
AWS
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NOV. 28 – DEC. 2, 2022 | LAS VEGAS, NV

PRT304

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Introducing Salesforce Genie: A real-time platform for customer magic

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Senior Director
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aws

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Ashish Thapliyal

Salesforce Product Management
Senior Director



Agenda

- Introduction to Genie
- Genie Technical Architecture
- Genie Customer Examples
- Genie Demo
- Q&A



Customer Expectations Are Rising



Then

- Broadcast
- Mass Emails
- Brick + Mortar
- Internet Ads

Now

- Personalized Offers
- eCommerce
- Omnichannel
- 24/7 Service
- Digital-First
- AI

73%

of customers expect companies to understand their unique needs and expectations

Salesforce State of the Connected Customer 2022

We're More Disconnected Than Ever



Companies

The average company has

976

different applications

Multi-Identity

Siloed Data

End of Cookies

Explosion of Data



Real-Time Customers

56%

of customers say companies treat them as a number

Salesforce State of the Connected Customer 2022

We're More Disconnected Than Ever





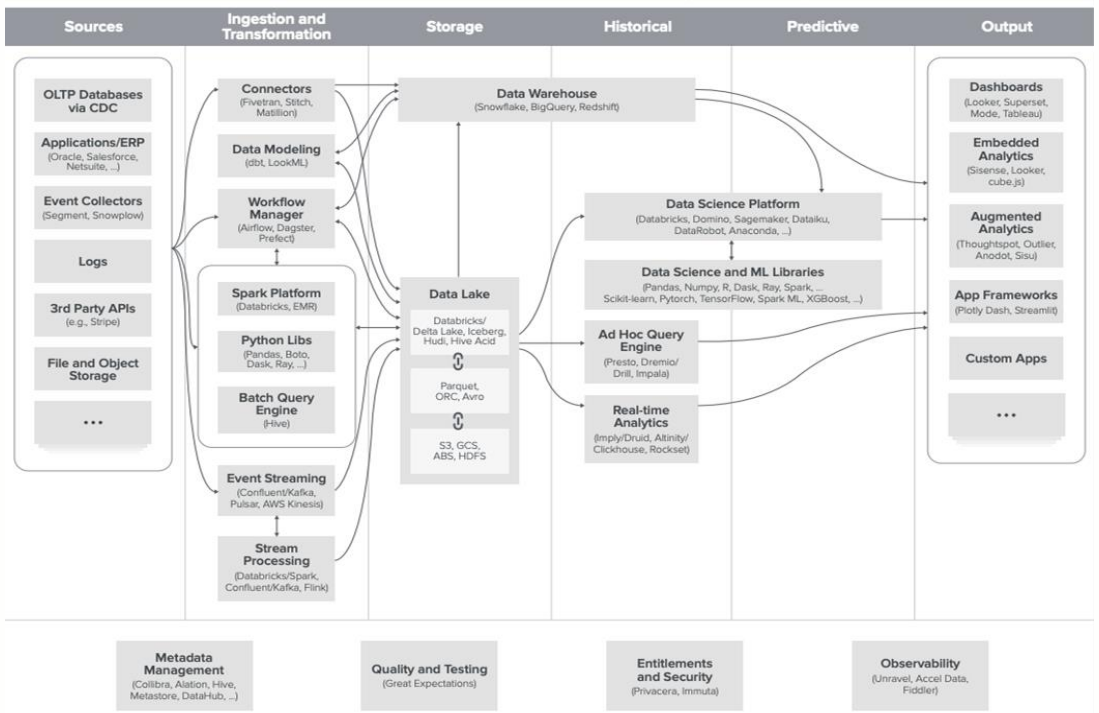
1 in 3

customers will switch
from brands they love
after **one bad experience**

Salesforce State of the Connected Customer 2022

Today's Answer Requires Building This...

...a massively complex and expensive data infrastructure



RT Decisioning

- Real-Time Eventing
- Real-Time IR
- Real-Time Segments
- Real-Time Actions

ML Processing

- Data Snapshots
- Feature Store/ Insights
- Batch/Stream Transformations
- SQL/File Access

Applications

- Profiles, Engagement Data
- SQL, SOQL
- REST APIs
- Metadata

Event Processing

- Streaming Ingest
- Streaming Transforms
- Window Aggregates *(last 5 min purchase etc.)*
- Streaming Actions – Pub-Sub

Analytics

- Batch Ingest
- Batch Transforms
- Batch Insights
- Columnar Stores
- SQL

Big Data Lake

- Delta Change Capture
- Large Scale
- File Formats

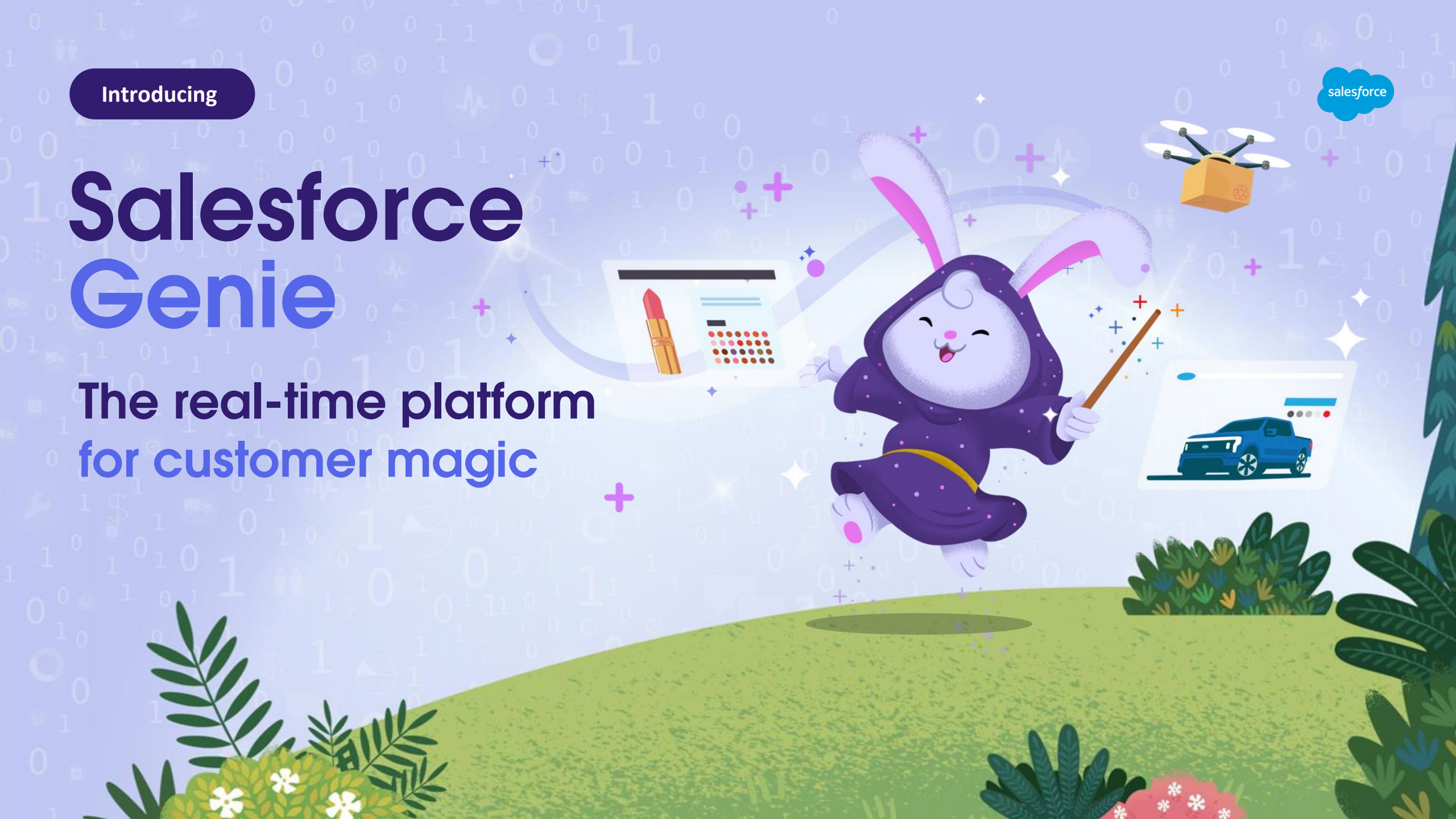
Commonality – Data, Metadata, Insights

https://a16z.com/2020/10/15/the-emerging-architectures-for-modern-data-infrastructure/

Introducing

Salesforce Genie

The real-time platform for customer magic



Customer 360
World's #1 CRM



Customer 360 Platform

Flow Automation

Einstein AI

Transactional Database

Hyperforce

AWS

Real-Time Customer 360
Powered by Genie



Real-Time Flow Automation

Real-Time Einstein AI

Real-Time Genie
Hyperscale Data Platform

Transactional
Database

Hyperforce







How Genie Works Its Magic



Architecture





…And Multiple Data Patterns Require Different Technology

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Commonality - Data, Metadata, Insights



Genie Supports Multiple Data Patterns Consistently



Applications

RT Decisioning

ML Processing

Event Processing

Analytics

Big Data Lake

Commonality - Data, Metadata, Insights



Data Principles

1. **Cold, warm, hot layers** for data access — Seamless movement
2. **Events and tables are interchangeable**
3. Every **operation** (insights, segments) generates event & is in a table
4. **Multi-modal access**—SQL, SOQL, file, REST, webhooks, platform events, journey events, lightning components
5. Snapshot, partition, transforms on data to support ML, analytics
6. High-performance **query layer** for analytics
7. Every data is typed with Salesforce metadata



How Salesforce Genie is architected on AWS services



Architecture

Lightning-Based App, Setup & Metadata

Metadata (Core) | Applications | Lightning App & Platform | AppExchange

Data Connectors & Ingress

Marketing Cloud | CRM Connector | Third-Party Connectors Amazon S3

CDP Processing (Identity Resolution, Segmentation, KPIs, Predictions, Activation, Query)

Identity Resolution | Segmentation | Real-Time Profiles | Query Services | Einstein Predictions | Activation

Data Transformations, Lightning Enabled Data Tables & Model Mappings

ETL Transformations | Data Stream Entities | Data Model Entities | Event Data Entities

Control & Management Plane

CI/CD, Control & Management Plane

Monitoring, Alerting , DevOps

Big Data Processing

Spark | Presto | AirFlow

Storage

Cached Metadata, Security | SQL Metadata Store | File Storage | Hot Store

Data Visualization & Analysis

Tableau

Datorama

Activation Channels

Messaging Journeys

Advertising (FB, Google, LinkedIn, ..)

RTIM

Genie Architecture + Amazon

Lightning Based App, Setup & Metadata

Metadata (Core) | Applications | Lightning App & Platform | AppExchange

Data Visualization & Analysis

- Tableau
- Datorama

Data Connectors & Ingress



Amazon Data Sync



Amazon Elastic Container Kubernetes

CDP Processing (Identity Resolution, Segmentation, KPIs, Predictions, Activation, Query)



Amazon ElastiCache



Amazon Simple Queue Service



Amazon Elastic Container Kubernetes

Big Data Processing



Amazon EMR

Data Transformations, Lightning Enabled Data Tables & Model Mappings



Amazon Elastic Container Kubernetes

Activation Channels



Amazon EMR



Amazon Simple Storage Service (S3)

Control & Management Plane



Amazon CloudWatch



AWS Identity & Access Management



AWS Auto Scaling

Storage

Cached Metadata, Security



Amazon RDS



AWS S3



DynamoDB

Storage Layering

Supports metadata at storage level

Big Data Service
Spark, Trino , Hyper integrated with Lake Library

Lake Library
Table Abstraction - Spark DataFrame, Tuples

Cloud Table
Salesforce Metadata, Relationships

Other Stores
Snowflake, BQ, Lake

Iceberg
Table Abstraction + Updates

Parquet
Columnar Storage

trino Apache Spark

DataFrames

OrderId	POId	Quantity	Cost
100	ABC	10	300
200	DEF	20	500

OrderCIM.json

Manifest.xml

OrderTablePartition1
OrderTablePartition2, DeleteFile1)...

/<customerFolder>
/OrderTableFolder

New Datasource integrated

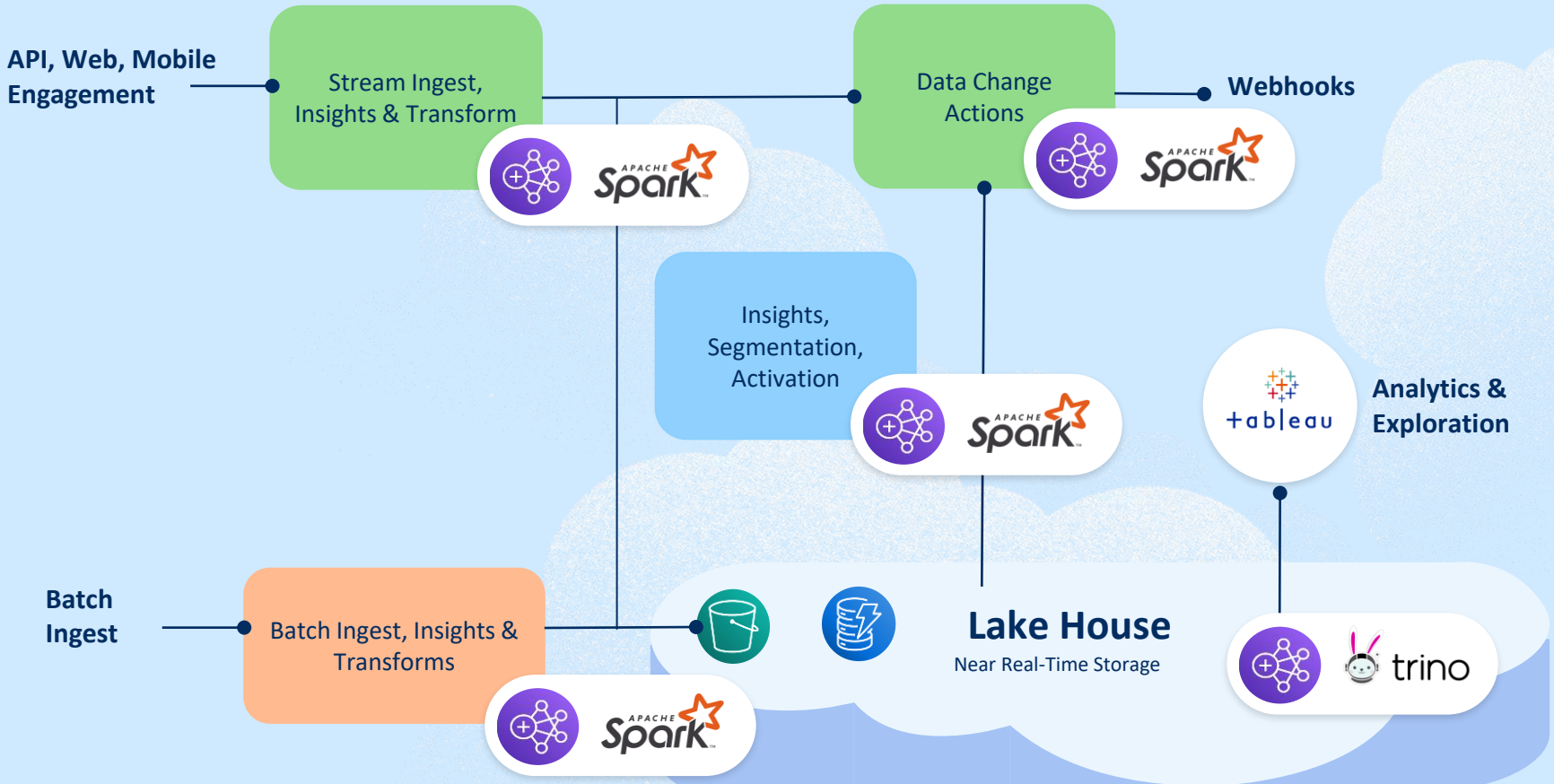
Bring Your Own Lake

Semantics,
Related tables

Deletes, Snapshots, Time Travel,
partition awareness

Warehouse style columnar access

Data Flow Architecture



Amazon EMR
Heart of the System

Faster Spark Processing
- Up to 2x faster than OSS

Handle Scale
- >100K RPS per tenant
- Tb ingest files
- Millions of queries
- 1,000s of clusters spun up

Cost reductions
- Spot saves 42% costs
- Auto scale

Near Real-Time Data Processing | Auto Scale | Cost Control | Guaranteed SLA

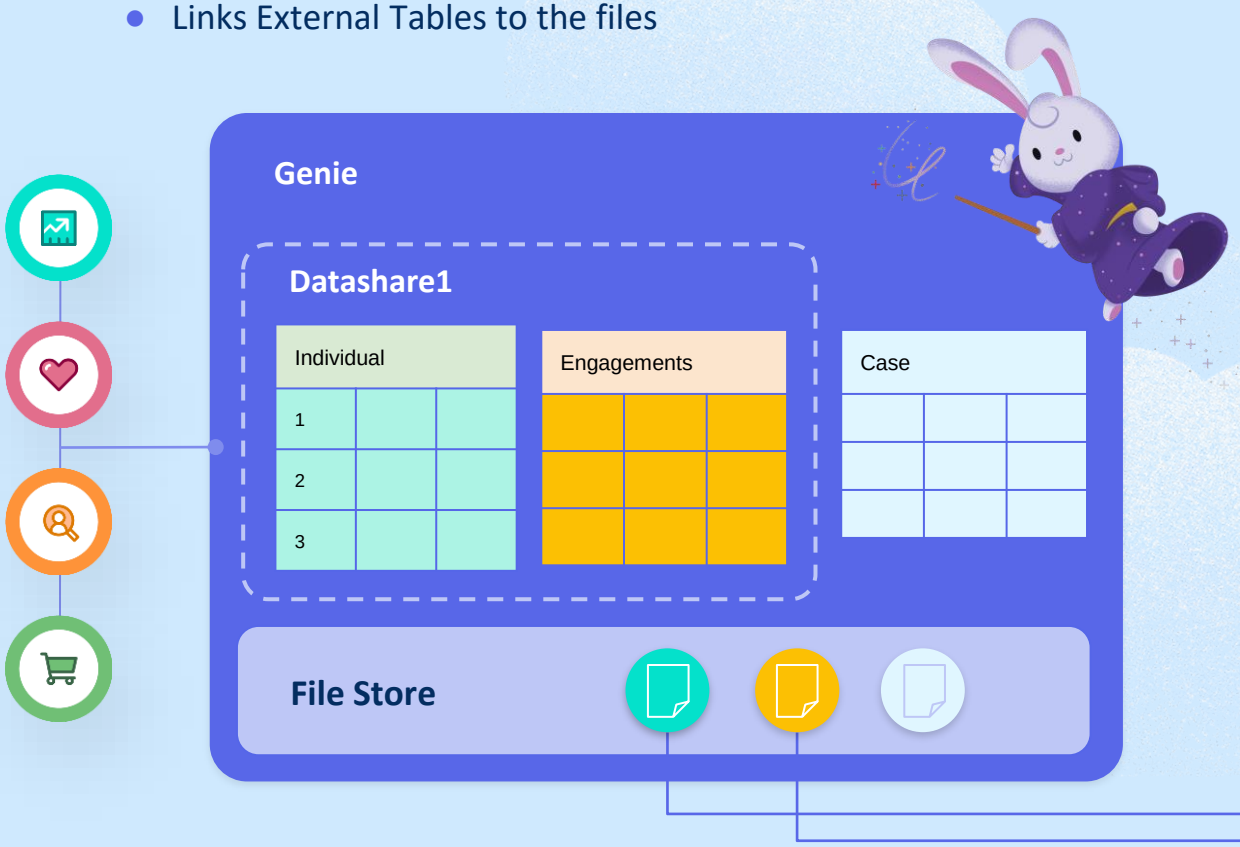
ROADMAP

Use Your Own Warehouse

Use data in Genie in your lake/warehouse with zero copies

Datashares Extend Genie Entities to DW

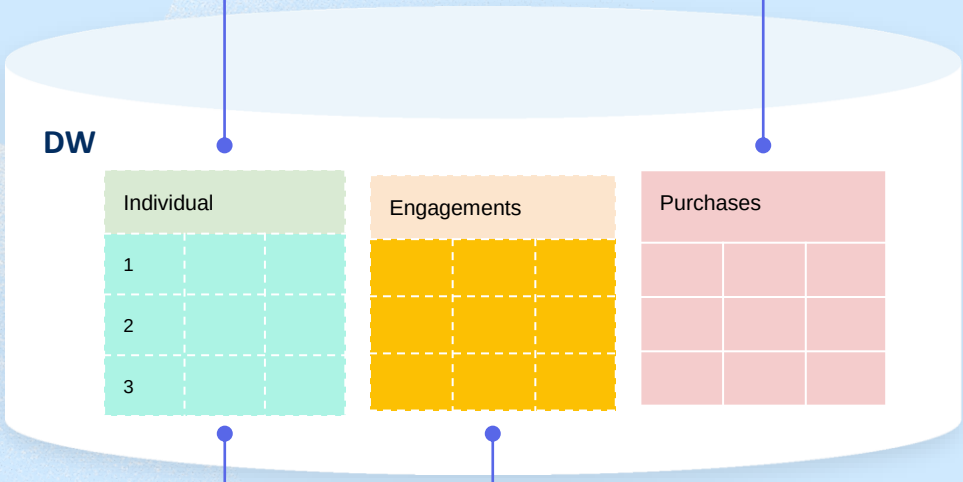
- Share the Entities at file level
- Creates External (Virtual) Tables in Snowflake/DW
- Links External Tables to the files



SQL Across Tables

Select * from
Individual JOIN Purchases
ON (Id = PurchaserId)
...

Queries run across the DW tables and external tables



Entities in Genie show up as External (Virtual) tables in DW

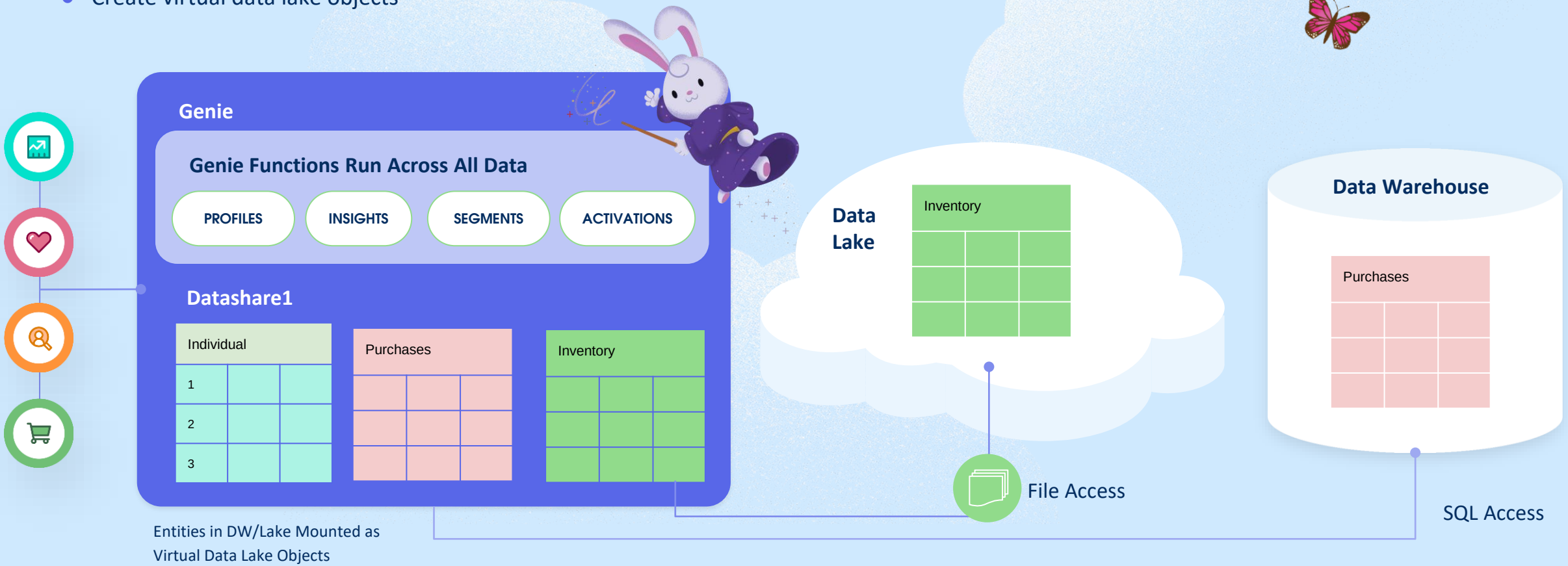
ROADMAP

Bring Your Own Warehouse

Mount data your lake/warehouse with zero copies into Genie

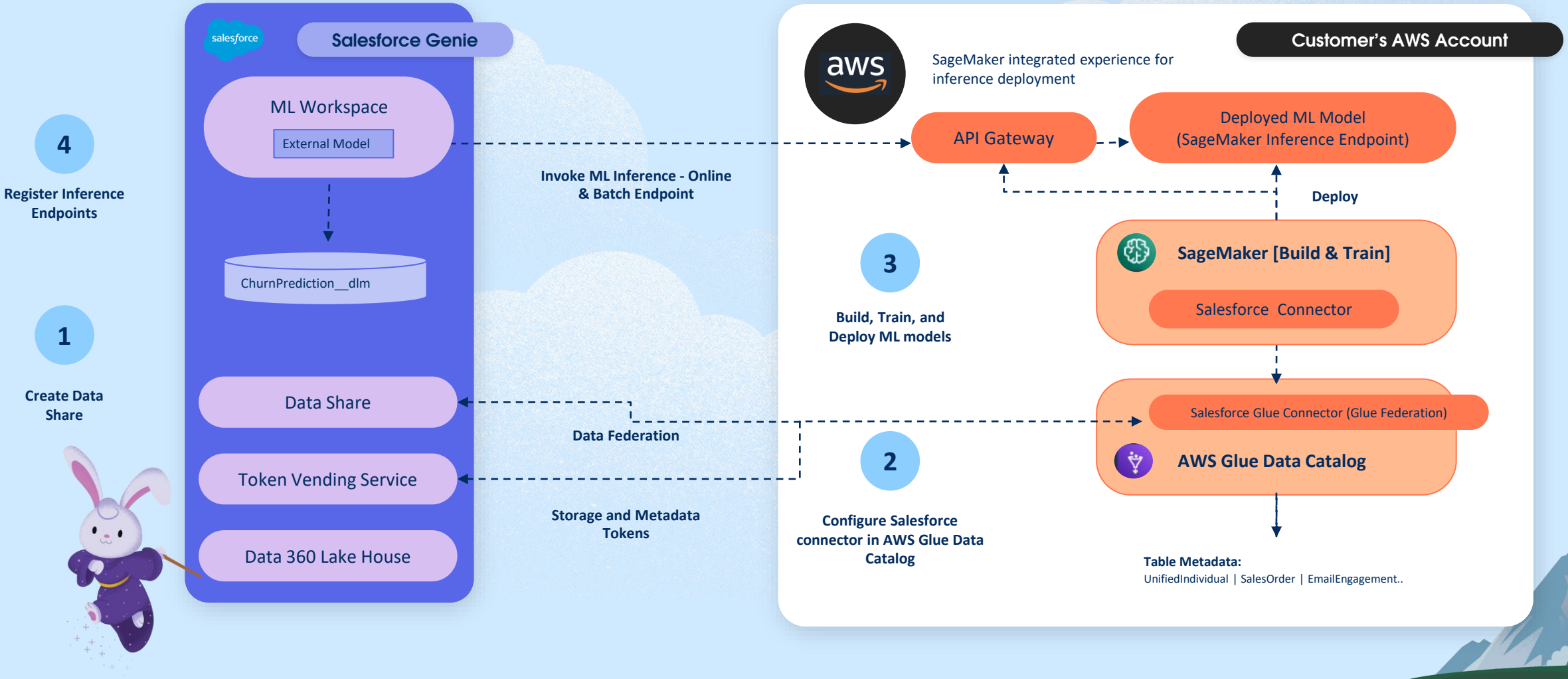
Mount External Data Into Genie

- Grant the necessarily privileges on the tables in DW
- Create virtual data lake objects



Amazon SageMaker Integration Architecture

Bring your own AI with SageMaker deployed inference – Phase 2 [242 GA]

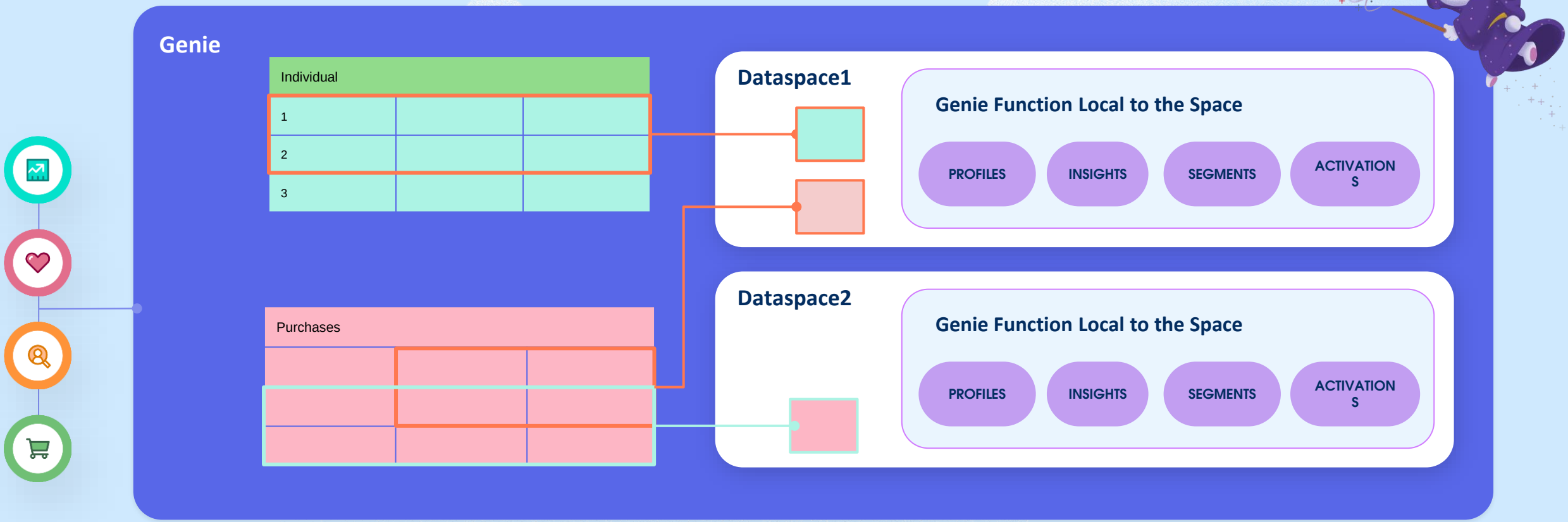


Dataspaces

Virtually partition your data..

Create Dataspaces per Business Unit/Role/Users

- Protected by Permission Sets



Partition the DLOs using filters

Dataspaces

Virtually partition your data..







Ingest | Prep | Segment | CI | Score | ...

CIM Modeled Event Streams

Control Change Feed

Hyperscale Buffer

Spark Stream Processing

Hyperscale Buffer

Action Triggers

- Platform Events/Flow
- Webhooks
- Journey Builder
- Pub-Sub

Table Data Change Feed

Data Source Object (DSO)

Data Lake Objects (DLO)



Data Model Object (DMO)

- Control
- Metadata
- Data
- Chang Feeds





Benefits of Genie

Security, Privacy & Compliance

Deep integration with privacy controls HIPAA, GDPR, CCPA , SOC2, ISO compliance; deep security controls

Availability & Trust

Built with high availability from ground up

Open Platform

Integrate seamlessly in mesh pattern SQL, Iceberg, BYOW, BYOL, BYOM, webhooks

Multi-Modal Data Platform

Uniform multi-modal storage to support analytics, ML, application building, query rich transforms



Salesforce Metadata Platform

Business user interface; developer ecosystem
Harmonize using canonical information model

Salesforce AppExchange

Open ISV-friendly ecosystem
Data, identity, Adtech, connectors

High Scale, Big Data Platform

Scale to petabytes of data
Public cloud scale
High velocity of ingest

Active Lake House Pattern

Near real-time lake house
Active platform with events & changes
Real time, streaming, batch patterns

Customer Use Cases



How Salesforce Uses Genie to Personalize Experiences Across the Customer 360

Account Information

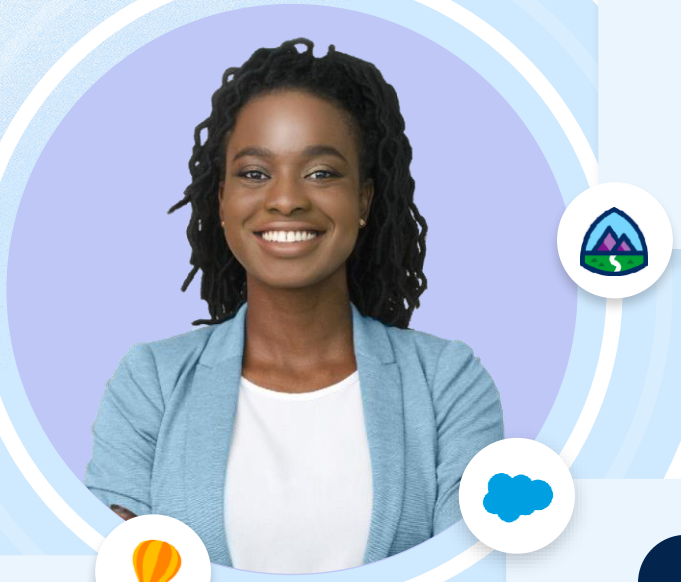
Role: Marketing Specialist
Industry: Retail
Topics: Personalization, AI, Data
Customer: Since 2019
Products: Marketing Cloud, Sales Cloud, Service Cloud, Tableau

Subscriptions

Marketing Cloud Newsletter

Trailhead Badge

Completed 158 Trails and Earned 2 New Badges This Year



1B+
Customer Records

160M
Unified Profiles

Service Case

Case 08976 (1 week ago)

dreamforce

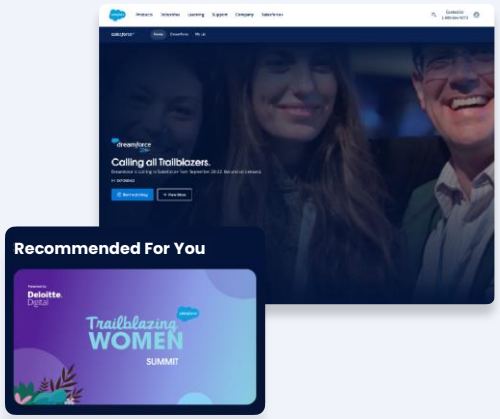
First-Time Attendee

salesforce+

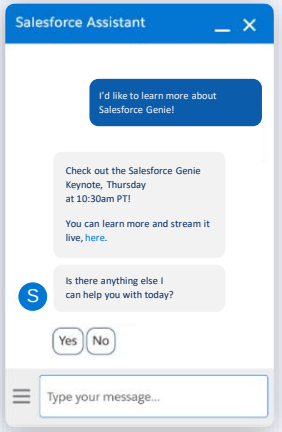
Watched All Seasons of Boss Talks

Salesforce Genie Customer Records

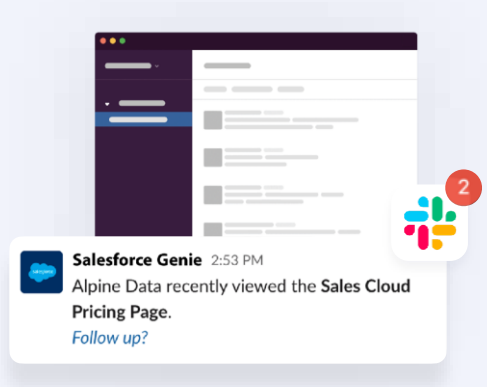
How Salesforce Uses Genie to Personalize Experiences Across the Customer 360



Real-Time Trailhead Personalization



Real-Time Engagement Bots



Real-Time Sales Engagement

Formula 1 Creates A New Era of Fan Experience & Engagement For An Ever-Growing Fanbase



"We're creating a new era of fan experience and engagement for our ever-growing fanbase. The fans are at the heart of everything we do—and both we and Salesforce will be working together to tailor our approach even better."

Brandon Snow
Managing Director, Commercial

Salesforce Solution

Marketing | Service | Sales | Success | Sustainability

Formula 1's Goals with Salesforce Customer 360

- Understand their customers with a single database to house fan data
- Create an end-to-end fan experience strategy with sales, service, and marketing
- Manage their technology and implementation with Salesforce
- Deliver against ambitious strategy of becoming Net Zero Carbon by 2030

About Formula 1

Formula 1 prides itself on being the "greatest racing spectacle on the planet" for its growing fan base with 500M global fans and a global TV audience of 1.5B.

Challenges

Formula 1 is working with Salesforce to:

- Attract new fans
- Increase fan engagement and
- Convert fan engagement into brand value and revenue



inter

salesforce

Drive 1:1 Personalization With Data-Driven Marketing Activations

Connects data from 6 sources to create a single, unified, customer profile and over 1,706 segments to activate

Reaches the right customer with automated, personalized product offers at the right time

Creates engagement score strategy based on email, push, Web and App performance data per business line in addition to sales propensity models

Improves the customer experience by only sending relevant, targeted campaigns, reducing the number of overall sends

20x
More ROI

35x
More conversion

33M+
records uploaded

6
data sources consolidated

1h30
Weekly bandwidth returned for each member of the team

MARKETING



Casey's accelerates focus on personalization to drive guest loyalty and business impact

Shifts from mass marketing to personalization at scale by incorporating multiple data sets into a single source of truth

Focuses on personalization to create relevant and familiar experiences for guests, anticipate their needs and add value at every interaction

Creates and activates guest audience segments with AI, unlocking insights to drive increase in visit frequency and transaction size

Focuses on new ways of working, increasing agility and experimentation leading to scale and impact

10M
Customer records ingested

+30X
Speed of segment creation

1.3B
Customer transaction records

Customer Data Platform


salesforce
Q&A

salesforce | aws

Visit Salesforce in the Content Hub in Venetian halls B, C, and D.

slack tableau MuleSoft



Thank you!



Please complete the session survey in the **mobile app**

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