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Transform your data approach - Develop your modern data strategy

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Amazon Web Services

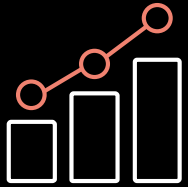


Agenda

- What is driving change in data strategies?
- Developing a modern data strategy
- Modern data strategy journey - Ingestion to visualization
- AWS purpose-built data services
- Lake House Architectures
- Recap
- Resources

What's driving change in data strategies?

Customers want more value from their data



**GROWING
EXPONENTIALLY**



**FROM NEW
SOURCES**



**INCREASINGLY
DIVERSE**



**USED BY
MANY PEOPLE**



**ANALYZED
BY MANY
APPLICATIONS**

Modern cloud-based applications

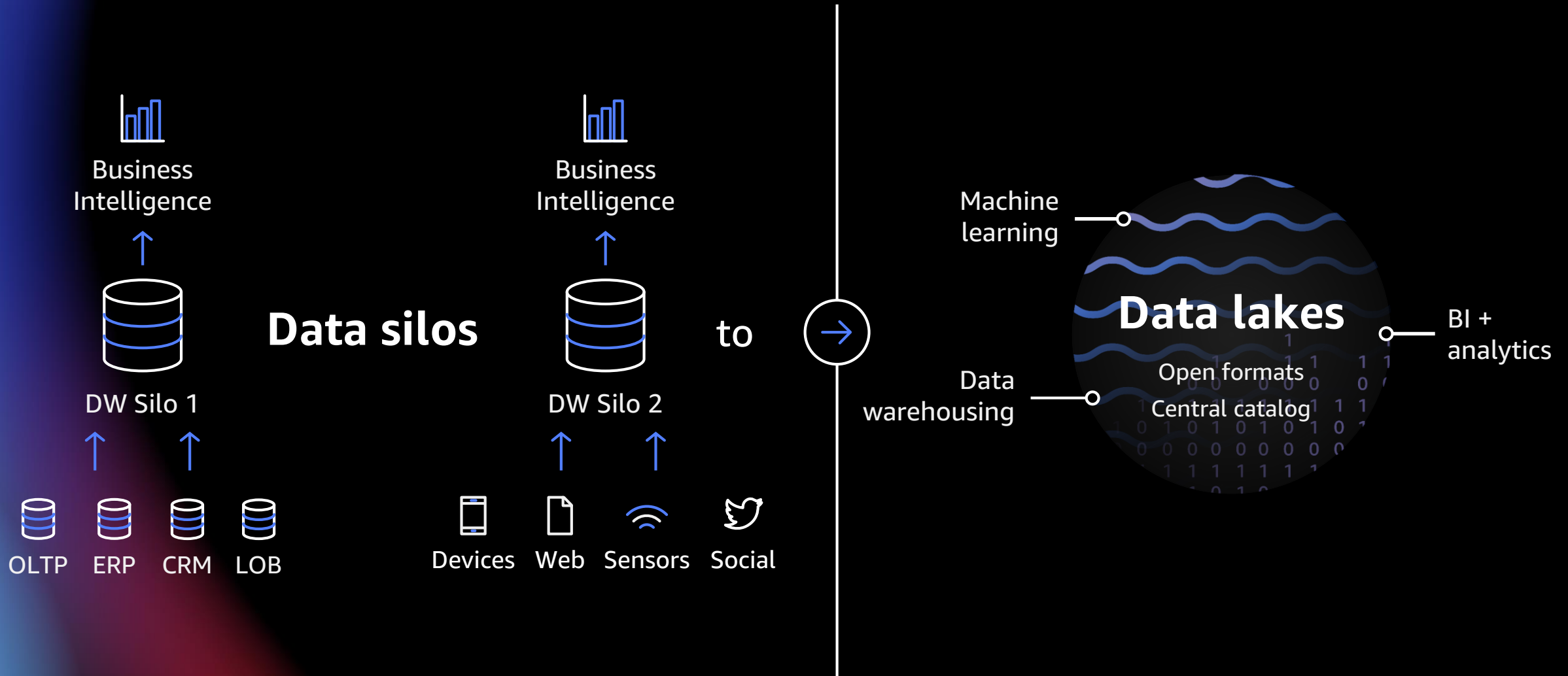
Loosely coupled micro-services and purpose-built data stores

The screenshot shows the Unicorn Shopping website interface. Annotations point to specific features:

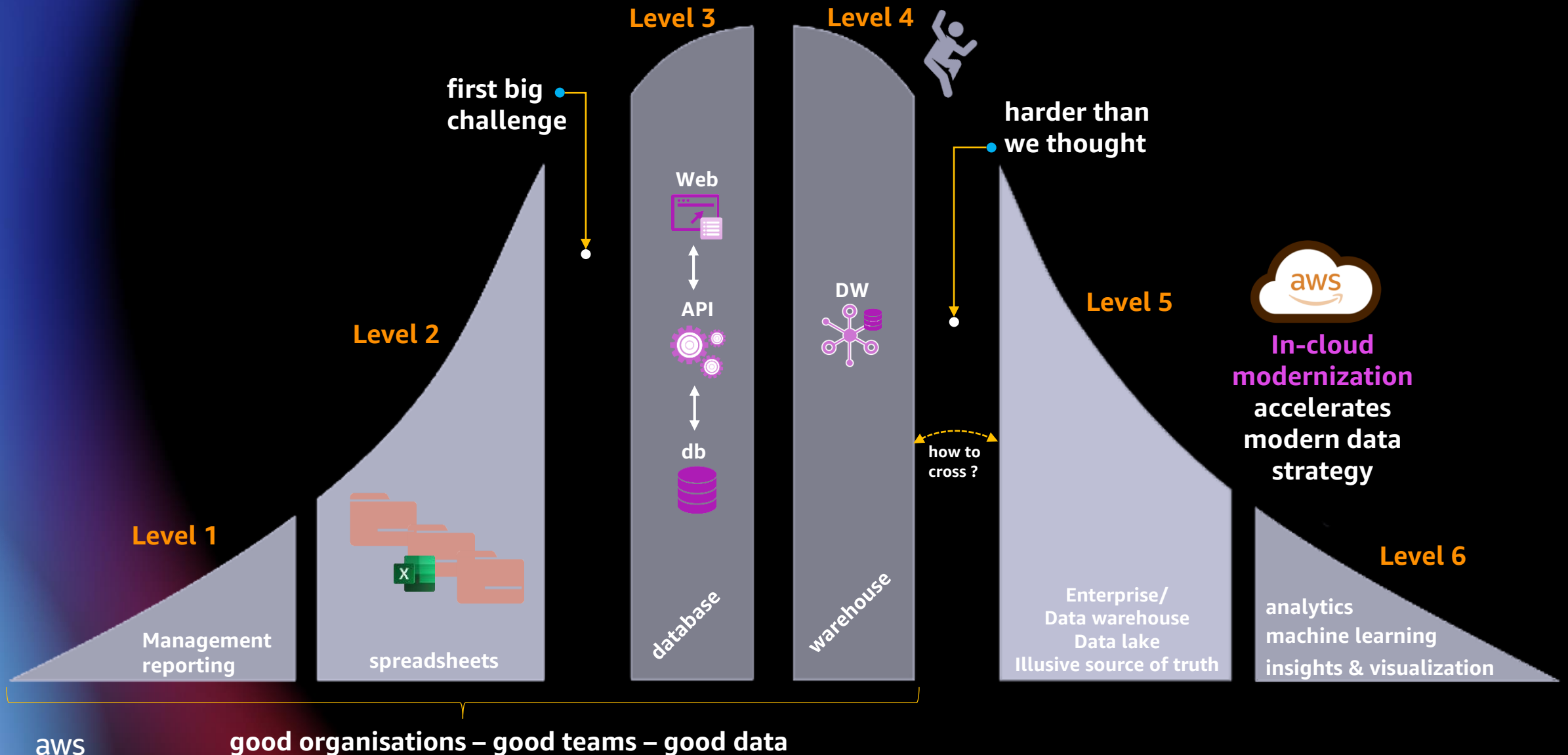
- Search:** Points to the search bar at the top of the page.
- Relational:** Points to the product details for the ELMac, including its price, stock status, and customer reviews.
- Key-value:** Points to the product details for the GORO Lawn Mower, including its price, stock status, and customer reviews.
- Graph:** Points to the 'Frequent accessories your friends bought together' section, which displays related products like the ELMac Lawn Trimmer and VG Grass Seed.

The website layout includes a header with the Unicorn Shopping logo, a search bar, user account information (Hello, Joe Account), and links to Orders and Cart. The main content area displays two products: the GORO Lawn Mower and the ELMac. The ELMac is highlighted as the '#1 Best Seller'. A sidebar on the right shows the quantity (Qty: 1) and buttons for 'Add to Cart' and 'Buy Now'. Below the product listings, a section titled 'Frequent accessories your friends bought together' shows the ELMac Lawn Trimmer and VG Grass Seed. A total price of \$570 is displayed, along with a button to 'Add all three to Cart'.

Traditional data warehousing approaches don't scale



Introduction – Data maturity model



Developing a modern data strategy

Introduction – Modern data strategy: The **why**

Why ? Modern Data Strategy



⚙️ Lineage

⚙️ Coverage

⚙️ Accuracy

⚙️ Security

⚙️ Performance



Relieve
data pain

- ? Is our data safe and secure?
- ? I can't find the data I'm looking for!
- ? Is this data correct, where did it come from?
- ? This data is growing out of control!
- ? Is business is complaining about performance?
- ? Surely there is a better way to visualize this?



Discover
data value

- ✓ Is there a seasonal or geographic correlation?
- ✓ Can we augment sales data and voice of the customer?
- ✓ These insights inspired a focused effort in the supply chain!
- ✓ This data adds enormous value to our customers!
- ✓ Real-time decisions are not out of reach
- ✓ Our confidence in our data is high with a data excellence framework

Introduction – Modern data strategy



Insights

What insights
will add value
to the
business?



Tools

Evaluate modern
tools to assist
from ingestion to
visualization



Leadership

Aligning your
leadership team
is key for
measurement,
ownership and
accountability



Data Ecosystem

Work towards
enabling
automated,
integrated, self-
service
capabilities



Workforce skills

Build talent in
your data teams
to use next-
generation
digital and cloud
technologies



Continuous Improvements

Build new
experiences and
reimagine old
processes using
rapid POCs to
gauge success

Data governance

Data governance includes:

processes,
roles,
policies,
standards and
metrics

that drive accurate and meaningful use of information enabling an organization to achieve its goals.

Processes and policies underpin the **quality** and **security** of the data

Clearly define the **actor** that can take what **action** upon what **data**, in which situations using what methods

Business drivers highlight what data needs to be carefully controlled in your data governance strategy and the **benefits** expected from this effort

Roles related to data are clearly defined to ensure that **responsibility** and **accountability** are agreed upon across the enterprise



Key data governance outcomes:

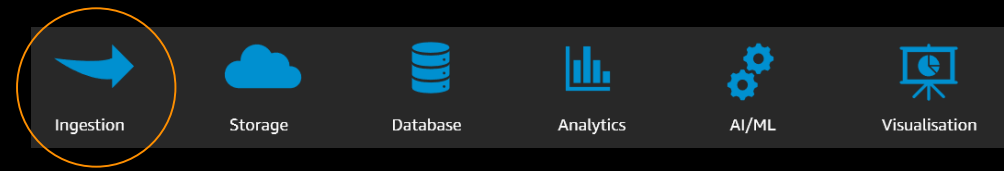
- ✓ Create an intelligent data governance plan
- ✓ Automate policies, standards, and processes
- ✓ Design for data quality and model for information relevance
- ✓ Support data governance for legal activities and security
- ✓ Ensure continuous compliance
- ✓ Enable your business with value-based data

Accelerate compliance leveraging cloud:

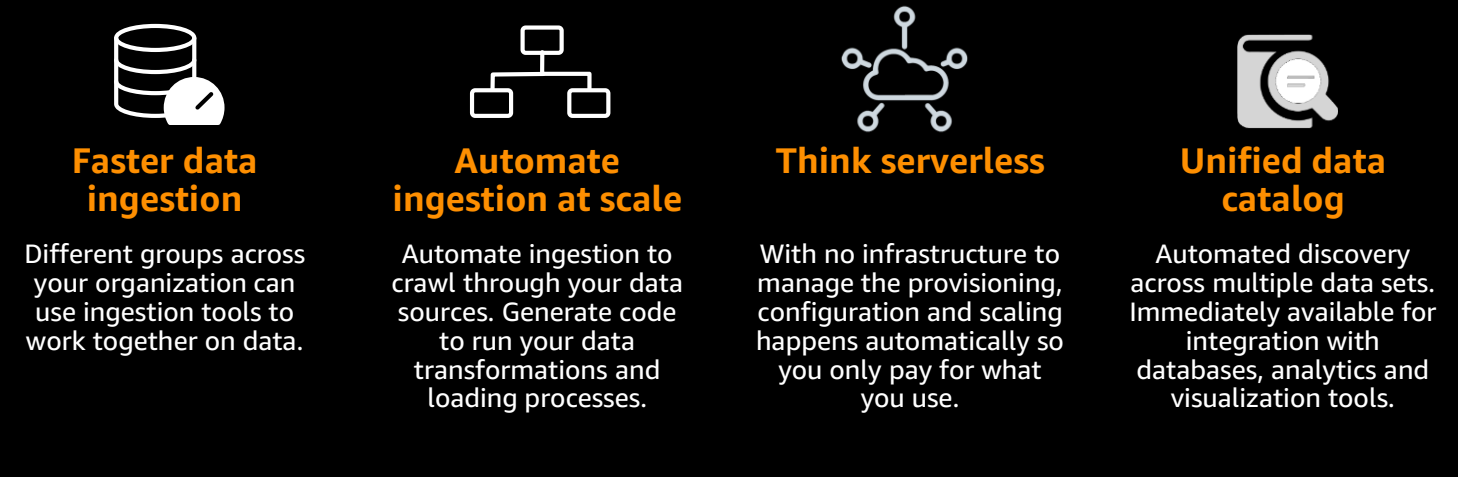


Modern data strategy journey – Ingestion to visualization

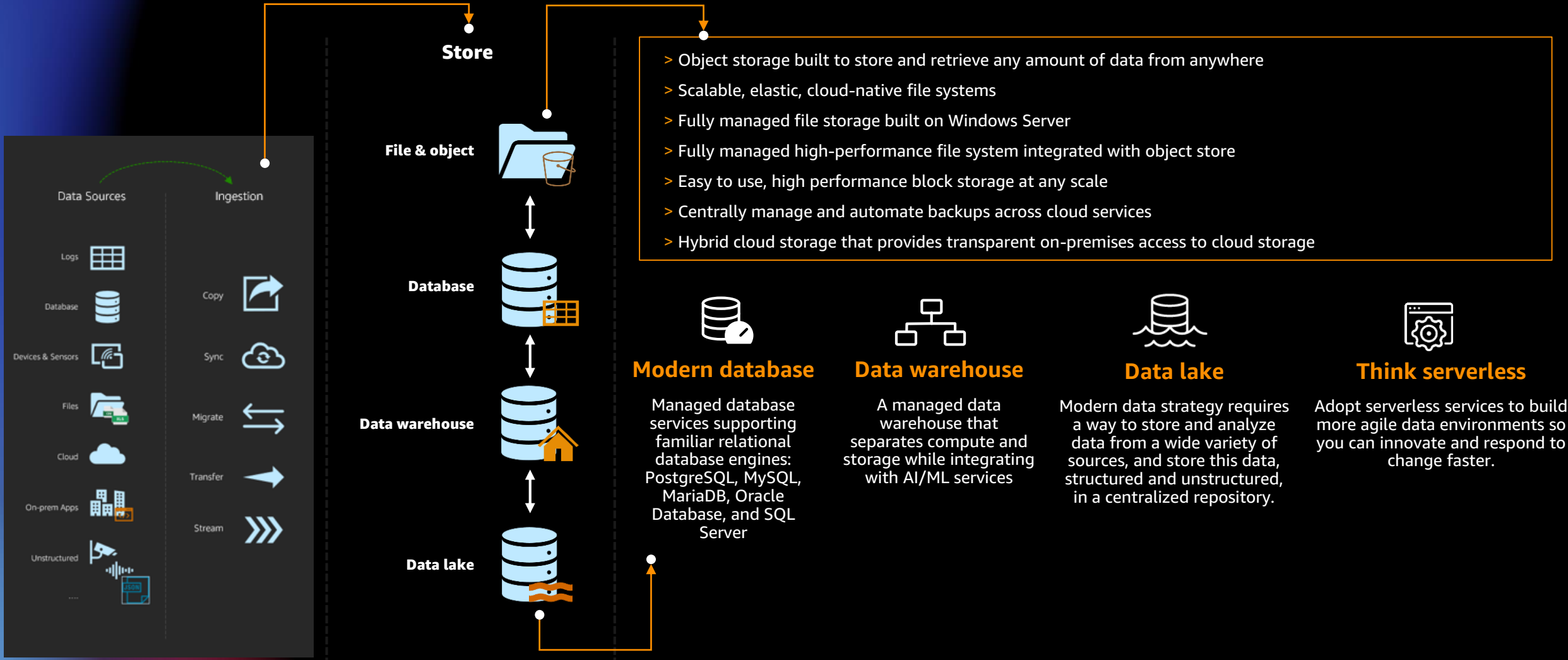
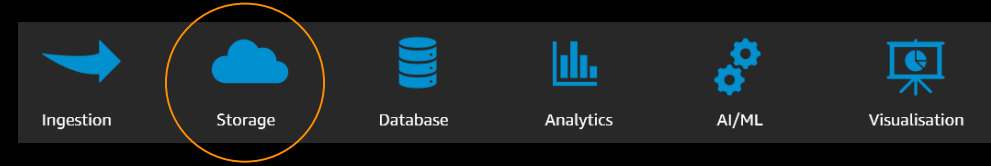
Data estate – Ingestion



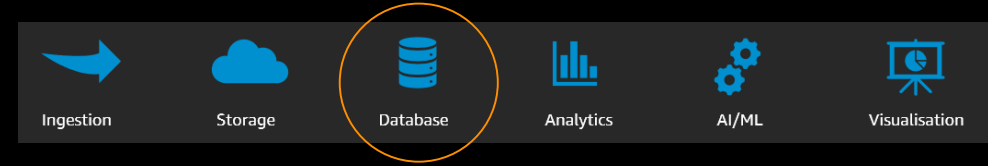
- Modern data sources are becoming increasingly complex
- Data source volumes are growing exponentially – MB → GB → TB → PB
- Onboarding new data sources is time sensitive relative to opportunity
- Ingestion must accommodate rapid onboarding of new data sources
- Stability, agility, availability and scale are required



Data estate – Storage



Data estate – Database



Fast & scalable

Various capacity options for CPU, memory with network throughput to match SSD backed storage capabilities.



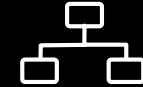
Secure

Granular network access, authentication and authorisation to your database together with encryption in transit and at rest.



Available & durable

Automated backup/recovery, host replacement and data center failure protection to deliver RTO of 0 and RPO of <90s.



Managed

Automated infrastructure provisioning, software installation, patching, scaling and recovery procedures.

On-premises

App optimization

Scaling

High availability

Database backups

DB S/W patches

DB S/W installs

OS patches

OS installation

H/W maintenance

Rack & H/W

Power, HVAC, net

Cloud Virtual machine

App optimization

Scaling

High availability

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Managed Database

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Scaling

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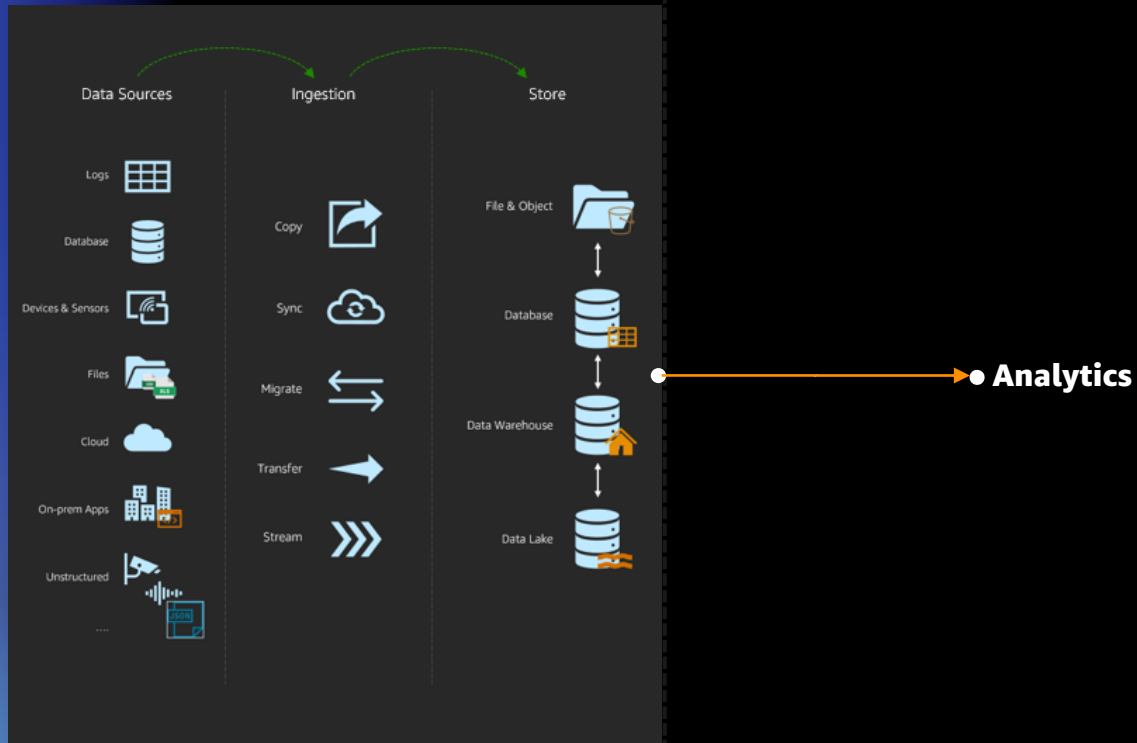
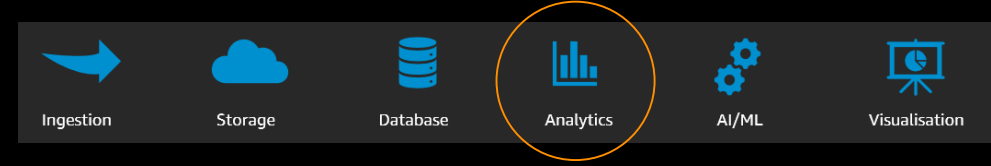
OS installation





H/W maintenance

Rack & H/W

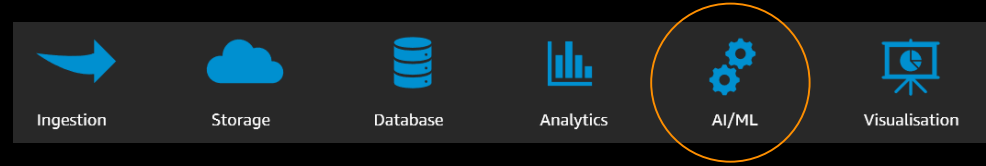
Power, HVAC, net

Data estate – Analytics



-  Interactive analytics
-  Big data processing
-  Data warehousing
-  Real-time analytics
-  Operational analytics
-  Dashboards and visualizations
-  Visual data preparation
-  Real-time data movement

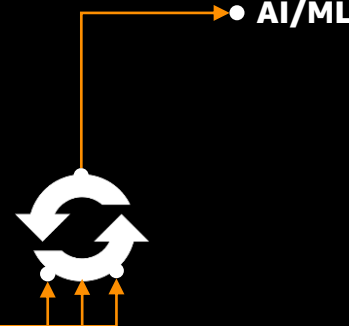
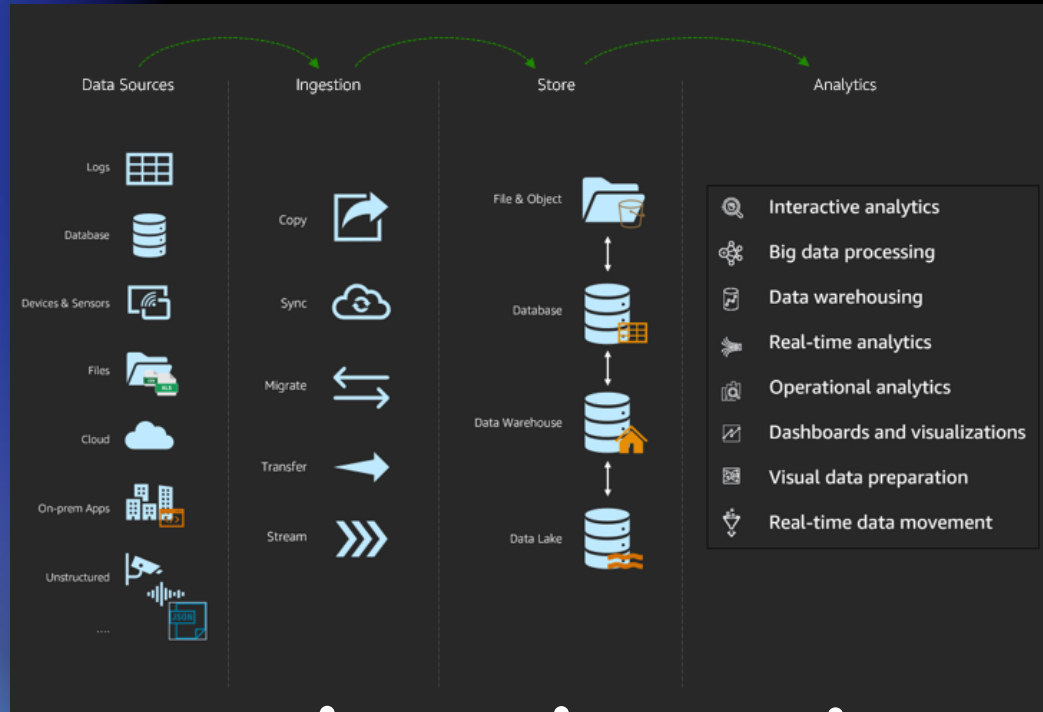
Data estate – AI/ML



Predictive Analytics & Machine Learning

Don't let great, reliable and performant data **idle**.

Data scientists and developers to prepare, build, train, and deploy high-quality machine learning (ML) models quickly by bringing together a broad set of capabilities purpose-built for ML.



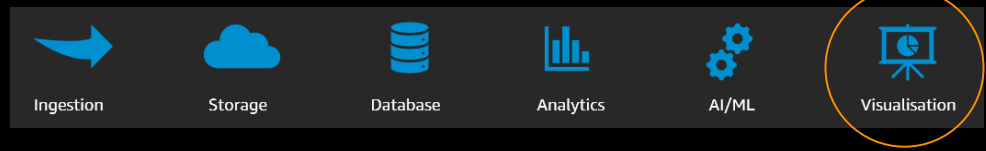
- Advanced Text Analytics
- Chatbots & Contact
- Demand Forecasting
- Document Analysis
- Enterprise Search
- Fraud Prevention
- Image and Video Analysis
- Personalized Recommendations
- Text to Speech
- Transcription

Data estate – Virtualization



Business Analytics & Data Visualization: Patterns help us understand our data, but these patterns are not obvious when we look at data in tables. The right visualization will help you quickly gain a deeper understanding.

Charts convey the following types of information: Key Performance Indicators (KPI), Relationships, Comparisons, Distributions, and Compositions.



Visualisation

Key Performance Indicators



Dashboard

Relationships



Scatter



Bubble

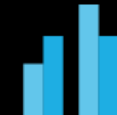
Comparisons



Bar



Table



Column



Line

Distributions



Histogram



Scatter

Compositions



Pie



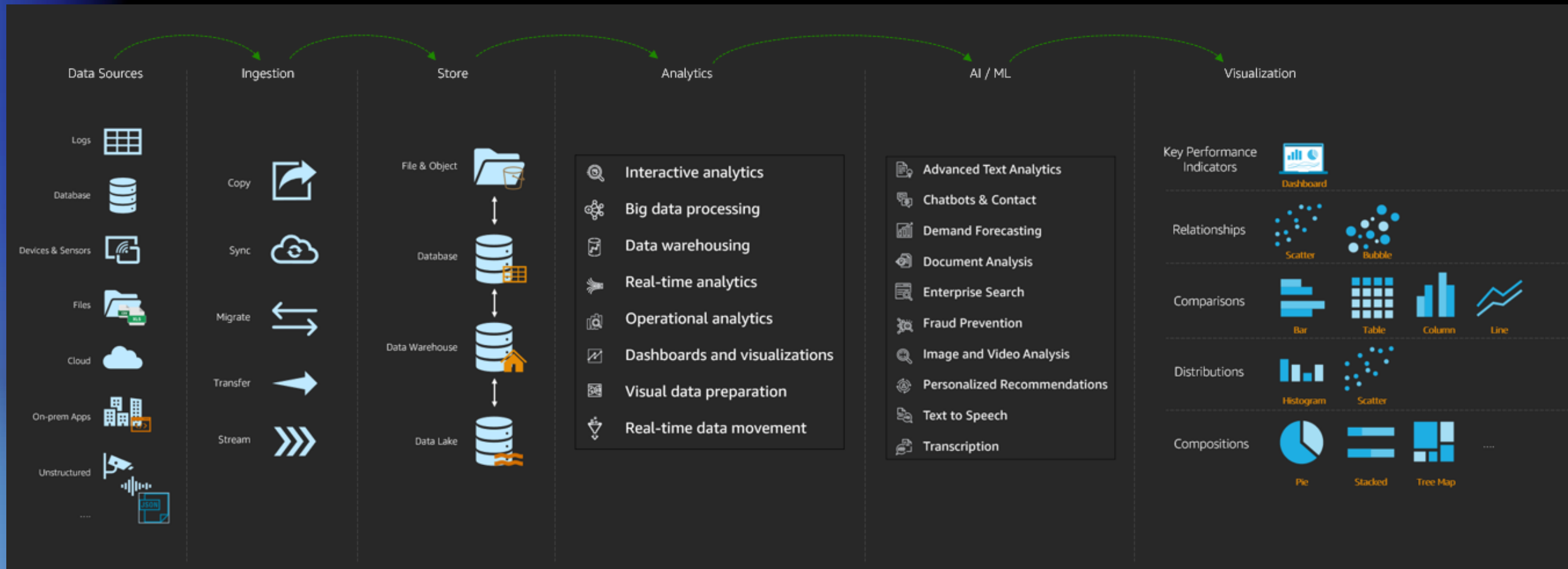
Stacked



Tree Map

...

Modern data strategy journey



AWS purpose-built data services

The most complete family of purpose-built data services

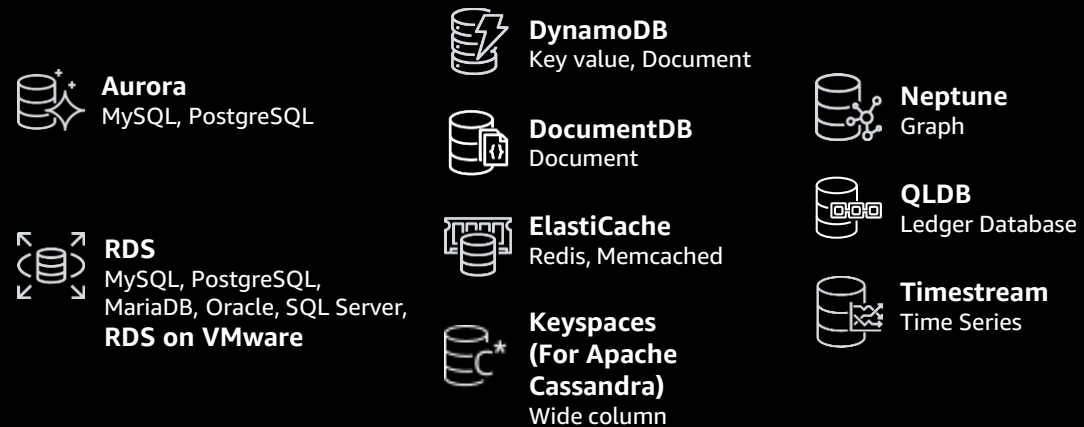
Business Intelligence & Machine Learning



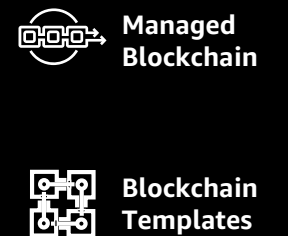
Analytics



Databases



Blockchain



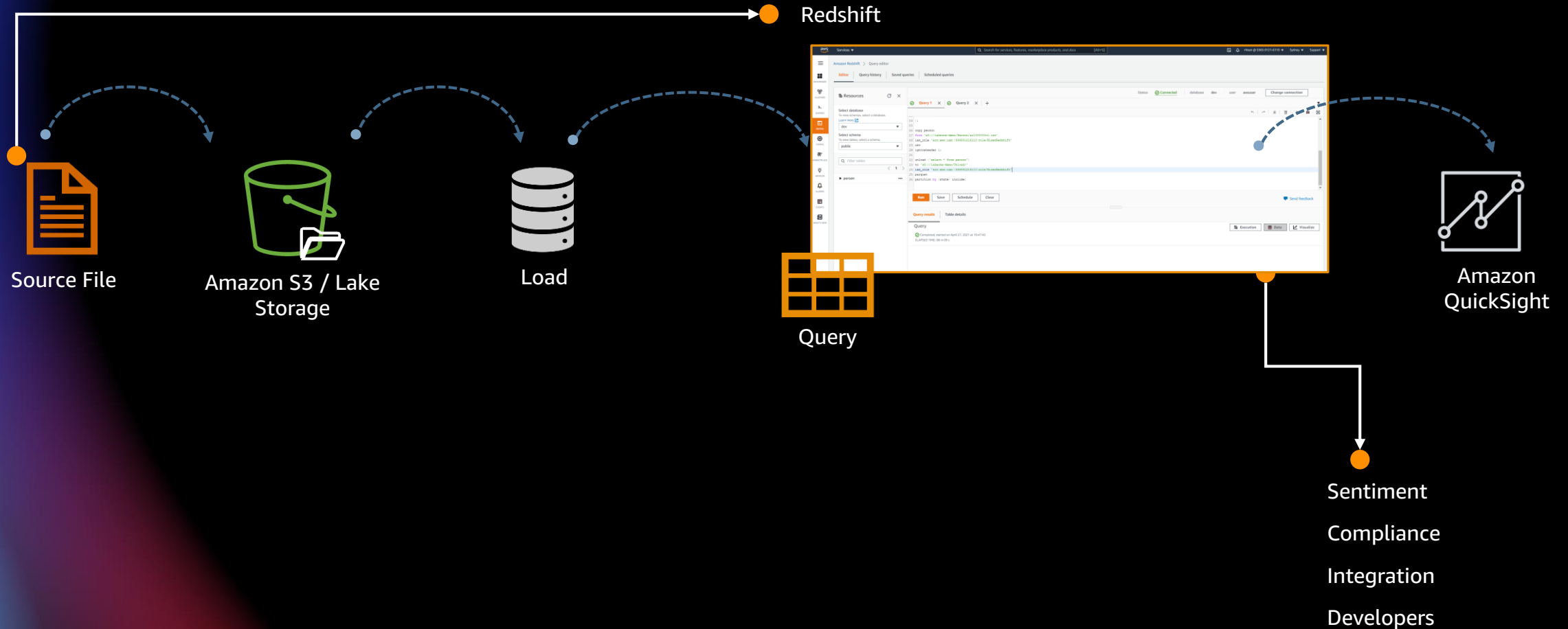
Data Lake



Data Movement

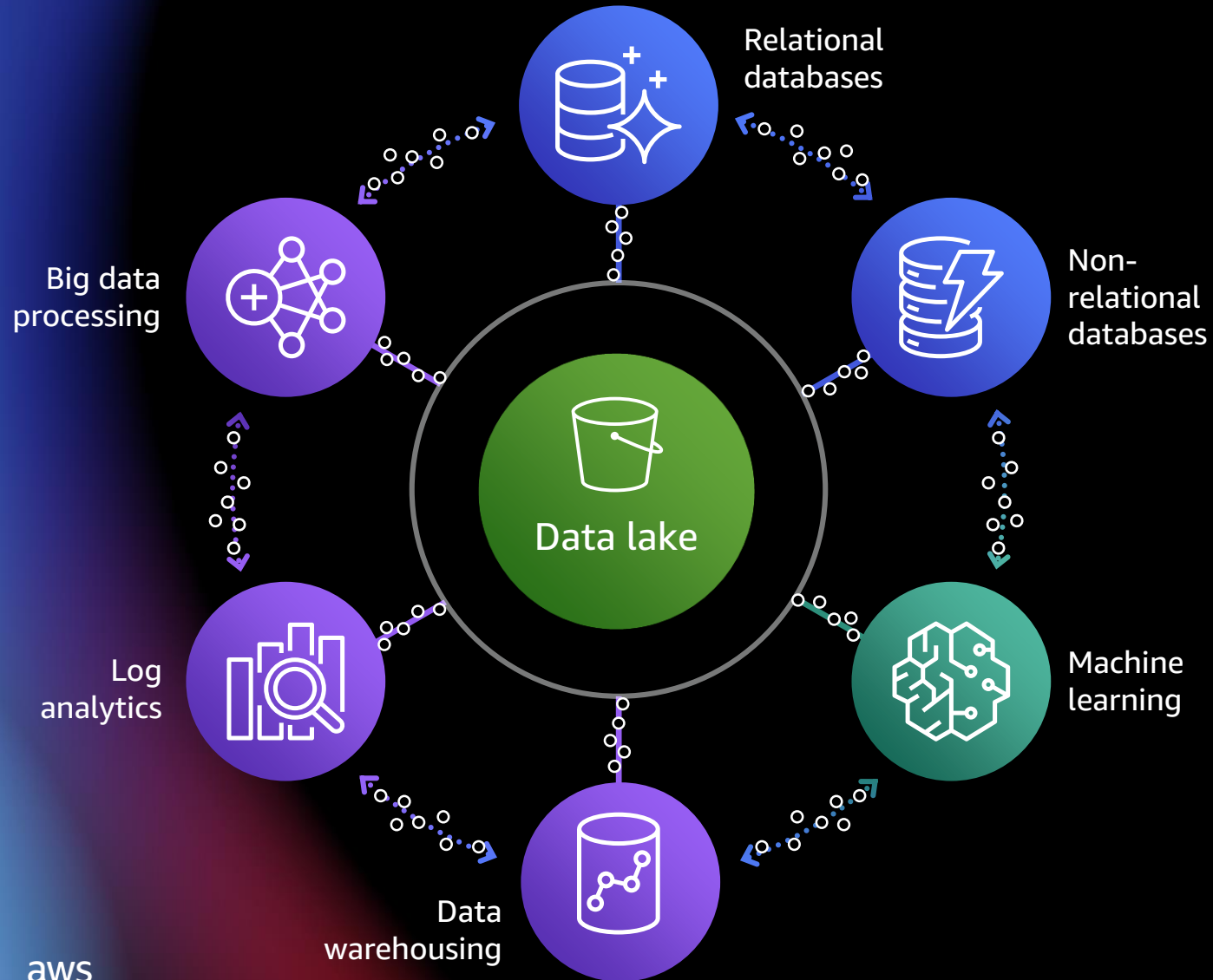
Database Migration Service | Snowball | Snowmobile | Kinesis Data Firehose | Kinesis Data Streams | Managed Streaming for Kafka

Demo



Lake House architecture

Lake House architecture



SCALABLE DATA LAKES

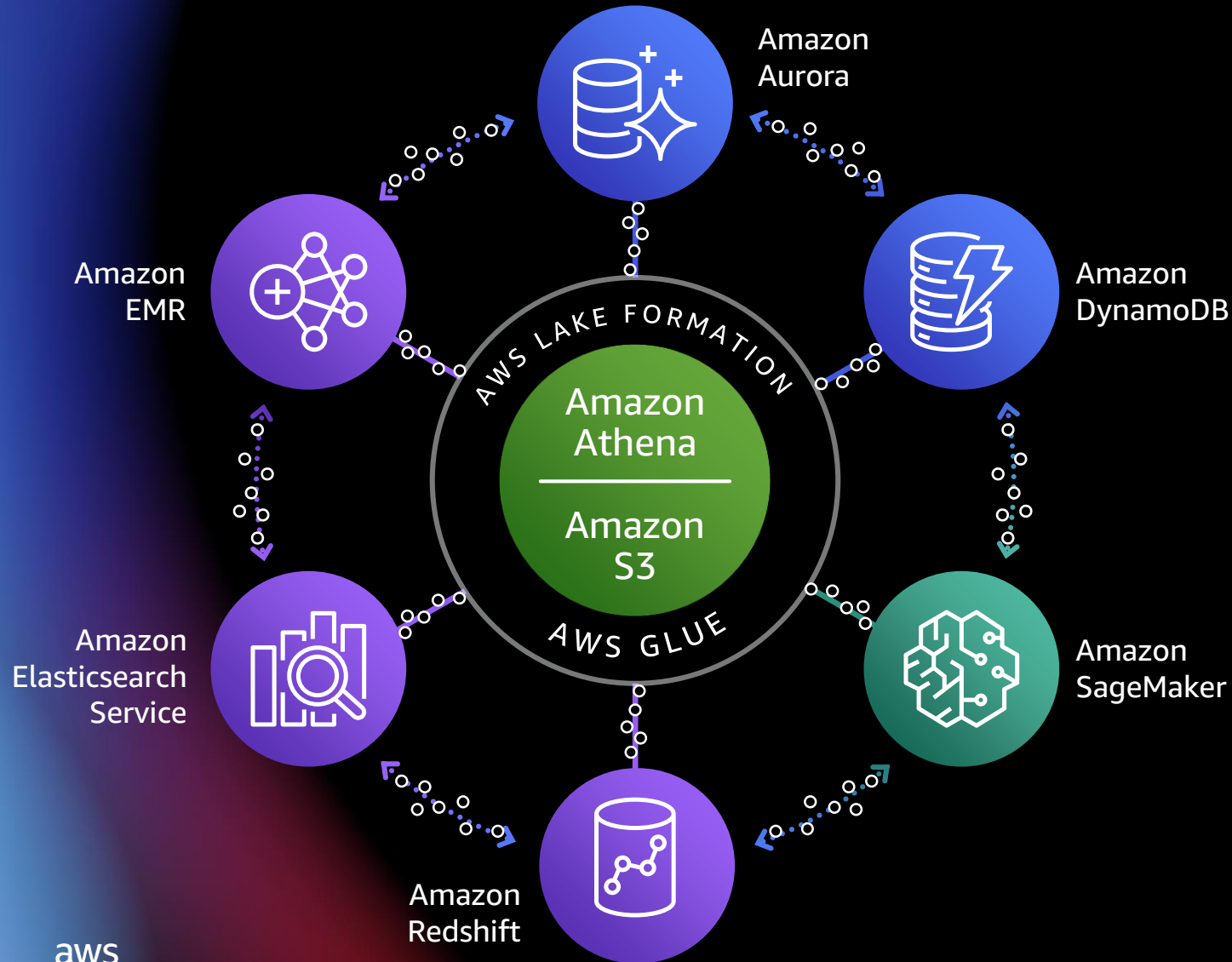
**PURPOSE-BUILT
DATA SERVICES**

**SEAMLESS
DATA MOVEMENT**

UNIFIED GOVERNANCE

**PERFORMANT AND
COST-EFFECTIVE**

Lake House architecture on AWS



SCALABLE DATA LAKES

PURPOSE-BUILT
DATA SERVICES

SEAMLESS
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UNIFIED GOVERNANCE

PERFORMANT AND
COST-EFFECTIVE

Recap and resources

Recap

- Customers want more value from their data
- New data sources and volumes are pushing the limits of legacy technologies
- Customers are challenged when moving from data warehouses to AI/ML
- Adopting a modern data strategy involves people, policies and technology to drive business value
- You need to evaluate your tools to ingest, store, operate, analyze, use AI/ML and visualize
- AWS has the most complete family of purpose-built data services
- Lake House architectures allow for seamless data movement while keeping your data in open formats with unified governance

Additional resources

- <https://aws.amazon.com/products/security/>
- <https://aws.amazon.com/products/networking/>
- <https://aws.amazon.com/products/storage/>
- <https://aws.amazon.com/products/databases/>
- <https://aws.amazon.com/products/databases/migrations/>
- <https://aws.amazon.com/big-data/datalakes-and-analytics/>
- <https://aws.amazon.com/machine-learning/>
- <https://aws.amazon.com/blogs/>

Visit the AWS Data Resource Hub

Dive deeper with these resources, get inspired and learn how you can use data to make better decisions and innovate faster.

- Building a winning data strategy
- The new leadership mindset for data & analytics
- Harness data to reinvent your organization
- Put your data to work with a modern analytics approach
- Breaking free from on-premises database constraints
- Cloud storage adoption: From cost optimization to agility & innovation
- A strategic playbook for data, analytics, and machine learning
- ... and more!



<https://tinyurl.com/aws-data-resource>


Visit resource hub



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Build data skills to
unlock any insight

Leverage free digital training

Learn how to harness the world's most valuable resource: data. Access digital and virtual instructor-led courses on data analytics and databases built by the experts at AWS and start your learning journey to become data-driven.

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Earn industry-recognized credibility and set tangible goals for success with industry-recognized certifications, like *AWS Certified Data Analytics – Specialty*.

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Deep dive into new topics and focus on knowledge gaps at your own pace with the *AWS Ramp-Up Guide: Database* and *AWS Ramp-Up Guide: Data Analytics*. With a wide range of whitepapers, blog posts, videos, webinars and peer resources available for data professionals to leverage for independent learning.

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Thank you!