

# Amazon quick sight

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is visualisation tool to help the build the graphs to see the how it works

## What is QuickSight?

- Fast, easy, cloud-powered business analytics service
- Allows all employees in an organization to:
  - Build visualizations
  - Perform ad-hoc analysis
  - Quickly get business insights from data
  - Anytime, on any device (browsers, mobile)
- Serverless



**Amazon  
QuickSight**

# QuickSight Data Sources

- Redshift
- Aurora / RDS
- Athena
- EC2-hosted databases
- Files (S3 or on-premises)
  - Excel
  - CSV, TSV
  - Common or extended log format
- Data preparation allows limited ETL



# SPICE

- Data sets are imported into SPICE
  - Super-fast, Parallel, In-memory Calculation Engine
  - Uses columnar storage, in-memory, machine code generation
  - Accelerates interactive queries on large datasets
- Each user gets 10GB of SPICE
- Highly available / durable
- Scales to hundreds of thousands of users
- Can accelerate large queries that would time out in direct query mode (hitting Athena directly)
  - But if it takes more than 30 minutes to import your data into SPICE it will still time out

spice is most fast and interactive

## QuickSight Use Cases

- Interactive ad-hoc exploration / visualization of data
- Dashboards and KPI's
- Analyze / visualize data from:
  - Logs in S3
  - On-premise databases
  - AWS (RDS, Redshift, Athena, S3)
  - SaaS applications, such as Salesforce
  - Any JDBC/ODBC data source

# QuickSight Anti-Patterns

- Highly formatted canned reports
  - QuickSight is for ad-hoc queries, analysis, and visualization
- ETL
  - Use Glue instead, although QuickSight can do some transformations

## QuickSight Security

- Multi-factor authentication on your account
- VPC connectivity
  - Add QuickSight's IP address range to your database security groups
- Row-level security
  - New for 2021: Column-level security too (CLS) – Enterprise edition only
- Private VPC access
  - Elastic Network Interface, AWS Direct Connect

# QuickSight Security

- Resource access
  - Must ensure QuickSight is authorized to use Athena / S3 / your S3 buckets
  - This can be managed within the QuickSight console (Manage Quicksight / Security & Permissions)\
- Data access
  - Can create IAM policies to restrict what data in S3 given QuickSight users can access

## Quicksight + Redshift: Security

- By default Quicksight can only access data stored IN THE SAME REGION as the one Quicksight is running within
- So if Quicksight is running in one region, and Redshift in another, that's a problem
- A VPC configured to work across AWS regions won't work!
- Solution: **create a new security group with an inbound rule authorizing access from the IP range of QuickSight servers in that region**
  - Those ranges are documented at <https://docs.aws.amazon.com/quicksight/latest/user/regions.html>

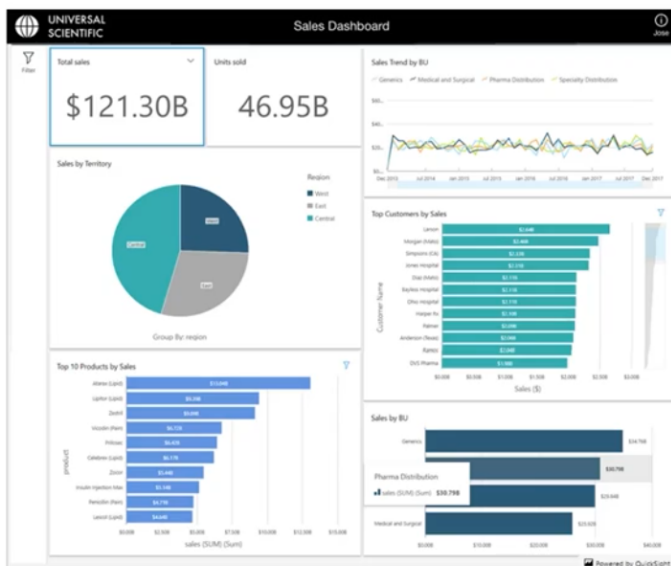
# QuickSight User Management

- Users defined via IAM, or email signup
- Active Directory connector with QuickSight Enterprise Edition
  - All keys are managed by AWS; you CANNOT use customer-provided keys
  - Enterprise edition only!
  - Can tweak security access using IAM if needed

## QuickSight Pricing

- Annual subscription
  - Standard: \$9 / user / month
  - Enterprise: \$18 / user / month
- Extra SPICE capacity (beyond 10GB)
  - \$0.25 (standard) \$0.38 (enterprise) / GB / user / month
- Month to month
  - Standard: \$12 / user / month
  - Enterprise: \$24 / user / month
- Enterprise edition
  - Encryption at rest
  - Microsoft Active Directory integration

## QuickSight Dashboards

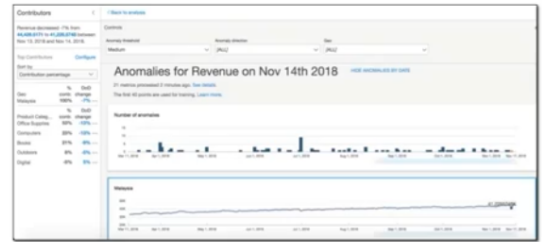


- Read-only snapshots of an analysis
- Can share with others with Quicksight access
- Can share even more widely with *embedded dashboards*
  - Embed within an application
  - Authenticate with Active Directory / Cognito / SSO
  - QuickSight Javascript SDK / QuickSight API
  - Whitelist domains where embedding is allowed



# Quicksight Machine Learning Insights

- ML-powered anomaly detection
  - Uses Random Cut Forest
  - Identify top contributors to significant changes in metrics
- ML-powered forecasting
  - Also uses Random Cut Forest
  - Detects seasonality and trends
  - Excludes outliers and imputes missing values
- Autonarratives
  - Adds “story of your data” to your dashboards
- Suggested Insights
  - “Insights” tab displays read-to-use suggested insights



Total Revenue for Nov 17, 2018 **decreased by 2.15%**  
**(-131,031.34720000066)** from 6,100,697.1616 to  
5,969,665.8144. Compounded growth rate for the last 4 days is  
-0.26% **worse than expected.**

## Quicksight Q

- Machine learning-powered
- Answers business questions with Natural Language Processing
  - “What are the top-selling items in Florida?”
- Offered as an add-on for given regions
- Personal training on how to use it is required
- Must set up *topics* associated with *datasets*
  - Datasets and their fields must be NLP-friendly
  - How to handle dates must be defined

# QuickSight Visual Types

- AutoGraph
- Bar Charts
  - For comparison and distribution (histograms)
- Line graphs
  - For changes over time
- Scatter plots, heat maps
  - For correlation
- Pie graphs, tree maps
  - For aggregation
- Pivot tables
  - For tabular data



## Alternative Visualization Tools

- Web-based visualizations tools (deployed to the public)
  - D3.js
  - Chart.js
  - Highchart.js
- Business Intelligence Tools
  - Tableau
  - MicroStrategy

