# AWS re:Invent

NOV. 29 – DEC. 3, 2021 | LAS VEGAS, NV

GPS306

# Data warehouse and business intelligence modernization


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# Agenda

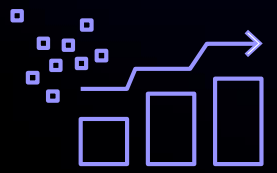
- Data trends
- Why and how to migrate your data warehouse to Amazon Redshift
- Why and how to modernize business intelligence with Amazon QuickSight
- Workshop
- Q&A

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# Data trends

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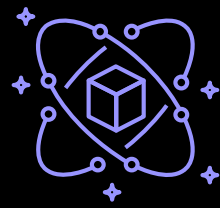
# Trends driving the modern data strategy



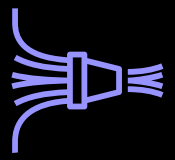
New data sources, sensors drive data growth



Empower personas – use best-fit analytical services



Growth in open data formats



Streaming data – analyze without loading it first



Single source of truth – unify analytics

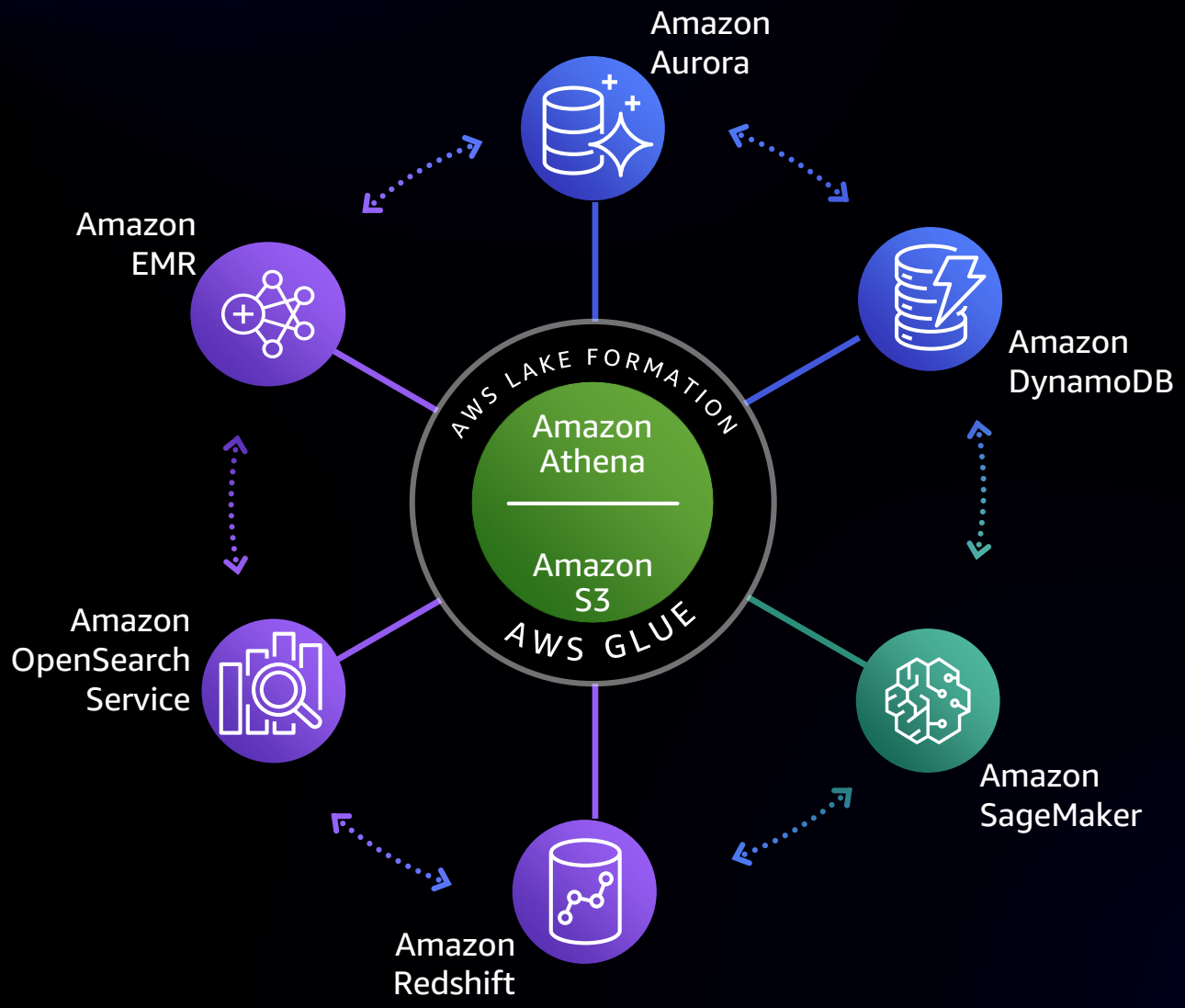


Unified security, compliance

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# Future-proof your organization with a modern data strategy




**Scalable data lakes**

**Purpose-built data services**

**Seamless data movement**

**Unified governance**

**Performant and cost-effective**

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# Why migrate your data warehouse to Amazon Redshift?

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# Amazon Redshift overview

Easy to use

Fully managed

Highly performant

Seamless data lake integration

Scalable

Resilient

Cost-effective

Secure cloud data warehouse



**30%**

overall analytics team productivity improvement



**408%**

five-year ROI[1]



**47%**

lower cost of data management platform

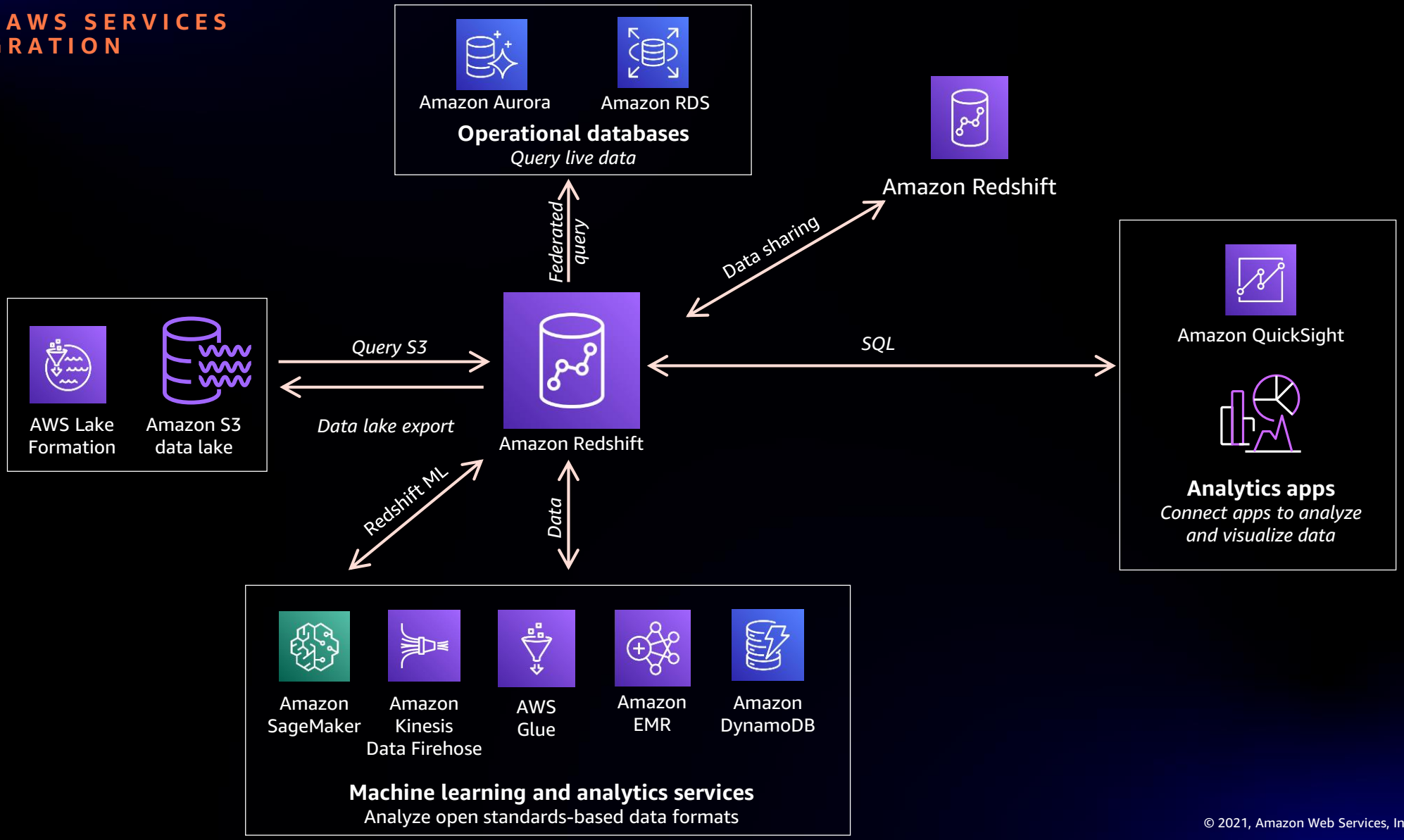
[1] Read the IDC report – The Business Value of Amazon Redshift Cloud Data Warehouse

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# Analyze all your data

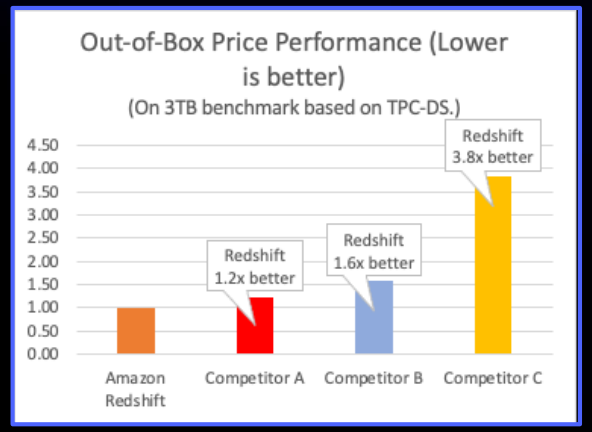
WITH AWS SERVICES INTEGRATION

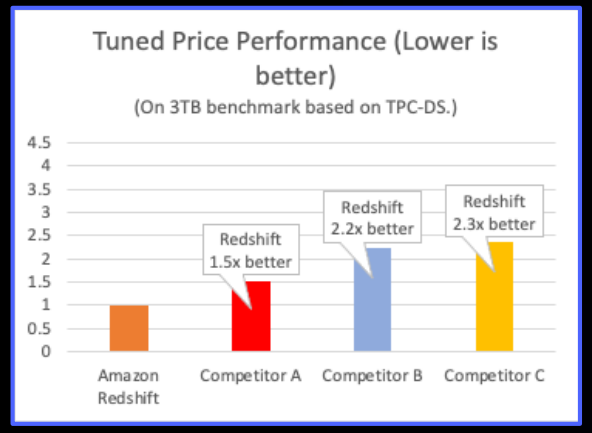



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# Performance at any scale

UP TO 3x BETTER PRICE PERFORMANCE THAN OTHER CLOUD DATA WAREHOUSES




Customers like Duolingo, Yelp, and Codecademy are doubling performance and saving costs with RA3

Amazon Redshift has up to 3x better price performance than other cloud data warehouses*

Scales data volume from 1TB to 1PB+ with predictable cost and performance

Boost queries up to 10x with AQUA for Amazon Redshift

*Source: Price performance with Amazon Redshift, https://go.aws/31OremX

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# Tens of thousands of customers process exabytes of data with Amazon Redshift daily




## Zynga

Doubled ETL performance and scaled to process >5.3TB of game data daily




## Schneider Electric

Supports tens of thousands of users through Redshift concurrency scaling and RA3 nodes to support a green future




## Magellan Rx

Redshift ML for predictive analytics to forecast future drug costs and identify trends




## SiriusXM

Moved ~80TB of reporting and ETL workloads to Amazon Redshift as part of its AWS migration, saving $1M annually




## NASDAQ

Easily support the jump from 30 billion records to 70 billion records a day because of the flexibility and scalability of Amazon S3 and Amazon Redshift




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# How to migrate your data warehouse to Amazon Redshift

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# Data warehouse migration journey

## Analyze and plan



Discovery & planning



Migration business case



Migration expertise



Migration plan

## Workshop and pilot

### Workload analysis and pilot



Create new target

Modify/develop BI and apps to dual target

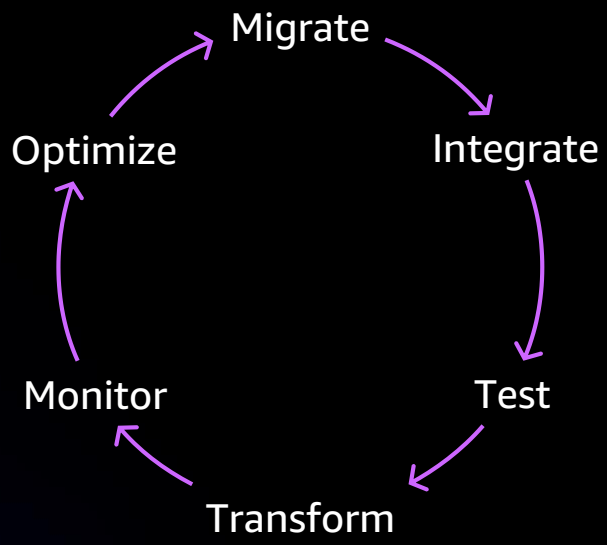
Modify/develop ETL to dual target



Skills/CoE

## Continuous workload migrations

### Migration




**AWS SUPPORT THROUGHOUT THE JOURNEY**

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# Migration toolkit

AWS TOOLS FOR EASY, FAST, AND SECURE DATA MOVEMENT TO AND FROM AWS CLOUD



AWS Schema Conversion Tool
(AWS SCT)



AWS Database Migration Service
(AWS DMS)



Amazon S3
Transfer
Acceleration



AWS Transfer
Family



AWS
DataSync



AWS Snow
Family



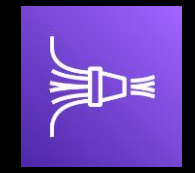
AWS
Direct Connect



AWS Storage
Gateway



ISV
connectors



Amazon Kinesis
Data Firehose

+ AWS Proof of Concept guide and technical help

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# SQL enhancements and migration support

ACCELERATE MIGRATIONS FROM LEGACY DATA WAREHOUSES

## SQL syntax

- Recursive CTE — GA
- Case sensitivity — GA
- Stored procedure enhancements
- Numeric & textual casting — GA

## Types & limits

- 100,000 tables
  10,000 SPs — GA
- New type:
  Time & TimeTZ — GA
- Extended SPATIAL support — GA

## Security

- Column-level permissions — GA
- Tokenization
  via Lambda UDFs — GA

## Tooling and connectivity

- Open source
  Python & JDBC drivers — GA
- **RSQL** – Amazon Redshift native command line tool with improved control flow and BTEQ support — GA

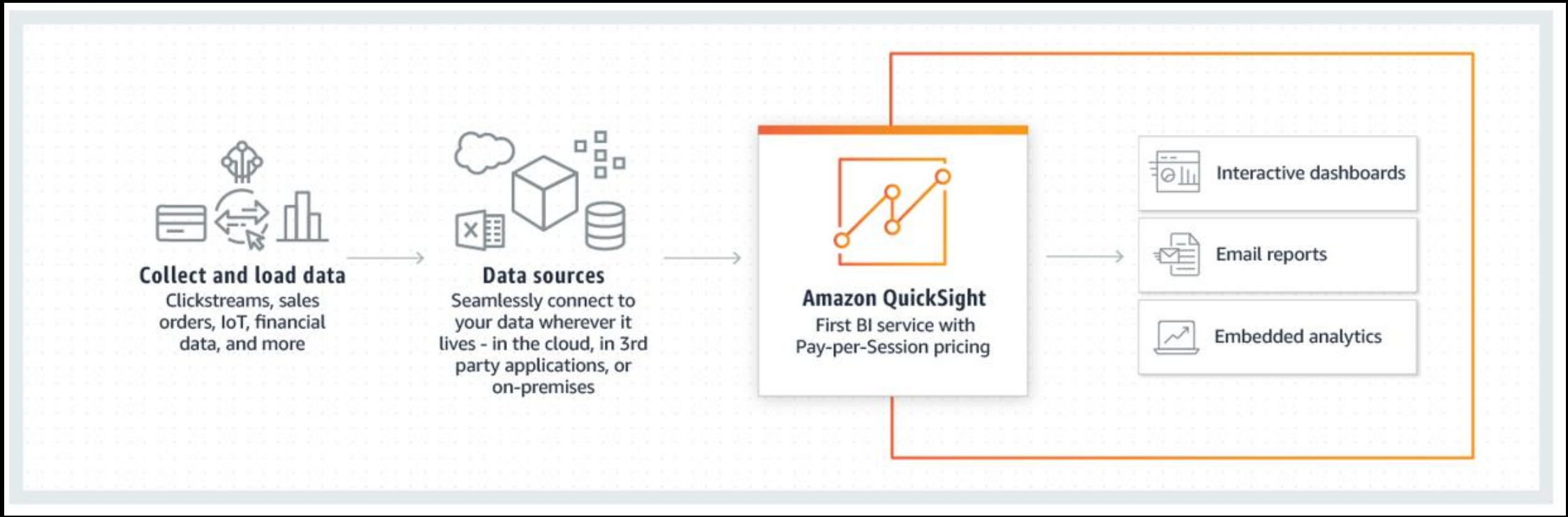
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# Why and how to modernize business intelligence using Amazon QuickSight

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# Amazon QuickSight

FULLY MANAGED BROWSER-BASED BUSINESS INTELLIGENCE SERVICE FOR THE CLOUD




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# Amazon QuickSight benefits

FULLY MANAGED BROWSER-BASED BUSINESS INTELLIGENCE SERVICE FOR THE CLOUD



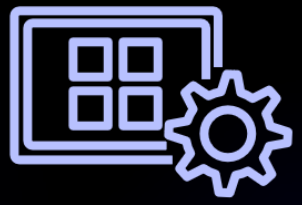
Auto scaling
and serverless



Pay as you go



Fully integrated
with AWS



Easy to develop
and maintain



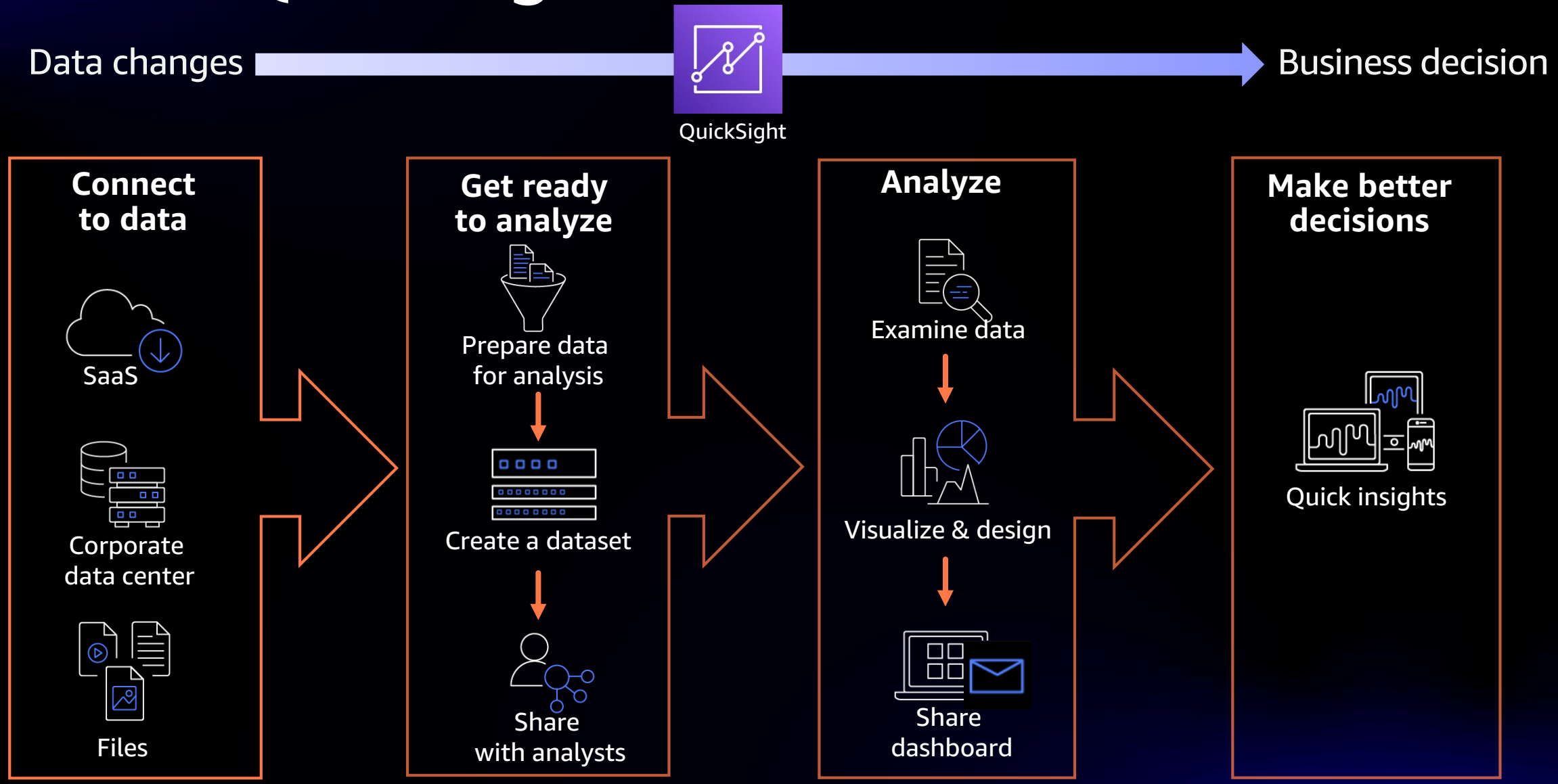
Consistent
performance



ML insights

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# Amazon QuickSight workflow




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# User types and user roles



## Admin

Manage users
Manage SPICE capacity
Manage VPC connections
Manage account settings

## QS Admin

Usually has AWS Console access



## Author

Create data sets
Create analyses
Create dashboards

## Analyst

IT/business users:
“Data Analyst”
“Data Engineer”
“BI Engineer”



## Reader

Consume dashboards

## Business user

Anyone
Can be internal or external users

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# Workshop

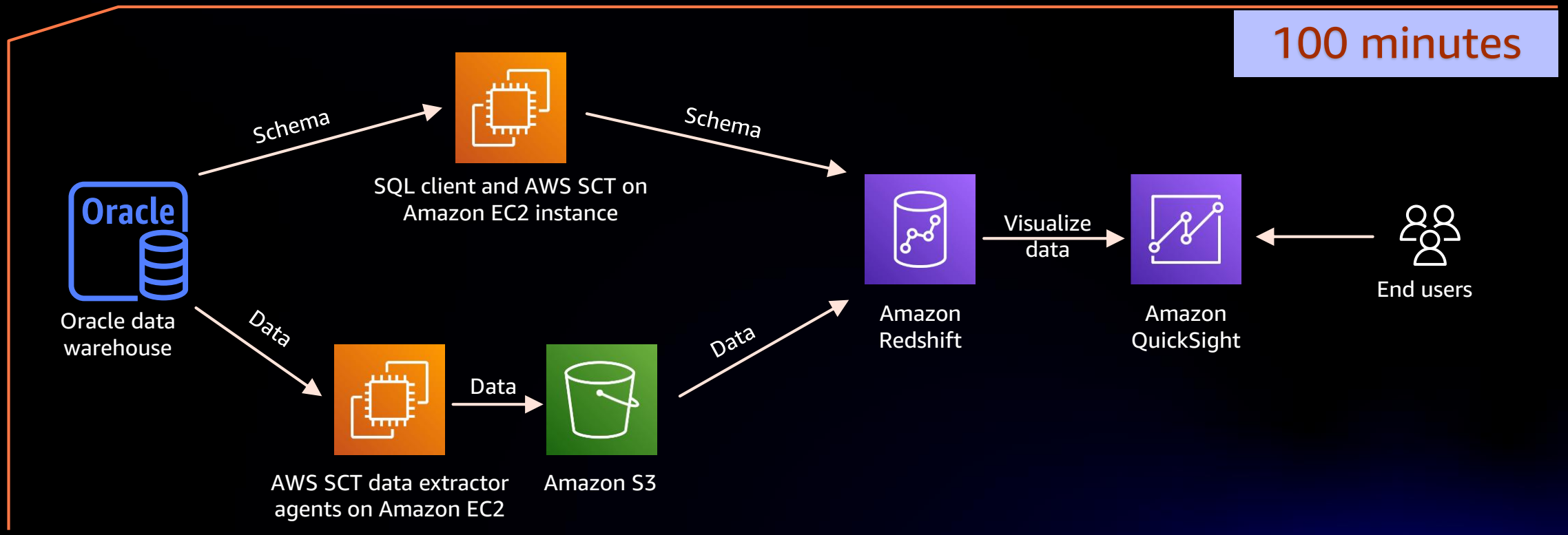
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# Workshop content

Instructions: https://tinyurl.com/gps0306

Event hash ID
fc97-113fdb4cd4-3e

## Architecture




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# Kick start your migration today!

## GETTING STARTED WITH YOUR MIGRATION

- Build migration team
- Decide on budget, scope, etc.
- Refer to AWS Blogs and self-service guides if you are migrating your data warehouse
  - https://aws.amazon.com/blogs/database/part-1-accelerate-your-data-warehouse-migration-to-amazon-redshift/
  - https://aws.amazon.com/blogs/big-data/develop-an-application-migration-methodology-to-modernize-your-data-warehouse-with-amazon-redshift/
  - https://pages.awscloud.com/GLOBAL-ln-DL-Netezza-Migration-Guide-2020-learn.html
  - https://docs.aws.amazon.com/prescriptive-guidance/latest/patterns/migrate-an-oracle-database-to-amazon-redshift-using-aws-dms-and-aws-sct.html

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# Thank you!

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