AWS re:Invent

ANT324-R

Deploy business analytics at enterprise scale with Amazon QuickSight

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Capital One

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Agenda

Amazon QuickSight overview

Common use cases

Security at scale

Capital One’s BI and analytics strategy

Resources to get started

The Amazon QuickSight Difference



Cloud native = No servers = Auto-Scale

No servers or software to manage, maintain, deploy. Start with 10s of users and scale to 10s of 1000s



Fast, consistent performance

Fast, predictable performance for every time. Concurrent users or increased interactions do not slow down the system.



Fully Integrated w/AWS

Build end-to-end analytics in AWS. Secure private VPC access, Fine-grained access control, ML integrations



ML-insights

Contextual, relevant insights with ML-powered anomaly detection, forecasting, alerts and customizable narratives.



Secure and Global

End-to-end encryption. Native High Availability. 10 Global regions. HIPAA, PCI, ISO, SOC and FedRamp eligibility



Insights for Everyone

Provide access to all users, pay only for usage. No upfront costs, no charges for inactive users



Easy to develop and maintain

Design with QuickSight, integrate with APIs. Secure data with row-level security and authenticate seamlessly via SAML SSO



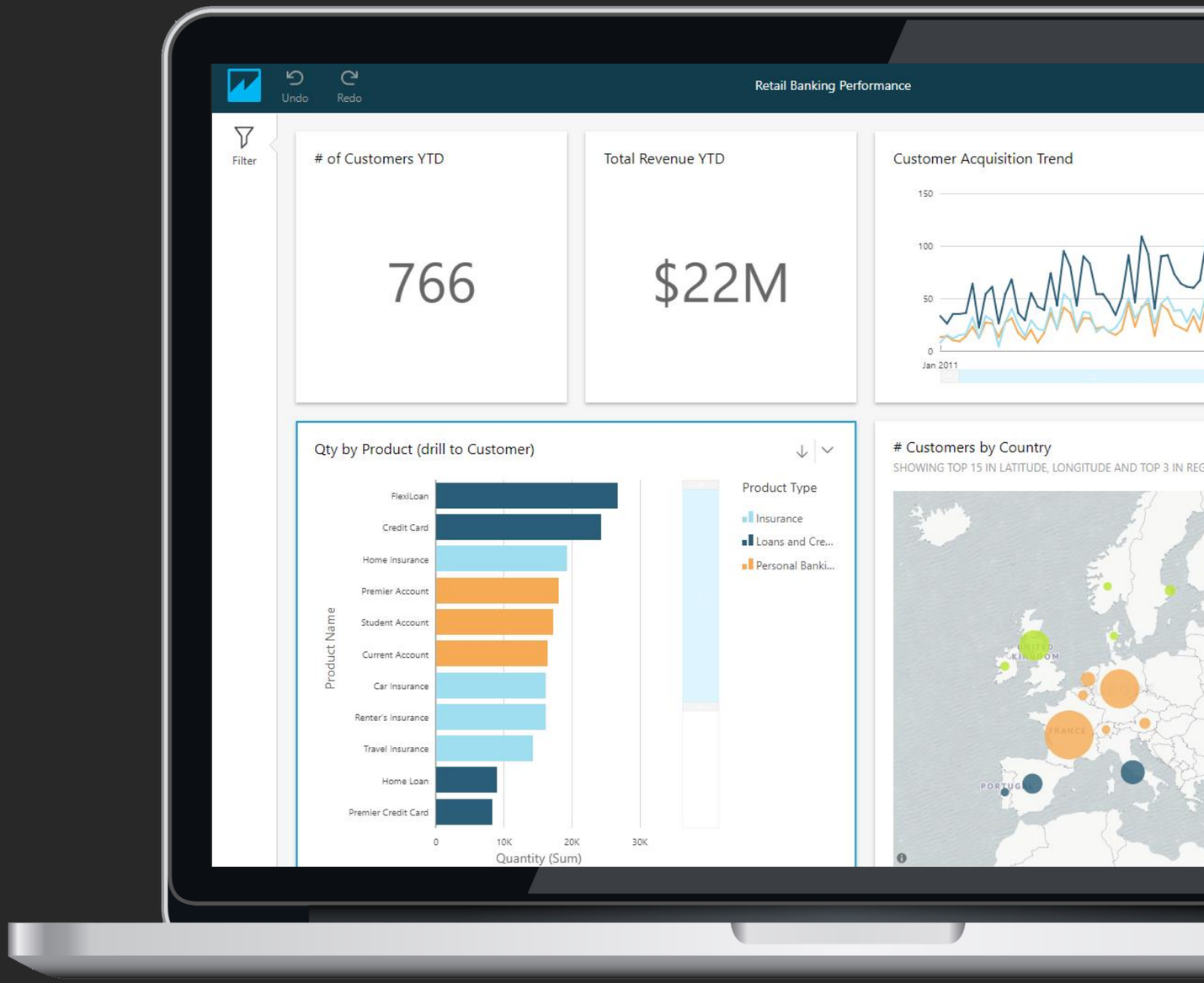
Customize and Embed

Embed into applications and enable analytics in hours, not months or years. Use themes to match application/corporate branding.

ADMINISTRATOR ⟵ *BENEFITS* ⟶ *END-USER*

Create beautiful, interactive dashboards

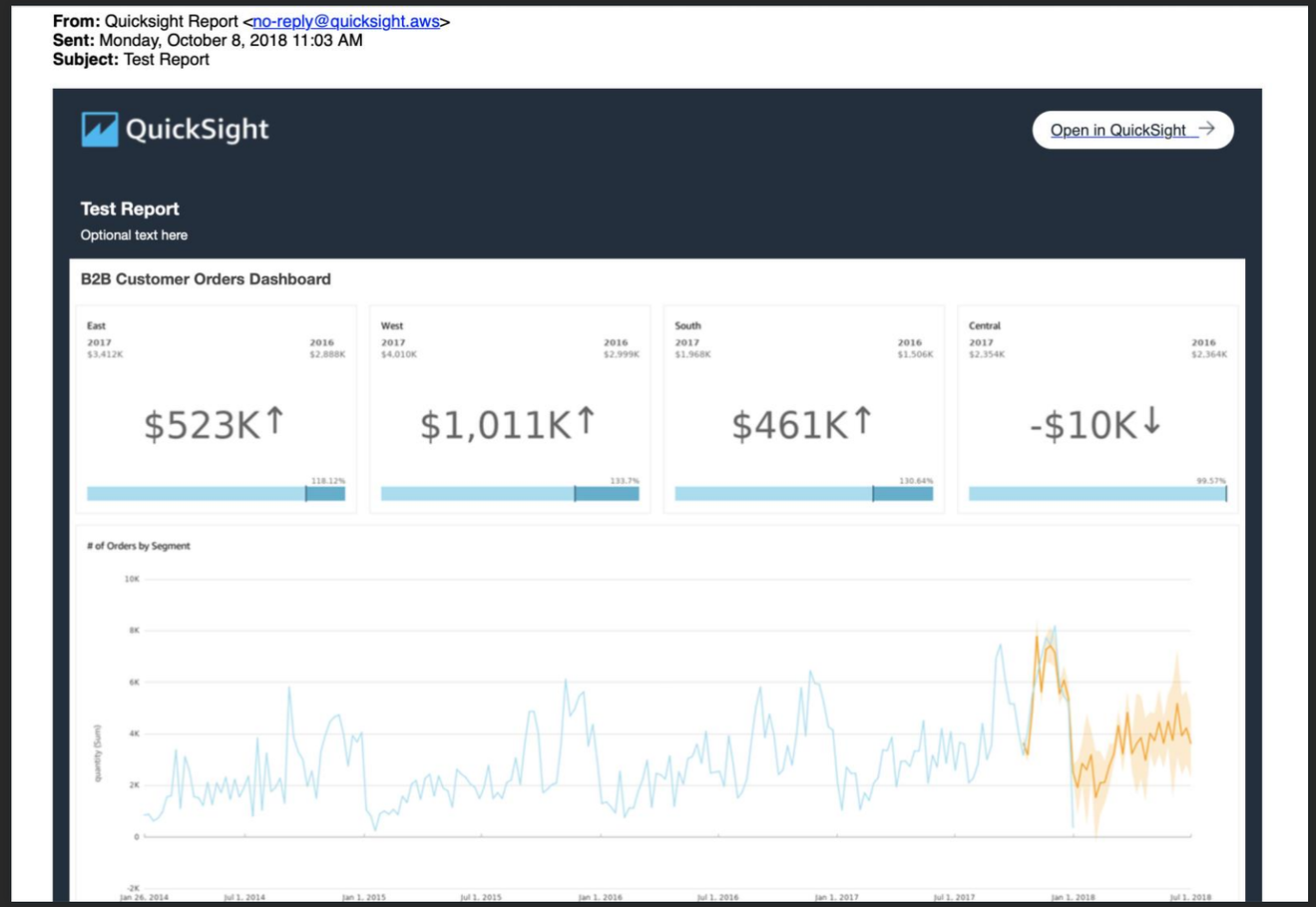
- Add rich interactivity like filters, drill downs, zooming, and more
- Blazing-fast navigation
- Accessible on any device
- Data refresh
- Publish to everyone with a click



Insights delivered to your inbox

Amazon QuickSight lets you send report snapshots directly to your user's inbox

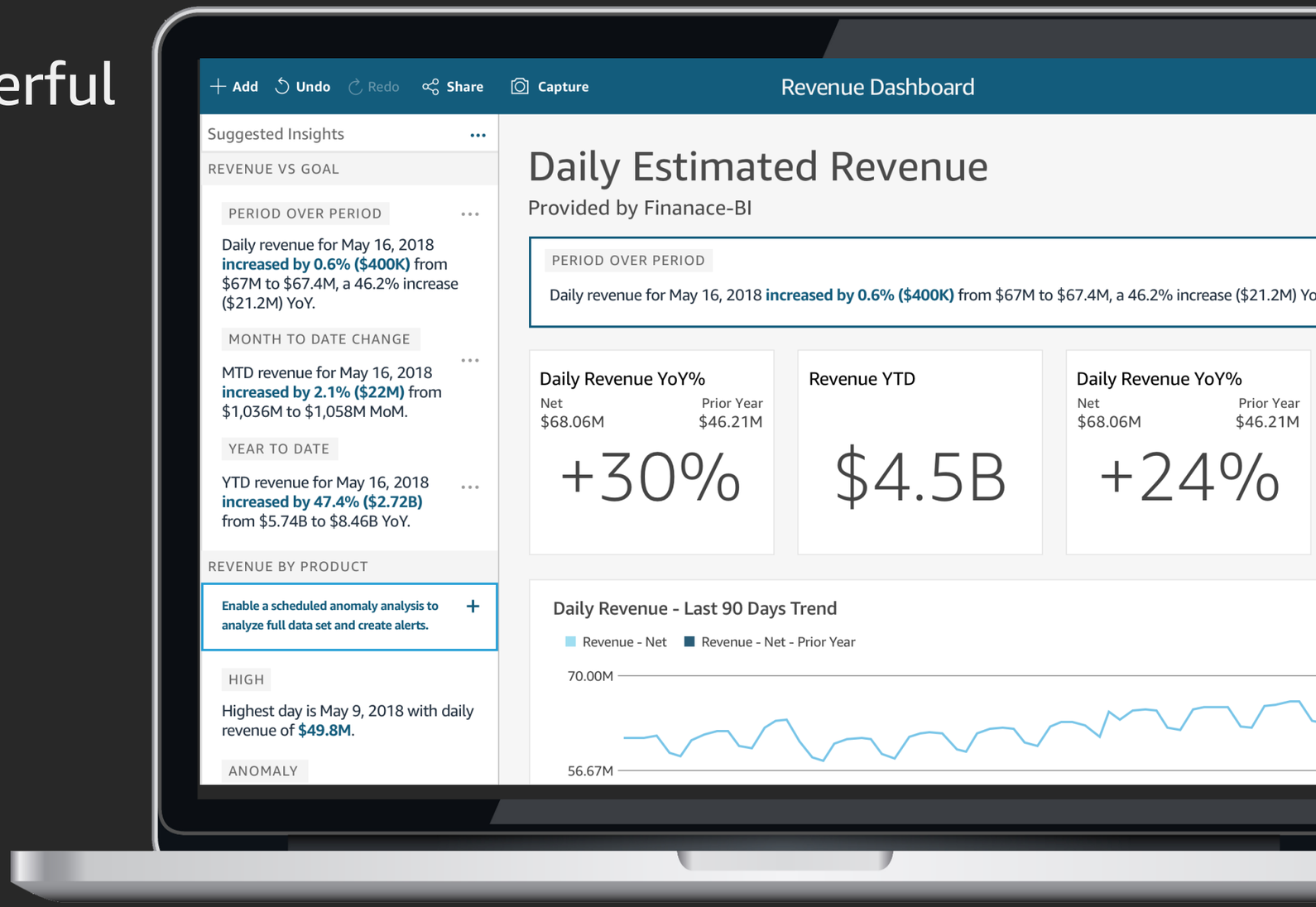
- Schedule email reports on a daily, weekly, or monthly basis
- Sent to individual users or groups
- Users can opt out of any report, so they can focus on what's important
- Uses pay-per-session pricing



ML insights

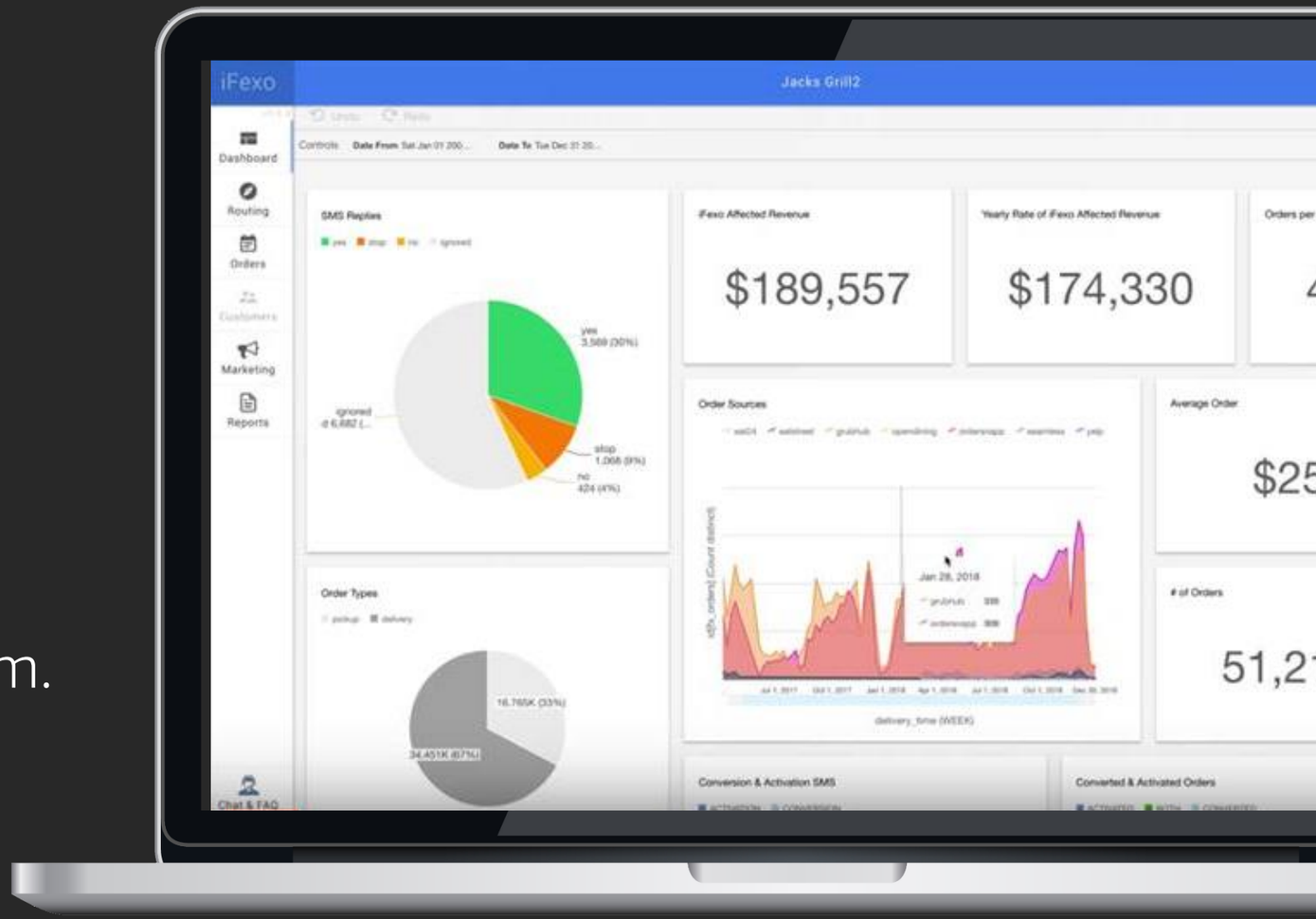
Cutting-edge ML tools that automatically discover powerful insights for your users

- ML-powered anomaly detection
- ML-powered forecasting
- Auto-generated natural language narratives and summaries
- Augment with Amazon SageMaker – NEW!



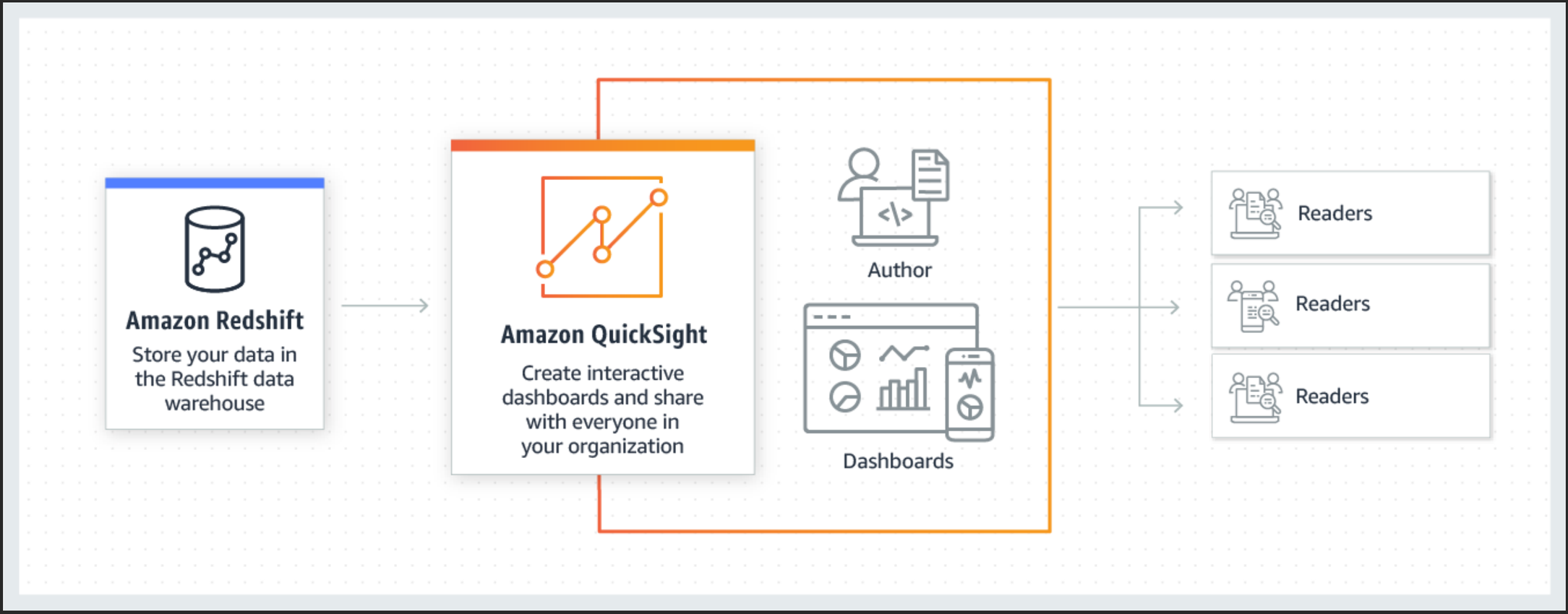
Embedding dashboards in your application

- Enhance your applications with rich analytics and dashboards.
- Easy maintenance—no servers to manage.
- Fast! No custom development or domain expertise needed.
- Leverage new features as we add them.
- Utilizes pay-per-session pricing.



How Amazon QuickSight works

Amazon QuickSight allows you to connect to your data sources and create dashboards that can be securely shared across your organization

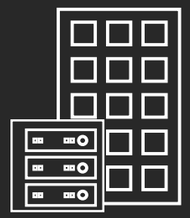


Connect to your data, wherever it is

Amazon QuickSight is natively integrated with AWS data sources, as well as on-premises and hosted databases and third-party business applications

On premises

Securely connect to on-premises databases and flat files like Excel and CSV



- Excel
- CSV
- Teradata
- MySQL
- SQL Server
- PostgreSQL

In the cloud

Connect to hosted databases, big-data formats, and secure VPCs



- Amazon Redshift
- Amazon RDS
- Amazon S3
- Amazon Athena
- Amazon Aurora
- Teradata
- MySQL
- Presto
- Spark
- SQL Server
- PostgreSQL
- MariaDB
- Snowflake
- AWS IoT Analytics

Applications

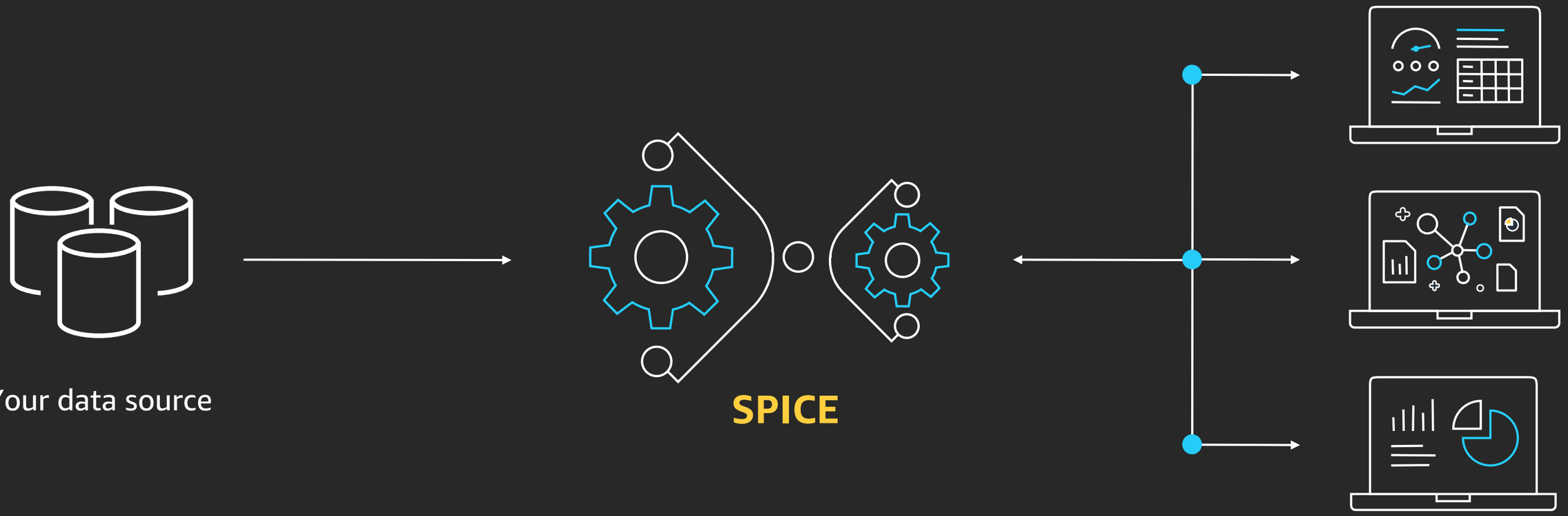
Connect directly to third party business applications



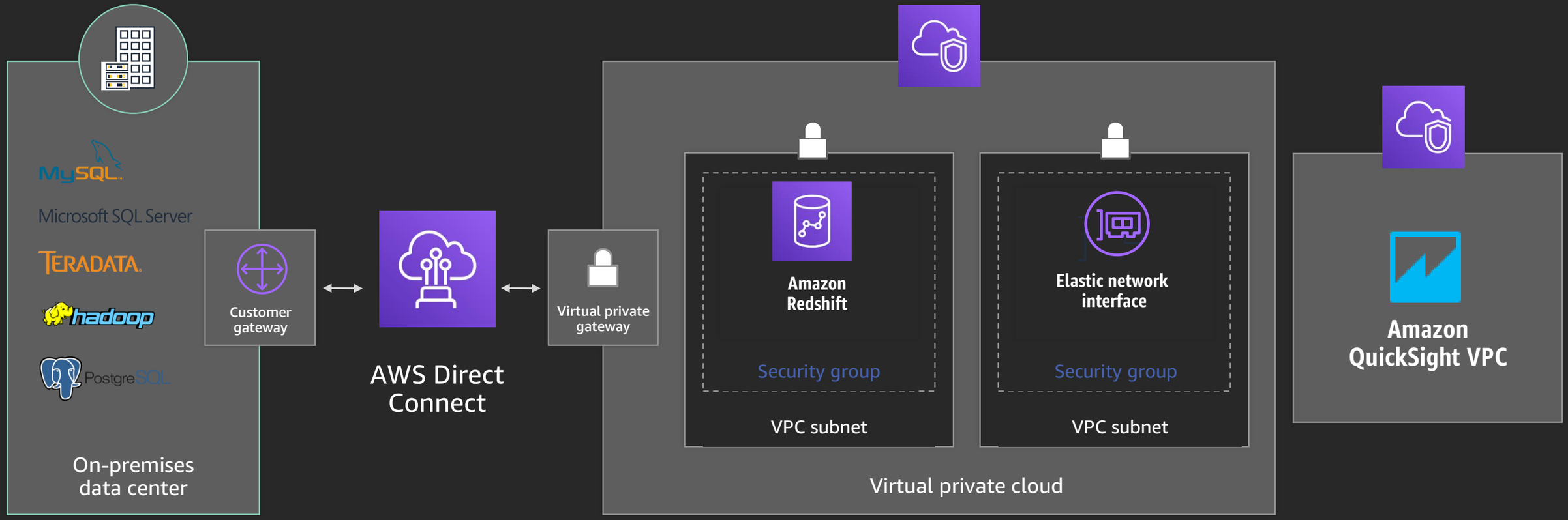
- Salesforce
- Square
- Adobe Analytics
- Jira
- ServiceNow
- Twitter
- GitHub

SPICE

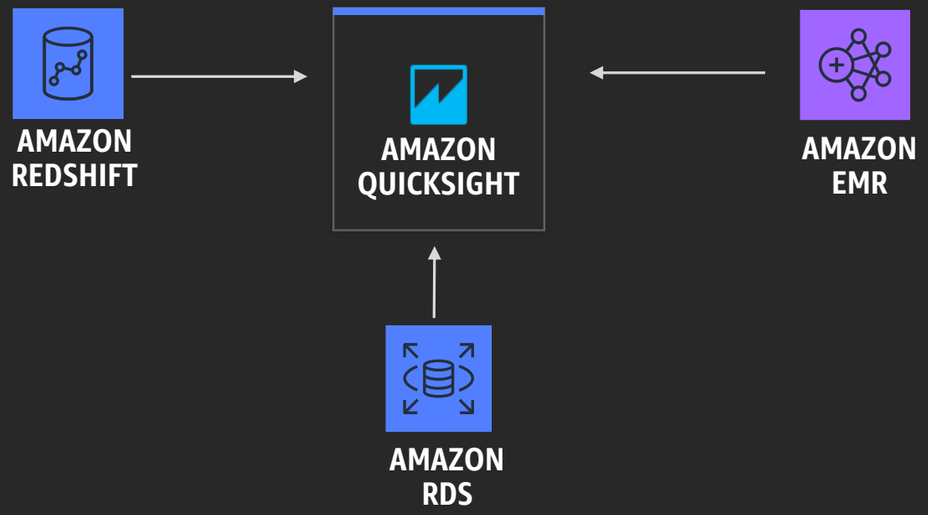
Amazon QuickSight is powered by SPICE, a superfast calculation engine that delivers performance and scale, regardless of how many users are active



Securely connect to on-premises data



Better Together: AWS + QuickSight



Private VPC connectivity = no public routing of data

Direct query to data sources or SPICE for fast access



Native fine-grained permissions for users with AWS IAM

Cost allocation by business unit or team

First visualization in minutes!

Audit all access via AWS CloudTrail

Roll out to all users - Pay for what you use

Enterprise edition

For deploying insights at scale, across your organization

Authors



Create and publish interactive dashboards

$18

/user/month

Billed annually

$24/user/month, paying month to month

Readers



Secure access to dashboards anytime, anywhere

$0.30 /session*

up to a max of

$5 /user/month

*session = 30 minutes from login

Standard vs. enterprise

	Standard edition	Enterprise edition
All capabilities of Standard edition plus:	√	√
Reader role		√
Email reports		√
Securely access data in private VPCs and on premises		√
Row-level security		√
Hourly refresh of SPICE data		√
Secure data encryption at rest		√
Connect to active directory		√
Use active directory groups		√
APIs – New!		√
Dashboard embedding – New!		√
ML insights – New!		√

AWS Directory Service for Microsoft Active Directory

Custom date format

Dashboard save as

Anomaly-detection alerts

Readers

Groups

Private VPC

100M-row SPICE tables

Spark and Presto connector

Scheduled refresh

Just-in-time provisioning

London and Frankfurt Regions

Search

Totals

Excel custom range

Federated SSO

Athena connector

200+

Export to CSV

Amazon S3 analytics

Week aggregation

Aurora PostgreSQL

new features released since launch

Calculations in SPICE

Cross-account Amazon S3 access

Row-level Security

Hourly refresh

Conditional formatting

Sydney and Tokyo Regions

10K filter values

ML insights

KPI chart

Spark connector

Amazon Redshift Spectrum support

URL actions

AD connector

Tabular reports

Singapore Region

Filter actions

Combo charts

Embedded dashboards

Geospatial maps

Level-aware aggregations

Parameters

Relative date filters

Filter groups

Other buckets

Snowflake connector

SaaS connectors

Teradata connector

HIPAA

PCI compliance

What’s new (since June 2019)

- **Amazon SageMaker integration**
- **APIs: Dashboard, Data Set, Data Source, Themes, User Management**
- **100M rows in SPICE**
- **Cross-source joins**
- **Conditional formatting**
- Cross-region VPC peering
- VPC gateway for external data sources
- Level-aware aggregations
- Multiple sheets (tabs)
- Regional AD support
- JSON support
- Donut, gauge, word-cloud charts
- Favorites

- **Dashboard Themes**
- **Group-based row-level security**
- **Amazon S3 scope down policies**
- **Localization (nine languages)**
- **Regions: London, Frankfurt, Seoul**
- **New iOS and Android apps**
- Filter actions
- Printing
- Athena Workgroups
- Transpose tables
- Percentile, StdDev, Var
- Duplicate visual
- Replace dataset
- Hide columns in tables

Demo

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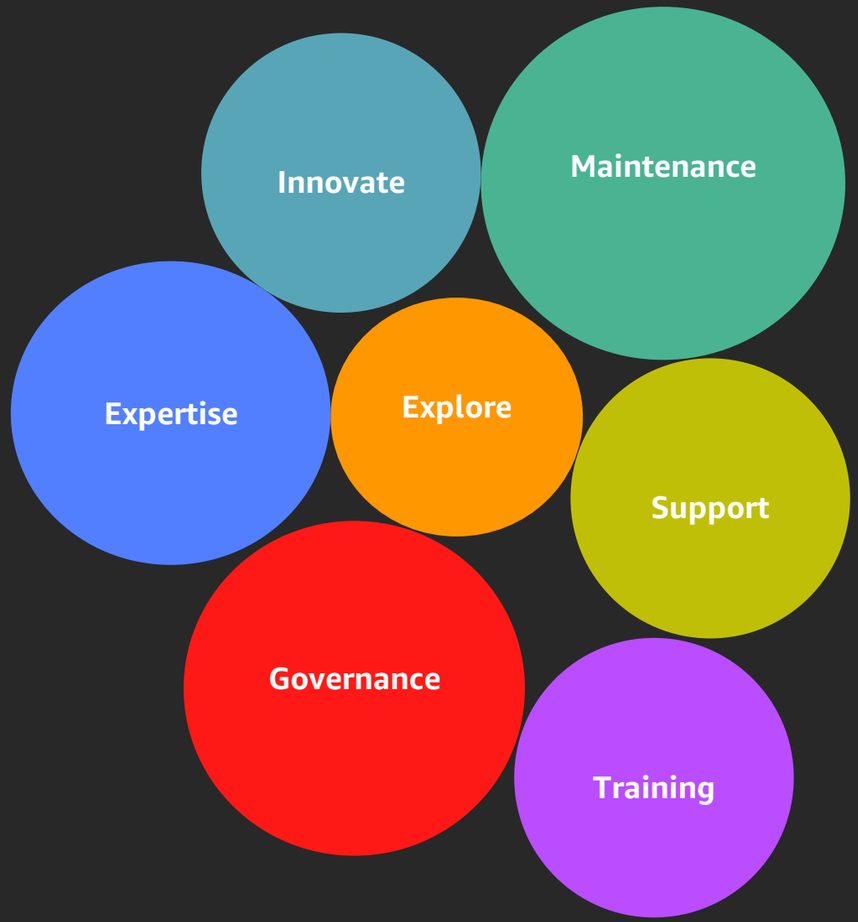
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Capital One

Enterprise business analytics

Enterprise BI team within Capital One is responsible for managing and supporting various BI tools

- Supporting BI community of about 25K users
- From executives to call-center agents
- Comprises traditional and self-service BI
- From analytical dashboards to operational reports
- BI governance and Center of Excellence



Key BI use cases

Our business teams leverage BI tools for a variety of use cases, and we see Amazon QuickSight as a fit for most of those



Performance analysis and forecasting



Spend and risk analysis



Market research



Monitoring and governance



Fraud and anomaly detection



Operational reporting

Uniqueness of Amazon QuickSight

Our team constantly evaluates BI products in the market and finds the best that meet all our requirements and offer enriched capabilities

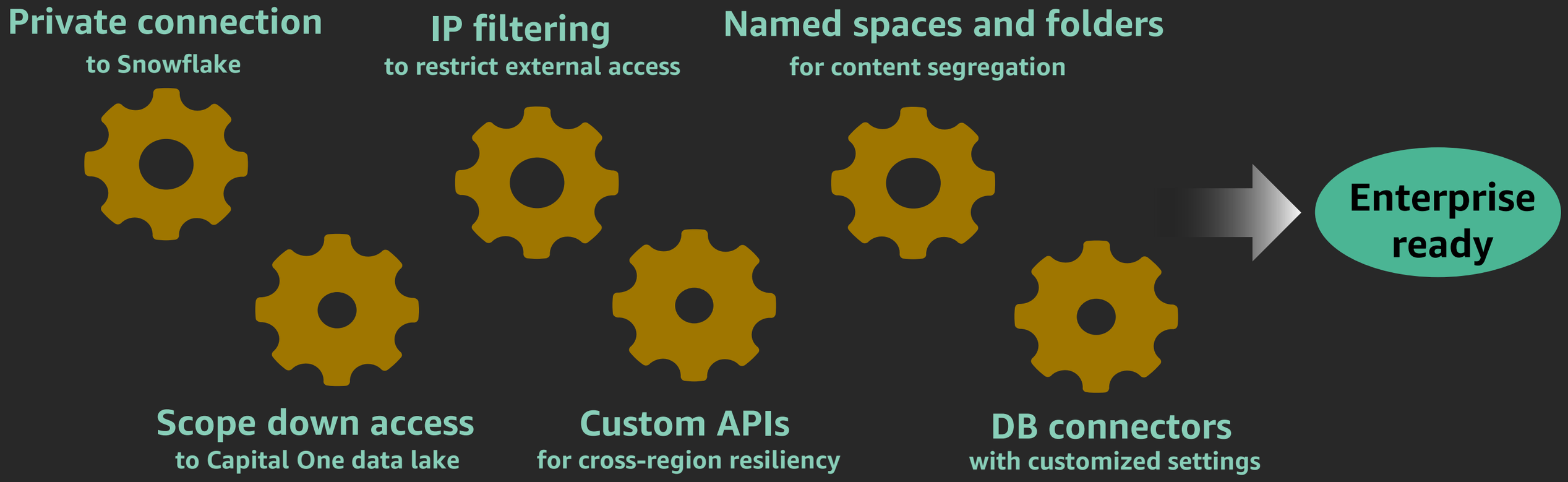
- Relief from server rehydration and downtime
- Say no to traditional long software-upgrade cycle
- Expand without the need for capacity assessment
- No software license commitment
- No need for a dedicated platform support
- More secured embedded analytics
- Power of machine learning
- Pay for what you use



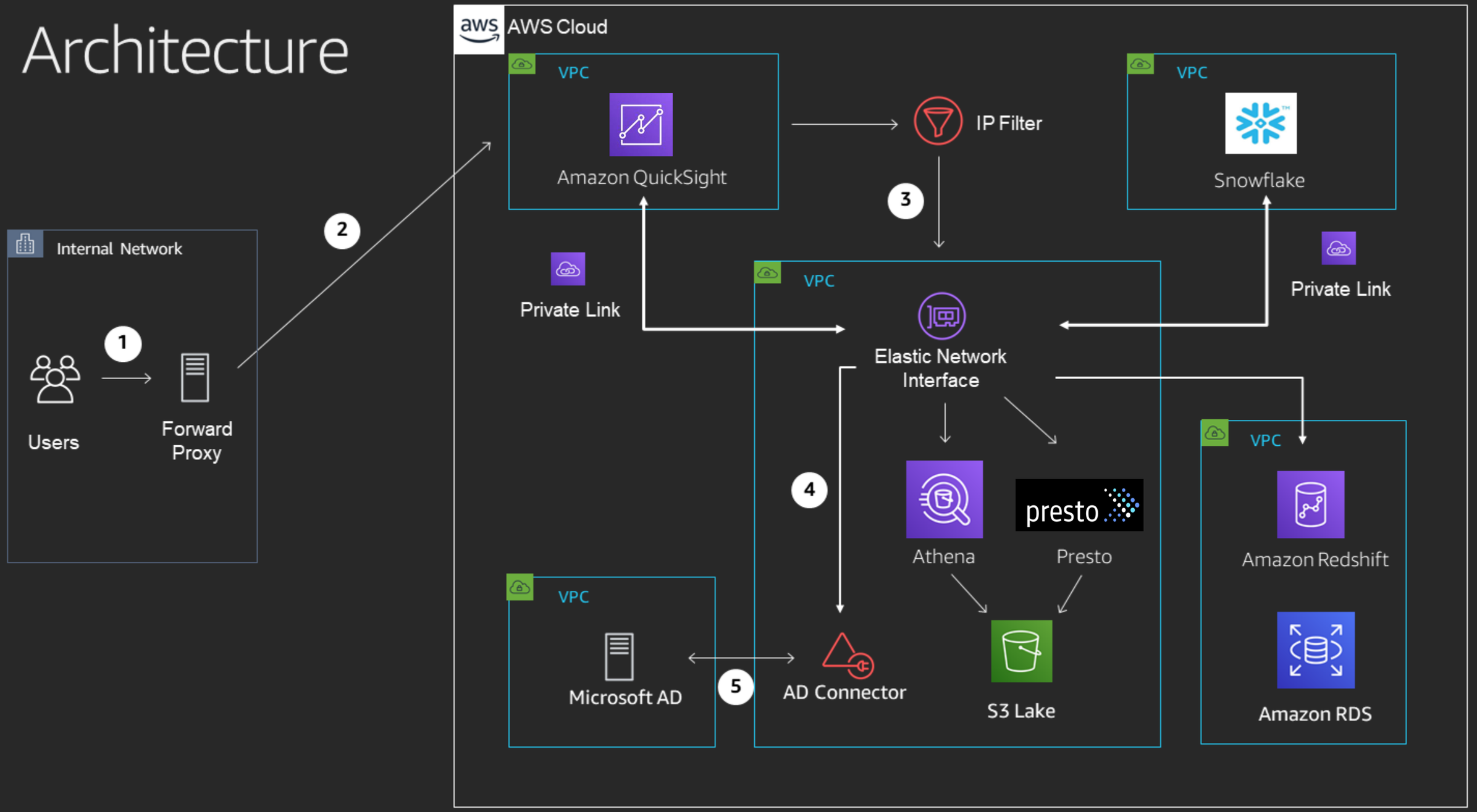
Next-generation BI

Tailored engineering solution

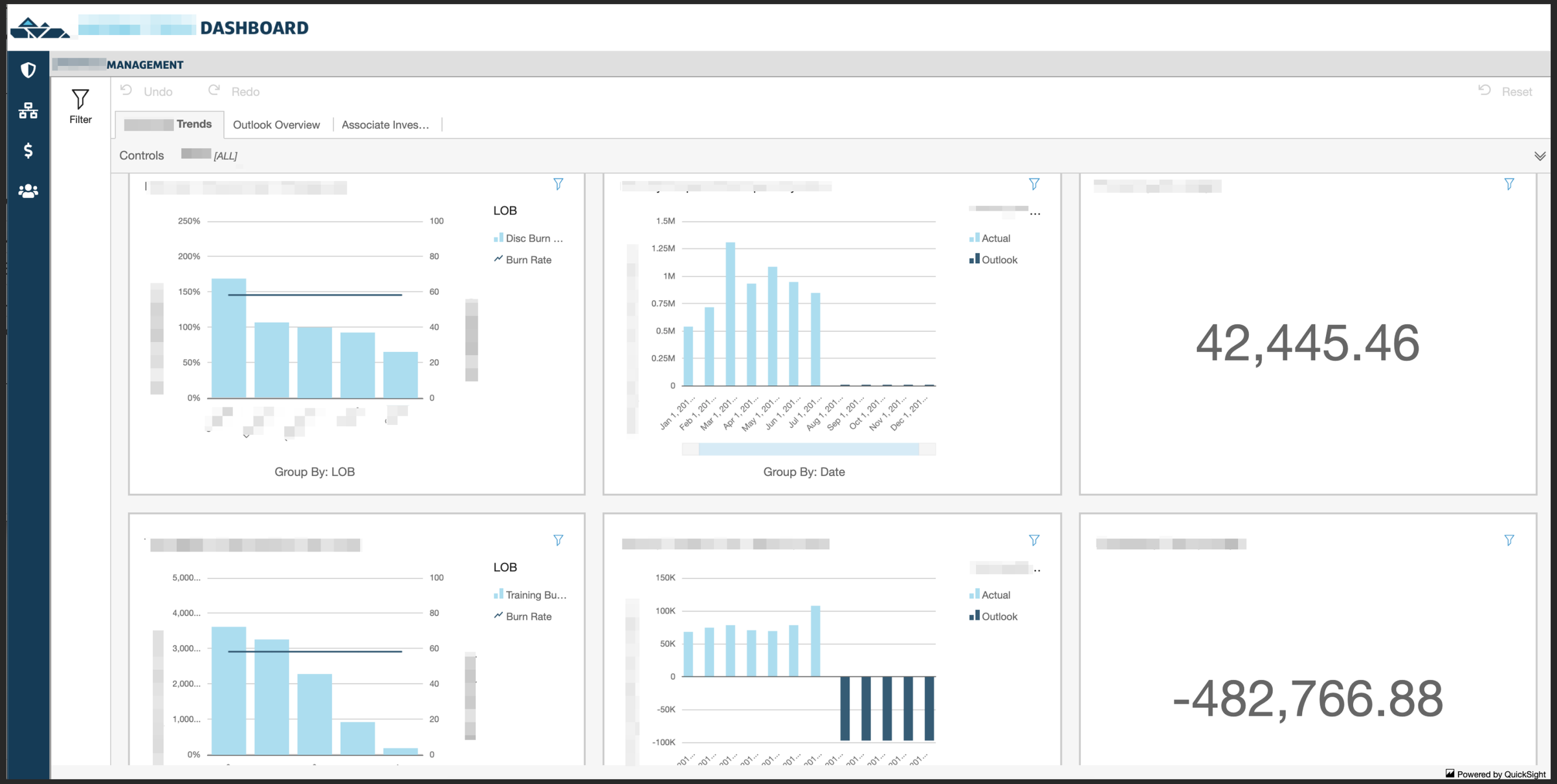
We had unique implementation requirements. The Amazon QuickSight team was able to deliver that with quick turnaround, meeting our standards.



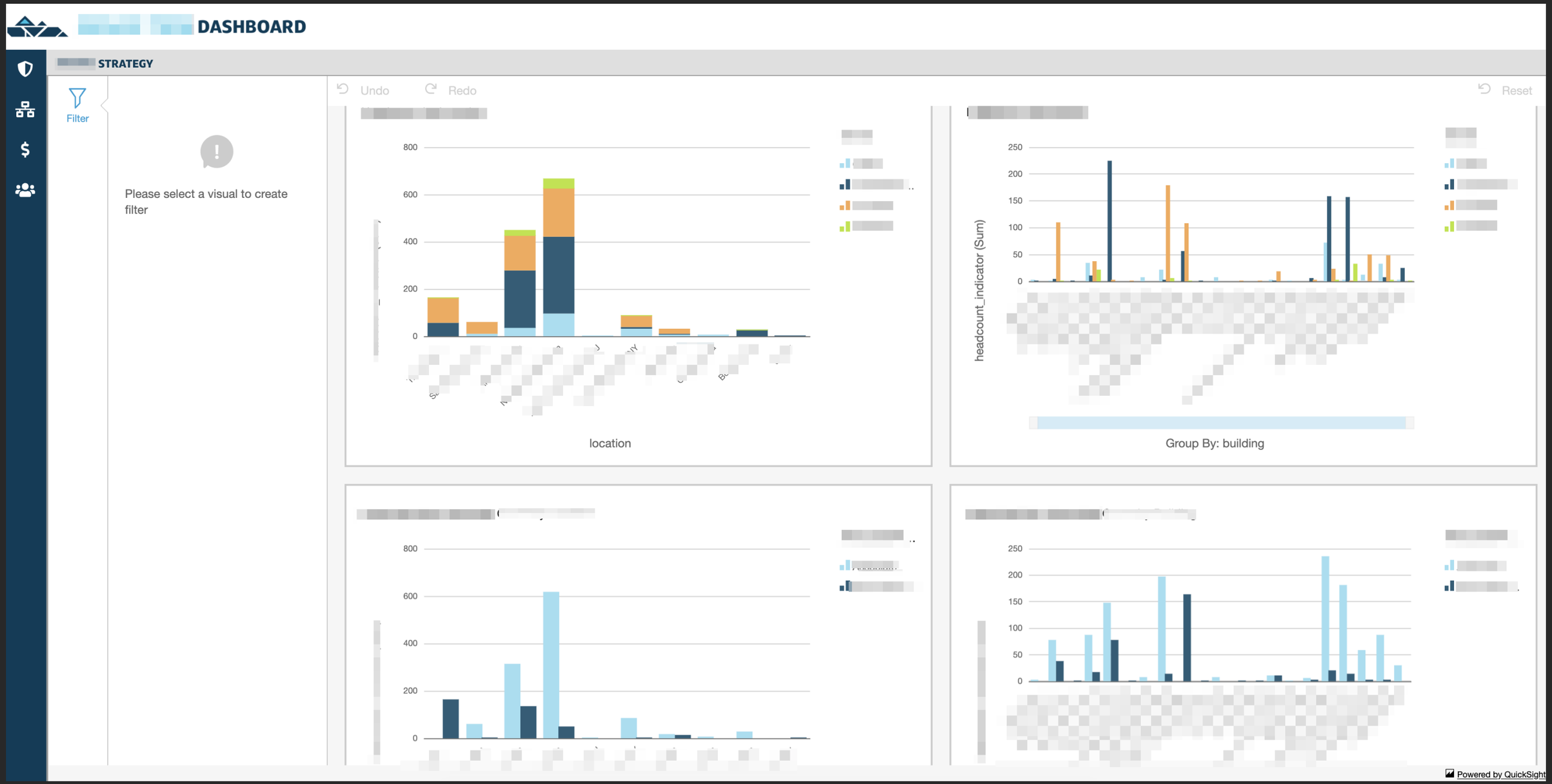
Architecture



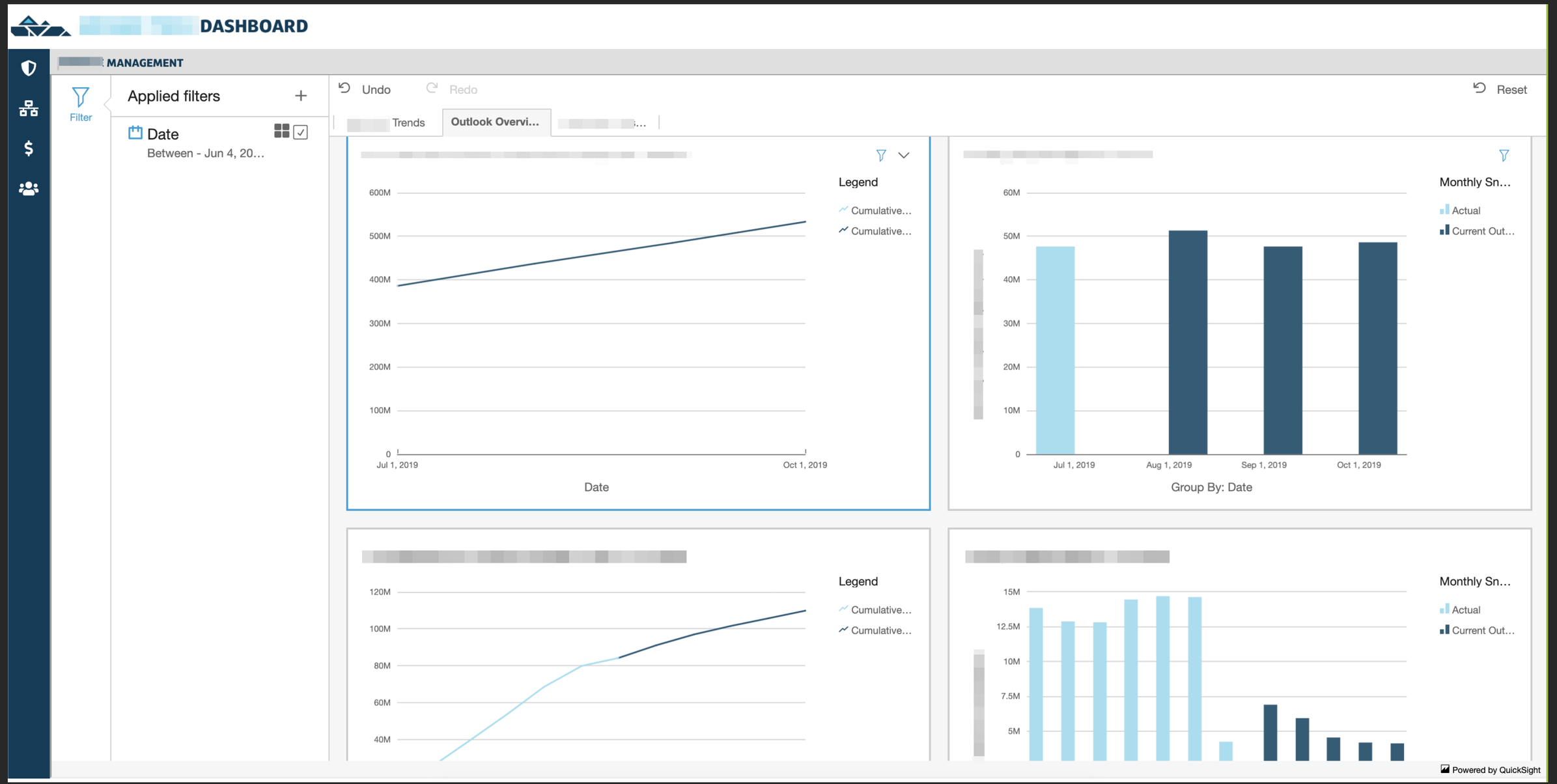
QS embedded visual 1



QS embedded visual 2



QS embedded visual 3



Customer engagement

Customer engagement and support determines the success of any product or service. We have the flexibility of collaborating with the Amazon QuickSight team in several ways.

- Expert sessions
- On-demand trainings
- Early access to beta features
- Enhancement prioritization
- Engineering consultation
- Design-review sessions
- 24/7 support



Prime care at no extra cost

Administration and rollout

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Federated single sign-on (SSO)

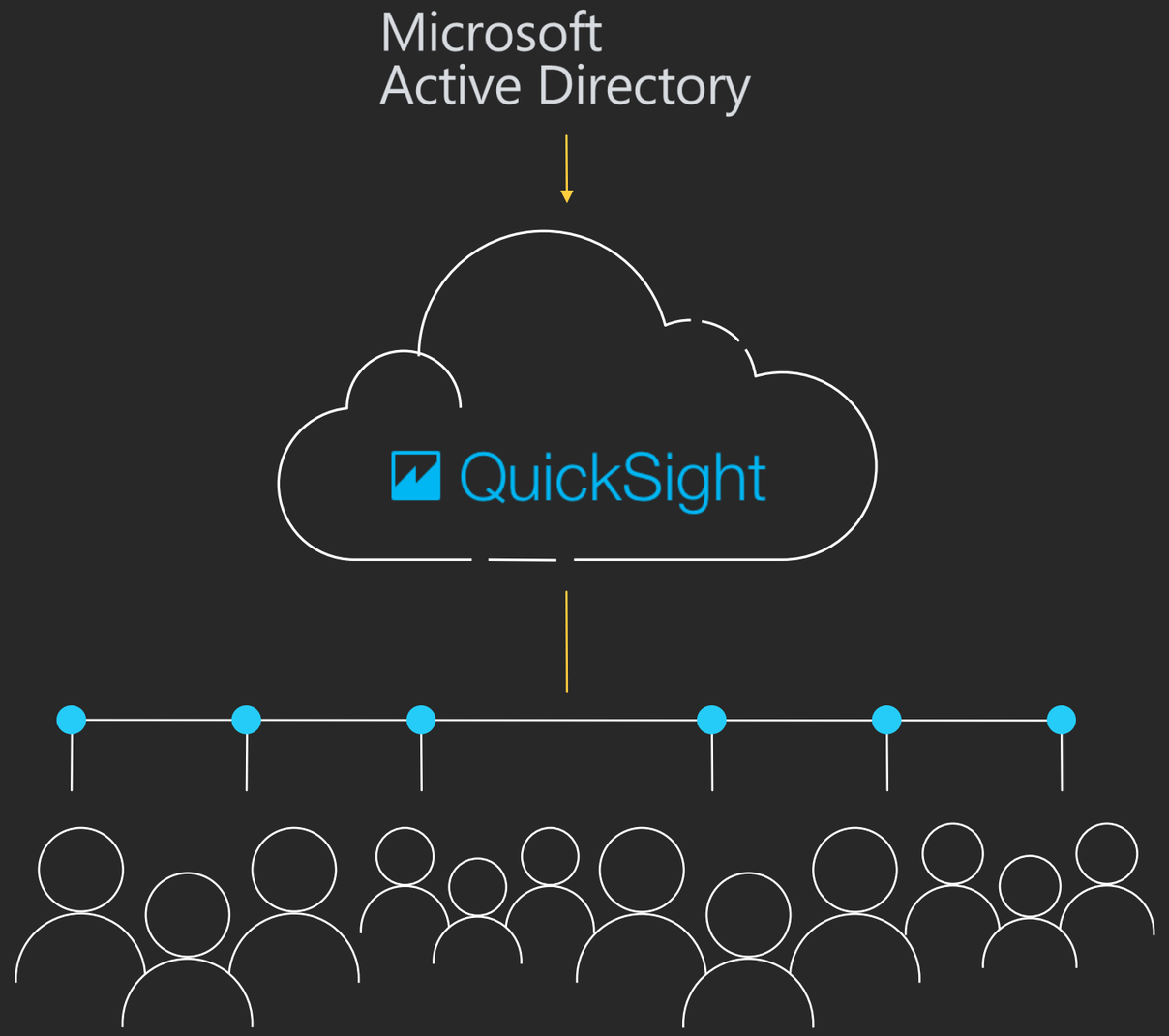
Allows users to sign into their identity-provider portals with existing credentials and then access Amazon QuickSight using SAML 2.0

Federated access with SAML 2.0



User management and AD integration

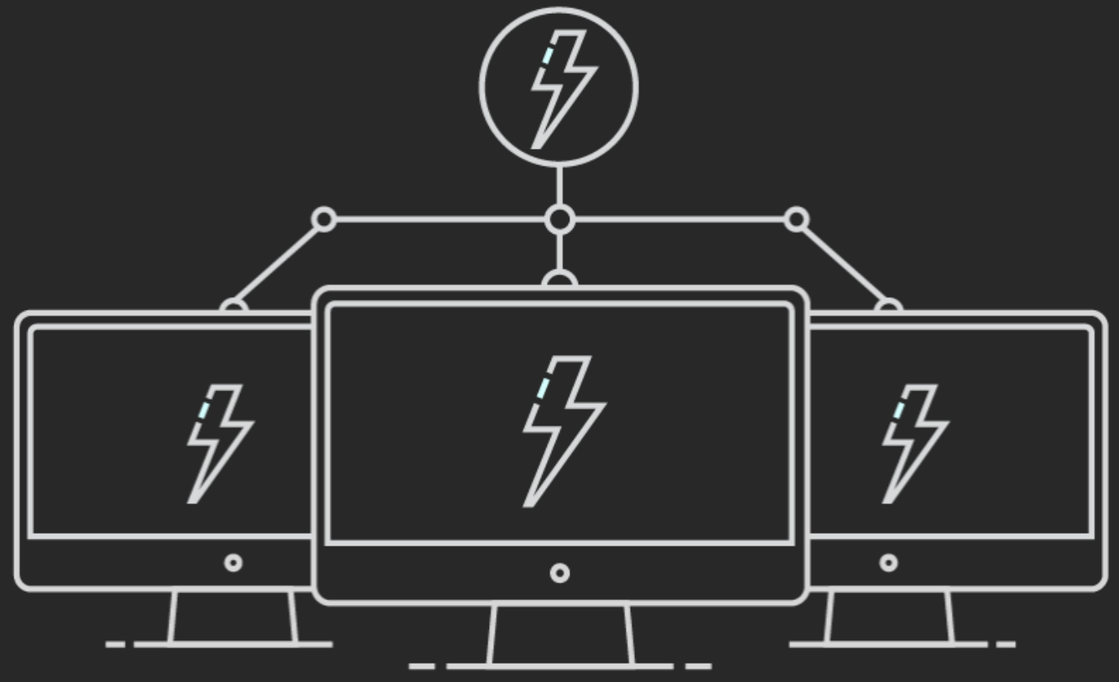
Amazon QuickSight enterprise edition can integrate with your Active Directory to dynamically manage users and groups



Secure content management

As a hosted application, everything you create in QuickSight is always connected, and always under control

- Modify, delete, refresh, and manage user access to everything
- Named user access with security permissions
- Track and manage all of your content and easily see who has access to what

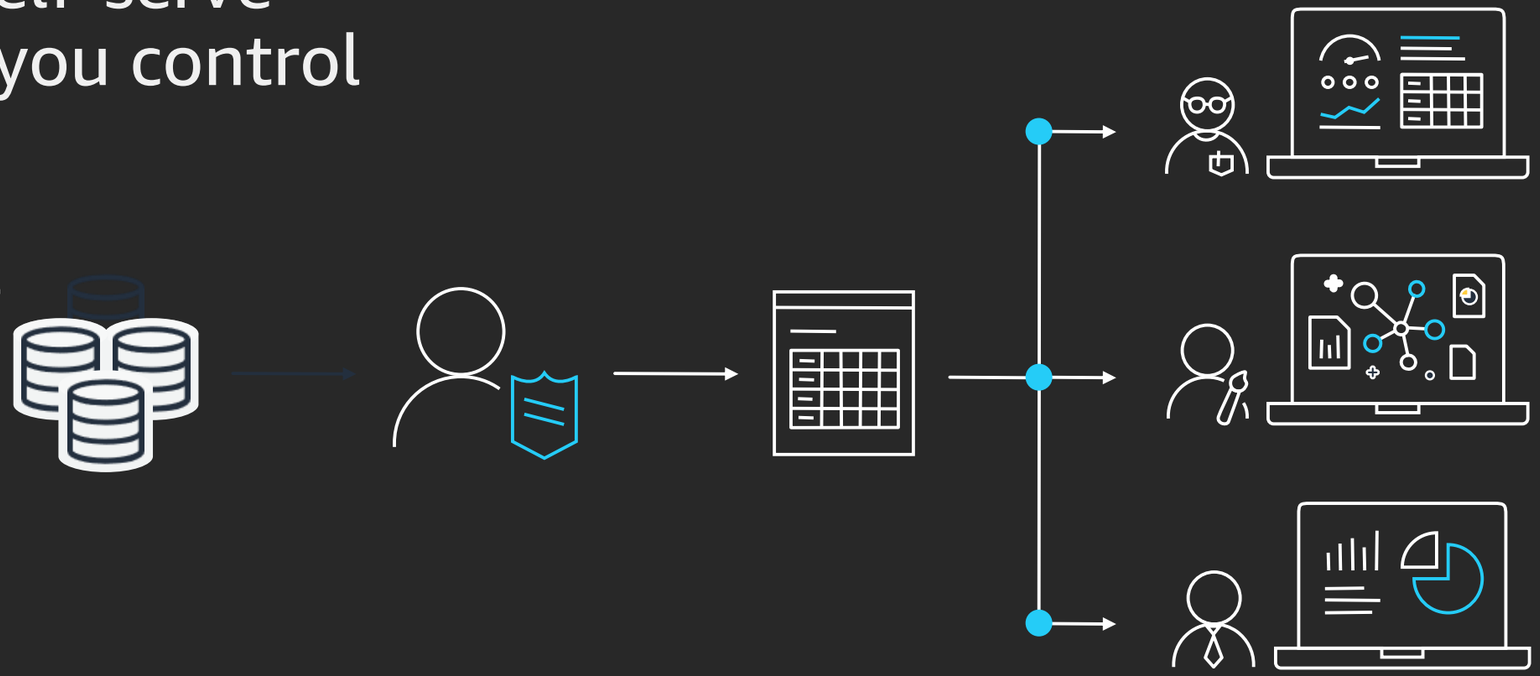


Data governance

Create managed datasets that give power users and authors the flexibility to perform self-serve analytics on data that you control

Create datasets that:

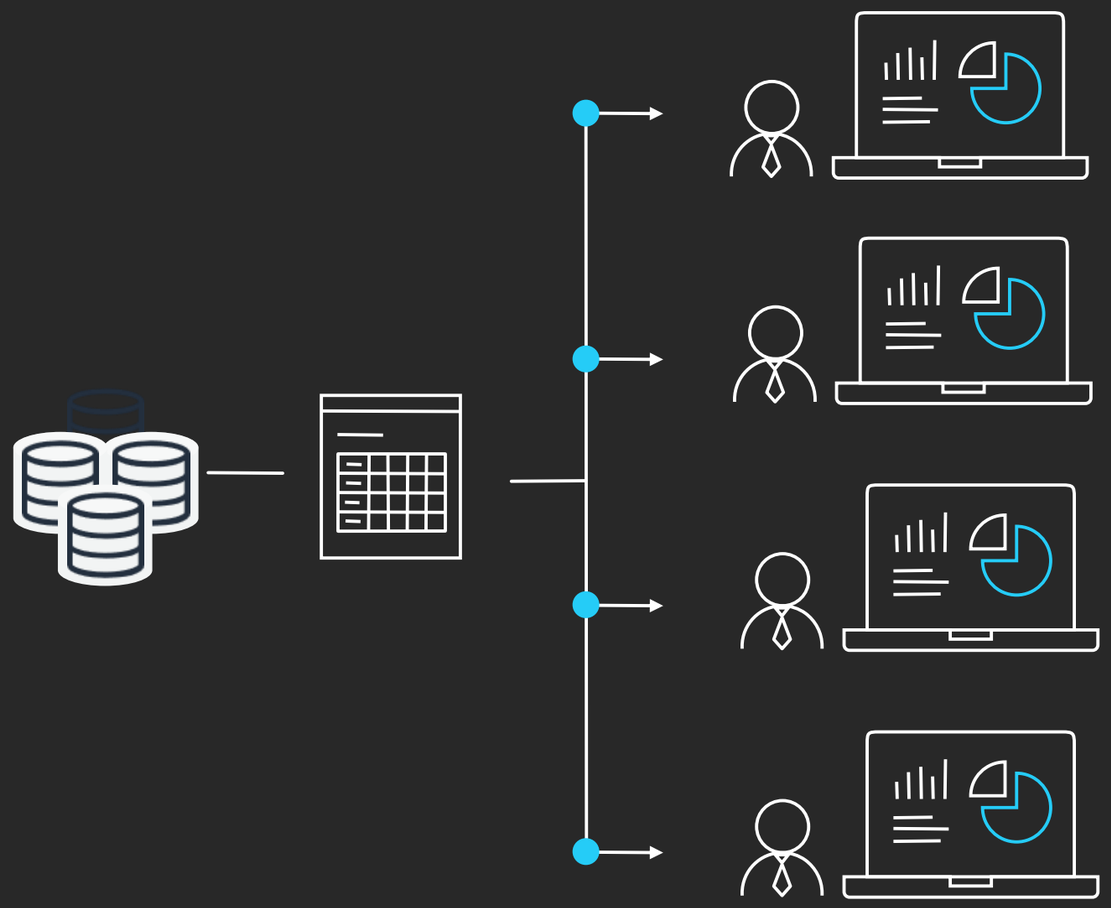
- Can be shared with any user
- Automatically refresh
- Have row-level security
- Users cannot modify
- Dynamically update with changes



Row-level security

Row-level security allows you to create dashboards and reports that display different data for different users

- Create a single dashboard for multiple users with different roles or data access
- Centrally govern access at the dataset level
- Works with email reports!

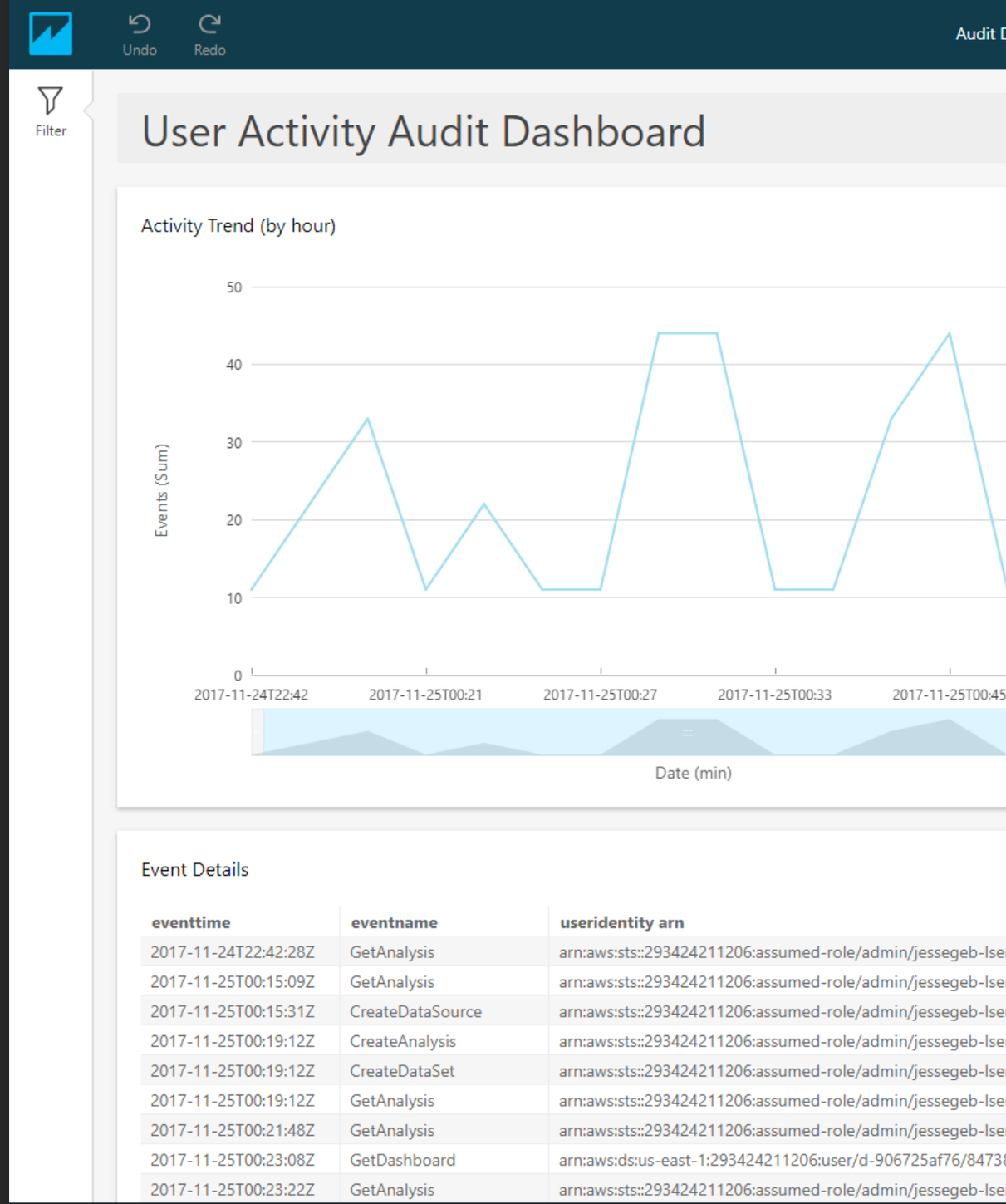


Auditing and logging

Keep track of your account with AWS CloudTrail for governance, compliance, and auditing purposes

Answer questions such as:

- How many users have seen this dashboard?
- Which dashboards has this user seen?
- Who has created a new dataset?
- When did they create the new dataset?



Related breakouts

ANT217 – Embedding analytics into applications with Amazon QuickSight

ANT302-R – Enhancing your applications with Amazon QuickSight dashboards

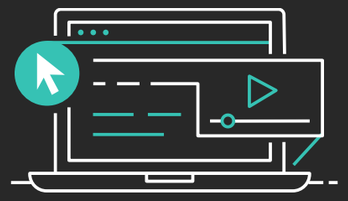
ANT341 – Integrating Amazon SageMaker and Amazon QuickSight

ANT211-R – Developing with the Amazon QuickSight SDK

ANT216-R – ML analytics with Amazon QuickSight

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