

BIG DATA on AWS

Data Visualization



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What is Amazon QuickSight?

What is Amazon QuickSight?

Amazon QuickSight is a fast, cloud-powered business intelligence service that makes it easy to deliver insights to everyone in your organization. Dashboards can be easily created, published and also be embedded with your applications.



- Get started quickly
- Access data from multiple sources
- Take advantage of dynamic visualizations
- Get answers fast
- Tell a story with your data

What is Amazon QuickSight?

Features provided by QuickSight



Pay-per-session pricing



Deliver rich, interactive
dashboards



Explore, analyze, collaborate

What is Amazon QuickSight?



ML Insights



Build predictive dashboards
with Amazon SageMaker



Embed dashboards and
APIs



Connect to your data,
wherever it is



QuickSight mobile



A global solution

How does QuickSight work?

How does QuickSight work?

Connect all kinds of data sources to QuickSight and deliver dashboards, email reports and also embed analytics to your web or mobile applications.



How does QuickSight work?

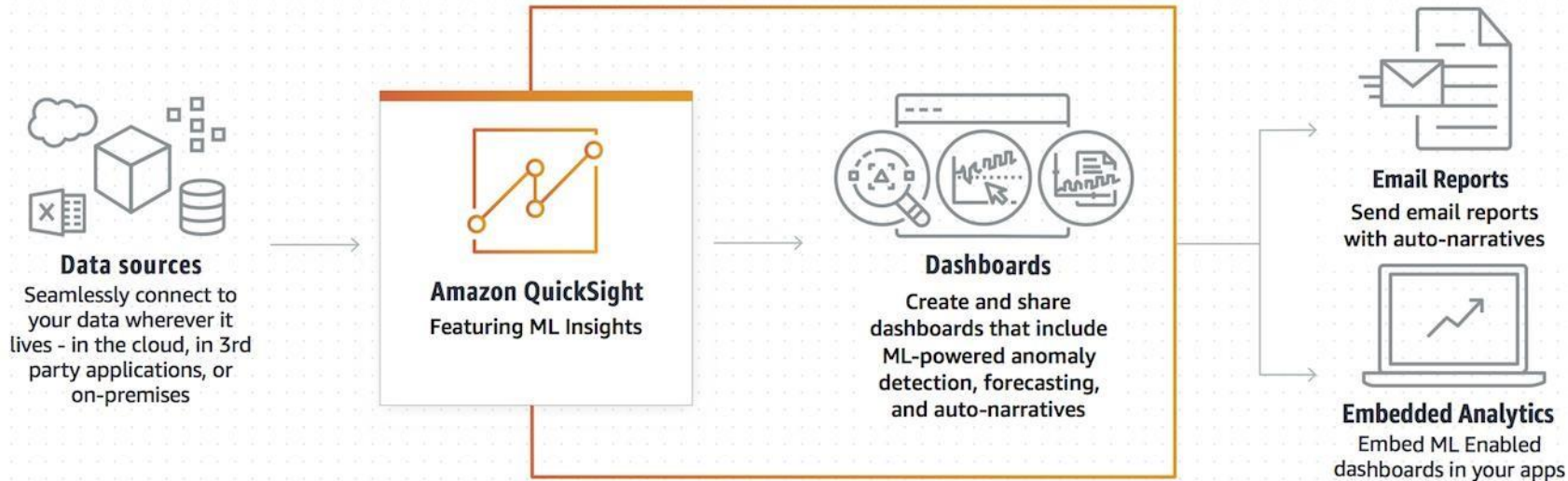
Other Use Cases of QuickSight

Provide Interactive dashboards



How does QuickSight work?

Get insights instantly and effortlessly



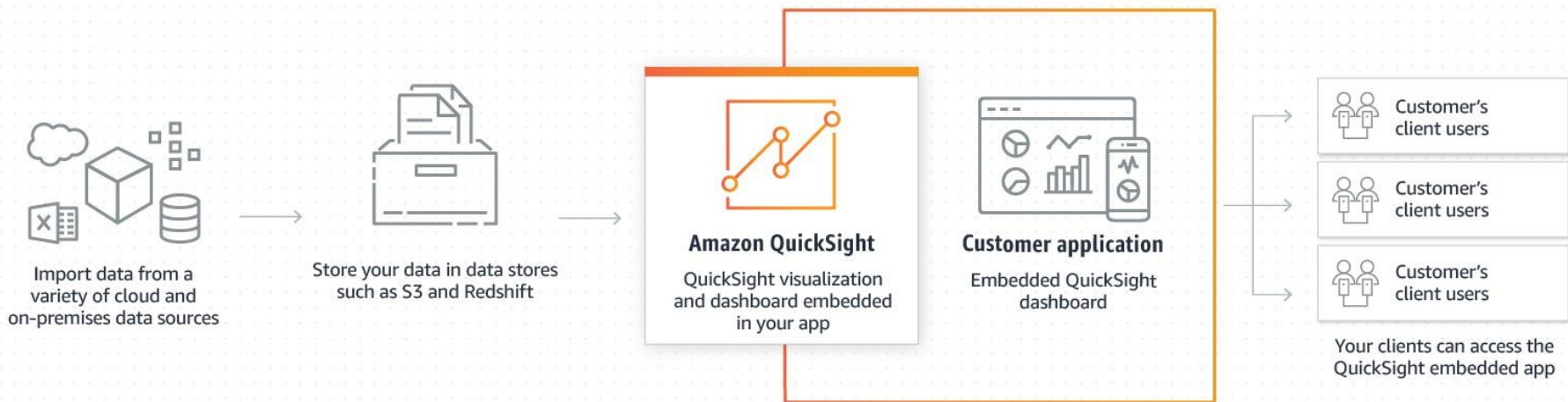
How does QuickSight work?

Insights delivered to your inbox



How does QuickSight work?

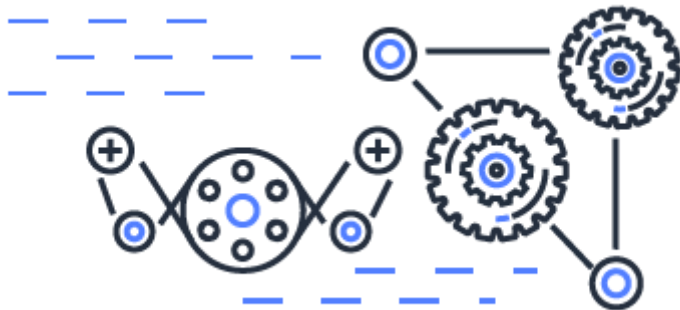
Enhance your apps with QuickSight dashboards



QuickSight SPICE

QuickSight SPICE

SPICE – **S**uper-fast, **P**arallel, **I**n-memory **C**alculation **E**ngine



The storage and processing capacity available in SPICE speeds up the analytical queries that you run against your imported data. By using SPICE, you save time because you don't need to retrieve the data every time you change an analysis or update a visual.

QuickSight SPICE

Every AWS account gets 1 GB of free SPICE storage

ANALYTICS

Free Tier

FREE TRIAL

Amazon QuickSight

1 GB

of SPICE capacity

Fast, easy-to-use, cloud-powered business analytics service at 1/10th the cost of traditional BI solutions.

1 GB of SPICE capacity 1 user perpetual free tier

10GB of SPICE capacity the first 2 months for free for a total of 4 users

Setting up Amazon QuickSight

Setting up Amazon QuickSight

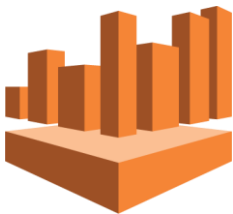
1. Open Amazon QuickSight from AWS Management Console
2. When our AWS account number is displayed for verification purposes, choose **Sign up for QuickSight**
3. Choose **Standard**. To confirm, select Continue. When the screen titled **Create your QuickSight account** appears, make choices for the following items:
 - Type in a unique name for our Amazon QuickSight subscription account
 - Type in our email address to receive Amazon QuickSight service and usage notifications
4. Review the choices made, and then click on **Finish**

Data Sources and Data Sets

Data Sources and Data Sets

You can connect QuickSight to a variety of data sources and create data sources from it

Relational Data Sources




MariaDB




MySQL®




PostgreSQL



 snowflake

Data Sources and Data Sets

You can connect QuickSight to a variety of data sources and create data sources from it

File Data Sources



Data Sources and Data Sets

You can connect QuickSight to a variety of data sources and create data sources from it

SaaS Data Sources



Adobe
Analytics

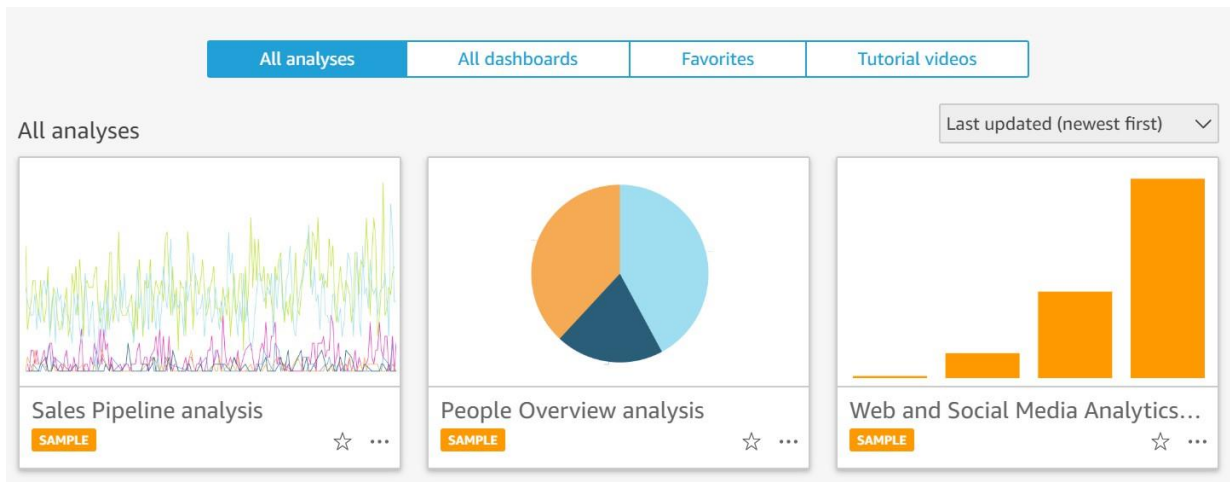


Hands-on: Creating a data set

Creating your own Analysis in QuickSight

Creating your own Analysis in QuickSight

You use an analysis to create and interact with visuals and stories. After you create an analysis and an initial visual, you can expand the analysis.



QuickSight Visualization

QuickSight Visualization

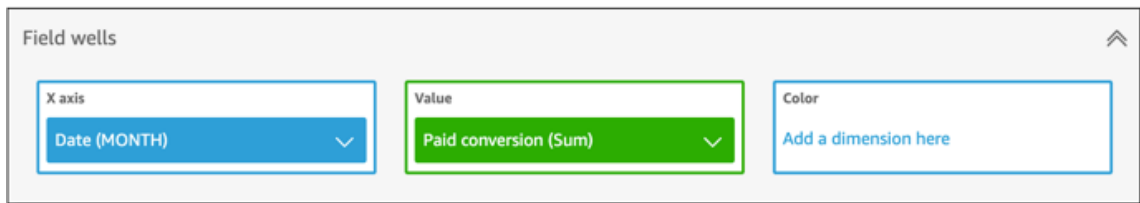
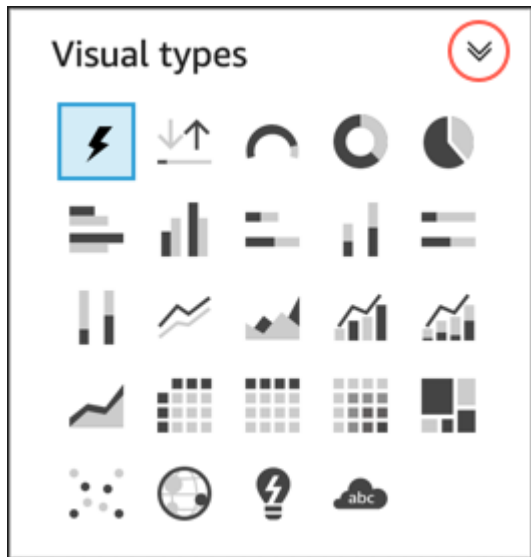
A visual is a graphical representation of your data. You can create a wide variety of visuals in an analysis, using different datasets and visual types.



Amazon QuickSight supports up to 30 datasets in a single analysis, and up to 30 visuals in a single sheet, and a limit of 20 sheets per analysis.

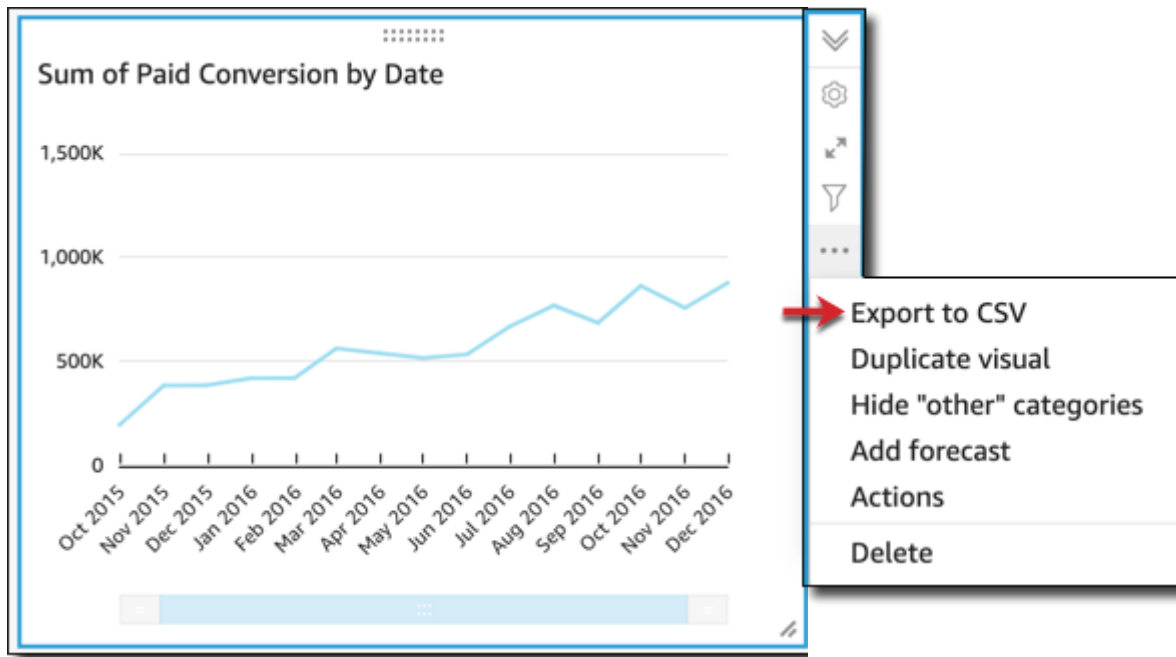
QuickSight Visualization

You get suggested Visuals once you have created your dataset. You can also choose from the ones which are already available. Then select the X and Y fields.



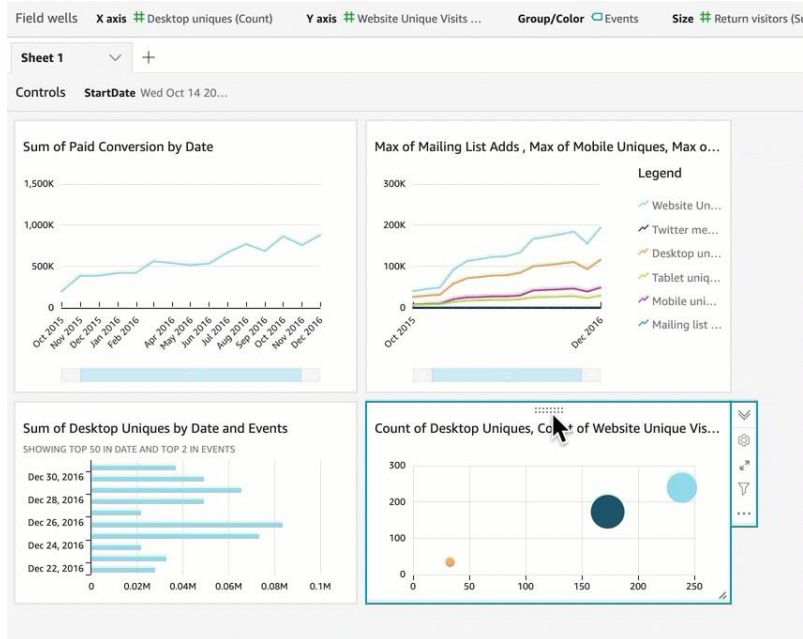
QuickSight Visualization

Once you have created visualizations, you can also export the visual data into a CSV file



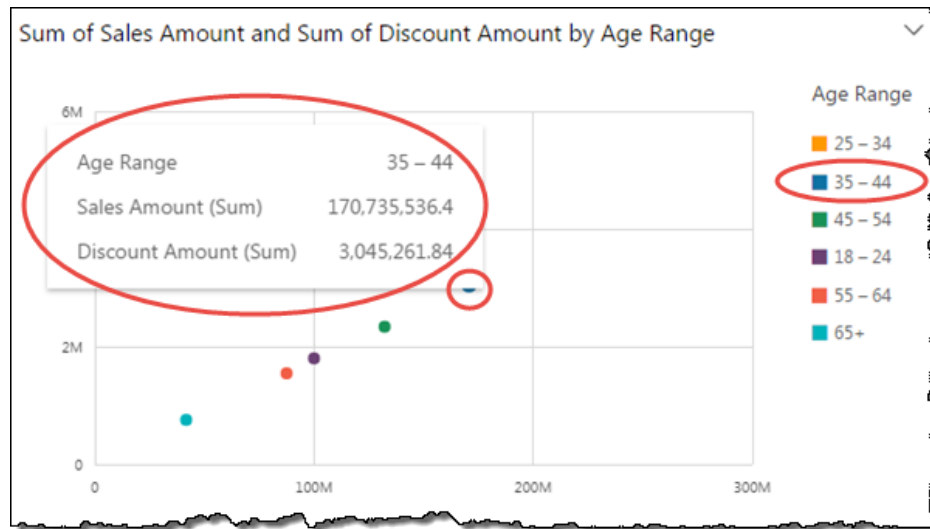
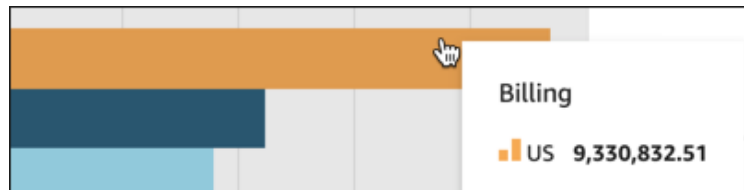
QuickSight Visualization

It has a easy drag and drop feature which can be used to easily change location of visuals



QuickSight Visualization

To view the information about a certain part of a visual, you just have to hover the mouse pointer over it. Can be a bar chart or a scatter plot, you will be able to see the data.

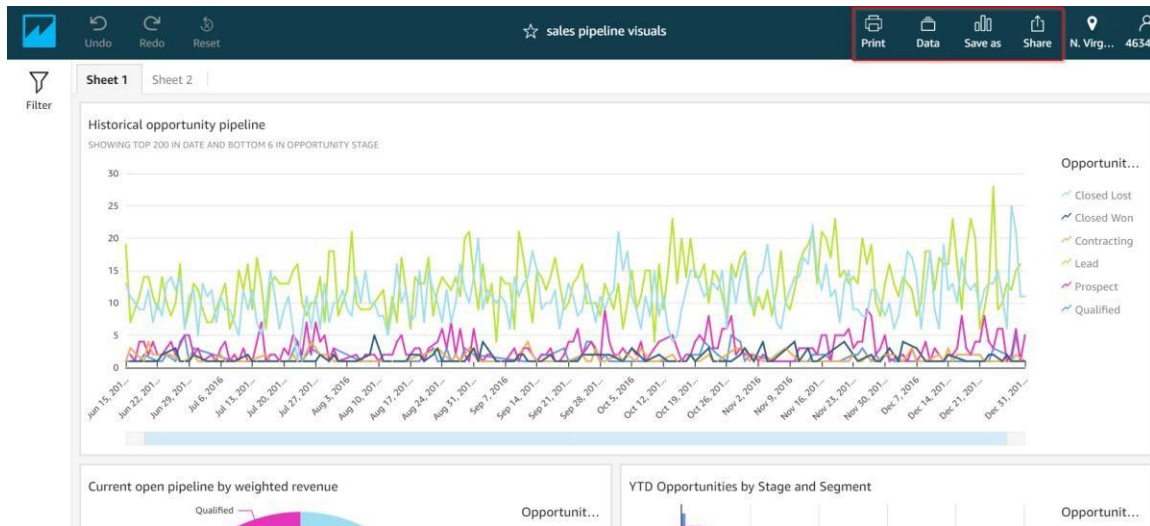


Hands-on: Creating various
visualizations on that data set

QuickSight Dashboards

QuickSight Dashboards

A dashboard is a read-only snapshot of an analysis that you can share with other Amazon QuickSight users for reporting purposes.



When you share a dashboard, you specify which users have access to it. Users who are dashboard viewers can view and filter the dashboard data.

QuickSight Dashboards

You can share your dashboards through email reports. It can be sent once or also set in repeat: Once a day, a week or a month

The image shows a screenshot of the QuickSight dashboard sharing interface, divided into two main sections: "1. Set the schedule for the report" and "2. Customize email text and report preference".

Section 1: Set the schedule for the report

- Schedule:** A dropdown menu is open, showing options: "Send once (Does not repeat)", "Repeat once a day", "Repeat once a week", and "Repeat once a month". The "Send once (Does not repeat)" option is currently selected.
- Send first report on:** A text input field containing "2018-08-09 17:00".
- Time zone:** A text input field containing "America/Los Angeles".
- Buttons:** A "Pause this report" button is visible at the bottom.

Section 2: Customize email text and report preference

- Report title:** A text input field containing "New Dashboard 1".
- (Optional) E-mail subject line:** A text input field containing "My test email report".
- (Optional) E-mail body text:** A text input field containing "This is my optional email body text".
- Optimize report for:** Two radio button options are shown:
 - ☒ Viewing on a desktop (Preserve the dashboard layout)
 - ☐ Viewing on a mobile device (Display visuals in a single column)

Dashboard Visuals:

The background of the interface shows a dashboard titled "Opportunity" with a line chart. The chart displays multiple data series over time, with the following legend:

- Closed Lc (Blue line)
- Closed W (Green line)
- Contracti (Orange line)
- Lead (Yellow line)
- Prospect (Pink line)
- Qualified (Purple line)

Top Navigation Bar:

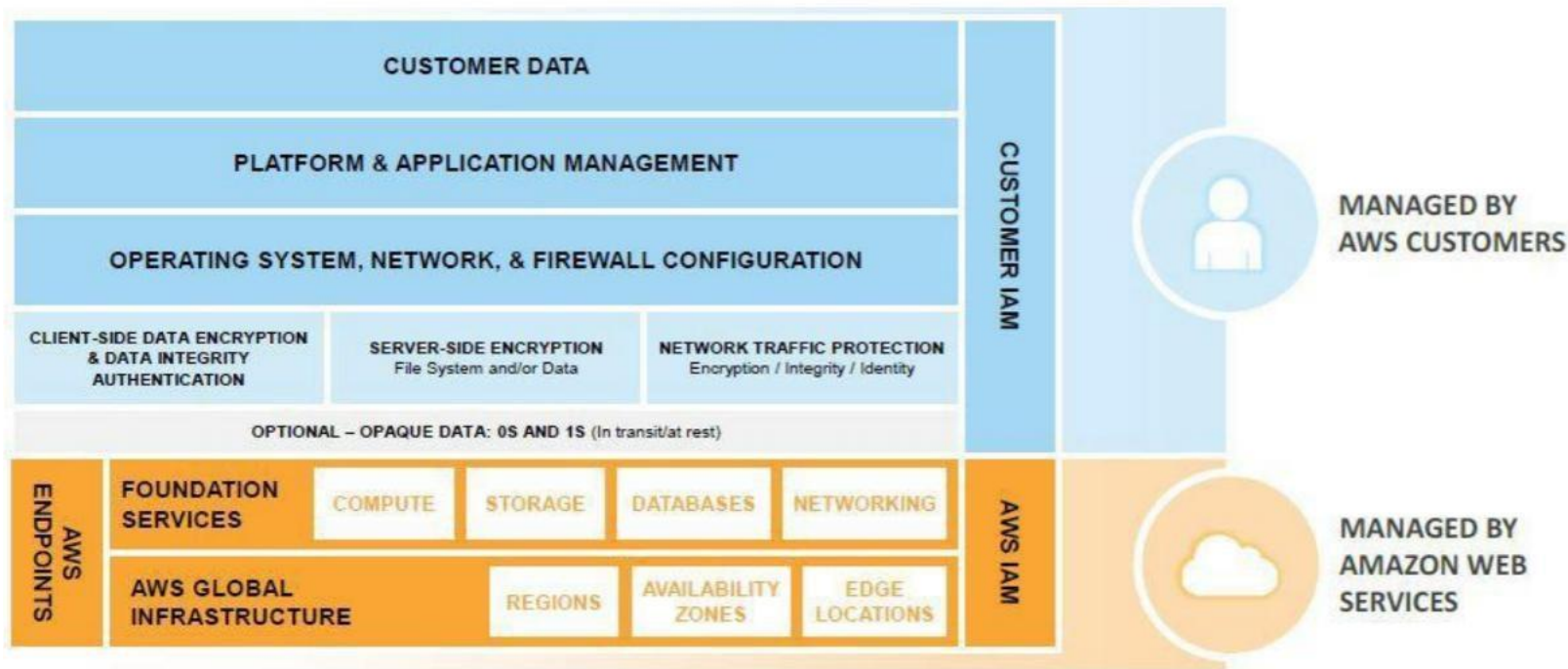
The top navigation bar includes icons for "Print", "Data", "Save as", "Share", and "N. Virg...". The "Share" icon is highlighted, and a dropdown menu is open, showing options: "Share dashboard" and "Email report".

Hands-on: Creating a QuickSight dashboard

Security Best Practices

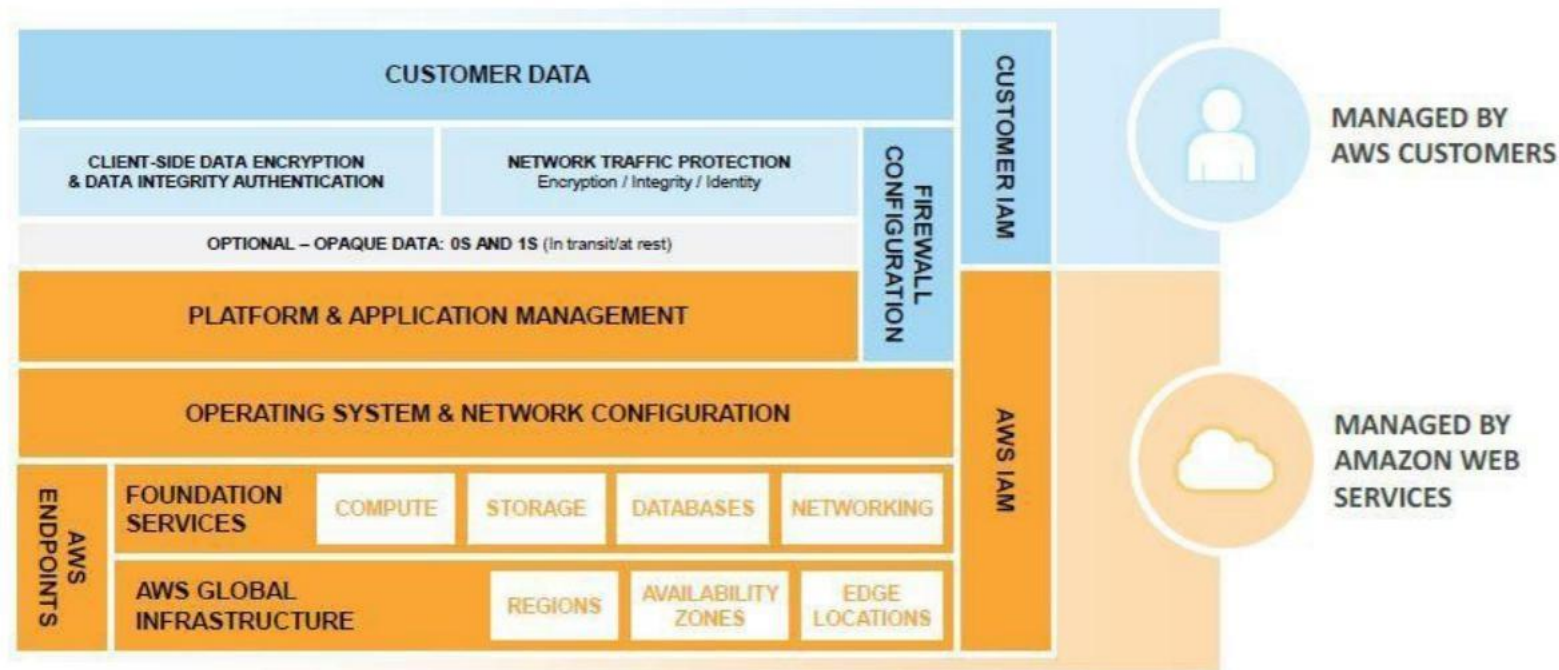
Security Best Practices

Shared Responsibility Model for Infrastructure Services



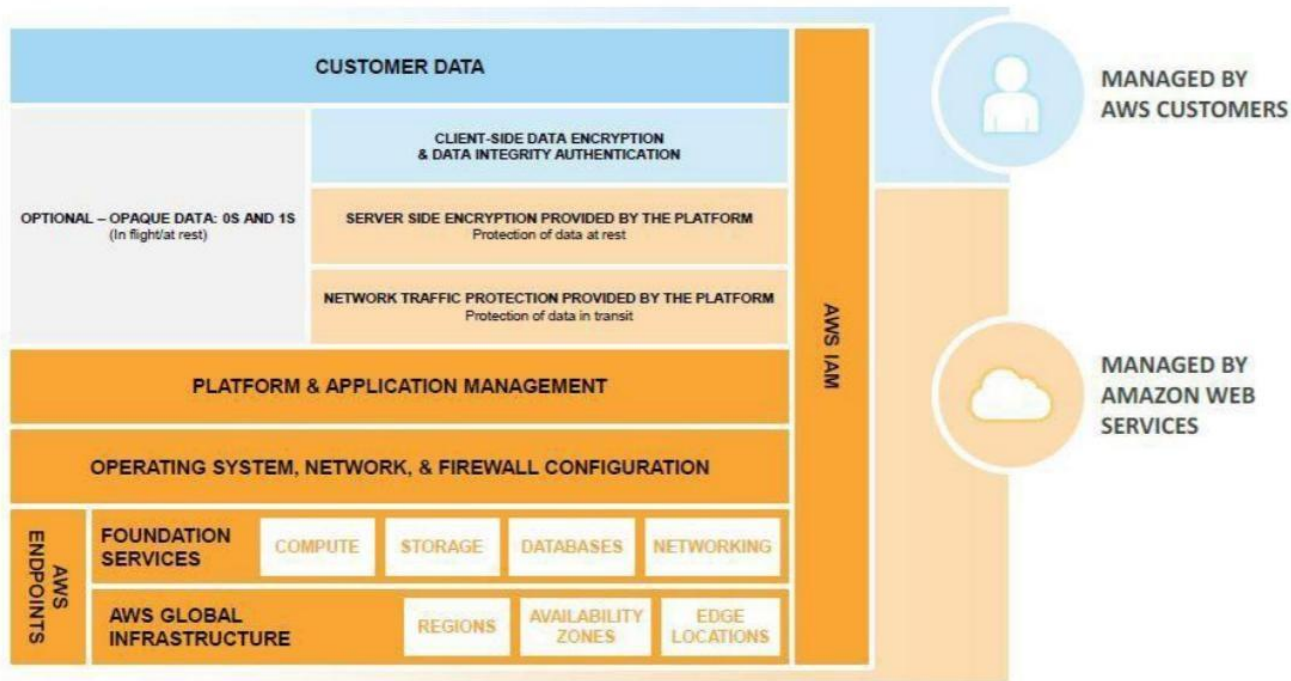
Security Best Practices

Shared Responsibility Model for Container Services



Security Best Practices

Shared Responsibility Model for Abstracted Services



Security Best Practices

Business Requirement	Proposed Design	Comments
Centralized security management	Single AWS account	Centralize information security management and minimize overhead.
Separation of production, development, and testing environments	Three AWS accounts	Create one AWS account for production services, one for development, and one for testing.
Multiple autonomous departments	Multiple AWS accounts	Create separate AWS accounts for each autonomous part of the organization. You can assign permissions and policies under each account.
Centralized security management with multiple autonomous independent projects	Multiple AWS accounts	Create a single AWS account for common project resources (such as DNS services, Active Directory, CMS etc.). Then create separate AWS accounts per project. You can assign permissions and policies under each project account and grant access to resources across accounts.

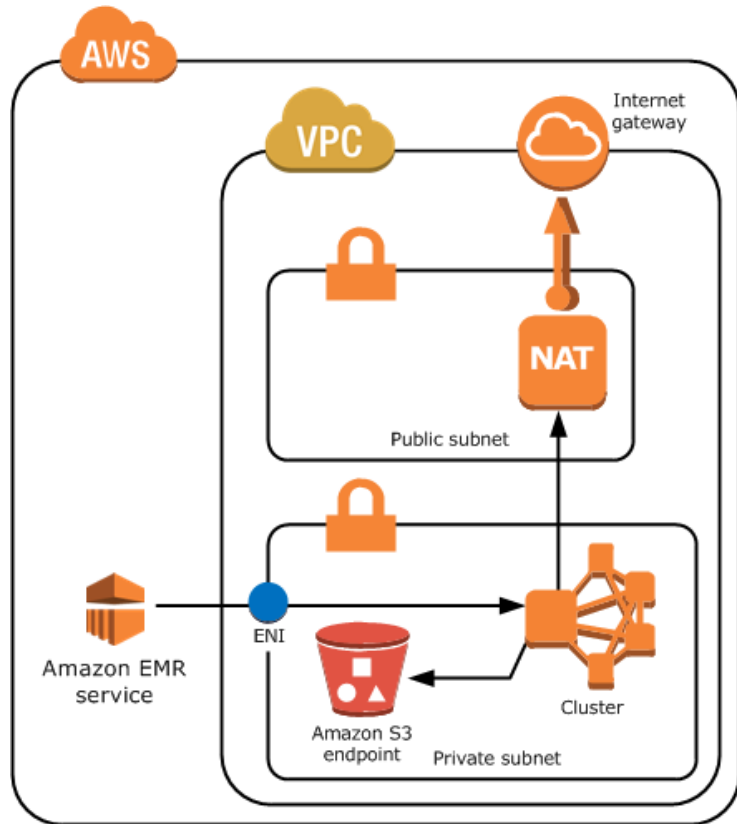
https://d1.awsstatic.com/whitepapers/Security/AWS_Security_Best_Practices.pdf

EMR Security

EMR Security

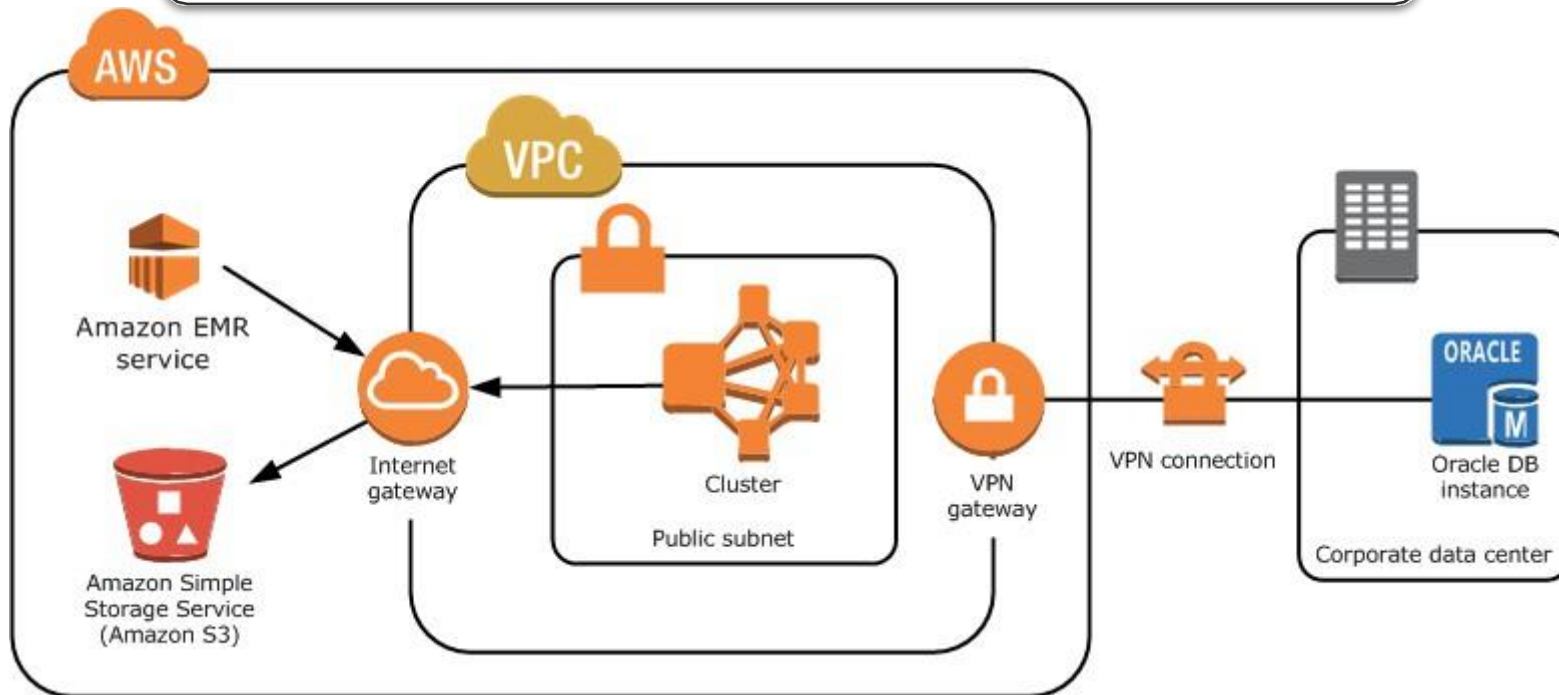
EMR cluster in a private subnet which can communicate only with the EMR service directly.

The cluster can communicate with other services outside the subnet with the use of a NAT gateway.



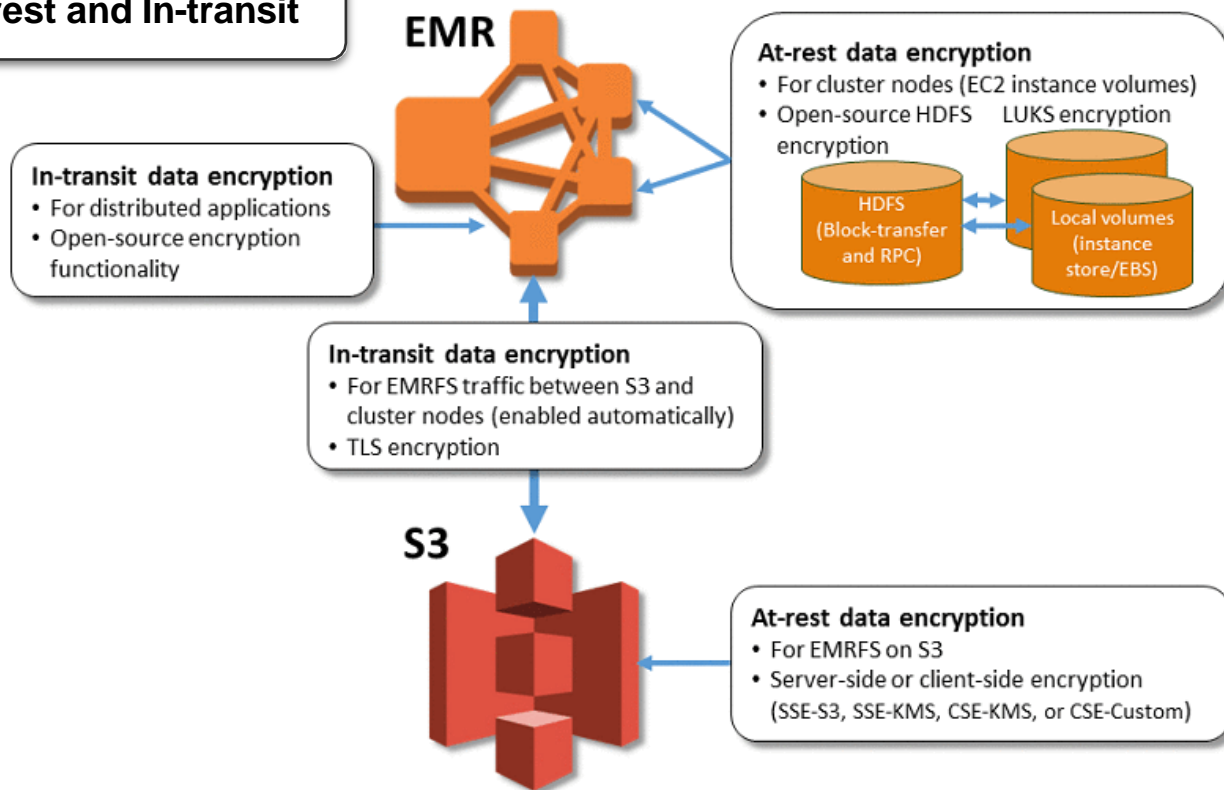
EMR Security

This EMR cluster can access all public services, and also communicate with your own network using a VPN gateway.



EMR Security

Encryption At-rest and In-transit



Redshift Security

Redshift Security

Cluster encryption — To encrypt the data in all your user-created tables, you can enable cluster encryption when you launch the cluster.

SSL connections — To encrypt the connection between your SQL client and your cluster, you can use secure sockets layer (SSL) encryption.

Load data encryption — To encrypt your table load data files when you upload them to Amazon S3, you can use either server-side encryption or client-side encryption. When you load from server-side encrypted data, Amazon S3 handles decryption transparently. When you load from client-side encrypted data, the Amazon Redshift COPY command decrypts the data as it loads the table.

Data in transit — To protect your data in transit within the AWS cloud, Amazon Redshift uses hardware accelerated SSL to communicate with Amazon S3 or Amazon DynamoDB for COPY, UNLOAD, backup, and restore operations.

Column-level access control — To have column-level access control for data in Amazon Redshift, use column-level grant and revoke statements without having to implement views-based access control or use another system.

Introduction to MicroStrategy

Introduction to MicroStrategy

MicroStrategy is an enterprise business intelligence (BI) application software vendor. The MicroStrategy platform supports interactive dashboards, scorecards, highly formatted reports, ad hoc query, thresholds and alerts, and automated report distribution.



Introduction to MicroStrategy

Features of MicroStrategy:

- Advanced and predictive analytics
- Real-time reporting
- Business intelligence
- Easy to use and maintain
- High performance
- Big data solutions



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