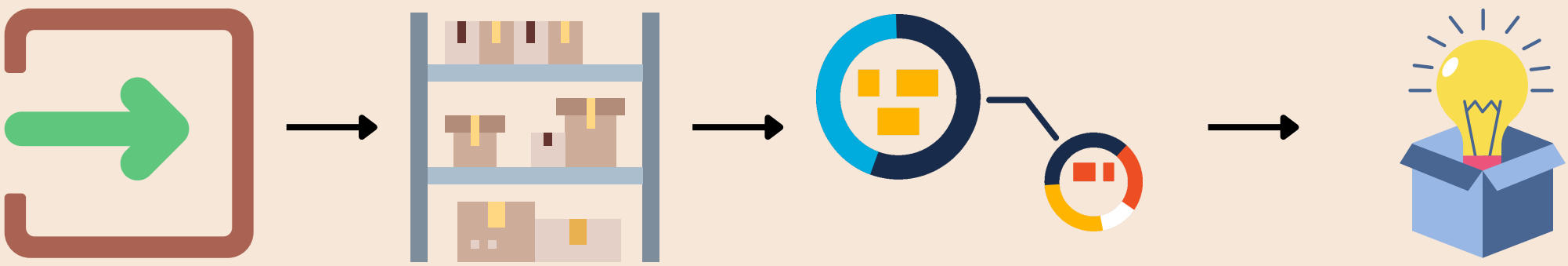
# MODERN DATA ARCHITECTURE

## BAKE OFF

## AWS - AZURE - GOOGLE

# WHAT IS A MODERN DATA ARCHITECTURE?

## 4 Building Blocks



INGEST STORE TRANSFORM INSIGHTS

## Managed with

SECURITY

SHARABILITY

SCALABLE

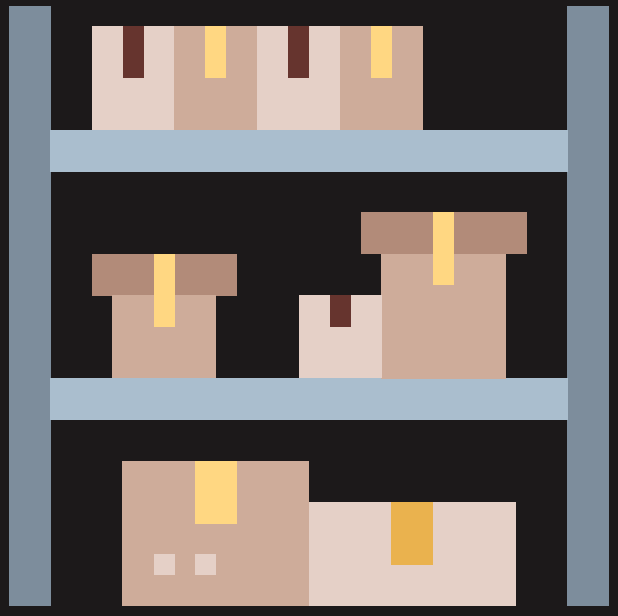
# INGEST

# INGEST

To bring data from external sources into a cloud environment

| AWS | AZURE | GOOGLE |
|---|---|---|
| AWS CLI | Azure CLI | gCloud CLI |
| Amazon Appflow | Azure Data Factory | Cloud Data Fusion |
| AWS Database Migration Service | Azure Database Migration Service | Database Migration Service |
| Amazon Kinesis | Azure Service Bus Messaging<br>Azure Event Hubs | Pub/Sub |
| Amazon Kinesis Data Streams | Azure Service Bus Messaging | Pub/Sub |
| AWS DataSync | Azure Migrate | Storage Transfer Service |

# STORE

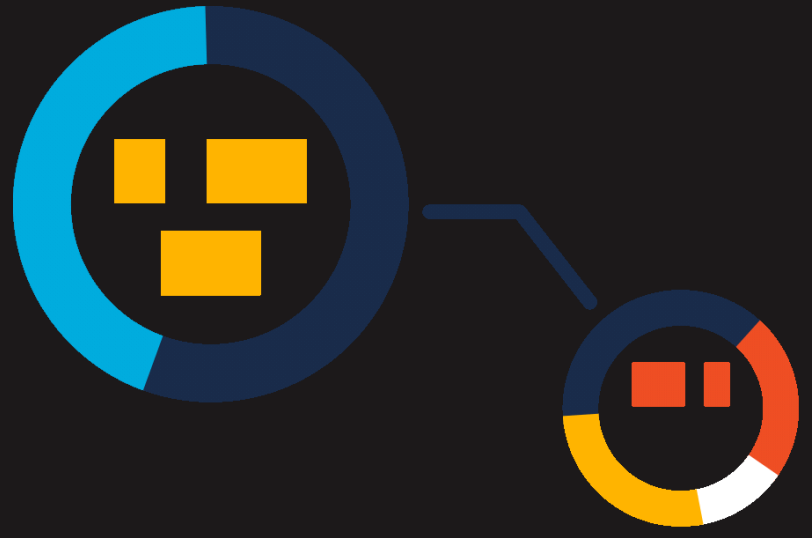


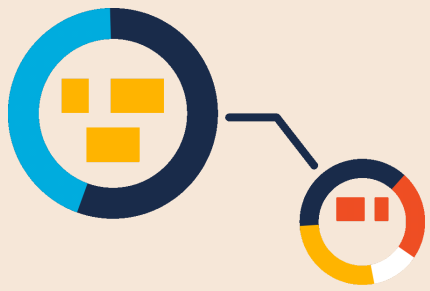
# STORE

To store data in a cloud file system, object store, database, or data warehouse.

| AWS | AZURE | GOOGLE |
| --- | --- | --- |
| AWS Simple Storage Service (S3) | Azure Blob Storage | Cloud Storage |
| Amazon Redshift | Azure Synapse Analytics | Big Query |
| Amazon RDS | Azure Database for MySQL & PostgreSQL | Cloud SQL |

# TRANSFORM





# TRANSFORM

Data transformation is the process of changing the format or structure of data to make it more usable, integrate it with other data, or prepare it for analysis.

| AWS | AZURE | GOOGLE |
| --- | --- | --- |
| AWS Glue Data Brew | Azure Data Factory | Dataprep by Trifecta |
| Amazon Redshift | Azure Synapse Analytics | Big Query |
| AWS Glue,<br>Amazon EMR | Azure Data<br>Lake Analytics<br>HDInsight | Dataproc |
| Amazon Athena | Azure Synapse<br>Analytics | BigQuery |
| Amazon Appflow.<br>Amazon Data Pipeline,<br>AWS Glue | Azure Data<br>Factory | Cloud Data Fusion |

# INSIGHTS

# INSIGHTS

Data insights are gained from analyzing data to inform decisions and identify trends.

## AWS

Amazon SageMaker

Amazon Quicksight

## AZURE

Azure Data Factory

Power BI

## GOOGLE

Vertex AI

Looker

# SECURITY

# SECURITY

Data security's goal is to give the right people the right level of access to the right resources at the right time, while also being able to see and track what is happening with those resources.

## AWS

Amazon IAM

## AZURE

Azure Identity Management

## GOOGLE

Identity and Access Management

# SHARABILITY

# SHARABILITY

Data sharability is where data governance and data access come together so that only the right users can access the right data. This ensures trust and accuracy with any data that a user is granted access to. Each cloud provider offers a centralized data service.

## AWS

AWS Lake Formation

## AZURE

Azure Data Lake

## GOOGLE

BigLake

# SCALABLE

# SCALABLE

One of the main benefits of moving to cloud is the ability of both storage and compute to scale based on demand.

AWS

AZURE

GOOGLE

# A MODERN DATA ARCHITECTURE ALLOWS YOU TO...

- Ingest data into a central data store
- Store data securely with fine grained access
- Store data at any scale and format
- Move data effortlessly between storage types
  e.g. Object store -> database -> data warehouse
- Transform, analyse, and gain insights using data from the central data store
- Pay only for the storage and services you use

# RESOURCES

AWS-AZURE-GCP-SERVICE-COMPARISON

AWS MODERN DATA ARCHITECTURE ANALYTIC LENS

AWS MODERN DATA ARCHITECTURE WHITEPAPER

MODERN DATA ARCHITECTURE - A DATA MODERNIZATION GREEN PAPER