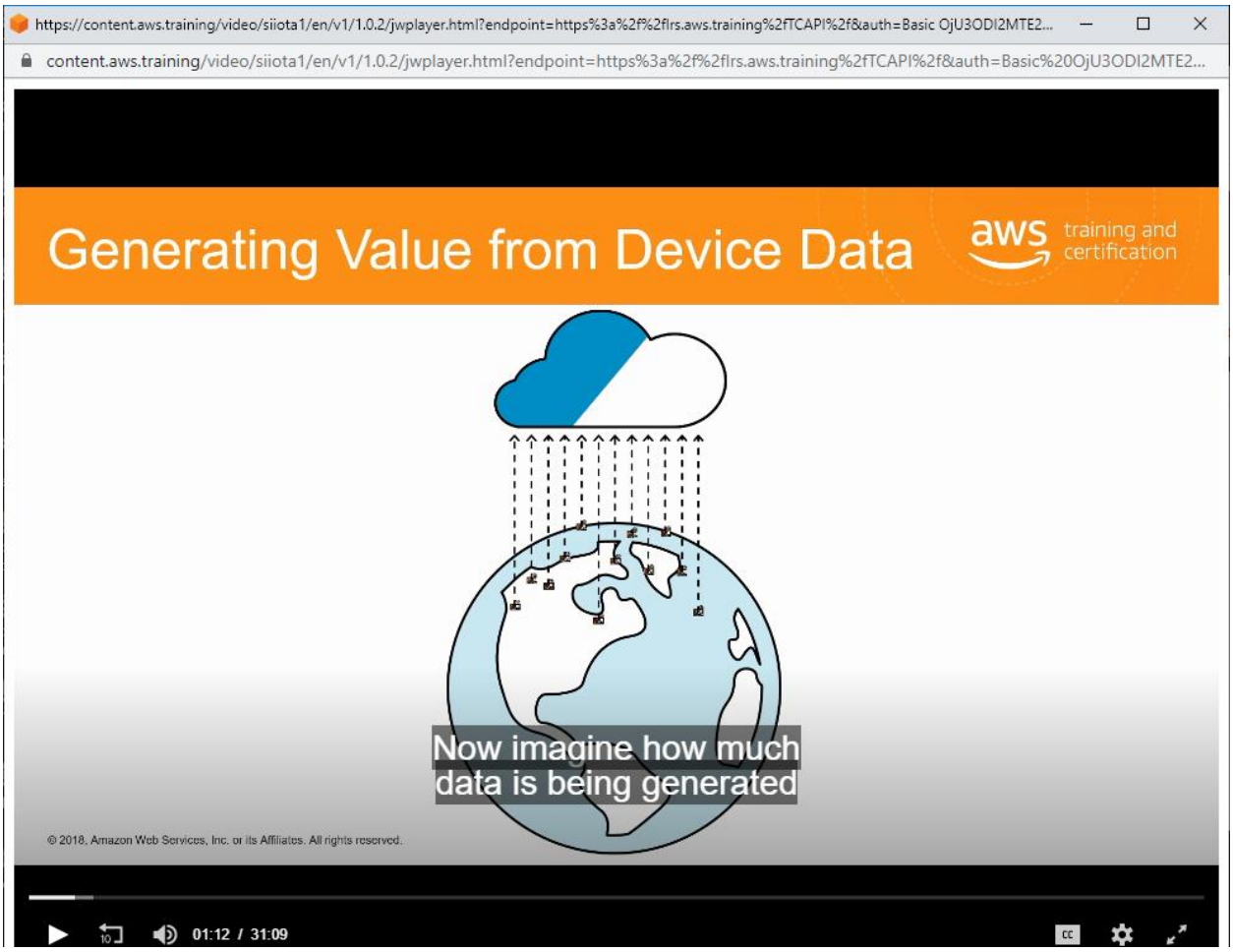
https://content.aws.training/video/siiota1/en/v1/1.0.2/jwplayer.html?endpoint=https%3a%2f%2flrs.aws.training%2fTCAPI%2f&auth=Basic OjU3ODI2MTE2...
content.aws.training/video/siiota1/en/v1/1.0.2/jwplayer.html?endpoint=https%3a%2f%2flrs.aws.training%2fTCAPI%2f&auth=Basic%20OjU3ODI2MTE2...
Generating Value from Device Data
aws training and certification
Now imagine how much data is being generated
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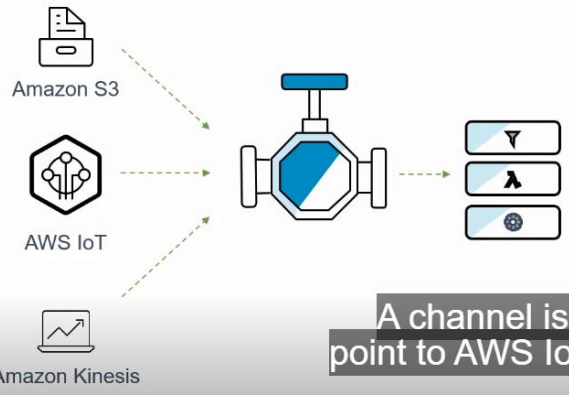
01:12 / 31:09

Channel



- Entry point to AWS IoT Analytics
- Data collection from multiple sources: IoT Core, Amazon Kinesis, Amazon S3, or custom source through APIs
- Data-format-agnostic: Supports JSON and Binary
- Authoritative store of raw data from multiple devices.

A channel is an entry point to AWS IoT Analytics.

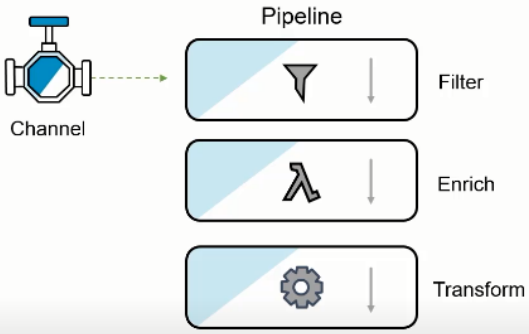
04:26 / 31:09

https://content.aws.training/video/siiota1/en/v1/1.0.2/jwplayer.html?endpoint=https%3a%2f%2flrs.aws.training%2fTCAPI%2f&auth=Basic OjU3ODI2MTE2...

content.aws.training/video/siiota1/en/v1/1.0.2/jwplayer.html?endpoint=https%3a%2f%2flrs.aws.training%2fTCAPI%2f&auth=Basic%20OjU3ODI2MTE2...

Pipeline

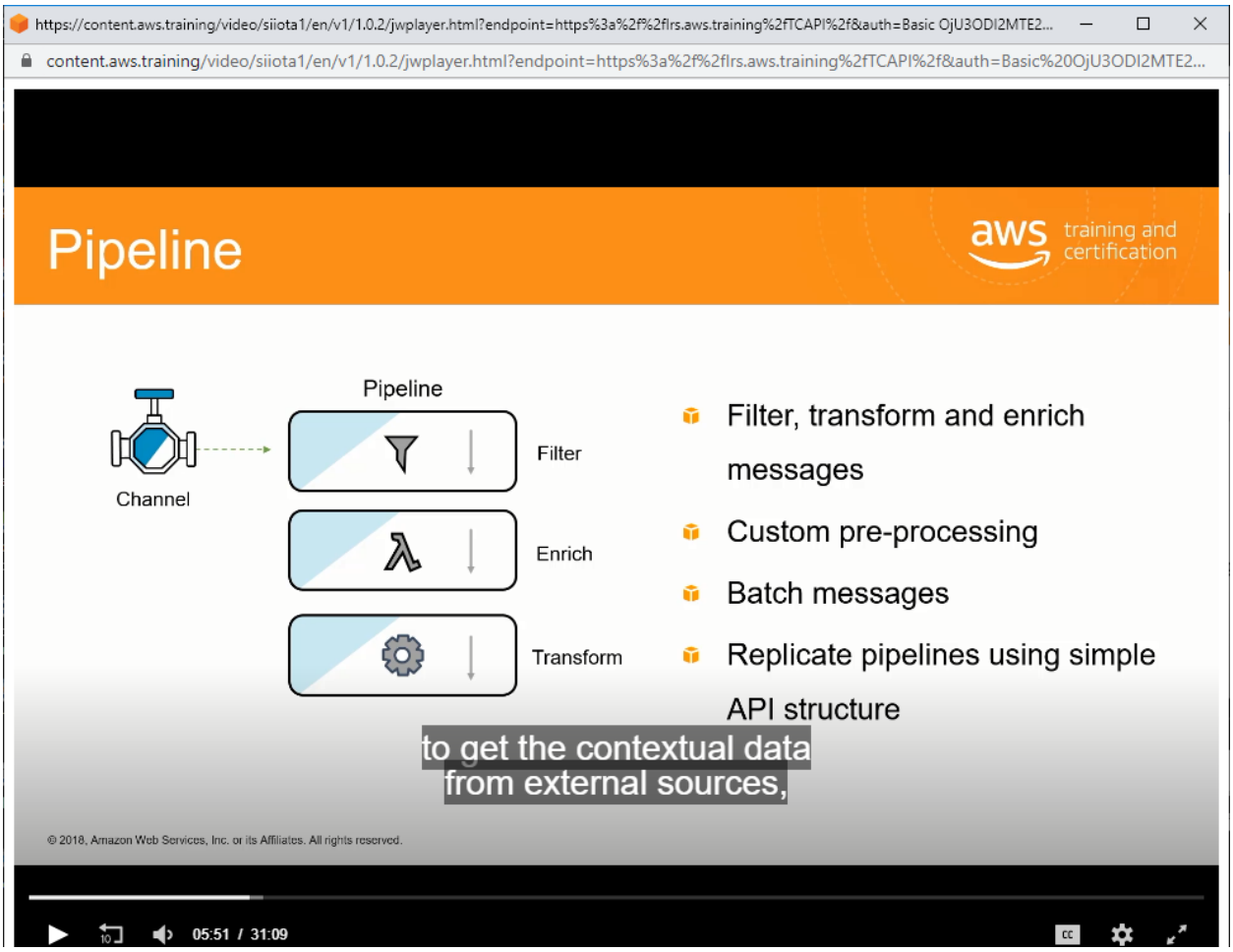
aws training and certification



- Filter, transform and enrich messages
- Custom pre-processing
- Batch messages
- Replicate pipelines using simple API structure

The pipeline has preprocessing tools

05:18 / 31:09


https://content.aws.training/video/siiota1/en/v1/1.0.2/jwplayer.html?endpoint=https%3a%2f%2flrs.aws.training%2fTCAPI%2f&auth=Basic OjU3ODI2MTE2...
content.aws.training/video/siiota1/en/v1/1.0.2/jwplayer.html?endpoint=https%3a%2f%2flrs.aws.training%2fTCAPI%2f&auth=Basic%20OjU3ODI2MTE2...
Pipeline
aws training and certification
Pipeline
Channel
Filter
Enrich
Transform
Filter, transform and enrich messages
Custom pre-processing
Batch messages
Replicate pipelines using simple API structure
to get the contextual data
from external sources,
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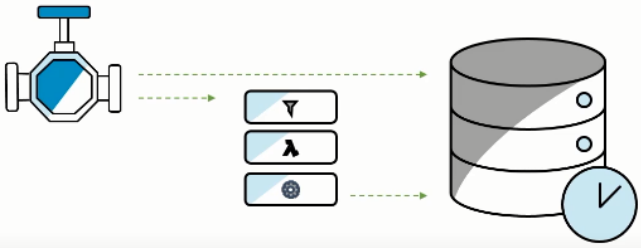
05:51 / 31:09

https://content.aws.training/video/siiota1/en/v1/1.0.2/jwplayer.html?endpoint=https%3a%2f%2flrs.aws.training%2fTCAPI%2f&auth=Basic OjU3ODI2MTE2...

content.aws.training/video/siiota1/en/v1/1.0.2/jwplayer.html?endpoint=https%3a%2f%2flrs.aws.training%2fTCAPI%2f&auth=Basic%20OjU3ODI2MTE2...

Data Store

aws training and certification



- Fully managed and optimized processed data store for time series and IoT workloads
  - Partitioned by time
  - Manageable data retention

as it partitions your
data by time, and supports

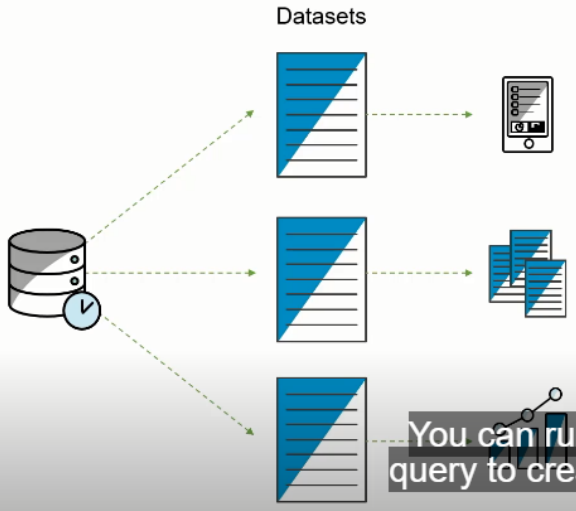
06:26 / 31:09

https://content.aws.training/video/siiota1/en/v1/1.0.2/jwplayer.html?endpoint=https%3a%2f%2flrs.aws.training%2fTCAPI%2f&auth=Basic OjU3ODI2MTE2...

content.aws.training/video/siiota1/en/v1/1.0.2/jwplayer.html?endpoint=https%3a%2f%2flrs.aws.training%2fTCAPI%2f&auth=Basic%20OjU3ODI2MTE2...

Dataset

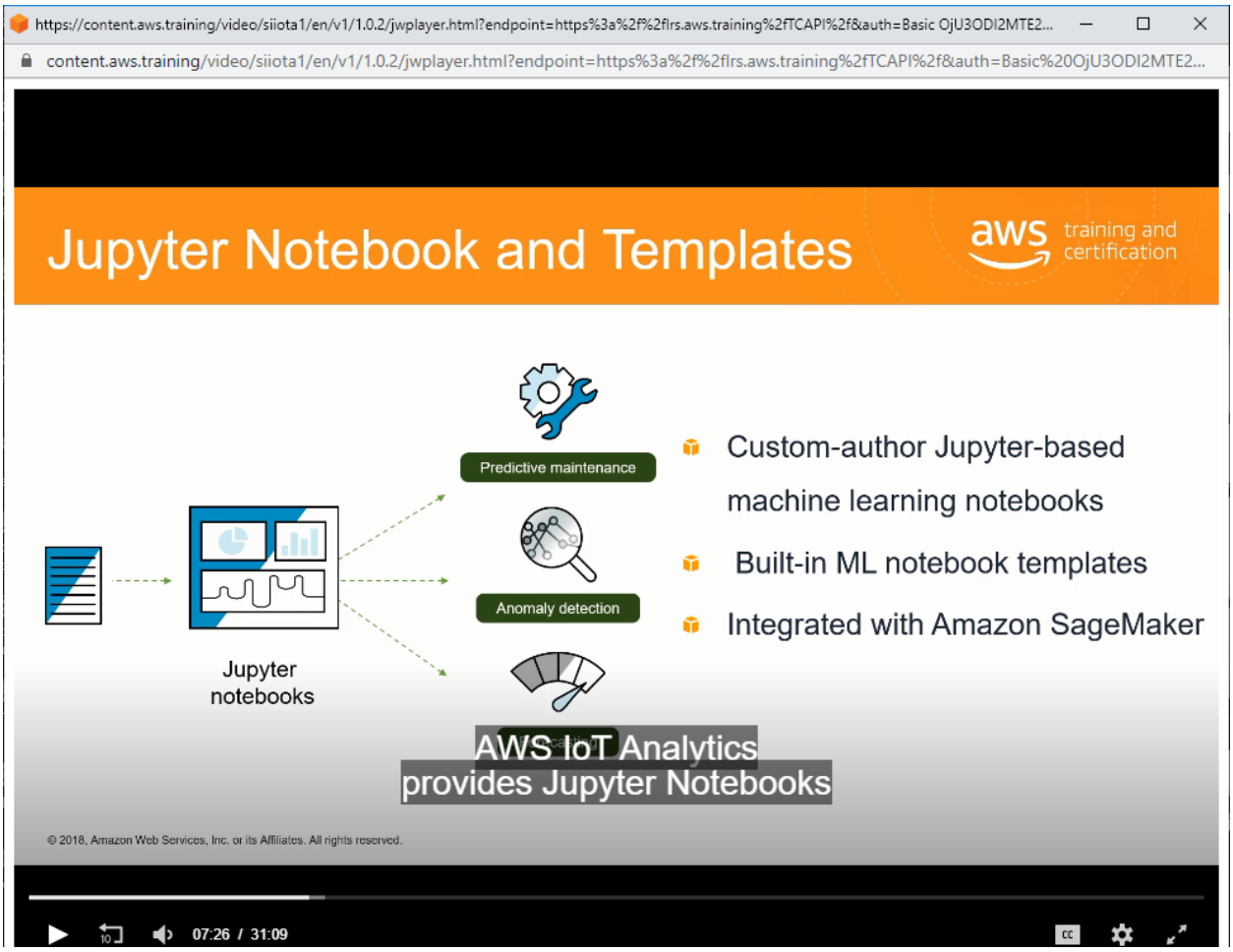
aws training and certification



- Query data stores using standard SQL and edit/schedule in console query editor
- Visualize in Amazon QuickSight dashboards
- Available via API, console download, or within Jupyter notebooks

You can run a SQL-like query to create a dataset.

06:52 / 31:09


https://content.aws.training/video/siiota1/en/v1/1.0.2/jwplayer.html?endpoint=https%3a%2f%2flrs.aws.training%2fTCAPI%2f&auth=Basic OjU3ODI2MTE2...
content.aws.training/video/siiota1/en/v1/1.0.2/jwplayer.html?endpoint=https%3a%2f%2flrs.aws.training%2fTCAPI%2f&auth=Basic%20OjU3ODI2MTE2...
Jupyter Notebook and Templates
aws training and certification
Predictive maintenance
Anomaly detection
Jupyter notebooks
Custom-author Jupyter-based machine learning notebooks
Built-in ML notebook templates
Integrated with Amazon SageMaker
AWS IoT Analytics provides Jupyter Notebooks
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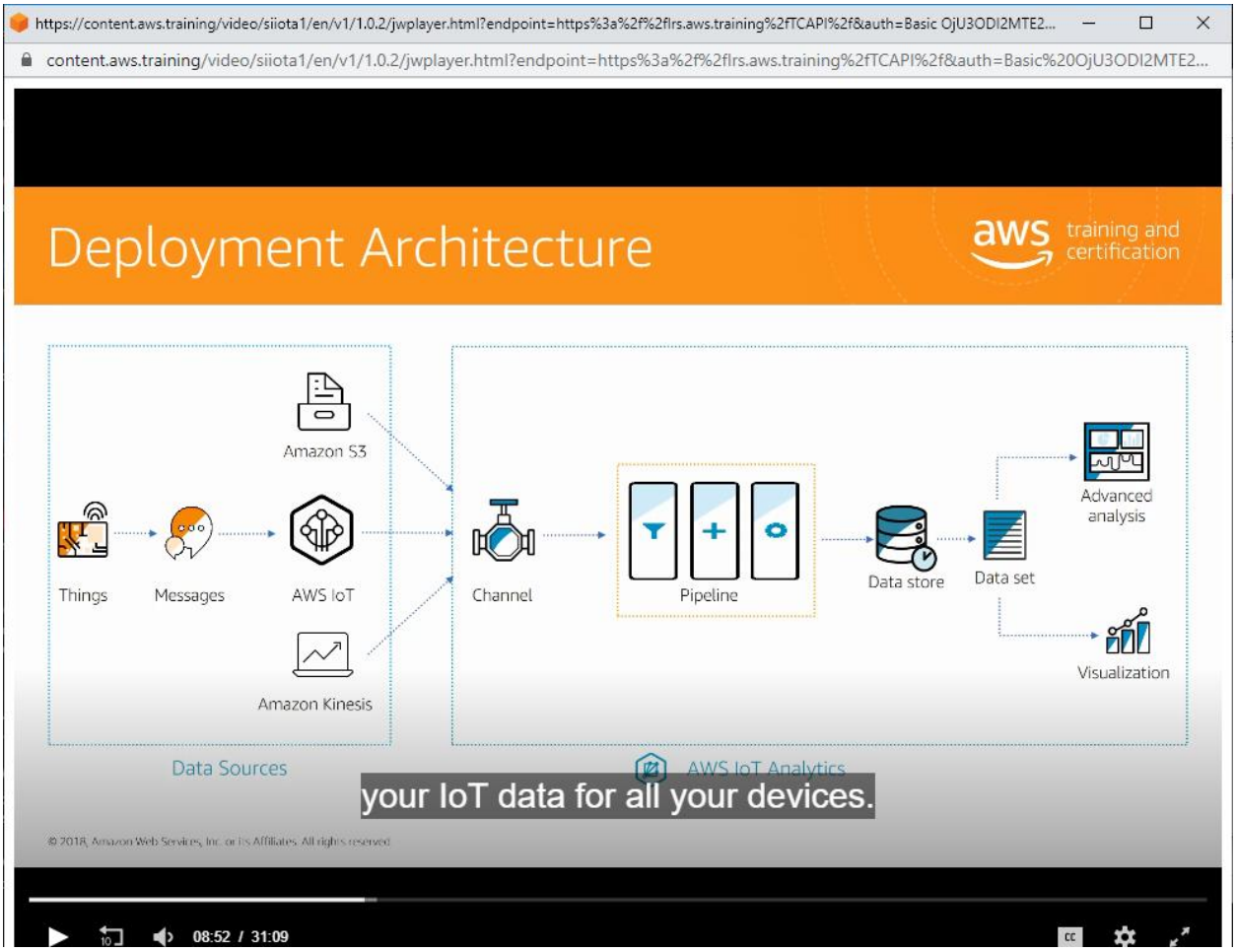
07:26 / 31:09


https://content.aws.training/video/siiota1/en/v1/1.0.2/jwplayer.html?endpoint=https%3a%2f%2flrs.aws.training%2fTCAPI%2f&auth=Basic OjU3ODI2MTE2...
content.aws.training/video/siiota1/en/v1/1.0.2/jwplayer.html?endpoint=https%3a%2f%2flrs.aws.training%2fTCAPI%2f&auth=Basic%20OjU3ODI2MTE2...
Deployment Architecture
aws training and certification
Amazon S3
Things
Messages
AWS IoT
Amazon Kinesis
Channel
Pipeline
Data store
Data set
Advanced analysis
Visualization
Data Sources
AWS IoT Analytics
your IoT data for all your devices.
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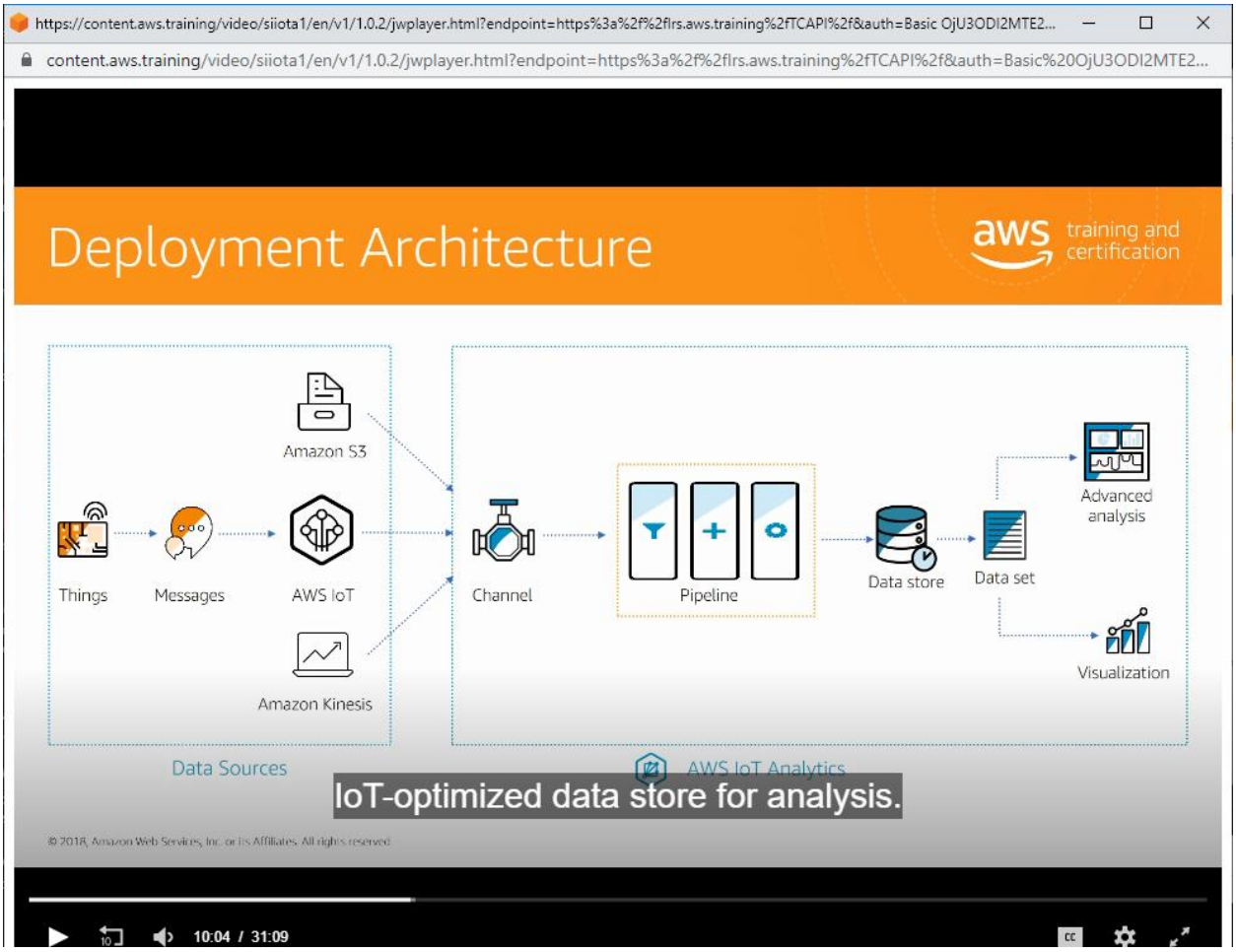
08:52 / 31:09
CC


https://content.aws.training/video/siiota1/en/v1/1.0.2/jwplayer.html?endpoint=https%3a%2f%2flrs.aws.training%2fTCAPI%2f&auth=Basic OjU3ODI2MTE2...
content.aws.training/video/siiota1/en/v1/1.0.2/jwplayer.html?endpoint=https%3a%2f%2flrs.aws.training%2fTCAPI%2f&auth=Basic%20OjU3ODI2MTE2...
Deployment Architecture
aws training and certification
Amazon S3
Things
Messages
AWS IoT
Amazon Kinesis
Channel
Pipeline
Data store
Data set
Advanced analysis
Visualization
Data Sources
AWS IoT Analytics
IoT-optimized data store for analysis.
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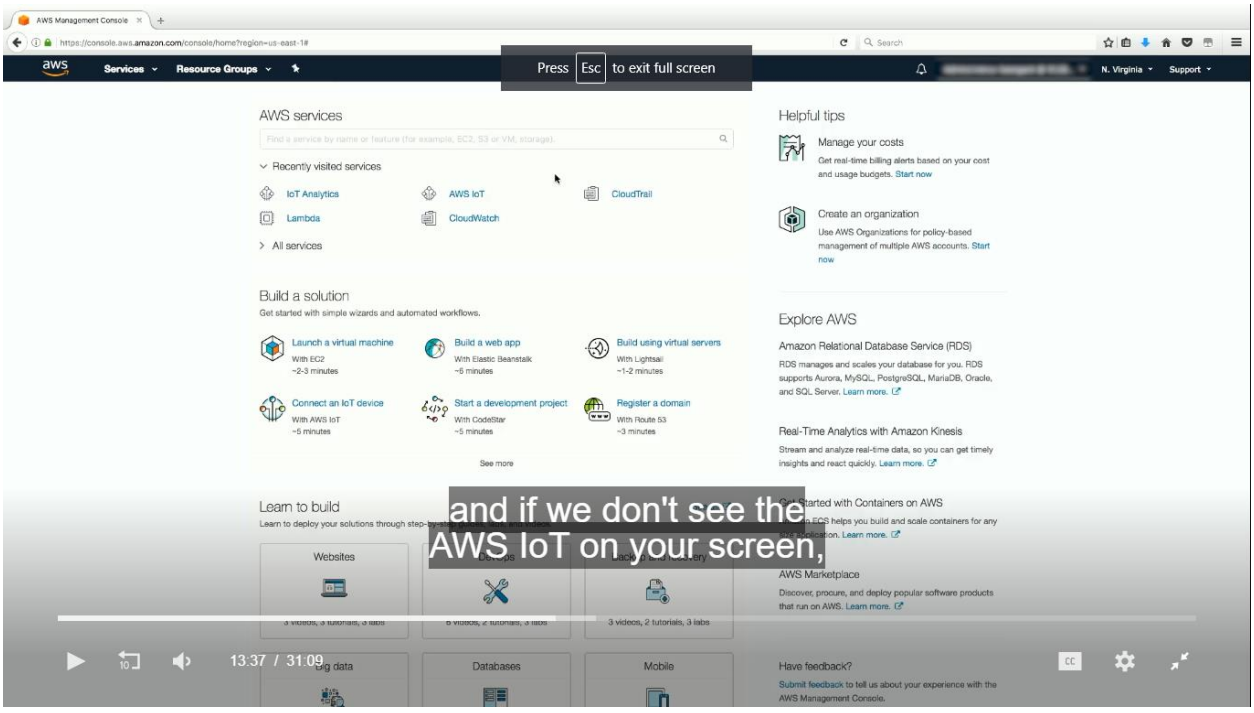
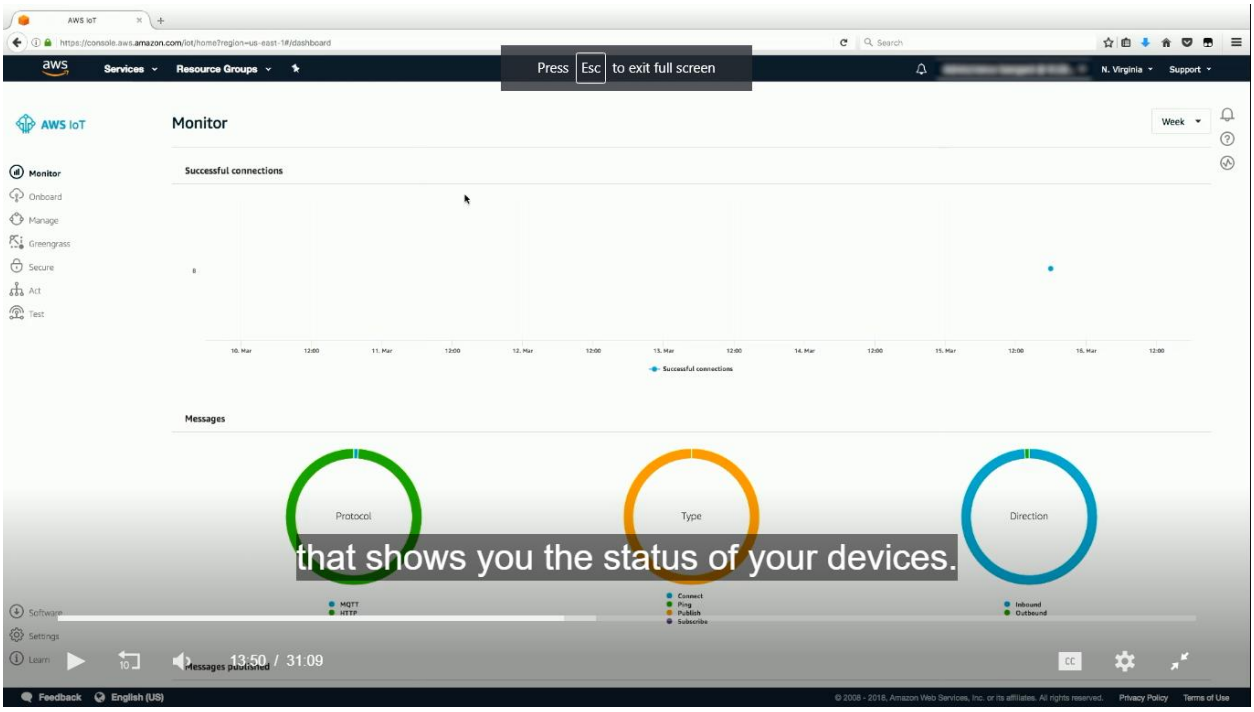
10:04 / 31:09
CC


Press Esc to exit full screen
AWS Management Console
Services
Resource Groups
N. Virginia
Support
AWS services
Recently visited services
IoT Analytics
AWS IoT
CloudTrail
Lambda
CloudWatch
All services
Build a solution
Get started with simple wizards and automated workflows.
Launch a virtual machine
With EC2
~2-3 minutes
Build a web app
With Elastic Beanstalk
~6 minutes
Build using virtual servers
With Lightsail
~1-2 minutes
Connect an IoT device
With AWS IoT
~5 minutes
Start a development project
With CodeStar
~5 minutes
Register a domain
With Route 53
~3 minutes
See more
Learn to build
Websites
Big data
Databases
Mobile
3 videos, 2 tutorials, 3 labs
Helpful tips
Manage your costs
Get real-time billing alerts based on your cost and usage budgets. Start now
Create an organization
Use AWS Organizations for policy-based management of multiple AWS accounts. Start now
Explore AWS
Amazon Relational Database Service (RDS)
RDS manages and scales your database for you. RDS supports Aurora, MySQL, PostgreSQL, MariaDB, Oracle, and SQL Server. Learn more.
Real-Time Analytics with Amazon Kinesis
Stream and analyze real-time data, so you can get timely insights and react quickly. Learn more.
AWS Marketplace
Discover, procure, and deploy popular software products that run on AWS. Learn more.
Have feedback?
Submit feedback to tell us about your experience with the AWS Management Console.
and if we don't see the
AWS IoT on your screen,
13:37 / 31:09


Press Esc to exit full screen
AWS IoT
Services
Resource Groups
N. Virginia
Support
AWS IoT
Monitor
Onboard
Manage
Greengrass
Secure
Act
Test
Monitor
Week
Successful connections
Successful connections
Messages
Protocol
Type
Direction
MQTT
HTTP
Connect
Ping
Publish
Subscribe
Inbound
Outbound
that shows you the status of your devices.
Software
Settings
Learn
Messages published
13:50 / 31:09
Feedback
English (US)
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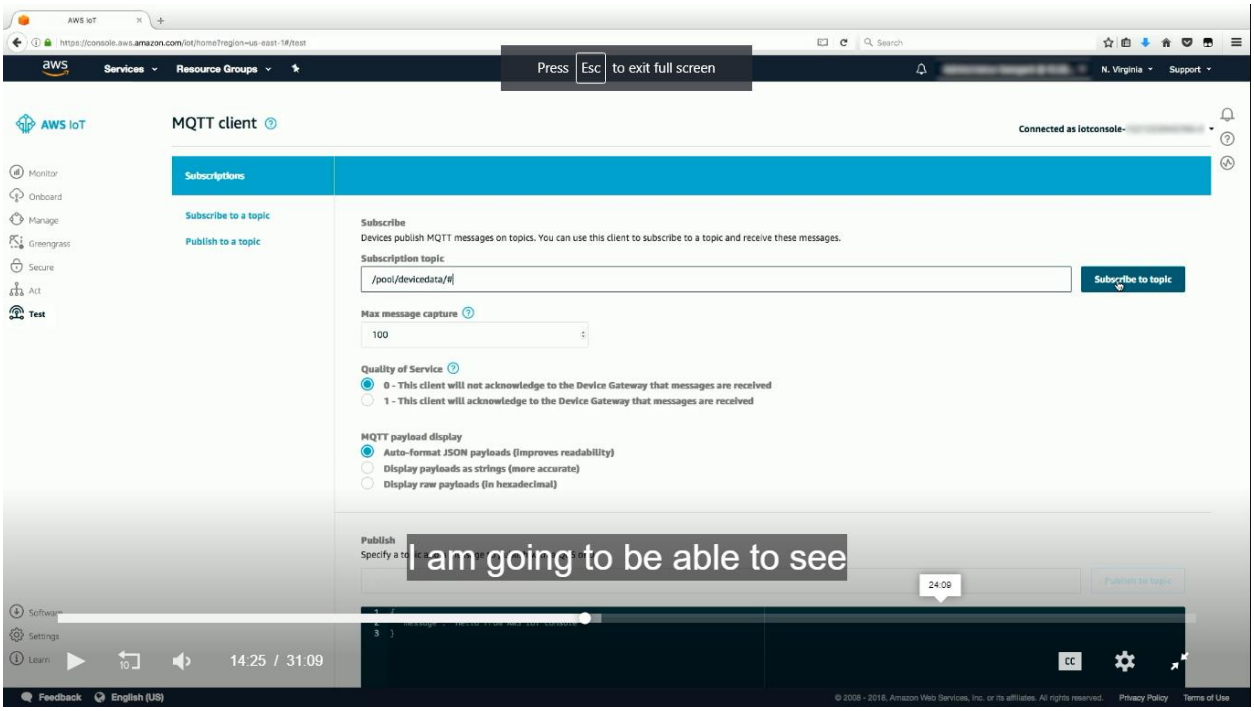
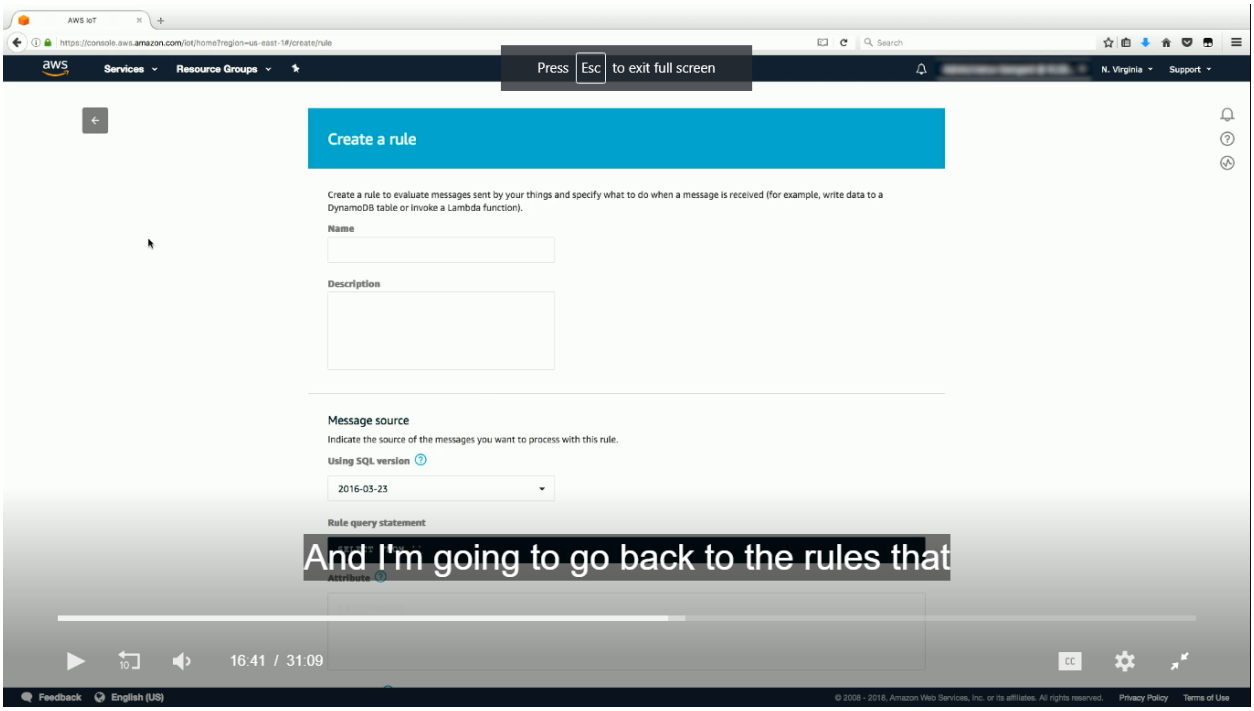
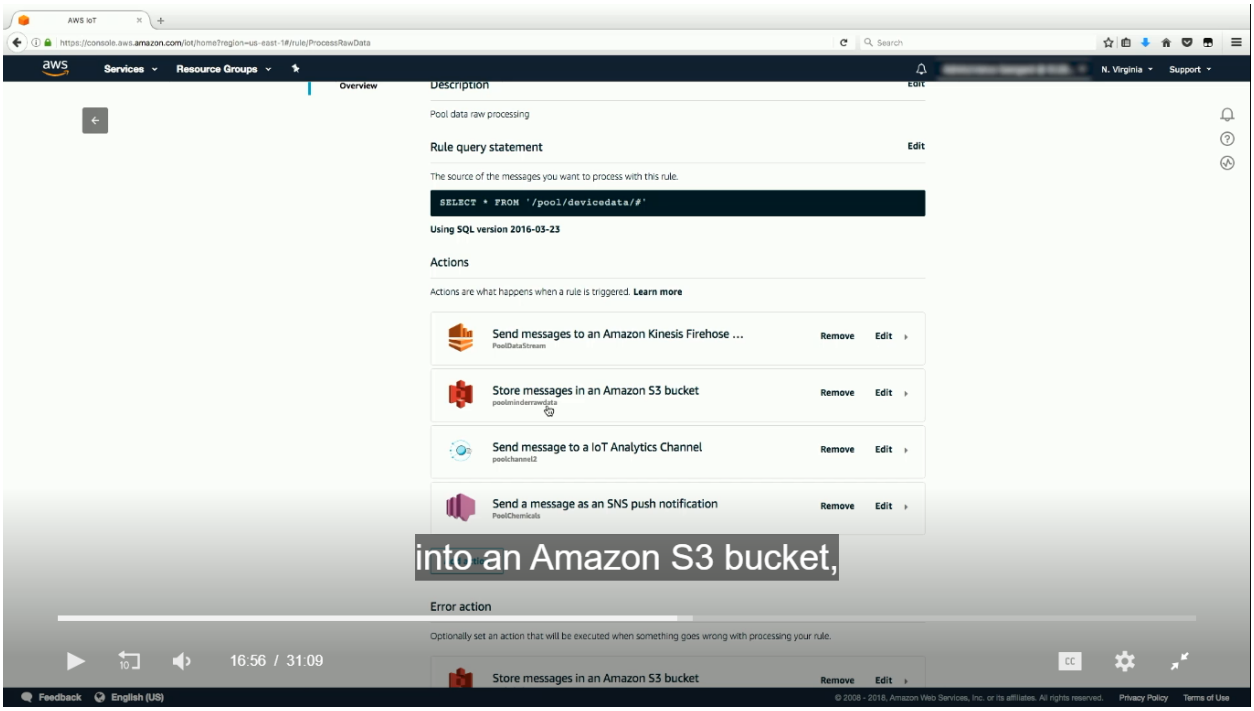
Privacy Policy
Terms of Use


Press Esc to exit full screen
AWS IoT
MQTT client
Connected as iotconsole-
Subscriptions
Subscribe to a topic
Publish to a topic
Subscribe
Devices publish MQTT messages on topics. You can use this client to subscribe to a topic and receive these messages.
Subscription topic
/pool/devicedata/#
Subscribe to topic
Max message capture
100
Quality of Service
0 - This client will not acknowledge to the Device Gateway that messages are received
1 - This client will acknowledge to the Device Gateway that messages are received
MQTT payload display
Auto-format JSON payloads (improves readability)
Display payloads as strings (more accurate)
Display raw payloads (in hexadecimal)
Publish
I am going to be able to see
24:09
14:25 / 31:09
Feedback
English (US)


Press Esc to exit full screen
Create a rule
Create a rule to evaluate messages sent by your things and specify what to do when a message is received (for example, write data to a DynamoDB table or invoke a Lambda function).
Name
Description
Message source
Indicate the source of the messages you want to process with this rule.
Using SQL version
2016-03-23
Rule query statement
And I'm going to go back to the rules that
16:41 / 31:09
Feedback
English (US)


AWS IoT
Services
Resource Groups
N. Virginia
Support
Overview
Description
Edit
Pool data raw processing
Rule query statement
Edit
The source of the messages you want to process with this rule.
SELECT * FROM '/pool/devicedata/#'
Using SQL version 2016-03-23
Actions
Actions are what happens when a rule is triggered. Learn more
Send messages to an Amazon Kinesis Firehose ...
PoolDataStream
Remove
Edit
Store messages in an Amazon S3 bucket
poolminderrawdata
Remove
Edit
Send message to a IoT Analytics Channel
poolchannel2
Remove
Edit
Send a message as an SNS push notification
PoolChemicals
Remove
Edit
into an Amazon S3 bucket,
Error action
Optionally set an action that will be executed when something goes wrong with processing your rule.
Store messages in an Amazon S3 bucket
Remove
Edit
16:56 / 31:09
Feedback
English (US)
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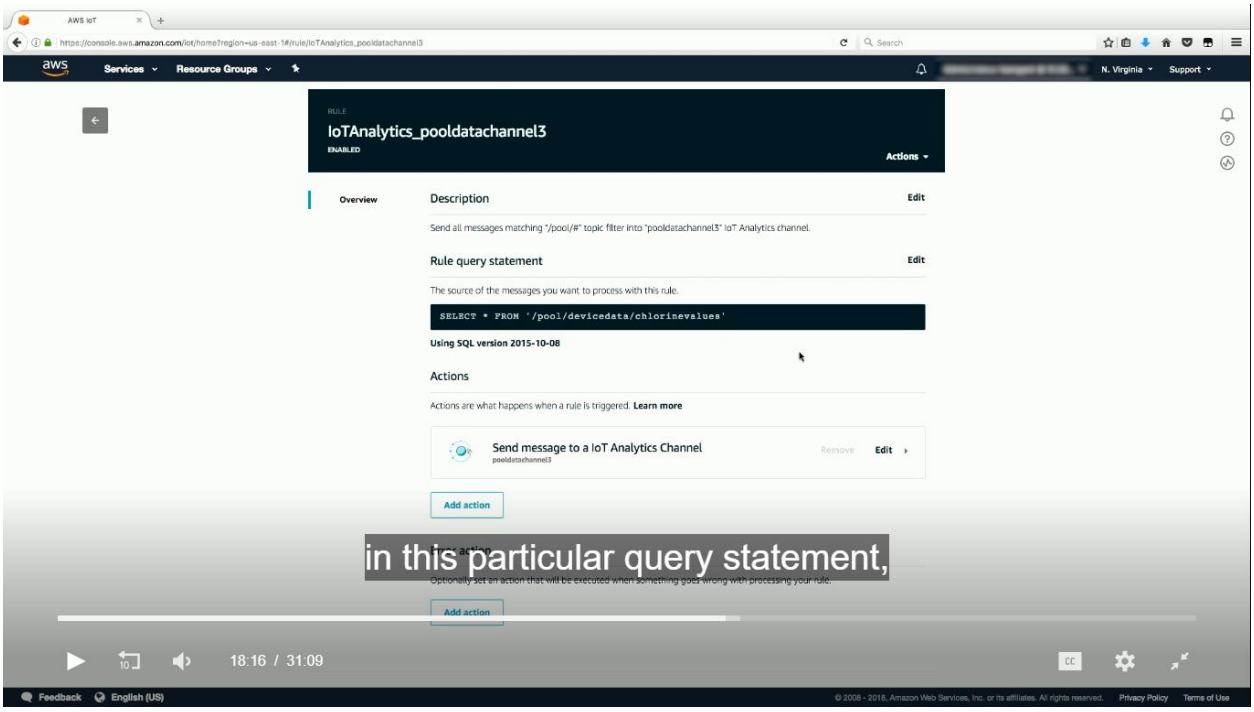
AWS IoT
Services
Resource Groups
N. Virginia
Support
RULE
IoTAnalytics_pooldatachannel3
ENABLED
Actions
Overview
Description
Edit
Send all messages matching "/pool/#" topic filter into "pooldatachannel3" IoT Analytics channel.
Rule query statement
Edit
The source of the messages you want to process with this rule.
SELECT * FROM '/pool/devicedata/chlorinevalues'
Using SQL version 2015-10-08
Actions
Actions are what happens when a rule is triggered. Learn more
Send message to a IoT Analytics Channel
pooldatachannel3
Remove
Edit
Add action
in this particular query statement,
Optionally set an action that will be executed when something goes wrong with processing your rule.
Add action
18:16 / 31:09
Feedback
English (US)
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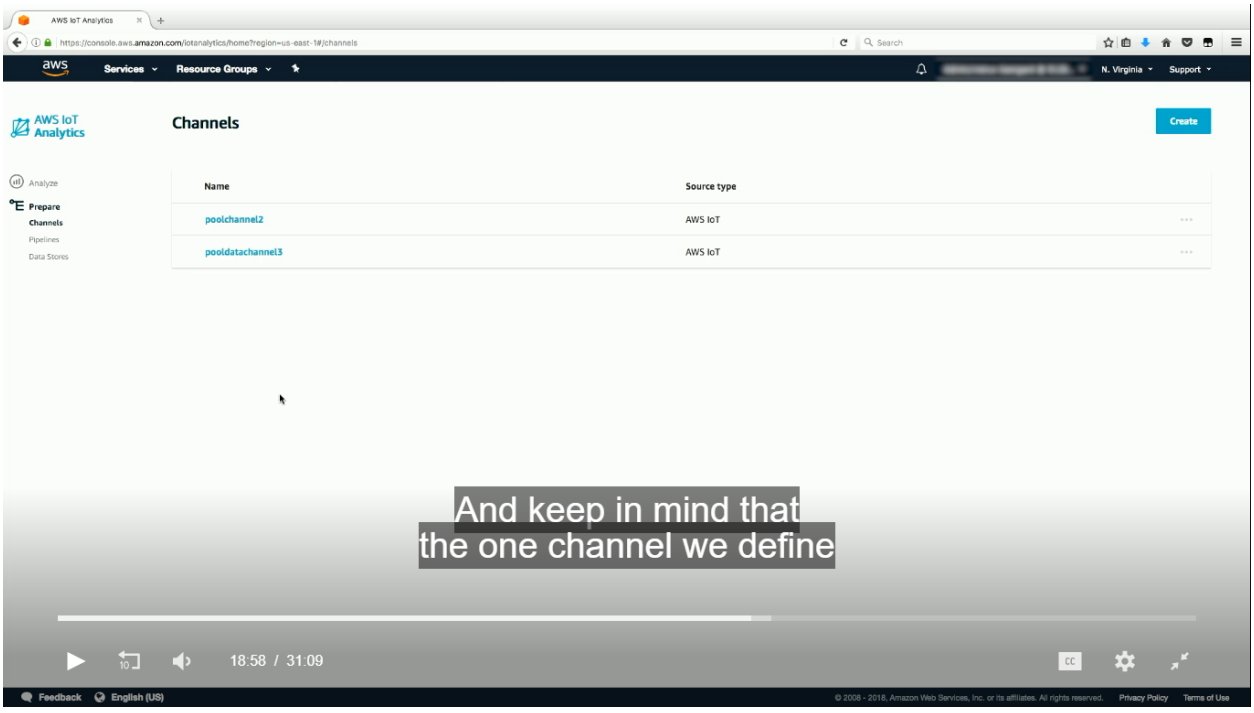
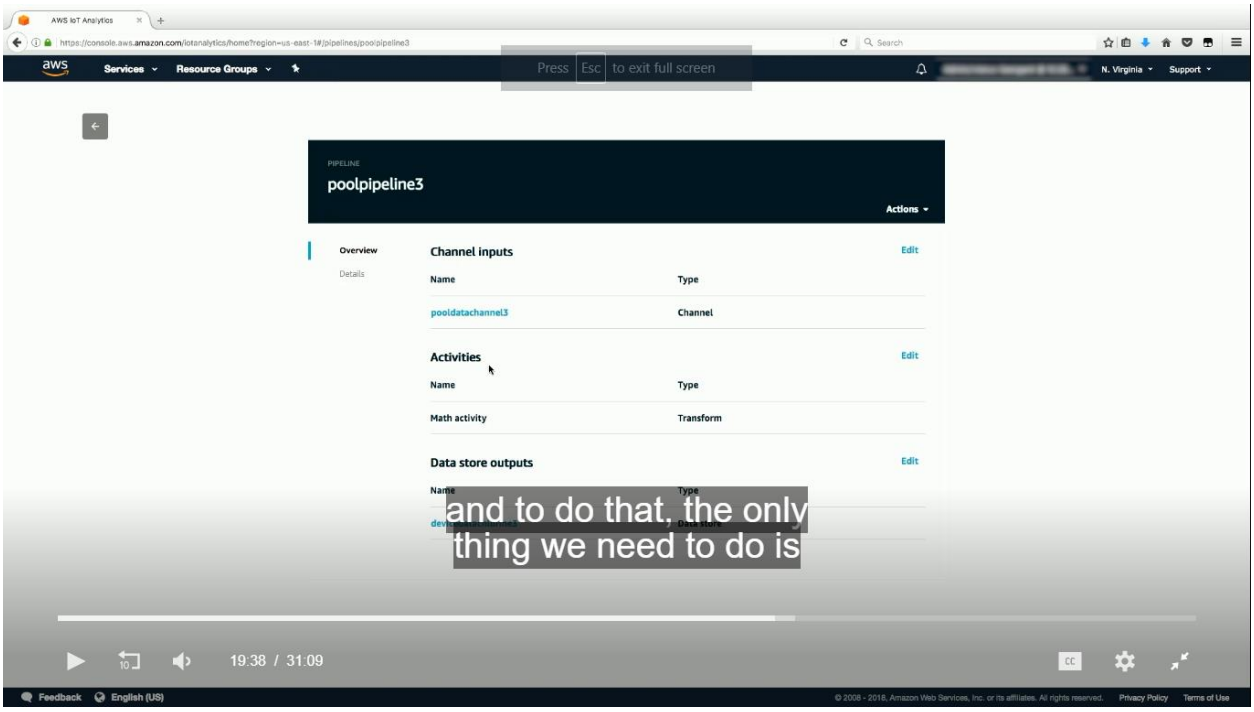
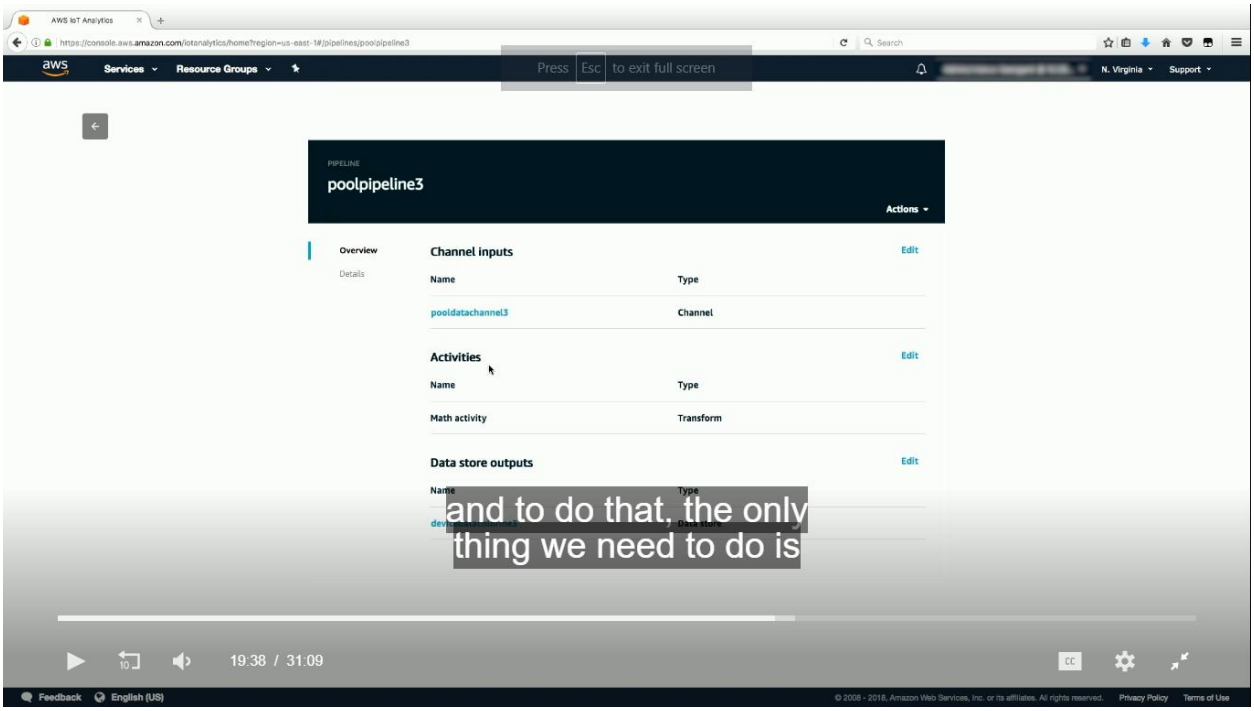
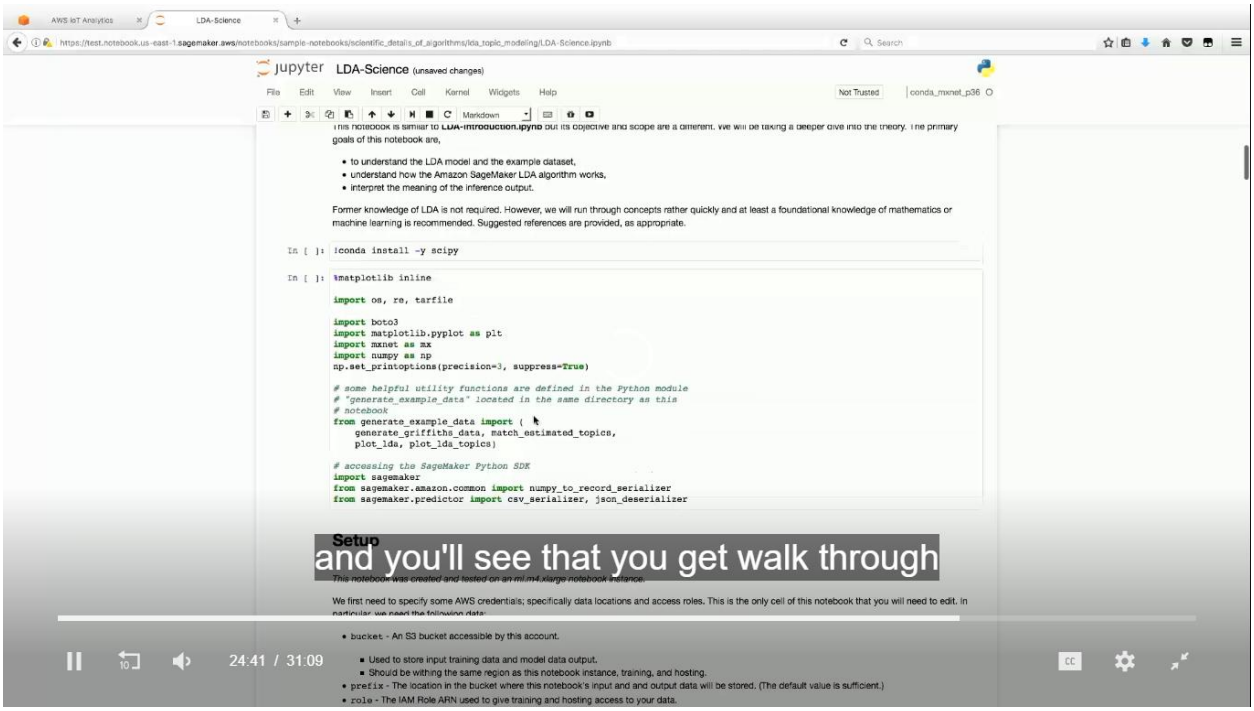
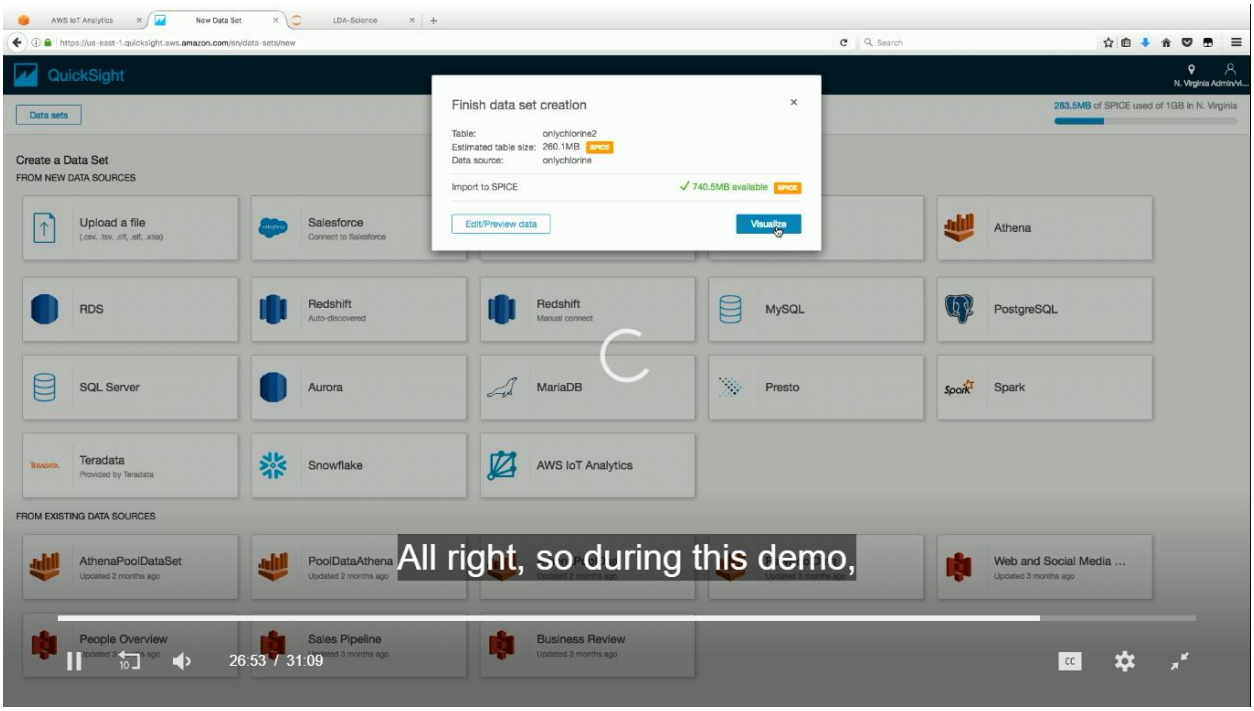
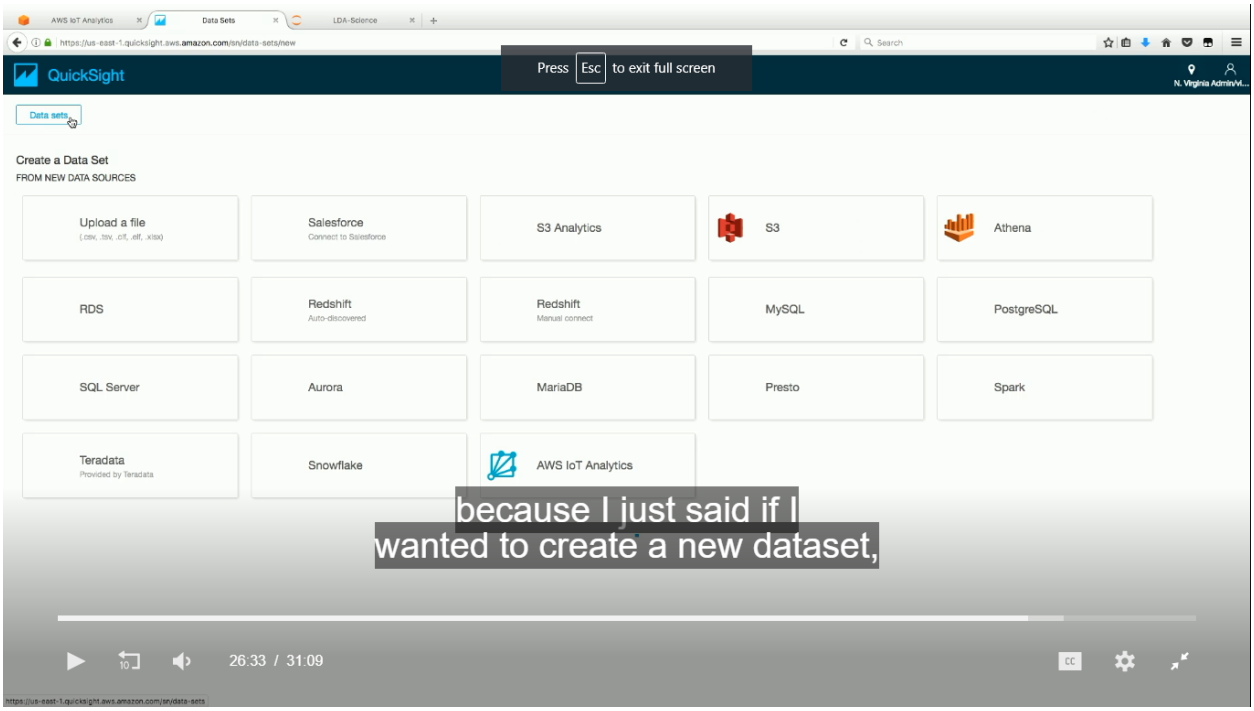

AWS IoT Analytics
Channels
Create
Name
Source type
poolchannel2
AWS IoT
pooldatachannel3
AWS IoT
And keep in mind that
the one channel we define
18:58 / 31:09


Press Esc to exit full screen
PIPELINE
poolpipeline3
Actions
Overview
Details
Channel inputs
Edit
Name
Type
pooldatachannel3
Channel
Activities
Edit
Name
Type
Math activity
Transform
Data store outputs
Edit
Name
Type
and to do that, the only
thing we need to do is
19:38 / 31:09


Press Esc to exit full screen
PIPELINE
poolpipeline3
Actions
Overview
Details
Channel inputs
Edit
Name
Type
pooldatachannel3
Channel
Activities
Edit
Name
Type
Math activity
Transform
Data store outputs
Edit
Name
Type
and to do that, the only thing we need to do is
19:38 / 31:09
Feedback
English (US)


jupyter LDA-Science (unsaved changes)
File Edit View Insert Cell Kernel Widgets Help
Not Trusted
conda_mxnet_p36
goals of this notebook are,
to understand the LDA model and the example dataset,
understand how the Amazon SageMaker LDA algorithm works,
interpret the meaning of the inference output.
Former knowledge of LDA is not required. However, we will run through concepts rather quickly and at least a foundational knowledge of mathematics or machine learning is recommended. Suggested references are provided, as appropriate.
In [ ]: !conda install -y scipy
In [ ]: %matplotlib inline
import os, re, tarfile
import boto3
import matplotlib.pyplot as plt
import mxnet as mx
import numpy as np
np.set_printoptions(precision=3, suppress=True)
# some helpful utility functions are defined in the Python module
# "generate_example_data" located in the same directory as this
# notebook
from generate_example_data import (
generate_griffiths_data, match_estimated_topics,
plot_lda, plot_lda_topics)
# accessing the SageMaker Python SDK
import sagemaker
from sagemaker.amazon.common import numpy_to_record_serializer
from sagemaker.predictor import csv_serializer, json_deserializer
Setup
and you'll see that you get walk through
This notebook was created and tested on an ml.m4.xlarge notebook instance.
We first need to specify some AWS credentials; specifically data locations and access roles. This is the only cell of this notebook that you will need to edit. In
bucket - An S3 bucket accessible by this account.
Used to store input training data and model data output.
Should be withing the same region as this notebook instance, training, and hosting.
prefix - The location in the bucket where this notebook's input and and output data will be stored. (The default value is sufficient.)
role - The IAM Role ARN used to give training and hosting access to your data.
24:41 / 31:09

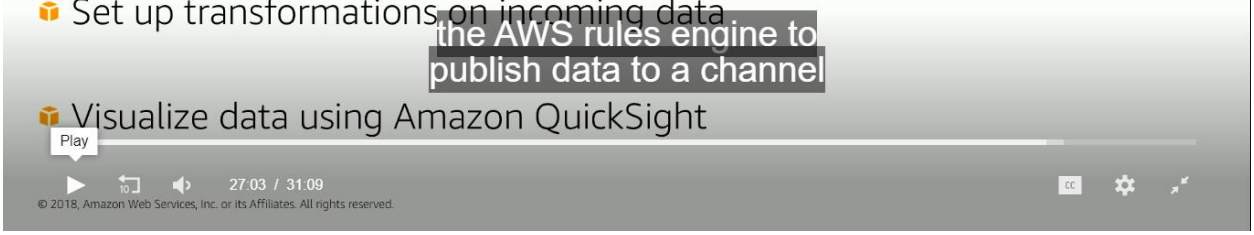

QuickSight
Finish data set creation
Table: onlychlorine2
Estimated table size: 260.1MB SPICE
Data source: onlychlorine
Import to SPICE
740.5MB available SPICE
Edit/Preview data
Visualize
Data sets
Create a Data Set
FROM NEW DATA SOURCES
Upload a file
Salesforce
Athena
RDS
Redshift
Redshift
MySQL
PostgreSQL
SQL Server
Aurora
MariaDB
Presto
Spark
Teradata
Snowflake
AWS IoT Analytics
FROM EXISTING DATA SOURCES
AthenaPoolDataSet
PoolDataAthena
Web and Social Media ...
People Overview
Sales Pipeline
Business Review
All right, so during this demo,
26:53 / 31:09

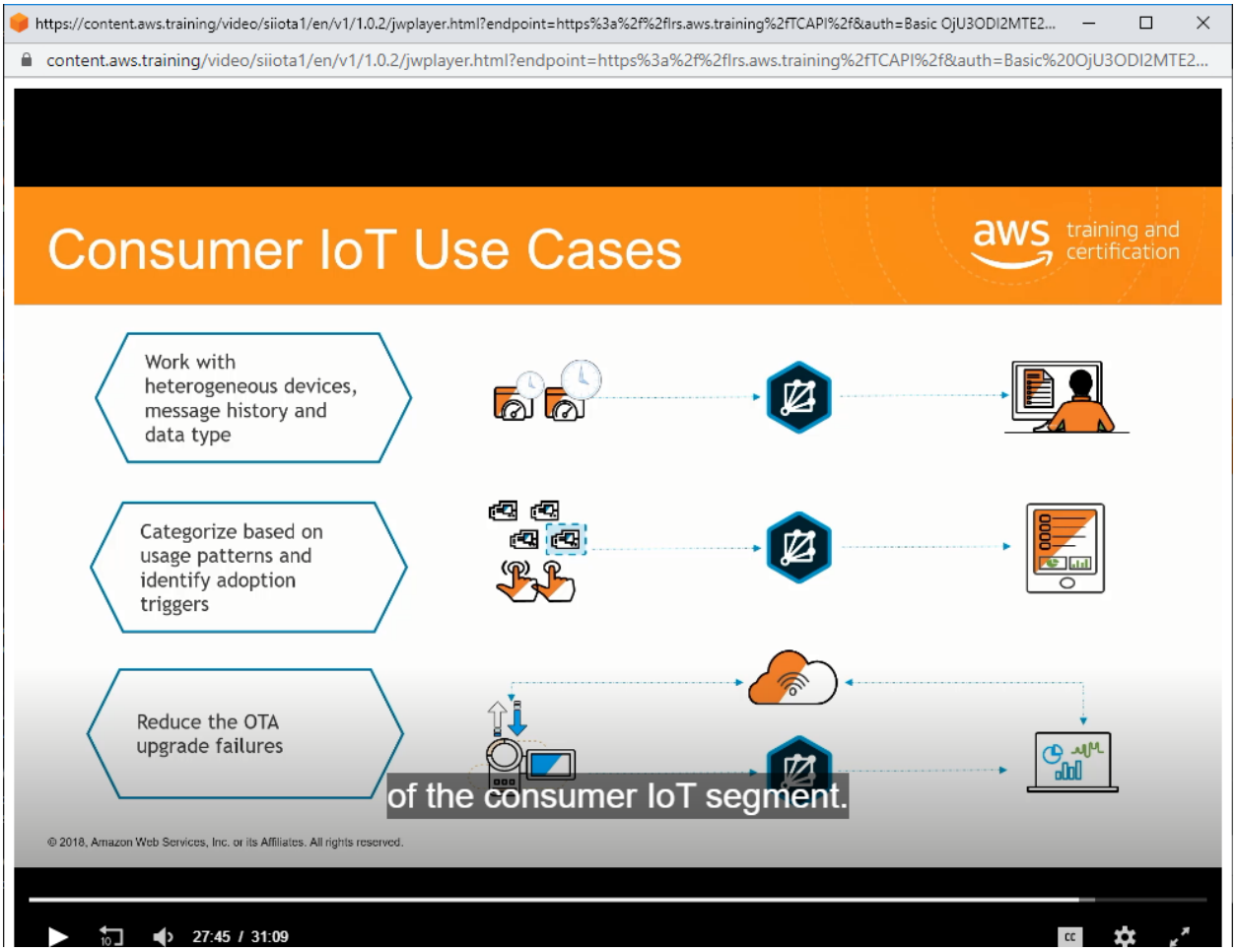

Press Esc to exit full screen
QuickSight
Data sets
Create a Data Set
FROM NEW DATA SOURCES
Upload a file
Salesforce
S3 Analytics
S3
Athena
RDS
Redshift
Redshift
MySQL
PostgreSQL
SQL Server
Aurora
MariaDB
Presto
Spark
Teradata
Snowflake
AWS IoT Analytics
because I just said if I
wanted to create a new dataset,
26:33 / 31:09

Demo – Pool Minder

aws training and certification

- Ingest sensor data into AWS IoT Core
- Process data using Rules Engine
- Pipe the data through a channel to IoT Analytics
- Set up transformations on incoming data
- Visualize data using Amazon QuickSight

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content.aws.training/video/siiota1/en/v1/1.0.2/jwplayer.html?endpoint=https%3a%2f%2flrs.aws.training%2fTCAPI%2f&auth=Basic%20OjU3ODI2MTE2...
Consumer IoT Use Cases
aws training and certification
Work with heterogeneous devices, message history and data type
Categorize based on usage patterns and identify adoption triggers
Reduce the OTA upgrade failures
of the consumer IoT segment.
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27:45 / 31:09

Industrial IoT Use Cases

Press Esc to exit full screen

aws training and certification

who wants to improve the strength of its paper.

29:33 / 31:09