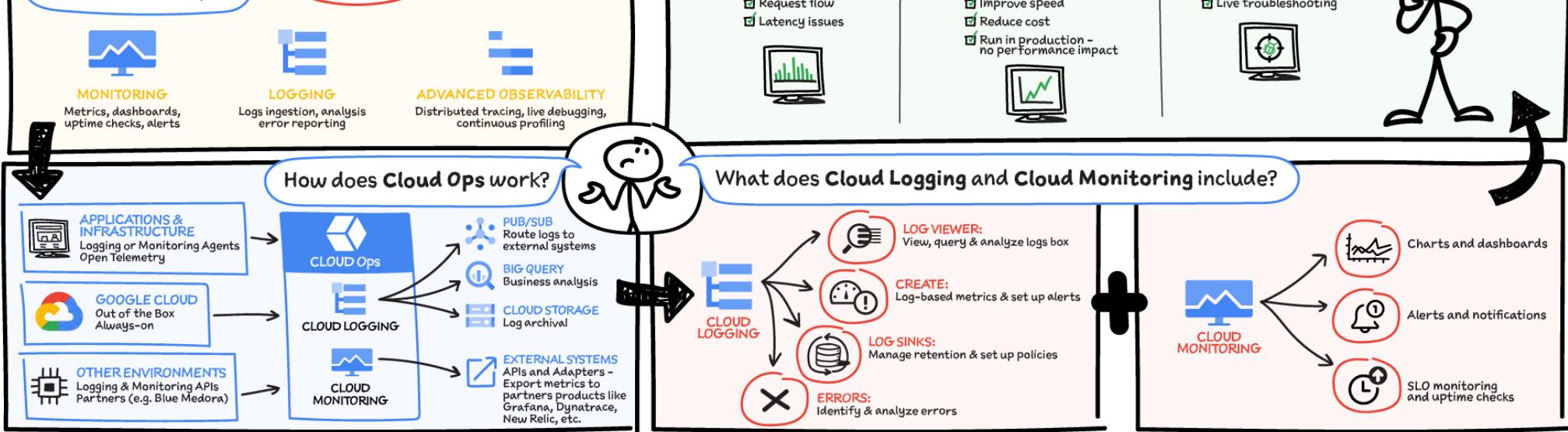
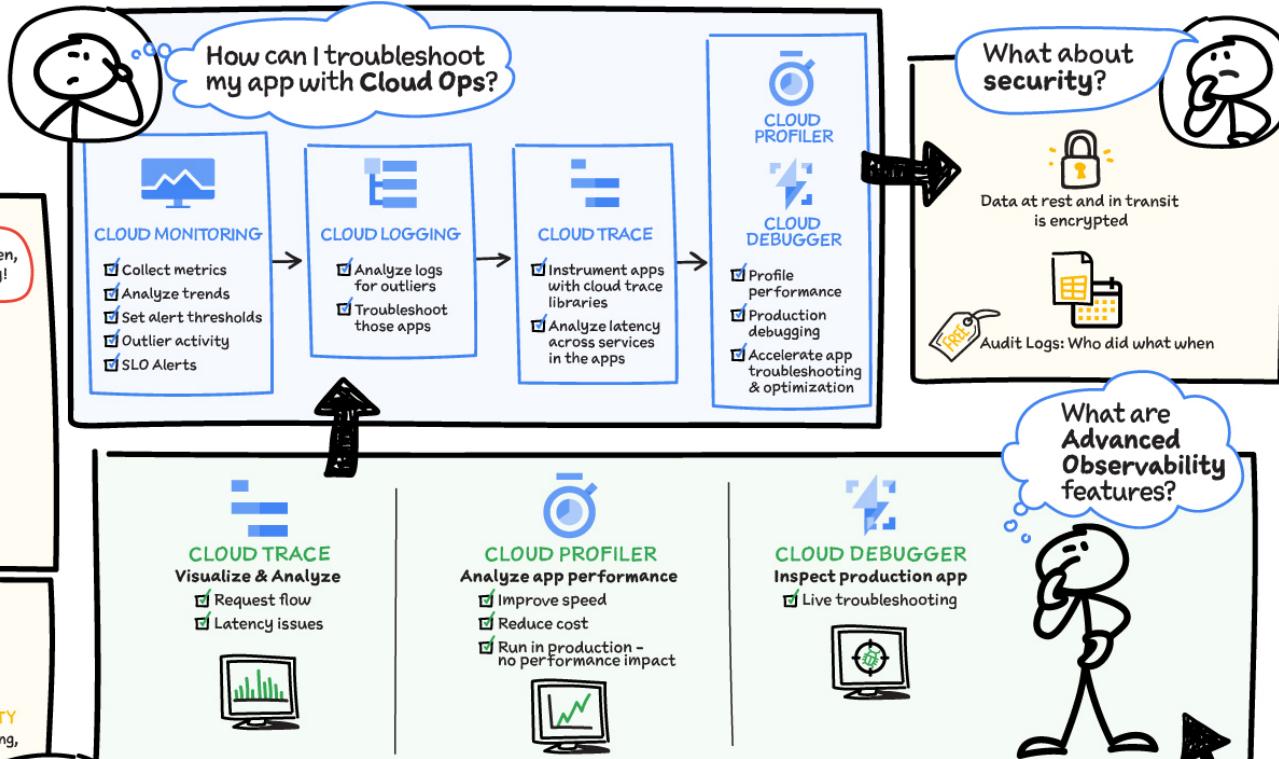
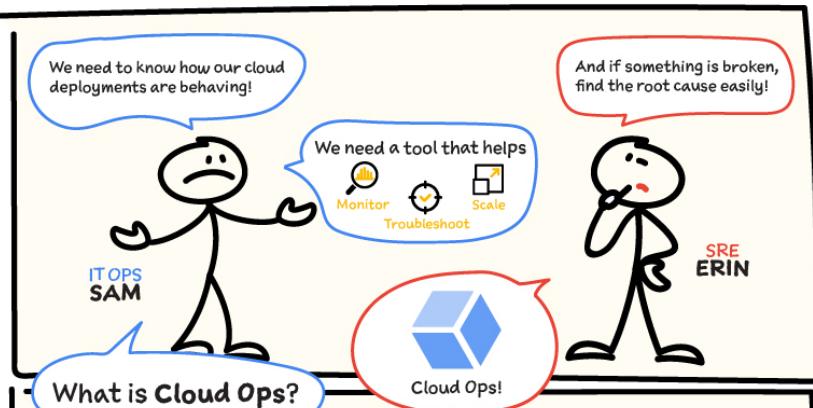
# Cloud Operations

#GCPsketchnote

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9.28.2020





# Google Cloud Security Controls



#GCPSSketchnote



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11.07.2021



## GOVERNANCE, RISK & COMPLIANCE

Third-party audits and certifications  
Google Vault for G Suite

## IDENTITY & ACCESS MANAGEMENT



Cloud Identity | Cloud IAM | Cloud IAP | CICP  
Titan Security Key | Cloud Resource Manager | BeyondCorp Enterprise

## ENDPOINT SECURITY



Safe Browsing



Device Management



## DATA SECURITY



Encryption at Rest | Cloud KMS | Secret Manager | EKM | HSM | VPC SC | Cloud DLP



## SECURE SOFTWARE SUPPLY CHAIN



Binary Authorization



## APPLICATION SECURITY



reCAPTCHA



## NETWORK SECURITY



Cloud VPCs | Encryption in Transit



Cloud Armor



Cloud Load Balancing



## INFRASTRUCTURE SECURITY

Cloud Infrastructure



Purpose-built  
Chips



Purpose-built  
Servers



Purpose-built  
Storage



Purpose-built  
Network



Purpose-built  
Data Centers



## SECURITY MONITORING & OPERATIONS



Cloud Logging  
Cloud Audit Logging



Cloud Security  
Command Center



Cloud IDS  
G Suite Security Center  
Access Transparency



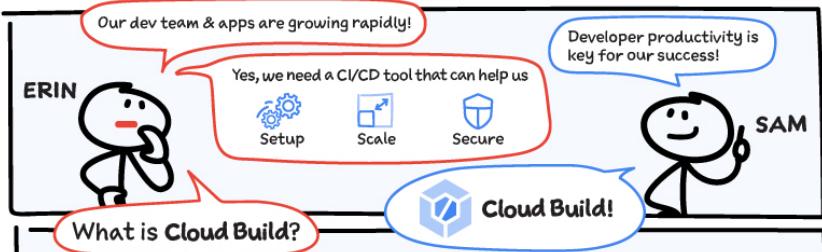
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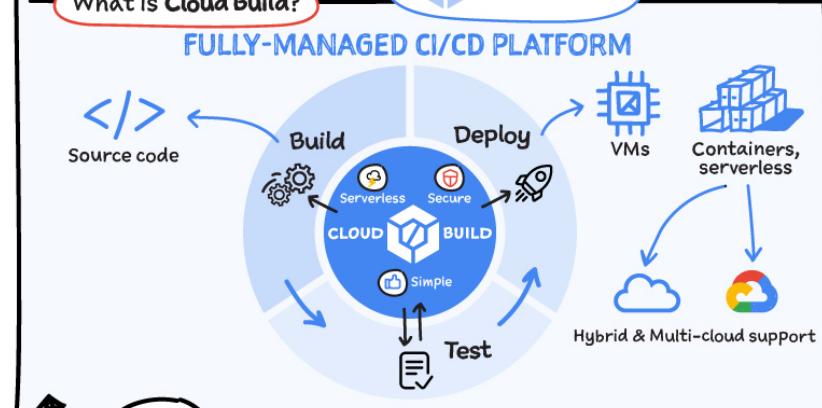
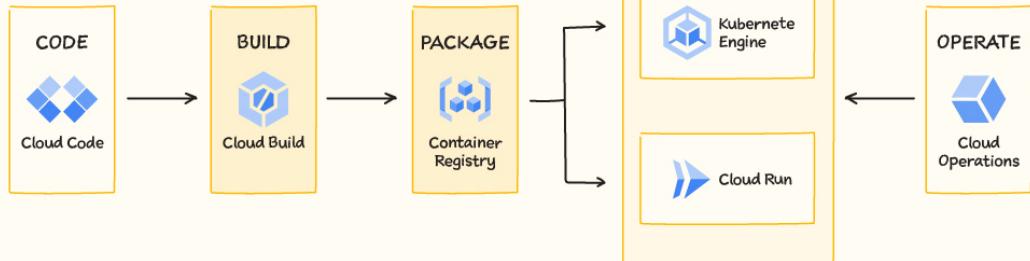
# Cloud Build #GCPsketchnote

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How do I create a cloud native CI/CD pipeline for containers?

## CI/CD FOR CONTAINERS WITH GCP



How does it help with Security?

