AWS re:Invent

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ANT215

Introduction to AWS Data Exchange for Amazon Redshift

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Amazon Web Services

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Mathematica



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Agenda

Introduction to AWS Data Exchange for Amazon Redshift

Use cases, benefits, key capabilities

Mathematica: Using AWS Data Exchange for Amazon Redshift to improve patient care

Demo

Summary

Q&A

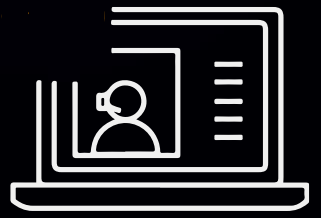
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AWS Data Exchange

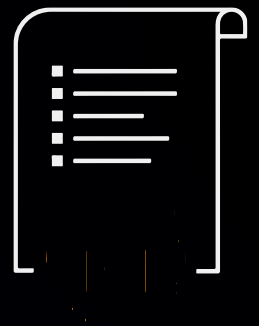
MAKES IT EASY TO FIND, SUBSCRIBE TO, AND USE THIRD-PARTY DATA IN THE CLOUD



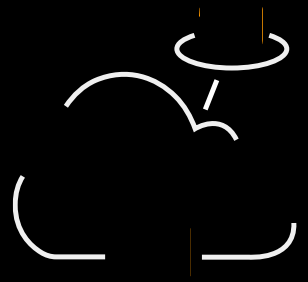
One place to exchange data publicly or privately



Easy subscription management



Automatic billing and payments



Natively integrate data into AWS

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Since launch, AWS Data Exchange supported sharing all types of data through files

Data providers

FOURSQUARE
Visits, places, and foot traffic data

experian
Demographic, geographic, and psychographic data

shutterstock
Images and stock photography

FACTSET
Financial Services Data

And many more



AWS Data Exchange



Amazon S3

Foot traffic

Satellite imagery

Voice recordings

Financial analyses

Bitcoin prices

COVID-19 vaccination rates

Data subscribers

KKR

MERCK

Nextdoor

Yum!

ConvergeHEALTH

And many more

aws

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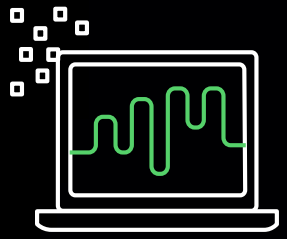
Data subscribers want to use the latest third-party data quickly and without heavy lifting



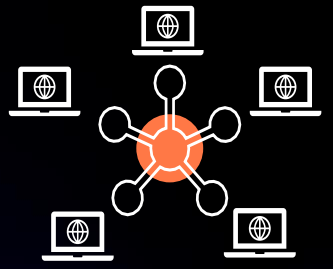
Query and analyze data within minutes of subscribing



No extracting, transforming, or loading



Use the latest data as soon as it's updated



Manage all third-party data subscriptions in a single place

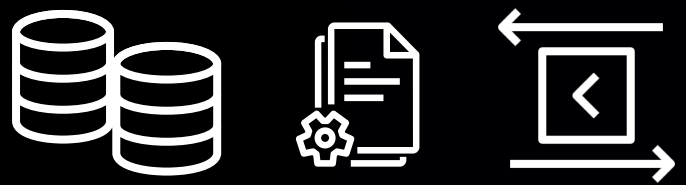
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Data providers want to provide subscribers a simple and convenient licensing experience



License data from their data warehouse in place within minutes without extracting, transforming, or loading



Offer multiple data delivery methods in a single subscription



Automatic entitlement, billing, and payment management

aws

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Introducing AWS Data Exchange for Amazon Redshift

Find, subscribe to, and query third-party data in an Amazon Redshift cloud data warehouse in minutes



Amazon Redshift

+



AWS Data Exchange

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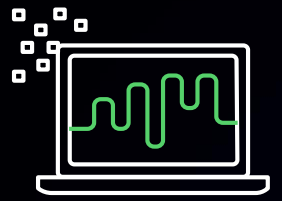
AWS Data Exchange for Amazon Redshift

Data subscribers

Query data in minutes, no ETL



Always use the latest data

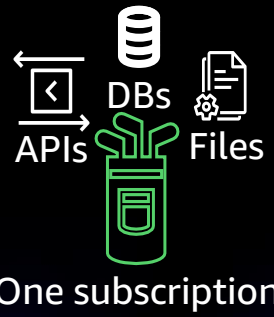


Data providers

Automate data entitlements, billing, and payment management



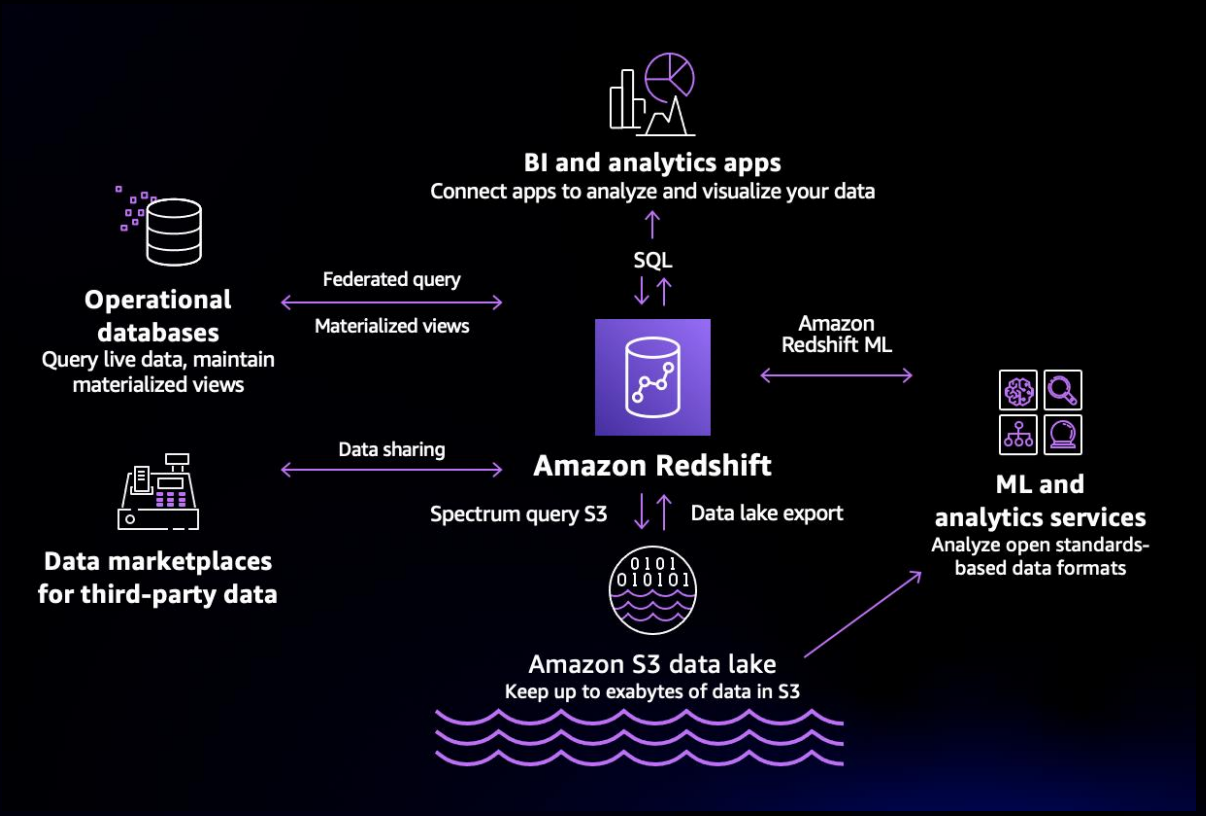
Multiple data delivery methods on a single product



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Brings the power of Amazon Redshift to data providers and data subscribers

- Cloud-native data warehouse
- Best-in-class performance at scale
- Strong transactional consistency
- Enterprise-class security
- Fully managed and self-tuning
- Rich SQL feature set
- Seamless data lake integration

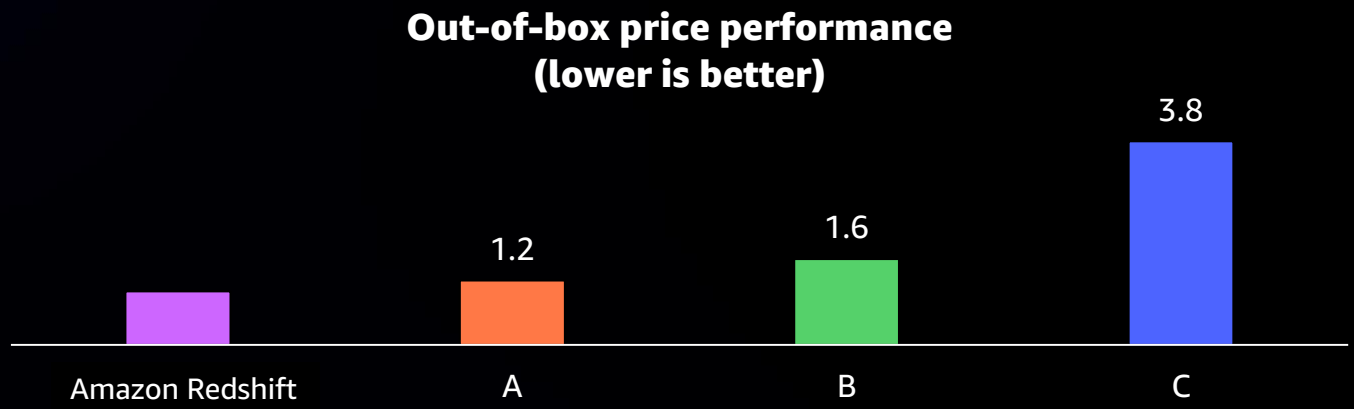


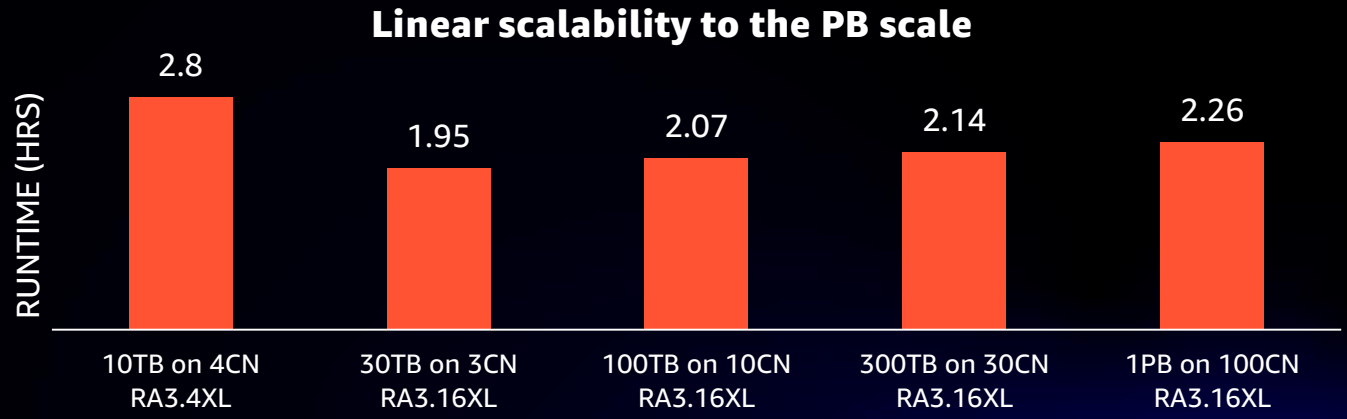
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Performance at scale

WHILE KEEPING YOUR COSTS PREDICTABLE

Gain up to 3x better price performance than other cloud data warehouses, and dynamically scale to improve query speed for complex and critical workloads



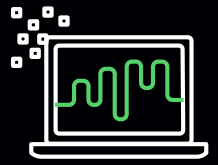


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Amazon Redshift data sharing enables consistent data access for all the subscribers



Simple and direct way to share data across Amazon Redshift clusters



Instant, granular, and high-performance access without data copies and data movement



Live and transactionally consistent views of data across all consumers

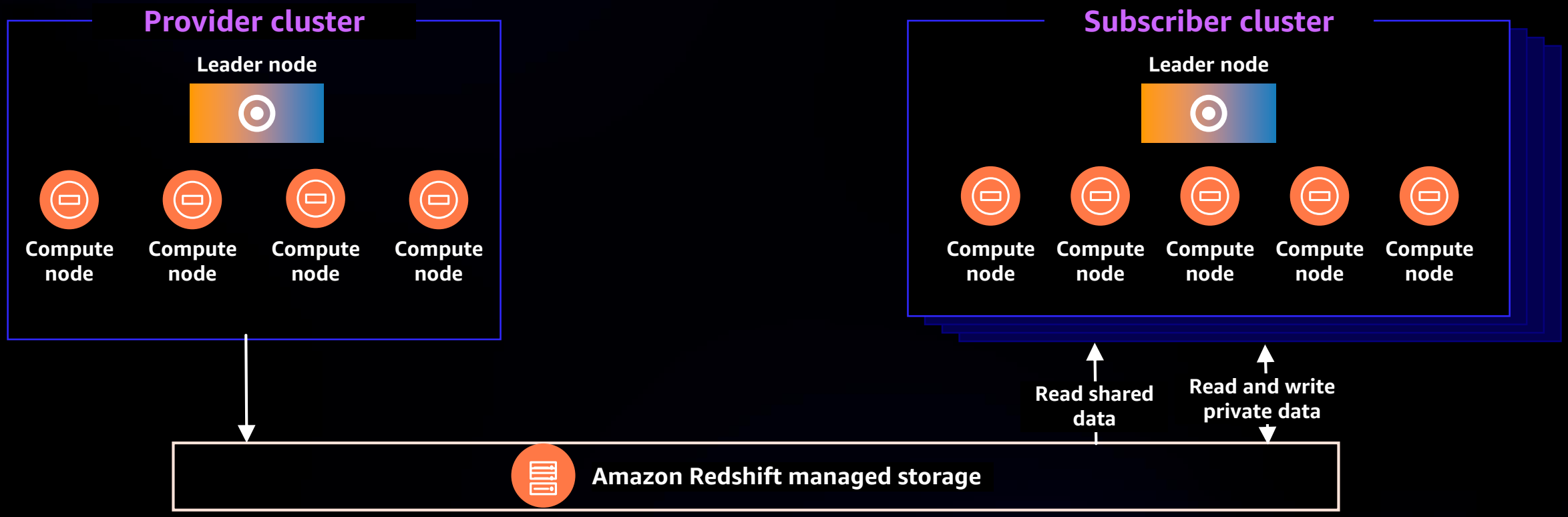


Secure and governed collaboration within and across organizations and with external parties

aws

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High-performance data access while preserving workload isolation



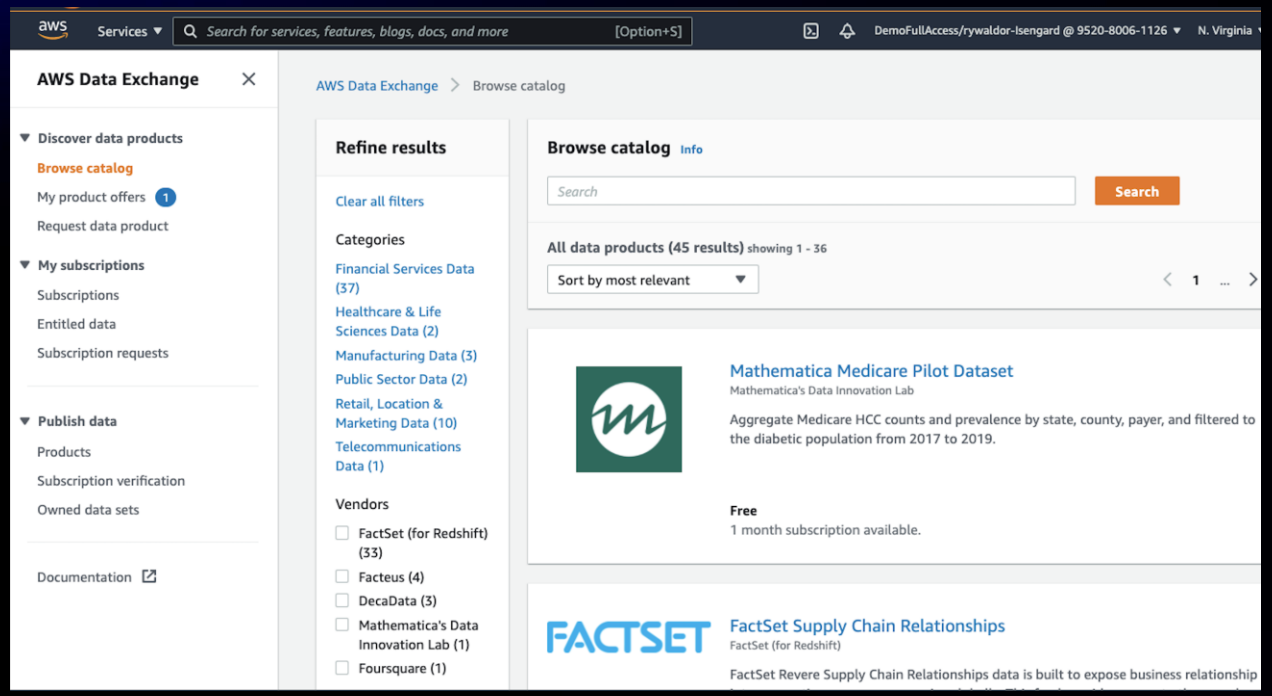
Provider pays for Amazon Redshift managed storage and subscriber pays for compute

Workloads accessing shared data are isolated from each other and the provider

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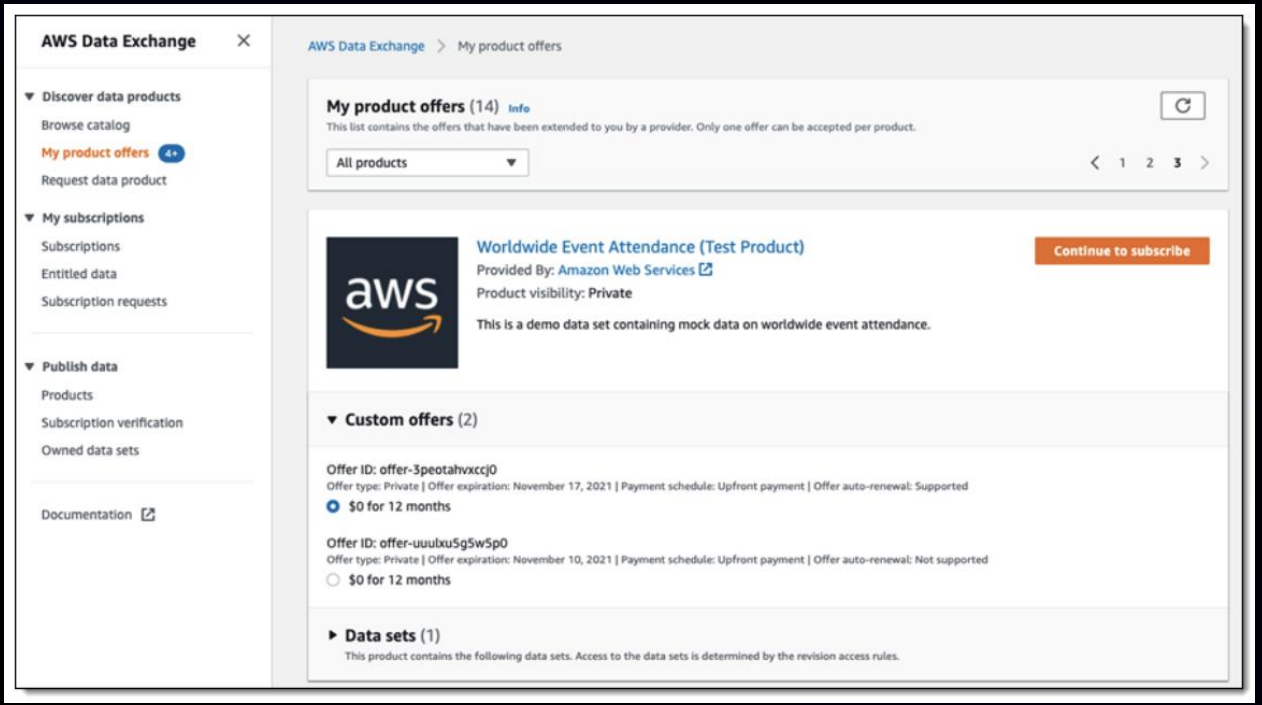
Getting access to third-party datasets is easy



1. Browse AWS Data Exchange catalog and find relevant products

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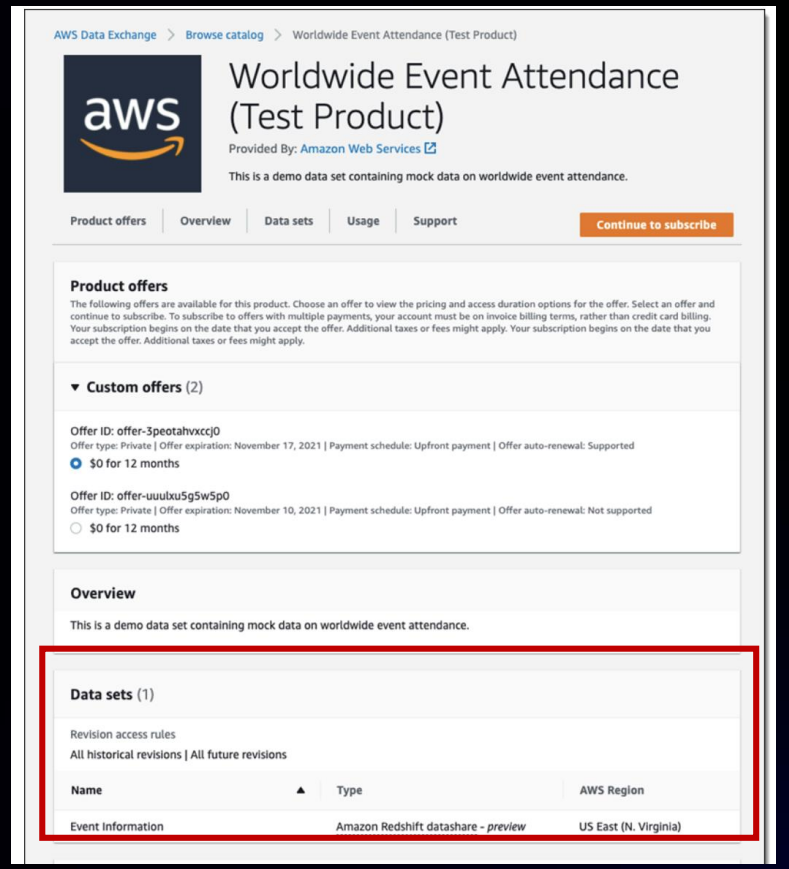
Getting access to third-party datasets is easy



2 Review public products and private offers (if any)

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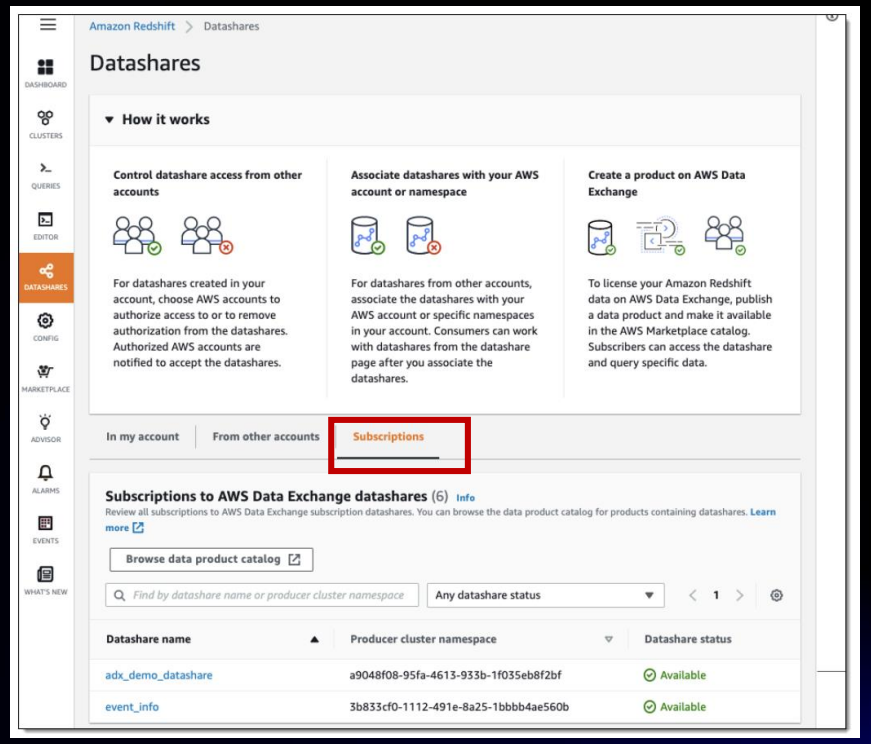
Getting access to third-party datasets is easy



3 Subscribe to the product

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Getting access to third-party datasets is easy

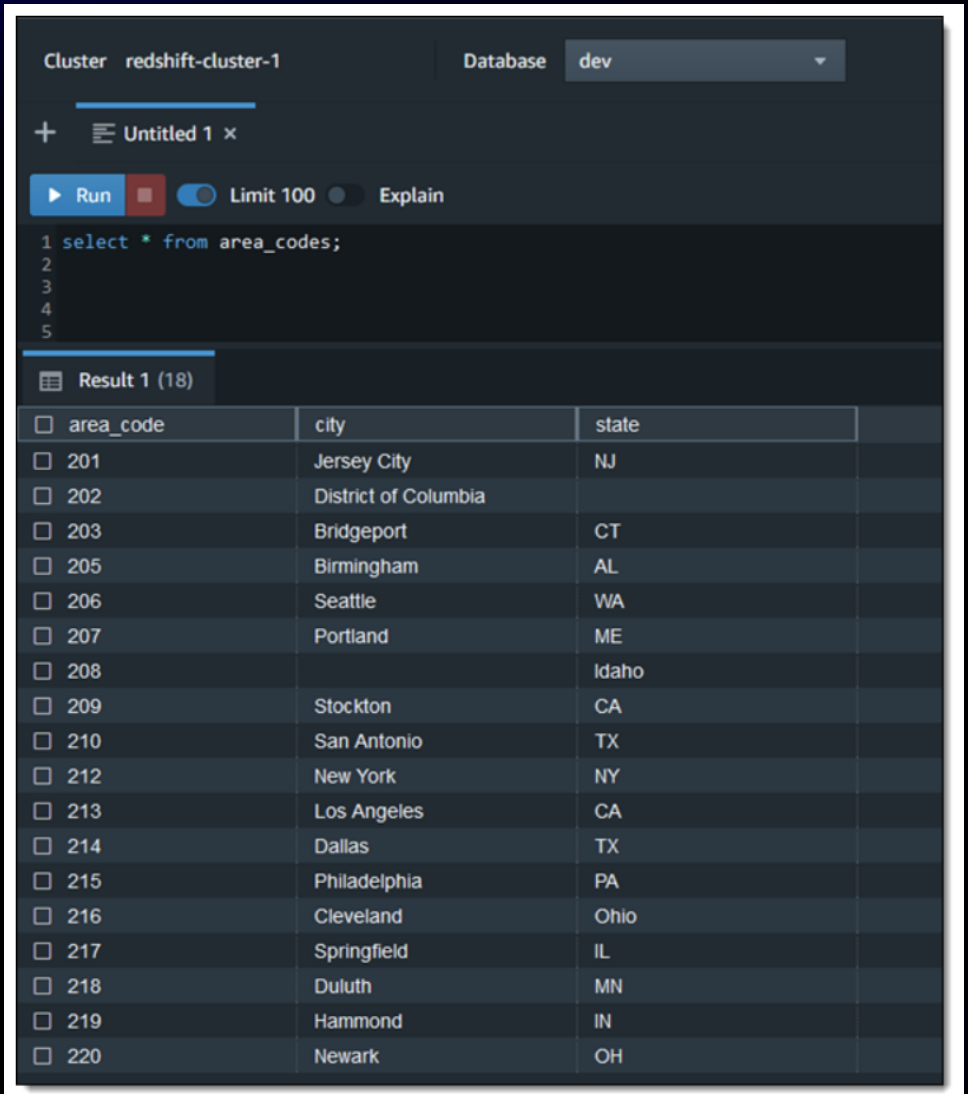


4

Review the subscription data share in Amazon Redshift console, create a database, and start querying

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License data in place from Amazon Redshift

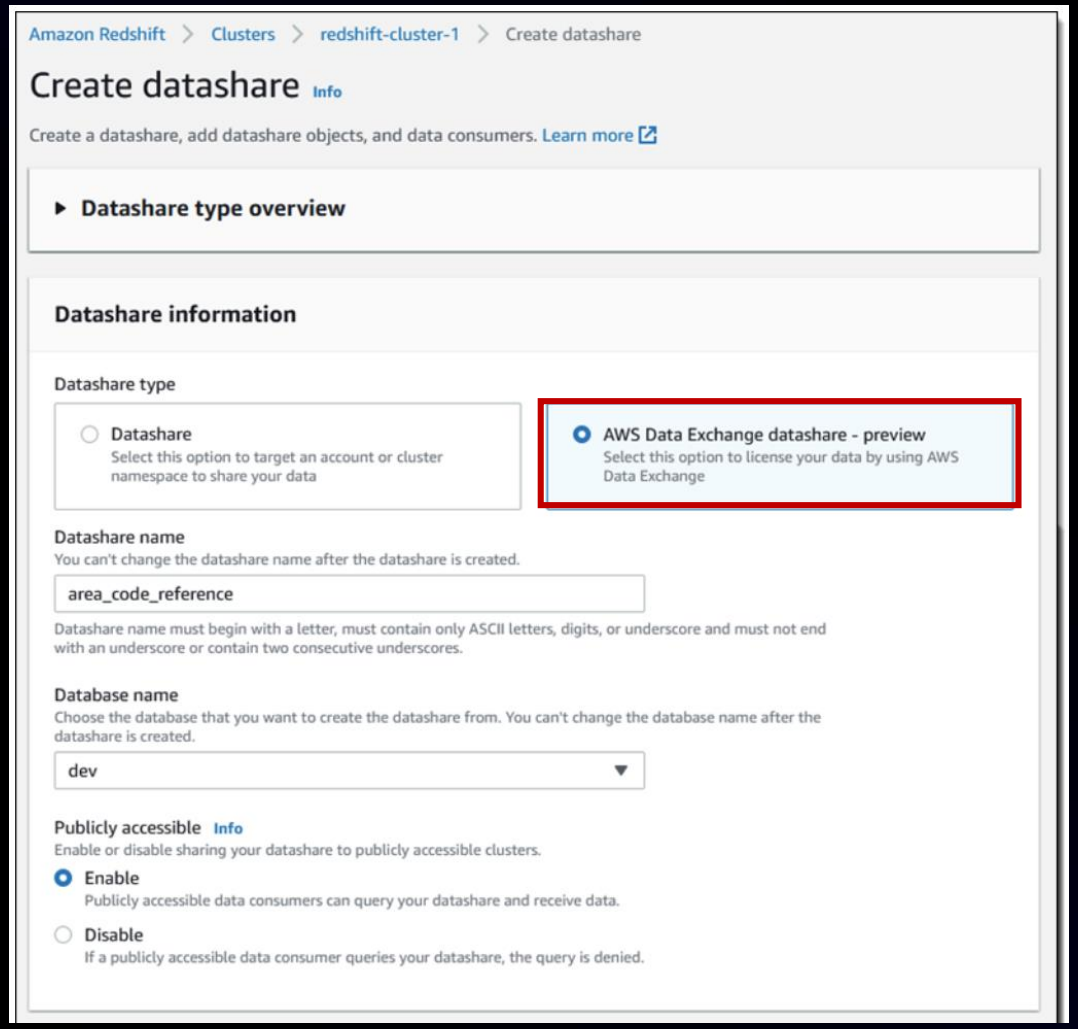


area_code	city	state
201	Jersey City	NJ
202	District of Columbia	
203	Bridgeport	CT
205	Birmingham	AL
206	Seattle	WA
207	Portland	ME
208		Idaho
209	Stockton	CA
210	San Antonio	TX
212	New York	NY
213	Los Angeles	CA
214	Dallas	TX
215	Philadelphia	PA
216	Cleveland	Ohio
217	Springfield	IL
218	Duluth	MN
219	Hammond	IN
220	Newark	OH

1. Determine which data warehouse data sets to license

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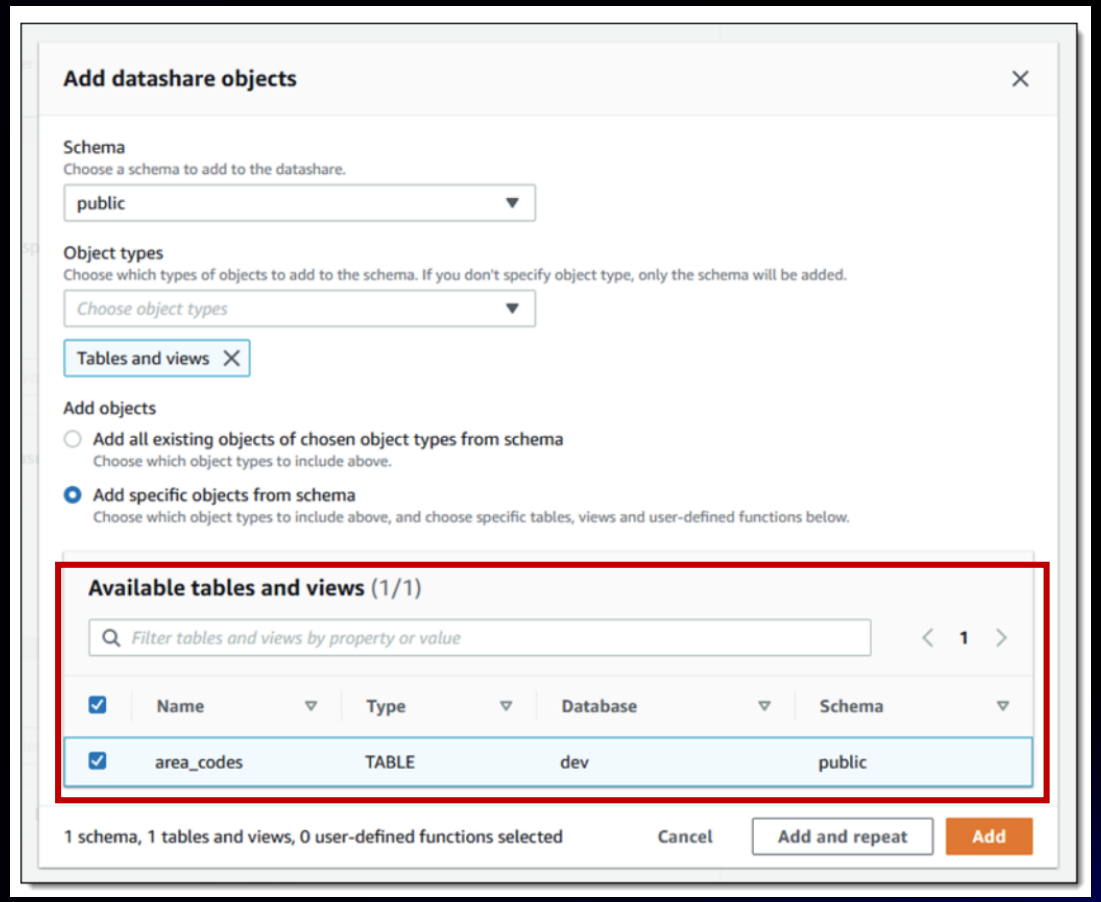
License data in place from Amazon Redshift



2 Create an AWS Data Exchange data share in Amazon Redshift console

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License data in place from Amazon Redshift

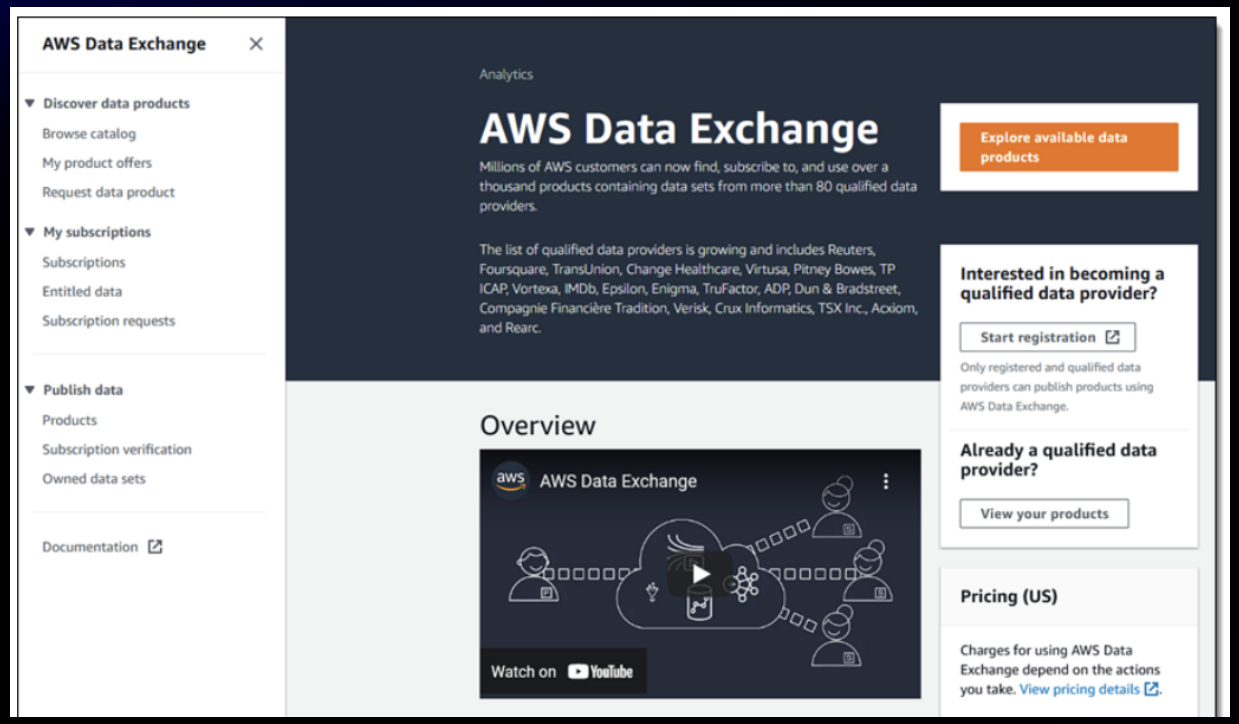


3

Add relevant datasets to the AWS Data Exchange data share

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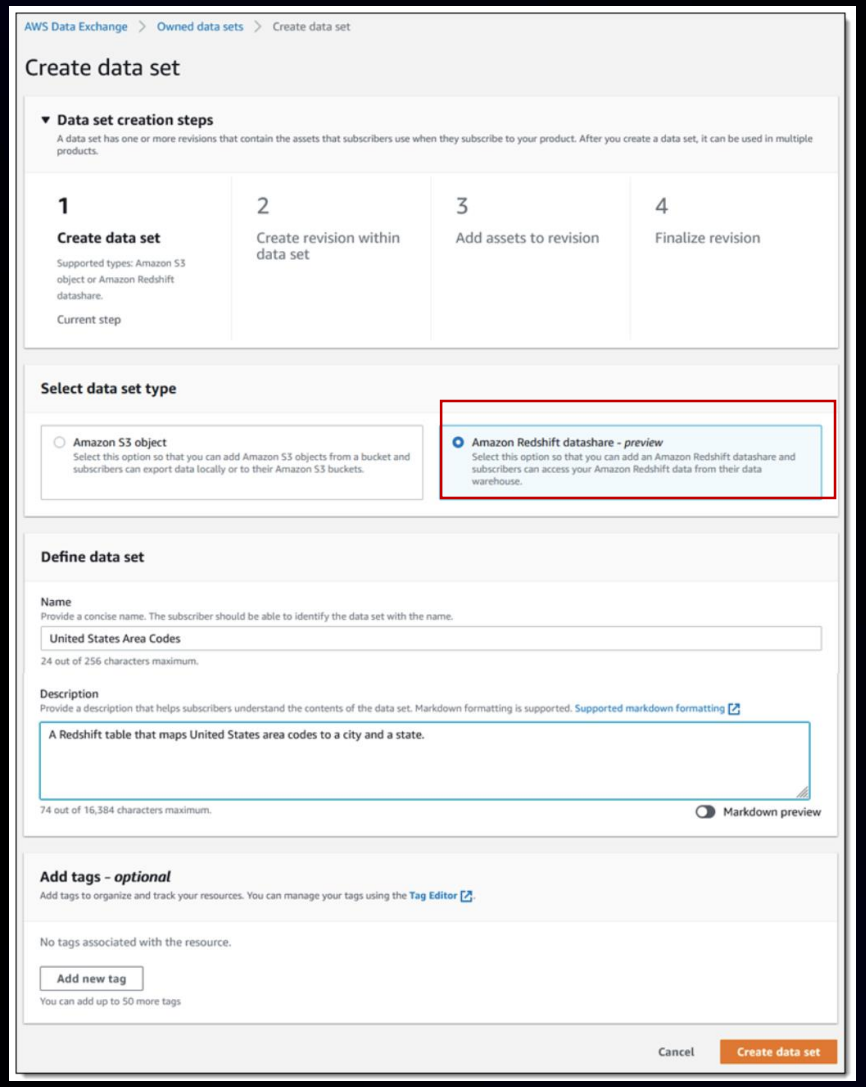
License data in place from Amazon Redshift



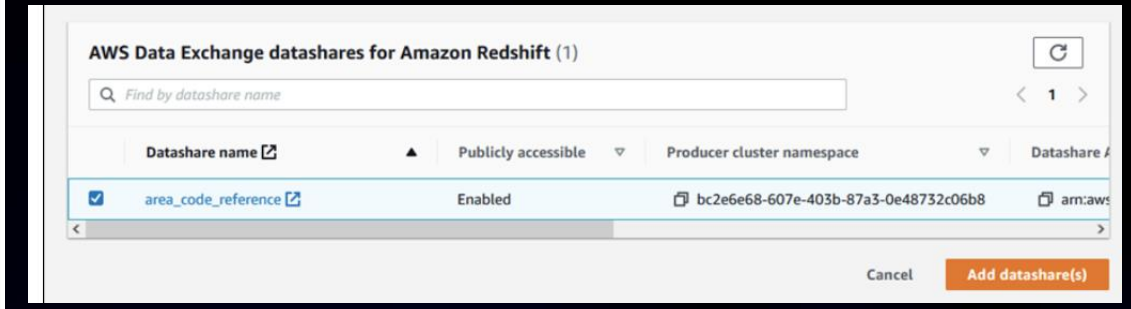
1. Start publishing the data share as a product in AWS Data Exchange

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License data in place from Amazon Redshift

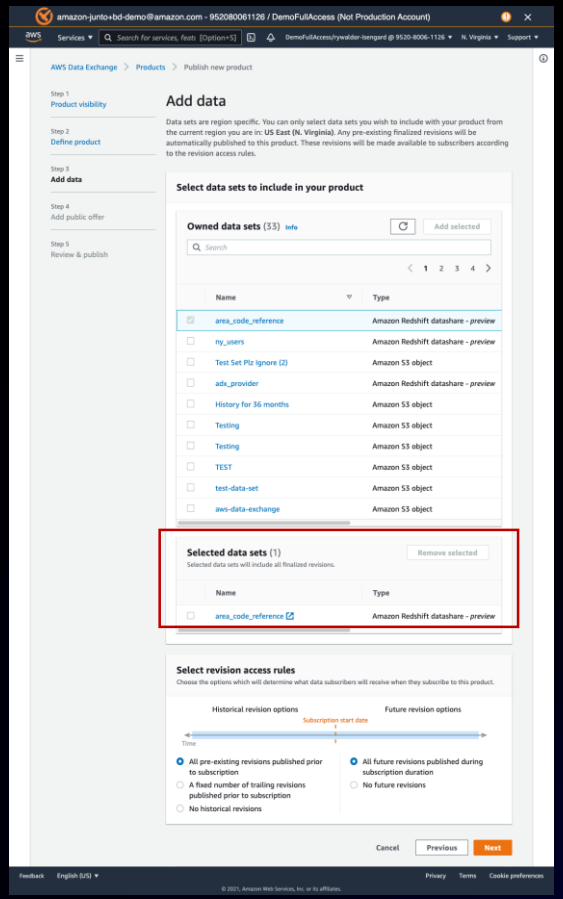


2 Create a dataset with the Amazon Redshift data share



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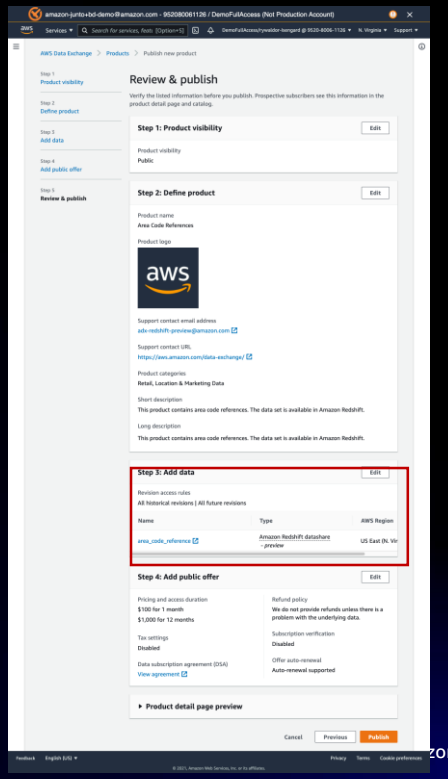
License data in place from Amazon Redshift



3 Create a new AWS Data Exchange product with the dataset

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License data in place from Amazon Redshift

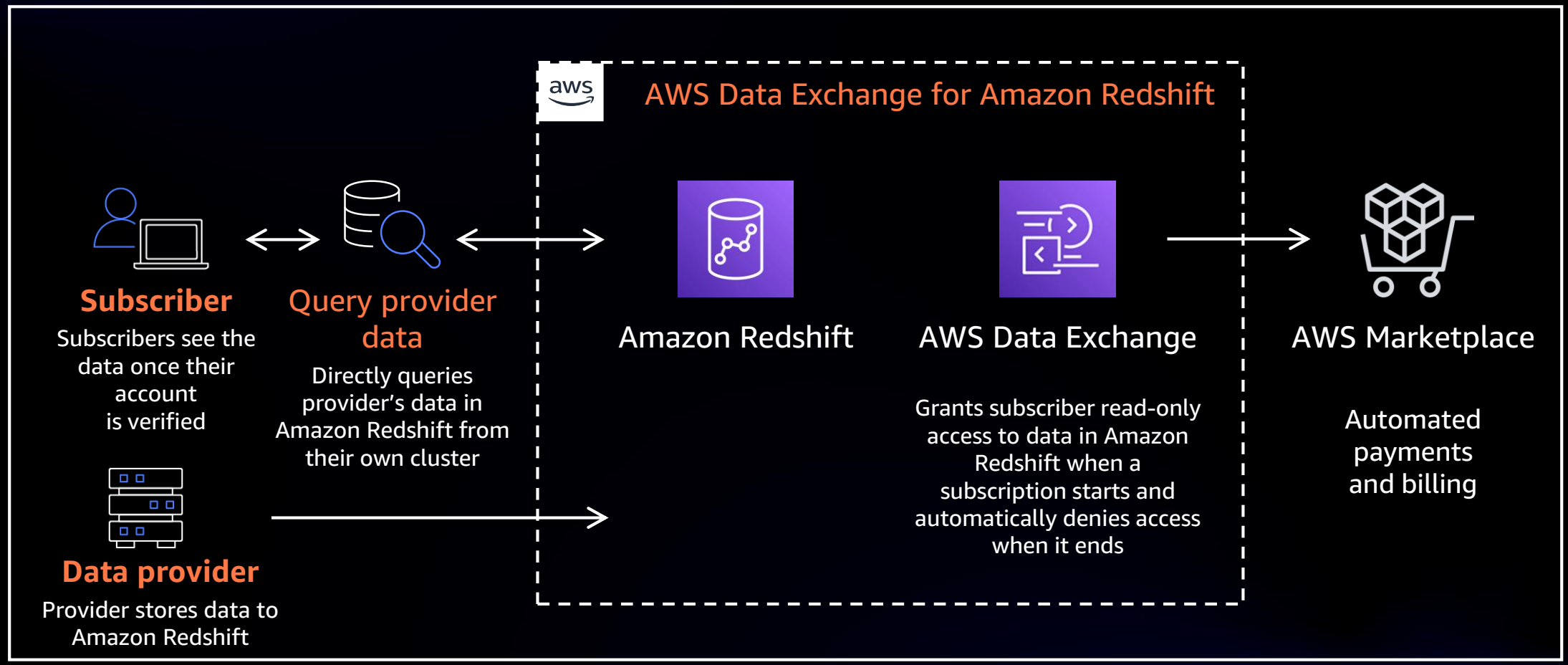


4

Add the offer (public or private) and publish the product

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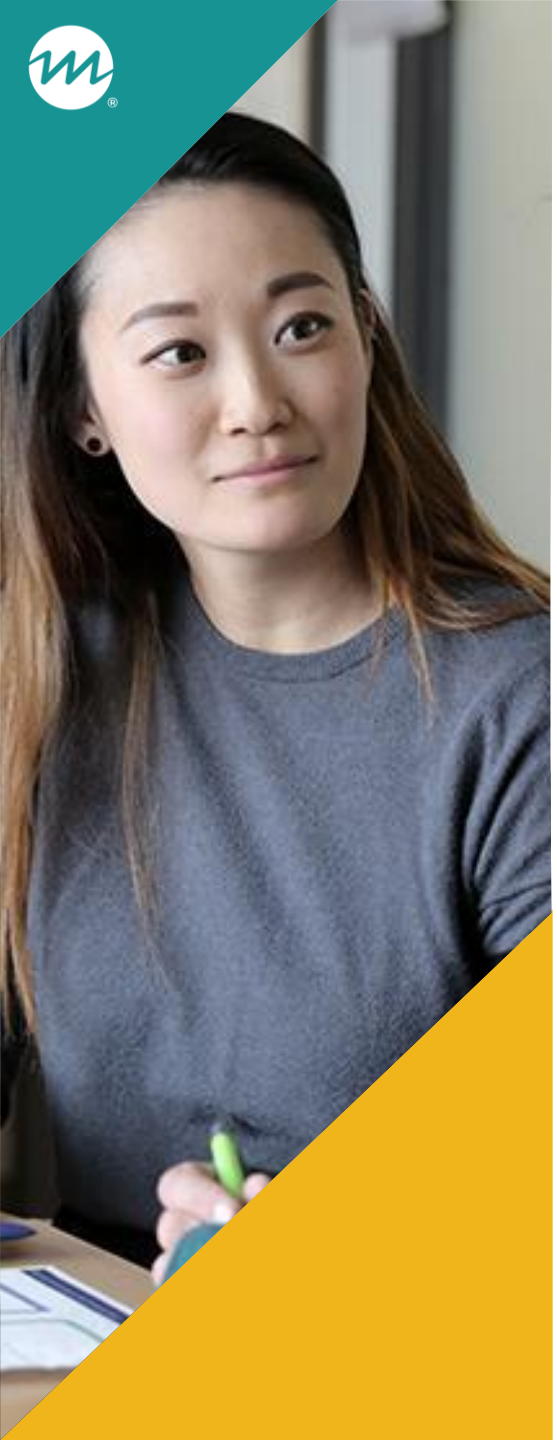
AWS Data Exchange for Amazon Redshift



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Guest speaker: Mathematica

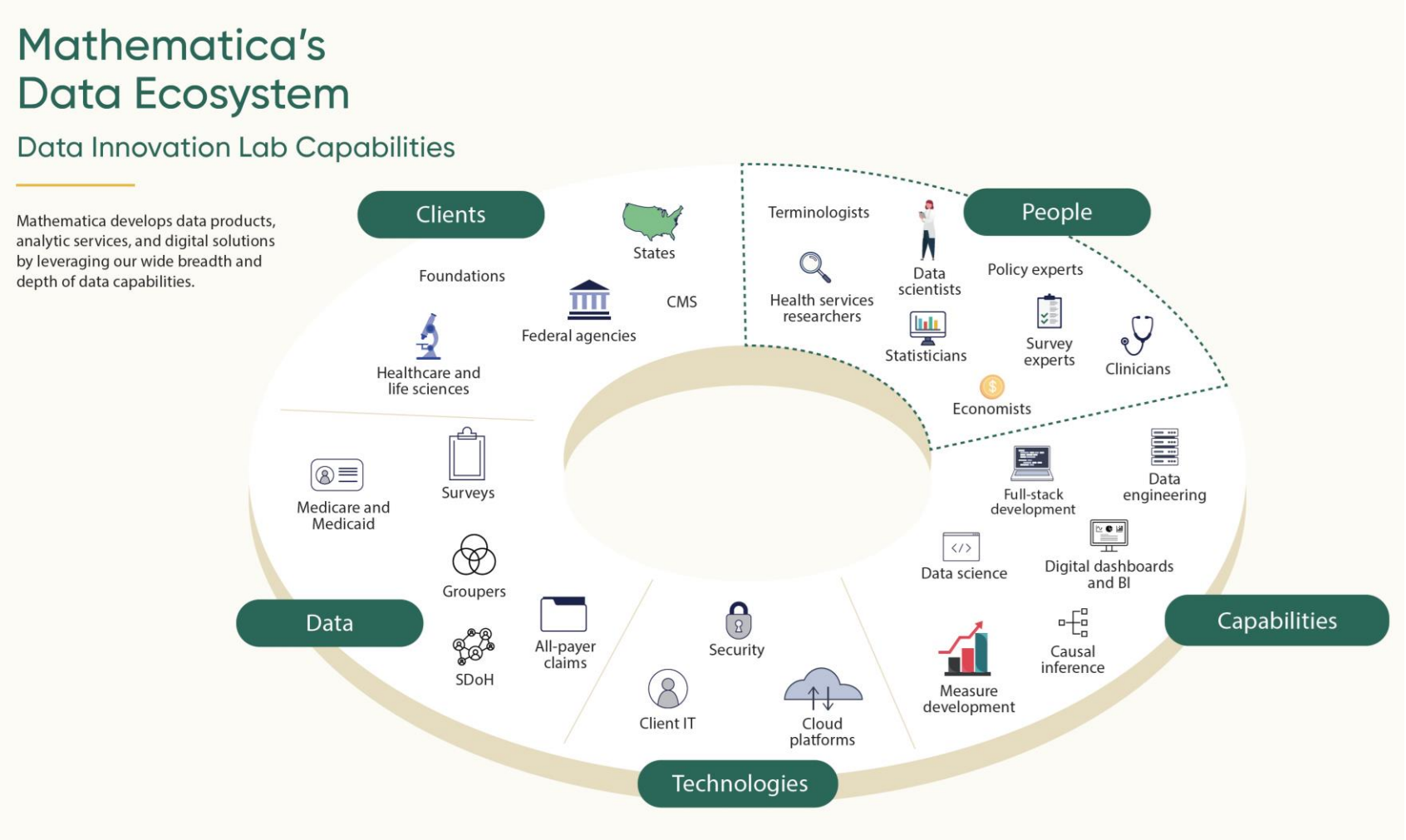
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About Mathematica

- Employee-owned, mission-driven company
- 1,400+ employees, including 650+ focusing on healthcare, life sciences, and health policy
  - Deep subject-matter expertise in **public sector data**
- **Mission**: Improving public well-being by bringing the highest standards of quality, objectivity, and excellence to bear on information collection and analysis for our partners and clients

Mathematica areas of expertise



Mathematica

Clients and services



Data services

- ✓ Linkable claims, encounter, pharmacy, and enrollment data for 170M+ covered lives
- ✓ Covers **100% Medicare and Medicaid beneficiaries**, incl. Medicare Advantage and Medicaid-managed care



Analytics services

- ✓ Real-world evidence studies
- ✓ Health economics outcomes research
- ✓ Cost and utilization benchmarking
- ✓ Predictive modeling
- ✓ Provider network analytics



Digital services

- ✓ SaaS solutions with insights at the population, market, plan, and provider levels
- ✓ Analytic services and digital solutions via AWS Marketplace
- ✓ Baseline and fully customizable solutions

Mathematica's Data Innovation Lab

Mission: Create streamlined access to Mathematica's public sector data expertise and capabilities to create a **menu** of data products, analytic services, and digital solutions focused on:



- **Population health**
- **Value-based care and payers**
- **Provider systems**

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Data Innovation Lab: Data products



Population health

Statistics on **groups of patients or beneficiaries**



Value-based care and payers

Benchmarks and insights for **plans or risk-bearing entities**



Provider systems

Benchmarks and insights for **health systems**

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Traditional process



Pain points of traditional process

- Long (6+ month) approvals
- At least 6 interactions before contracting
- No transparency into data quality and completeness

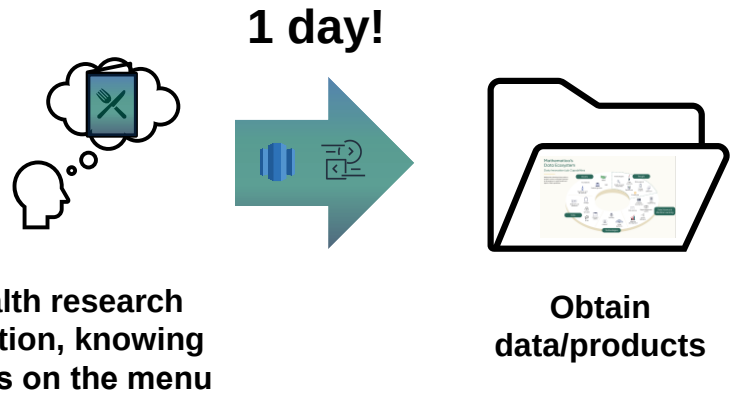
Mathematica

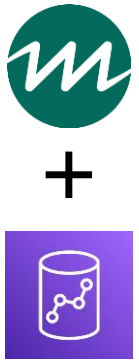
AWS Data Exchange, Amazon RedShift, and Mathematica process

Traditional process



AWS Data Exchange/ Amazon RedShift and Mathematica process





Aiming for **same-day fulfillment**

Mathematica

What's on the AWS Data Exchange now?

Population health

Multiple chronic conditions (MCCs)

- **Goal**: Enable real-world evidence studies and population health

Medicaid data quality

- **Goal**: Assess the feasibility of digital or data products using Medicaid data

Mathematica

Quick background: Medicare and Medicaid

Medicare

65M+

covered
(older adults, persons with disabilities, or ESRD)



~50% enrolled in **private Medicare**

Medicaid

82M+

covered
(children, mothers, working-age adults, long-term care, disabled)



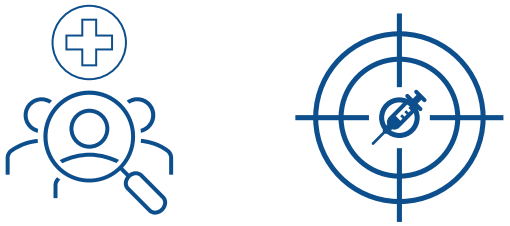
75%+ involved in **managed care**

Value add: Mathematica is the national expert on nationwide Medicare and Medicaid data and has immediate access to all relevant data

Mathematica

Use case: Multiple chronic conditions

Two national priorities, enabled through data



Precision medicine

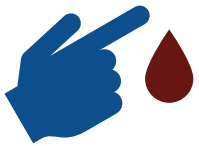


Population health

AWS Data Exchange listing focused on **diabetes** patients with **MCCs**

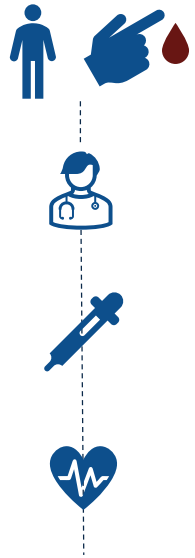


AWS Data Exchange



Includes **traditional** and **managed** Medicare

Example customer request



What are the **care trajectories** for diabetic patients with MCCs?

Mathematica

Use case: Medicaid data quality

Challenges: **Limited research and innovation** for Medicaid population

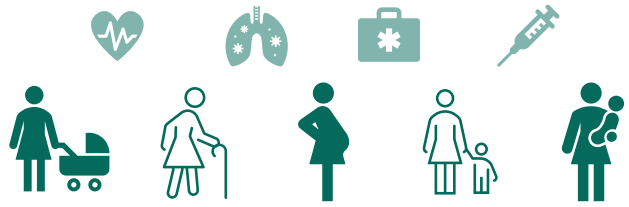


- ✓ Practical challenges (e.g., variable data quality)
- ✓ Medicaid populations have large medical, functional, and social needs

AWS Data Exchange shows **data availability** by state



AWS Data Exchange



Value-add: Identify beneficiaries with multiple needs by population

Example customer request



What are the **social needs** of **disabled adults living at home**?

Mathematica

Next steps for use cases



- ✓ Update years
- ✓ Add more conditions
- ✓ Add the Medicaid population
- ✓ Add data transparency files
- ✓ Add pharmacy and service use
- ✓ Add quality measures and avoidable utilization

Key takeaways before demo

AWS Data Exchange and **Amazon Redshift** allow **Mathematica** to:

- Accelerate customer lead time
- Provide transparency to customers
- Expand offerings while reducing maintenance

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Summary

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Summary and key takeaways

Find and subscribe to third-party data that you can query, analyze, and build applications with in minutes, no ETL

Read the data at its source so you're always using the latest data

Manage entitlements, billing, and payments automatically and without undifferentiated heavy lifting

Access third-party databases, data files, and APIs all with a single subscription

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Next steps

Try AWS Data Exchange for Amazon Redshift preview today

- For questions – send email to adx-for-redshift@amazon.com

Learn more about AWS Data Exchange for Amazon Redshift

- Feature page: https://a.co/adx4rsfeature
- Amazon Redshift data products: https://a.co/adx4rs
- Get started as a data provider: https://a.co/adx4rsdocs

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