















Options to move data to Google Cloud

 GCS Transfer Tools  For small transfers upto a few TBs	 Transfer Service  Large-scale online transfer Cloud data On-premises	 Transfer Appliance  Large scale transfers from low bandwidth networks	 BIGQUERY DATA TRANSFER SERVICE  Data from SaaS & 3rd party apps
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How Do They Work?

Upload data directly to GCS  Tools - GSUTIL, UI, JSON API	 Tools UI, Client Libraries, HTTP REST API On-premise agent with GUI	 1. Request Appliance 2. Upload data SFTP, SCP or NFS 3. Ship to Google 4. GCS 5. Erase NIST 800 standard	 S3, Teradata, RedShift, Google SaaS apps, GCS, 3rd party
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Some Cool Things To know

rsync Streaming GSUTIL - Fast multi threaded	 Scheduled & Incremental updates Scale to 10's of Gbps Data moves over Google's high-bandwidth network pipes Minimize transfer time max available bandwidth performance optimizations	 All SSDs Minimal software Performance features Multiple network connectivity options	 Automatic Schedule Mirror or Append data
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Security

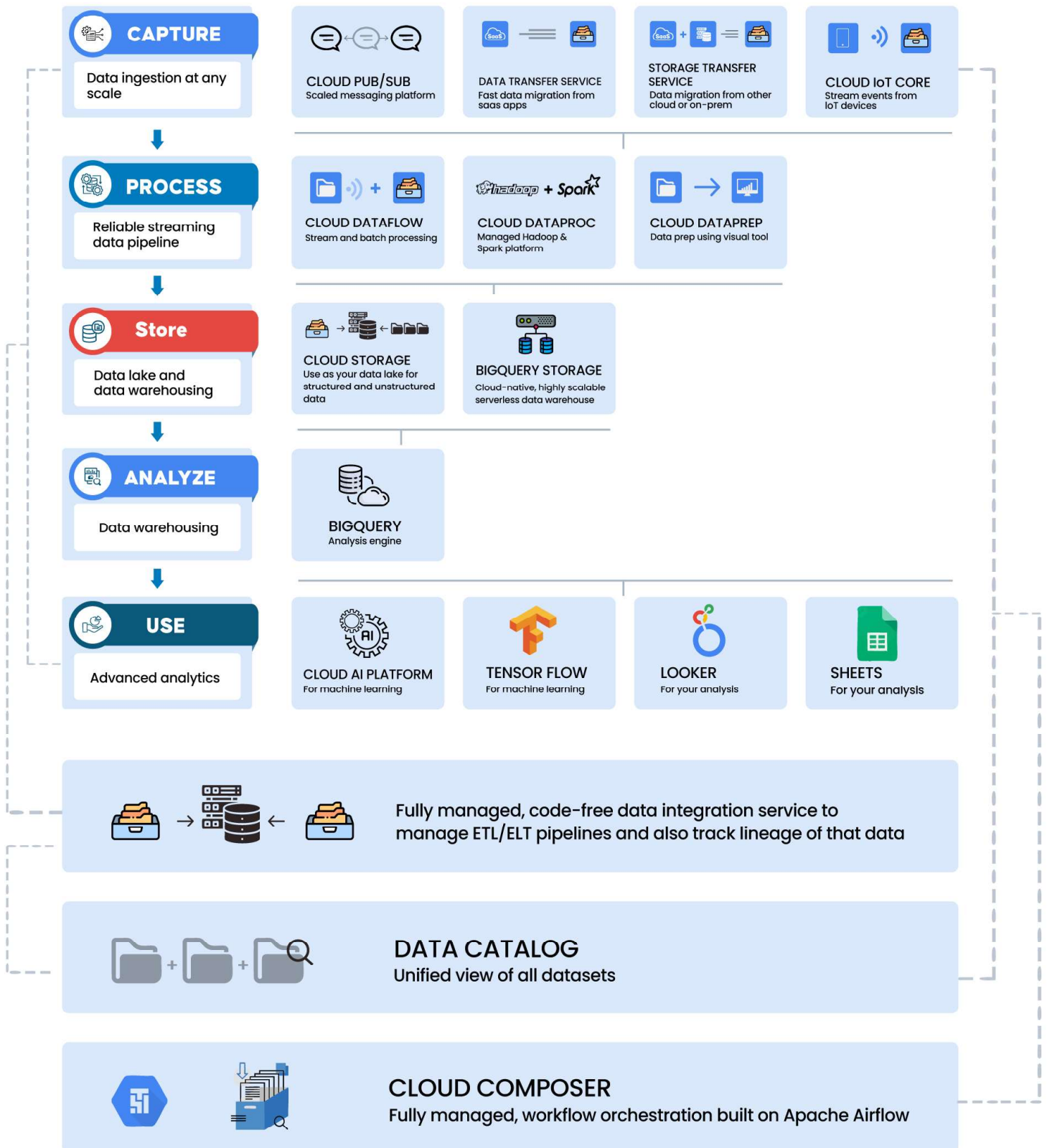
 HTTPS encrypted TLS connections	 Cloud sources accessed using private credentials All bytes checksummed & encrypted in-flight	 AES 256 encryption on the appliance Tamper resistant, Ruggedized Customer Managed Encryption Key (CMEK)	 HTTPS encrypted TLS connections
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Use Cases For Data Transfer

 Data Center Migration	 Decommission Tape Libraries & Infrastructure	 Machine Learning	 Storage & Delivery	 Backup & Archival
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How to build a scalable DATA ANALYTICS PIPELINE



Which Database should I use?

Relational

Cloud SQL	Cloud Spanner	Bare Metal
Managed MySQL, PostgreSQL, SQL Server	Cloud-native with large scale, consistency, 99.999% availability	Lift and shift Oracle workloads to Google Cloud
Good For:		
General purpose SQL DB	RDBMS+ scale, HA, HTAP	RDBMS+ scale, HA, HTAP
Use Case:		
<ul style="list-style-type: none"> Web frameworks ERP CRM Ecommerce and web SaaS application 	<ul style="list-style-type: none"> Gmailing Global financial ledger Supply chain/ inventory management 	<ul style="list-style-type: none"> Legacy applications Data center retirement

NON-RELATIONAL (NO SQL)

DOCUMENT	KEY VALUE
Firestore Cloud Native, serverless, NoSQL document database, backend-as-a-service, global strong consistency, 99.999% SLA	Cloud Bigtable Cloud-native NoSQL wide-column store for large scale, low-latency workloads
Good For:	
Large scale, complex hierarchical data	Heavy read + write, events
Use Case:	
<ul style="list-style-type: none"> Mobile/web/ IoT applications Real-time sync Offline sync Personalized apps 	<ul style="list-style-type: none"> Personalization Adtech Recommendation engines Fraud detection

In Memory

Memory Store

Fully managed Redis and Memcached for sub-millisecond data access

Good For:

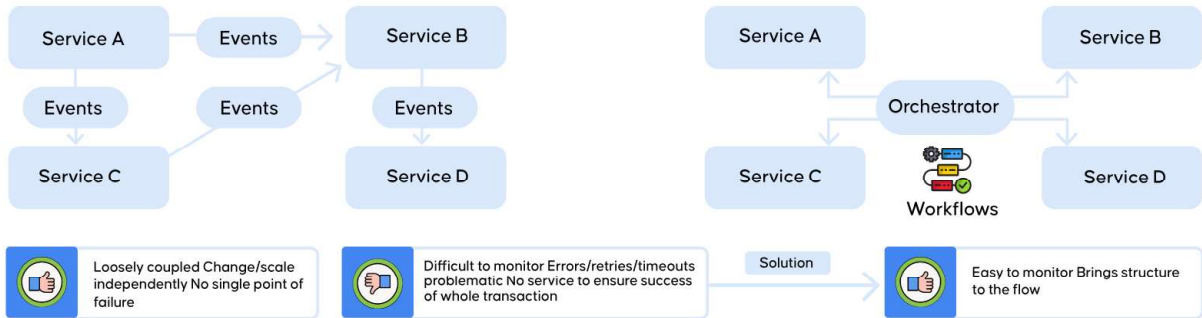
In-memory and Key-value store

Use Case:

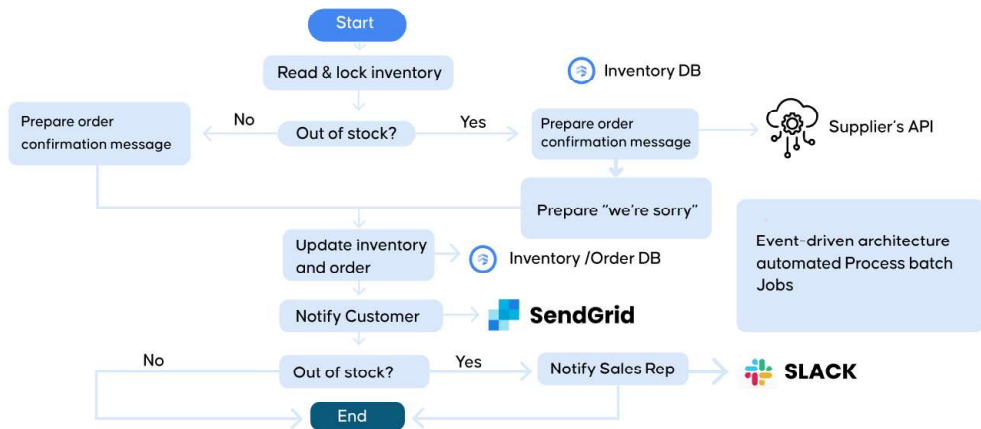
<ul style="list-style-type: none"> Caching Gmailing Leaderboard Social chat or news feed 	<ul style="list-style-type: none"> Session Store Personalization Adtech
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Service IN GOOGLE CLOUD

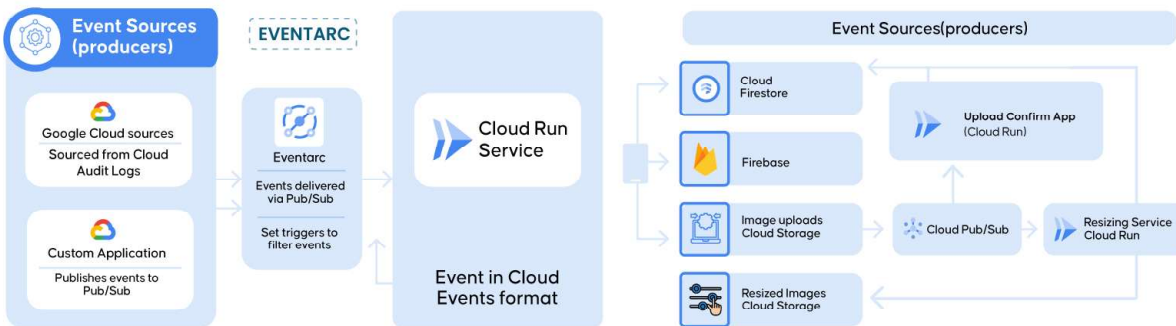
Service Choreography VS Orchestration



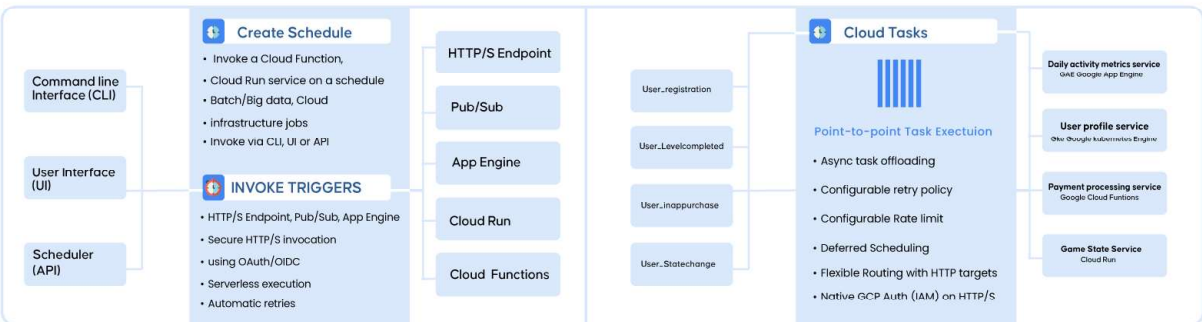
WORKFLOW USE CASES FOR SERVICE ORCHESTRATION



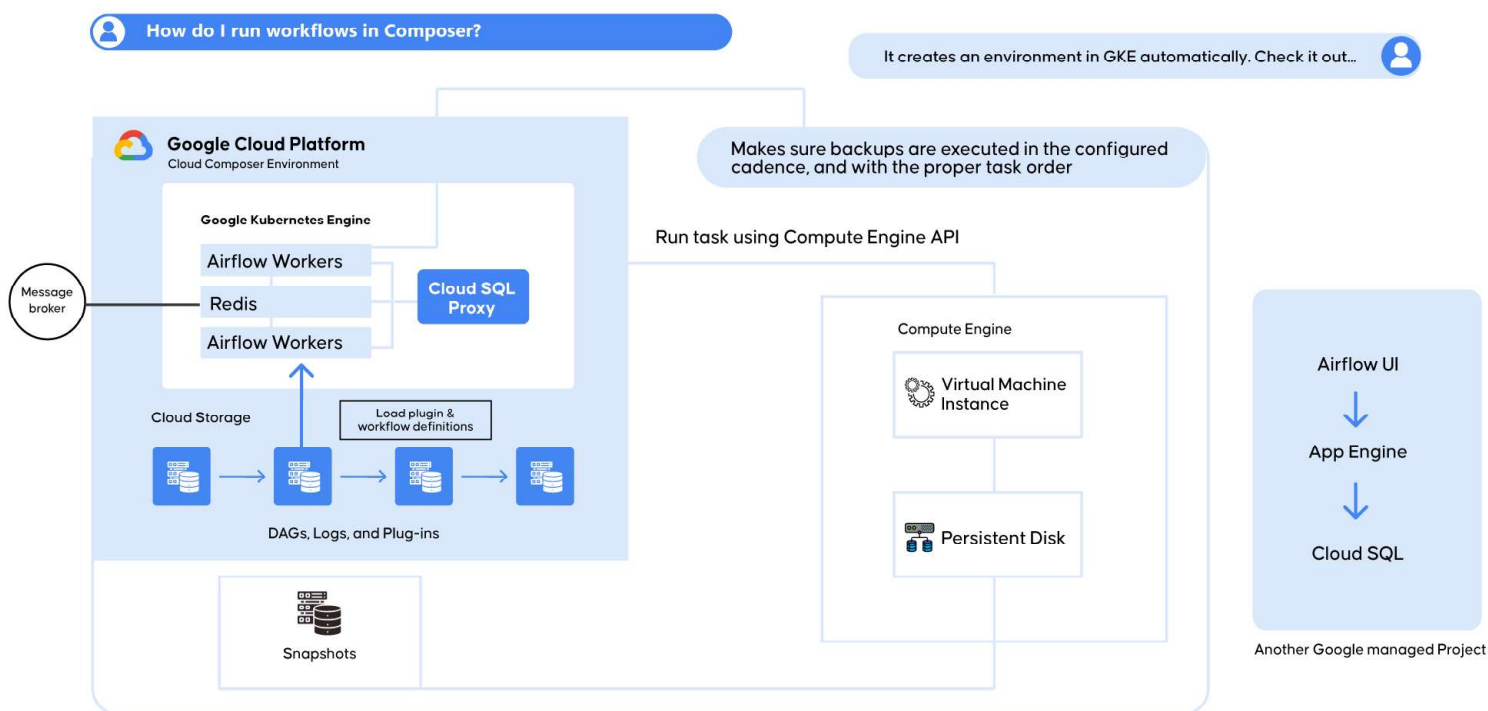
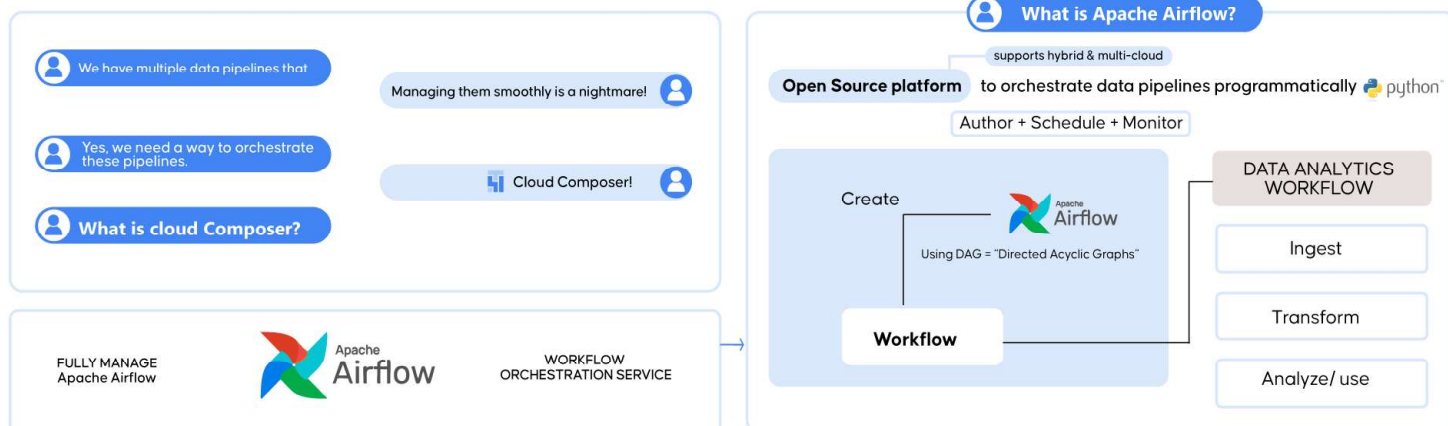
SERVICE CHOREOGRAPHY FOR EVENT-DRIVEN SYSTEMS



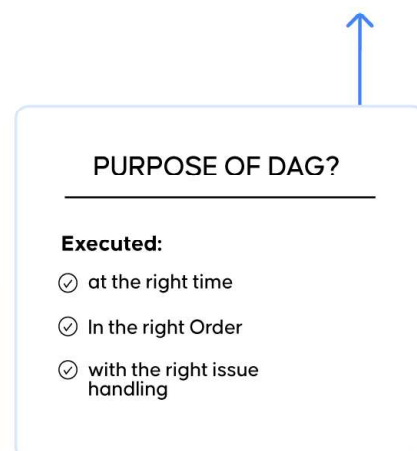
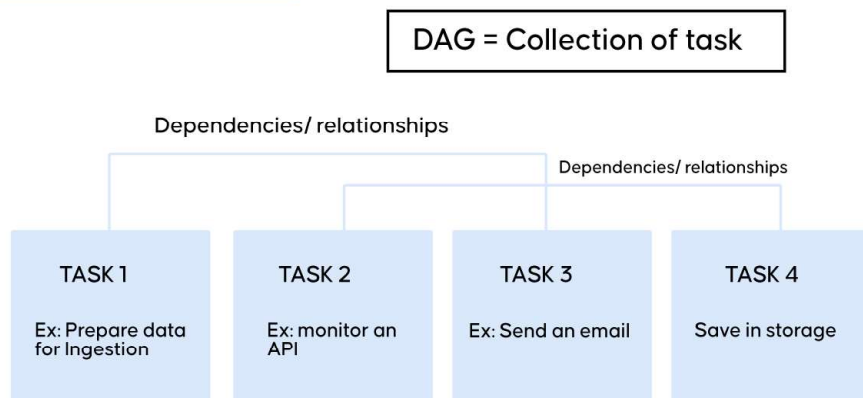
Cloud Scheduler vs Cloud Tasks



Cloud Composer



What is DAG?





Pick Your AI/ML Path

