

# AWS re:Invent

## Deliver Voice-Automated Serverless BI Solutions in Under 3 Hours

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# Deliver Voice Automated Serverless BI Solutions in Under 3 Hours

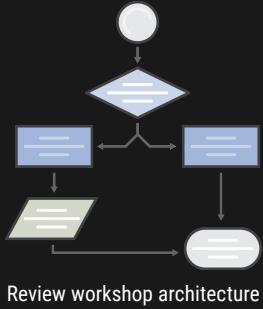
Prior to starting the workshop...

Ensure you have an AWS account with full access:  
<https://aws.amazon.com/resources/create-account/>

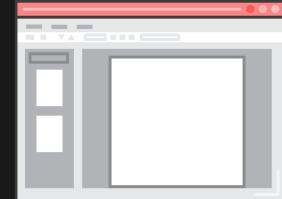
We'll be issuing AWS credits to substantially cover the costs  
of this workshop

# Logistics

We talk  
*(We'll try to keep it short)*



Check access to required products



Quick talk about Amazon Athena and Alexa



Explore data set



Build AWS Lambda, Amazon DynamoDB,  
and Athena resources



Create Alexa skill

# Metrics

How many “likes” or “retweets” have we received in the last month?

Which reseller has sold the most products in the last month?

How many tweets have we posted in the last month?

How many unique monthly users have we had?

What is my monthly revenue?

What page are visitors viewing the most?

How many one-star ratings have we received?

What country has bought the most products in the last month?

What demographic is most appealing to our products?

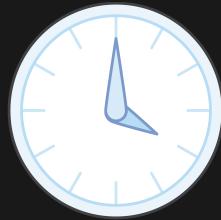
What time of the day do we get the most views?

How many orders have breached our delivery SLA?

# Why do we need to change the delivery model?



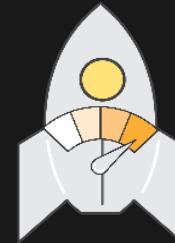
Data is scattered



Traditional ETL takes  
careful design and lead  
time



Traditional data  
warehouses can  
be expensive



What if you can  
make delivering  
metrics fun and  
easy?

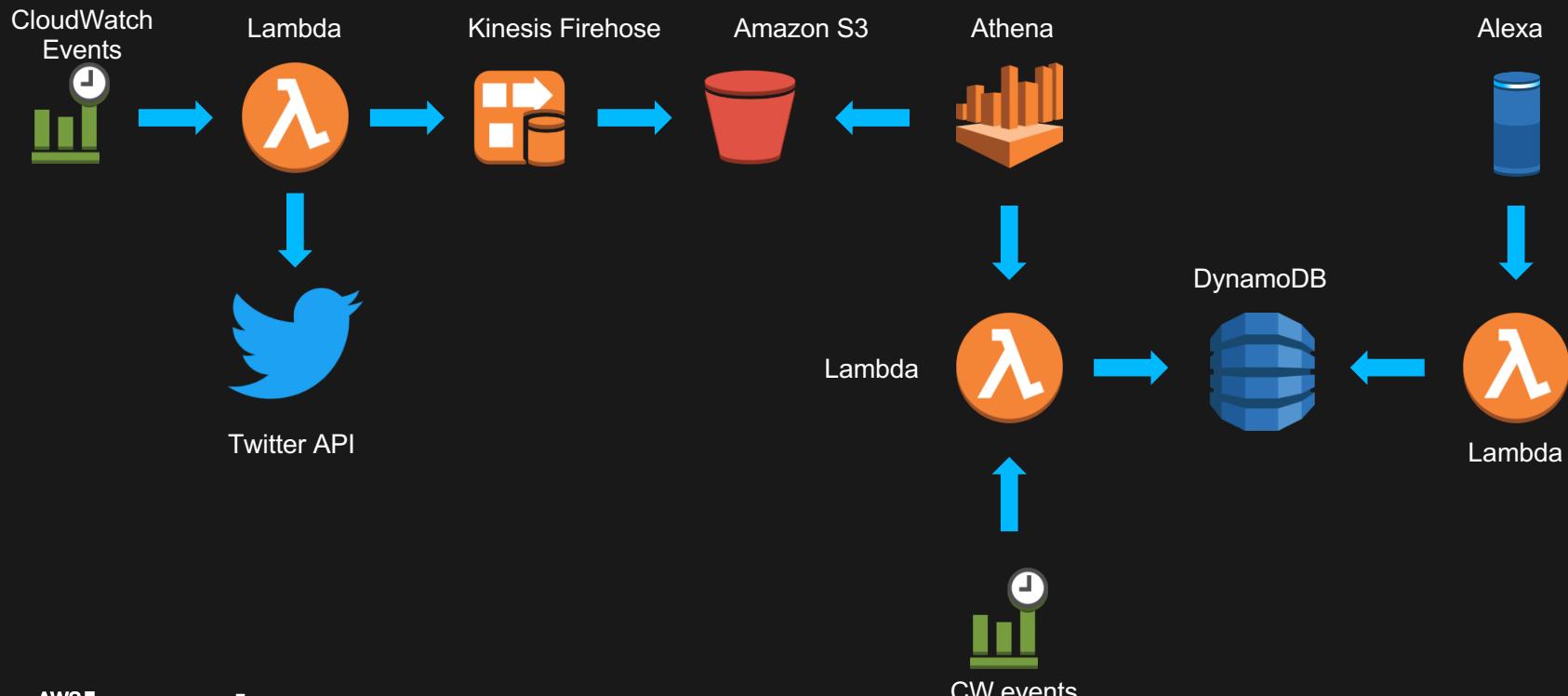
# Prerequisites

- ✓ Want to learn, have fun, and build cool new services to bring back to your organization
- ✓ Foundational AWS knowledge on core services

## *User permissions:*

- ✓ AWS account with admin access
- ✓ Ability to create new AWS Identity and Access Management policies and roles
- ✓ Full access to Athena – Clusterless query engine
- ✓ Full access to Amazon QuickSight – Interactive BI visualizations
- ✓ Full access to Amazon Simple Storage Service – Limitless and durable object store
- ✓ Full access to Lambda – Event-triggered functions
- ✓ Full access to DynamoDB – Managed NoSQL database
- ✓ Full access to Alexa – Voice-powered skills

# The architecture



# Today's workshop

CloudWatch  
Events



Lambda



Kinesis Firehose



Amazon S3



Twitter API

Created in advance

Athena



Lambda



DynamoDB



Alexa



CW events

This workshop

# Athena

Amazon Athena is an **interactive query service** that makes it easy to analyze data directly from Amazon S3 using Standard SQL

# Why Athena?

- Decouple storage from compute
- Serverless – No infrastructure or resources to manage
- Pay only for data scanned
- Schema on read – Same data, many views
- Encrypted
- Standard compliant and open storage formats
- Built on powerful community supported OSS solutions

# Simple pricing

- DDL operations – Free
- SQL operations – Free
- Query concurrency – Free
- Data scanned – \$5 per TB
- Standard Amazon S3 rates for storage, requests, and data transfer apply.

# Familiar technologies under the covers



## Used for DDL functionality

Complex data types

A multitude of formats

Supports data partitioning

Hive compatible SerDe (serializer/deserializer)



## Used for SQL queries

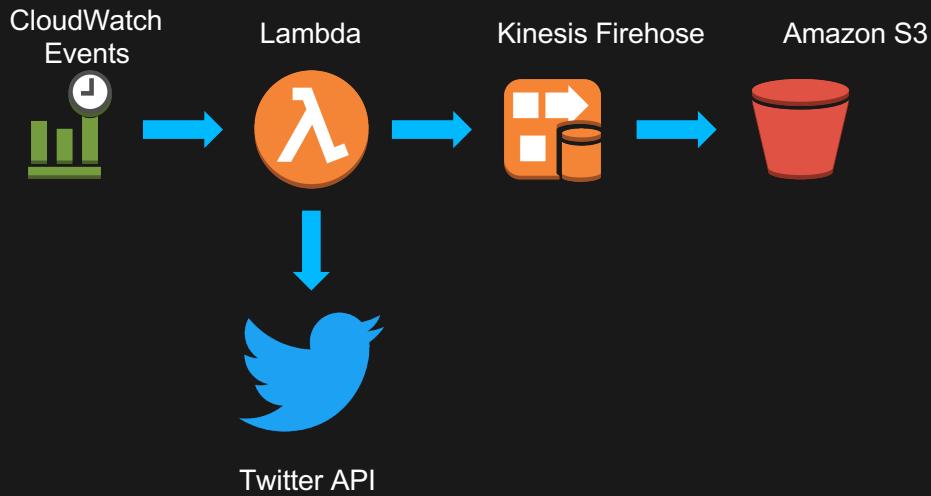
In-memory distributed query engine

ANSI-SQL compatible with extensions

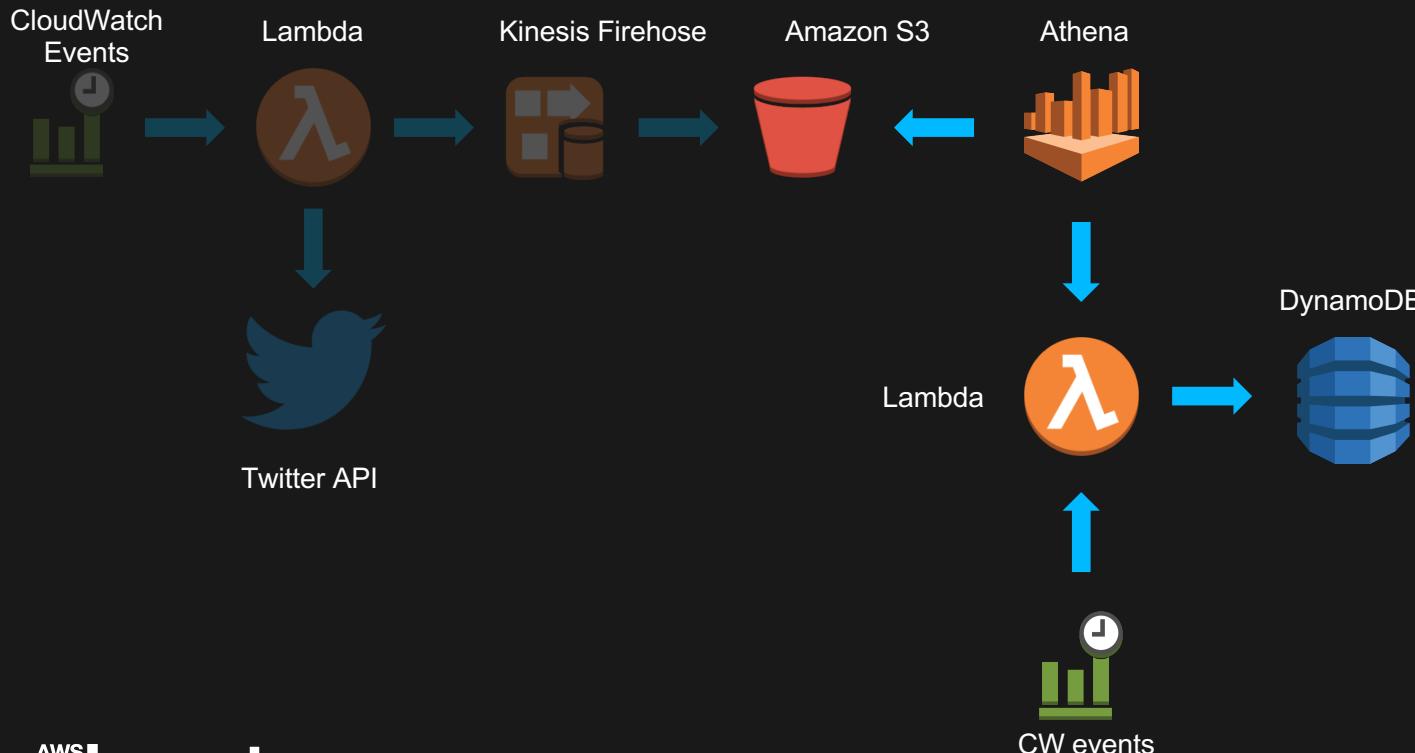
# Our data set

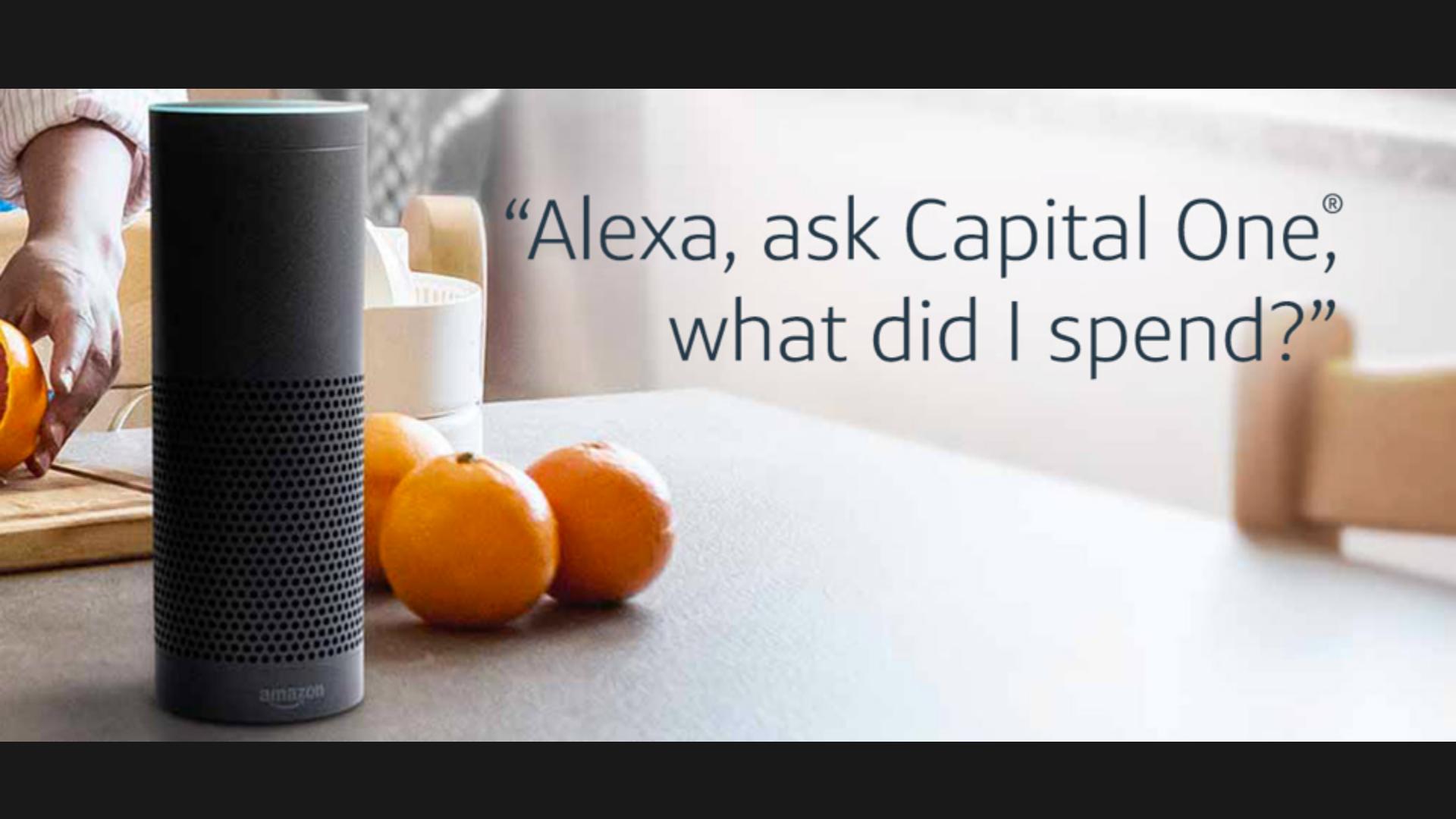
```
{  
    "id": 914642318044655600,  
    "text": "Two months until #reInvent! Check out the session calendar & prepare for reserved seating on Oct. 19!  
http://amzn.to/2fxlvg7",  
    "created": "2017-10-02 00:04:56",  
    "screen_name": " AWSReinvent ",  
    "screen_name_followers_count": 49864,  
    "place": "none",  
    "country": "none",  
    "retweet_count": 7,  
    "favorite_count": 21  
}
```

# How we get the data



# How we query the data





“Alexa, ask Capital One,  
what did I spend?”<sup>®</sup>

# Creating an Alexa skill

Voice user interface



Programming logic



<https://developer.amazon.com> <https://aws.amazon.com>

# Voice user interface: Utterance, intent, slots

WhatsMyMetric

Intent

“What’s my”  
“Tell me my”

Utterance

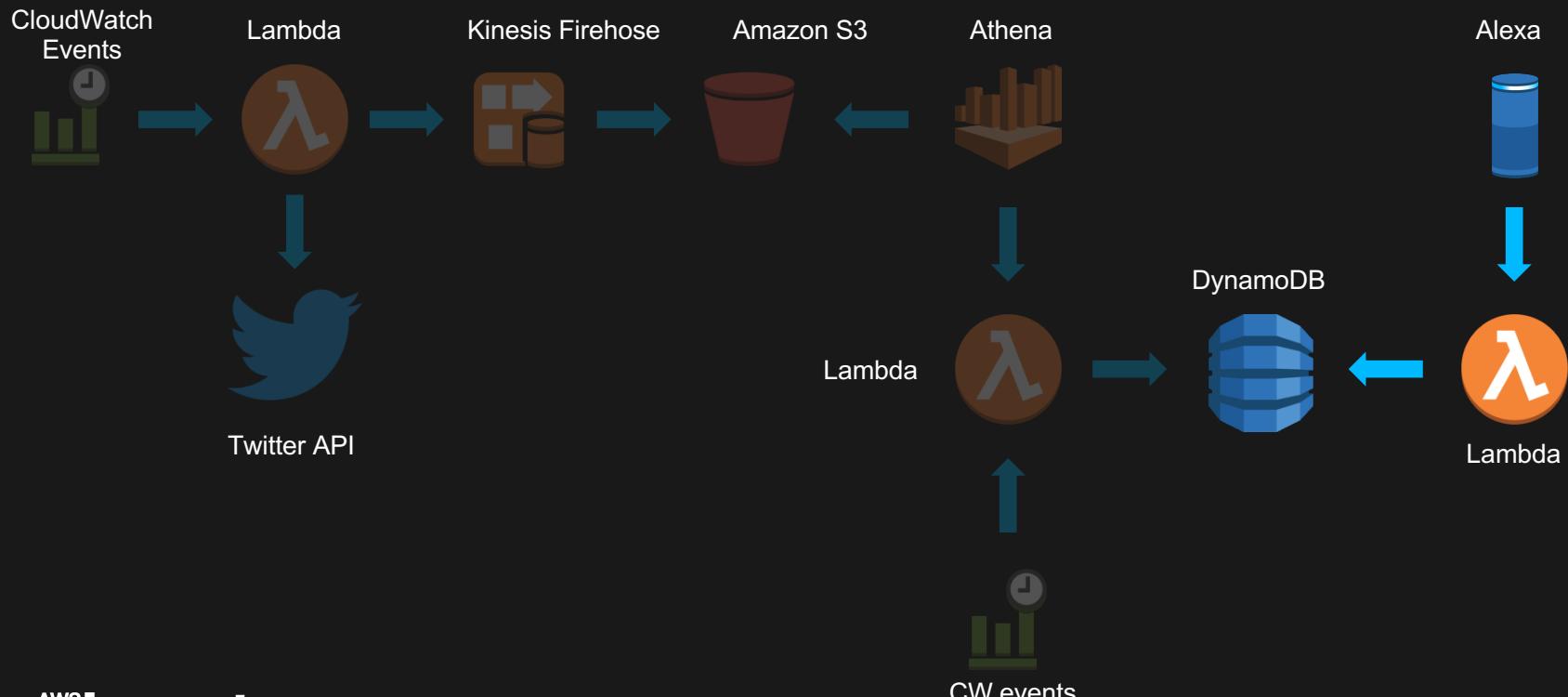
monthly tweet count for reinvent  
mentions in the last hour

Slot value

*“Your metric monthly tweet count for re:Invent is 250.”*

Sample response

# How Alexa gets the data



Full workshop instructions

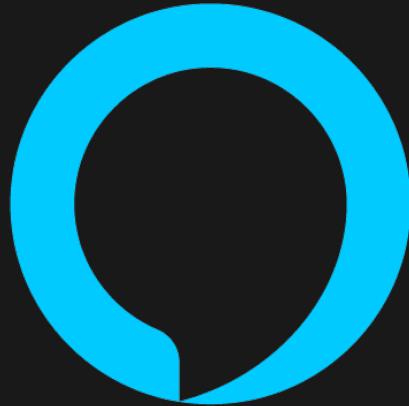
<http://github.com/awslabs/voice-powered-analytics>

Engage our Workshop Gurus with any questions or help

We'll collectively regroup at 1 p.m.

# The Art of the Possible

Notifications for Alexa  
Martin Butler, Technical Program Manager



amazon alexa

# Why Amazon Alexa?

- **Voice is the future**

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- **Customers love Echo and Alexa**

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# Why Amazon Alexa?

- **Voice is the future**
- **Customers love Echo and Alexa**
- **Alexa is always getting smarter**
- **Introducing... Alexa Notifications**

# Alexa Notifications

Notifications allow Alexa to close the loop on requests in real-time, when information arrives that a customer wants to receive.



Thank you!

Please fill out your survey!