



# Enabling speech analysis using Contact Lens

## Installation and User Guide

Version 2.2 [Mar 2021]



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## 1 Introduction

Follow these steps to enable speech analysis using Contact Lens and have the following results attached to your tickets:

- Call transcription
- Customer and agent sentiment
- Categories based on rules set within Contact Lens
- Conversation characteristics



NOTE: pay-as-you-go charges apply if you enable Contact Lens in your Amazon Connect instance.

### 1.1 Deprecation of the previous version of speech analysis

Since v1.1 of the app, we have provided an option to display a mini app within your Zendesk instance with real-time speech analysis and have the speech analysis attached to your tickets. With the release of Contact Lens we will be moving away from using this mini app to solely providing speech analysis through Contact Lens. As such, if you are using the mini app for your speech analysis, we highly recommend moving across to using Contact Lens as soon as possible as we are looking to remove the mini app functionality in our next release. For more information please contact [zendeskconnect@voicefoundry.com.au](mailto:zendeskconnect@voicefoundry.com.au).

#### 1.1.1 Removing the previous version of speech analysis from your AWS account

If you have the previous version of speech analysis installed in your AWS account, we strongly recommend uninstalling this feature before enabling speech analysis with Contact Lens. While the two versions of speech analysis shouldn't impact each others functionality, you will end up with two sets of speech analysis being attached to your tickets. Follow the below steps to remove the previous version of speech analysis.

1. Delete the CloudFormation stack that you would have installed for the previous version of speech analysis. You will be prompted to first delete the S3 buckets that were created during this stack. If you want to keep the files stored within these S3 buckets, first transfer them across to another location before deleting the buckets.
2. In your contact flow, remove the lambda functions that were created in the above stack.
3. In your contact flow, remove the `speech_analysis` contact attribute.

## 2 Enabling Contact Lens in Amazon Connect

In order to have speech analysis from Contact Lens appended to your tickets, you will need to first enable Contact Lens in your Amazon Connect instance.

If Contact Lens has yet to be enabled in your Amazon Connect instance, please follow the instructions in the below link.

- [Enable Contact Lens for Amazon Connect](#)

**NOTE:** The Amazon Connect app for Zendesk only supports analysis of **redacted** call recordings. As such please ensure that the following checkbox is ticked within the *Set recording and analytics behaviour* block in your inbound and outbound contact flows, otherwise you will not be able to attach Contact Lens' speech analysis to any of your tickets.


☒ Redact sensitive data

Redact sensitive data, such as personal information, in the Contact Lens output file and get a redacted audio recording. Sensitive data redaction is applied after the call disconnects, and is currently available for certain languages only.

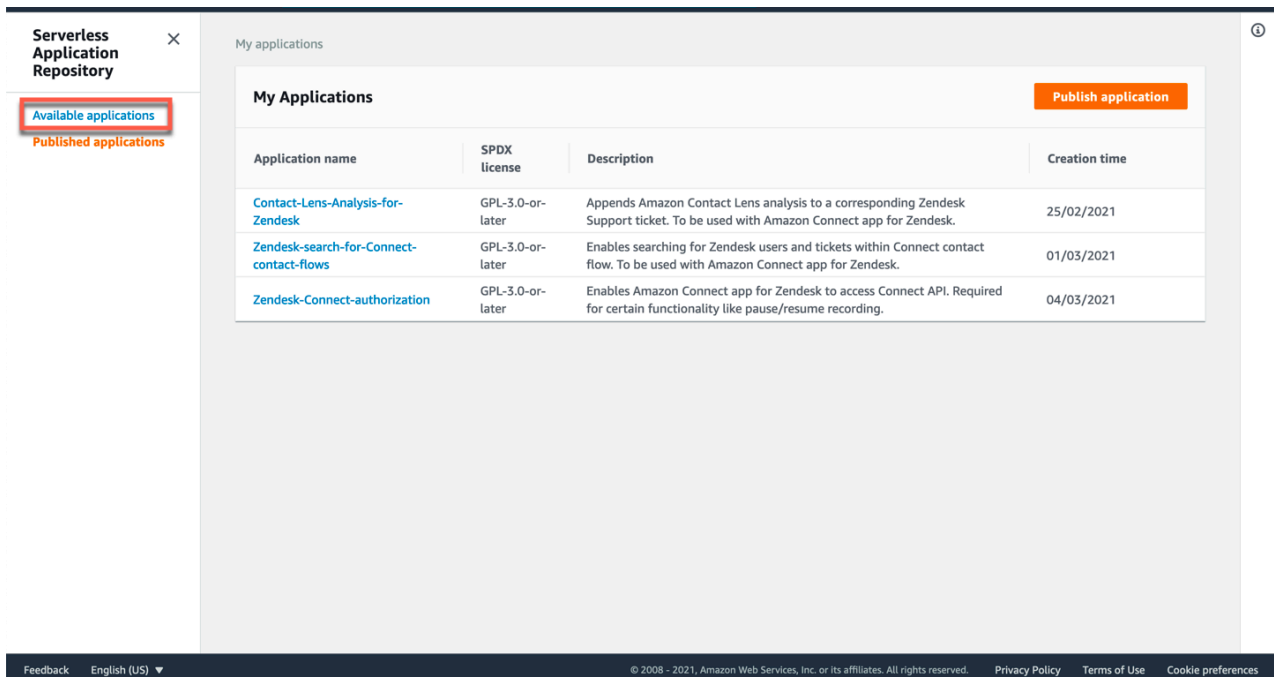
[Learn more](#)

### 3 Installation guide

To enable this feature you will need to install a serverless application within the AWS Serverless Application Repository. Sign in to your AWS account, then search for and select the *Serverless Application Repository* service.

 Make sure you are in the same region as your Connect instance.

Click on *Available applications*.

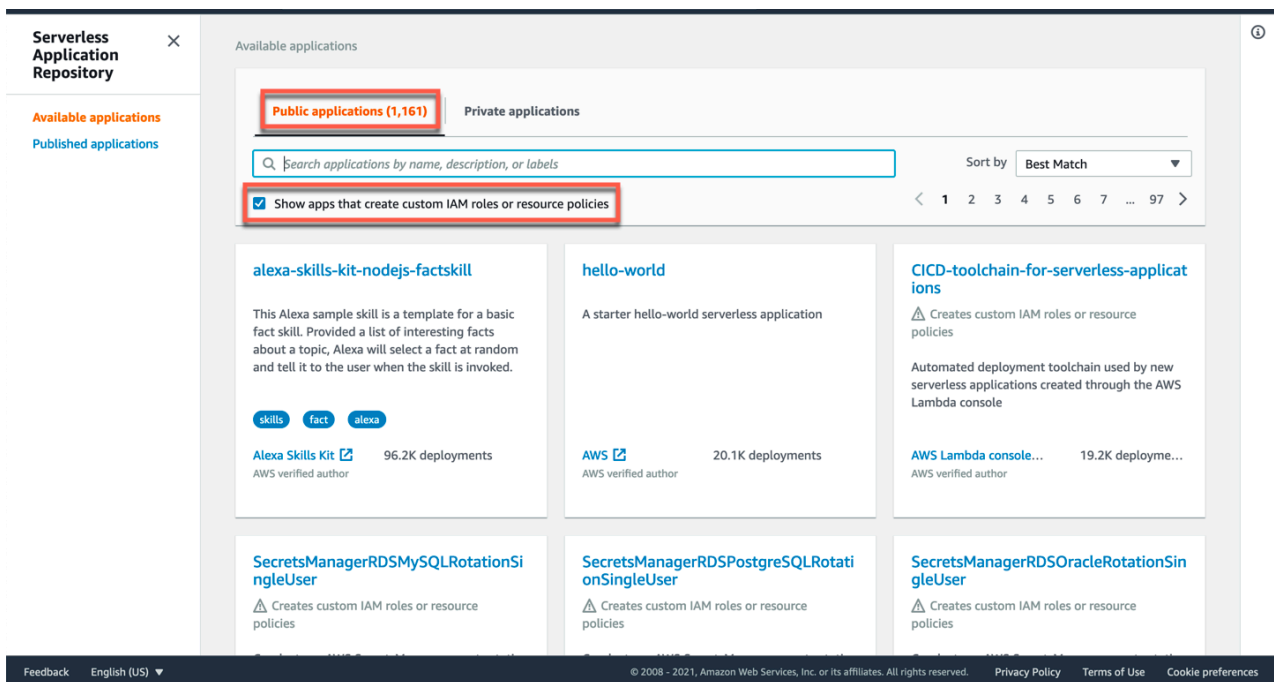


The screenshot shows the AWS Serverless Application Repository console. On the left sidebar, under 'Serverless Application Repository', the 'Available applications' link is highlighted with a red box. The main content area is titled 'My applications' and contains a table of applications. A 'Publish application' button is located in the top right corner of the table area.

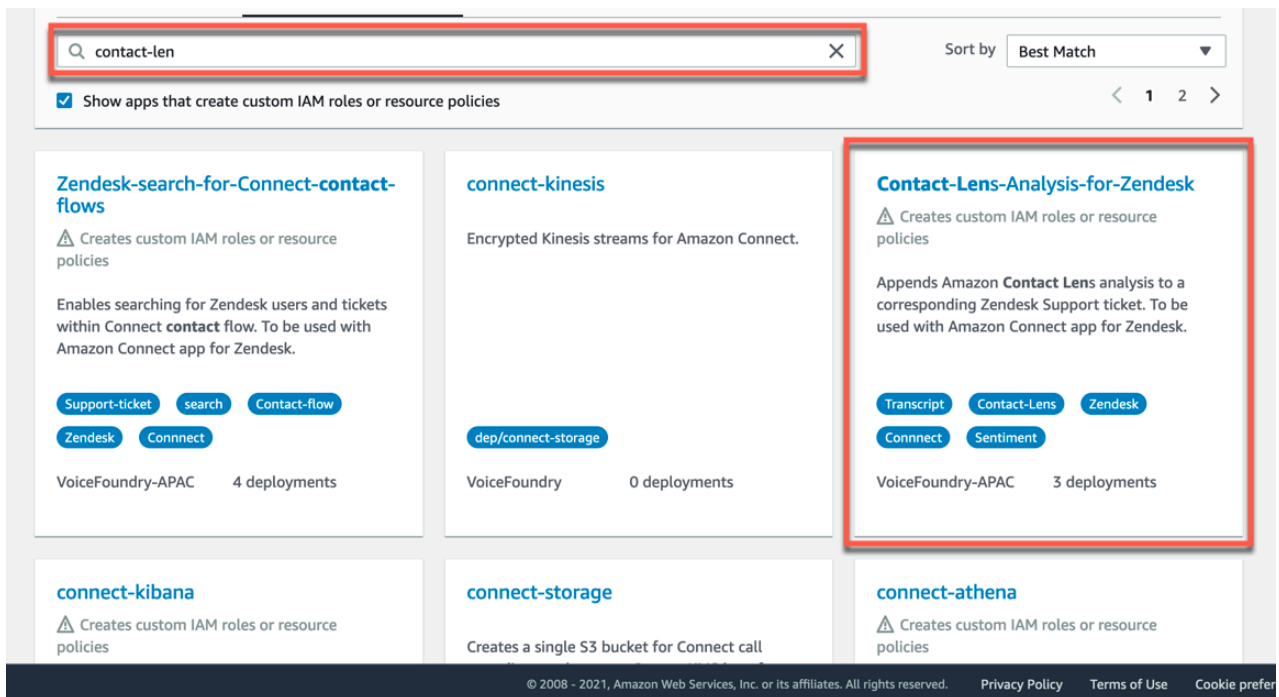
Application name	SPDX license	Description	Creation time
<a href="#">Contact-Lens-Analysis-for-Zendesk</a>	GPL-3.0-or-later	Appends Amazon Contact Lens analysis to a corresponding Zendesk Support ticket. To be used with Amazon Connect app for Zendesk.	25/02/2021
<a href="#">Zendesk-search-for-Connect-contact-flows</a>	GPL-3.0-or-later	Enables searching for Zendesk users and tickets within Connect contact flow. To be used with Amazon Connect app for Zendesk.	01/03/2021
<a href="#">Zendesk-Connect-authorization</a>	GPL-3.0-or-later	Enables Amazon Connect app for Zendesk to access Connect API. Required for certain functionality like pause/resume recording.	04/03/2021

Under *Public applications*, select the checkbox *Show apps that create custom IAM roles or resource policies*.

## Enabling speech analysis using Contact Lens



Search for and select *Contact-Lens-Analysis-for-Zendesk*.



Scroll down to *Application settings* and enter the following information:

## Enabling speech analysis using Contact Lens

**AWS Lambda** ×

Updated console (preview)  
Tell us what you think

Dashboard  
Applications  
**Functions**

▼ **Additional resources**  
Code signing configurations  
Layers

▼ **Related AWS resources**  
Step Functions state machines

**Readme file**

### Installation and Use

Contact Lens Analysis for Zendesk is an optional add-on to the [Amazon Connect app for Zendesk](#). If a ticket is created (or updated) for a call, this add-on will automatically add an internal comment to that ticket attaching the following info:

- a list of categories detected via Contact Lens
- sentiment analysis
- conversation statistics
- conversation transcript

You can view the detailed installation steps [here](#).

**Application settings** ←

**Application name**  
The stack name of this application created via AWS CloudFormation  
Contact-Lens-Analysis-for-Zendesk

**ConnectBucket**  
The name of an S3 bucket where your Connect call recordings are stored  
connect-xyz

**TargetEnvironment**  
Name of your target environment (dev, UAT, prod, ...)  
prod

▼ **functionUpdateTicket**

**ConnectMasterKeyid**  
Key ID of your KMS key that your stored call recordings are encrypted with

**ConnectURL**  
Connect instance URL (either https://<connect-instance>.awsapps.com, or https://<connect-instance>.my.connect.aws).

**TimeZone**  
Time zone (eg. Australia/Sydney) to be used when linking to Connect Contact Trace Records. For a full list see [https://en.wikipedia.org/wiki/List\\_of\\_tz\\_database\\_time\\_zones](https://en.wikipedia.org/wiki/List_of_tz_database_time_zones)

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### Application name

Leave this name as is.

### ConnectBucket

You will need to enter the name of the S3 bucket that call recordings from your Connect instance are being stored in. To find the name of the S3 bucket for your Connect instance, search for and select *Amazon Connect* within your AWS account. Select your Connect instance.

## Amazon Connect virtual contact center instances

Select a virtual contact center instance to manage its directory, administrator(s), telephony options, data storage, and advanced features.

**Add an instance** Remove

Instance Alias	Access URL	Channels	Create Date	Status
<input type="checkbox"/> [redacted]	[redacted]	Inbound, outbound telephony	05/05/2020	Active
<input type="checkbox"/> [redacted] ←	[redacted]	Inbound, outbound telephony	05/05/2020	Active

Click on *Data storage*.

## Enabling speech analysis using Contact Lens

Amazon Connect > vf-dev-1

### Overview

Telephony

Data storage

Data streaming

Analytics tools

Tasks

Customer profiles

Approved origins

Contact flows

Your S3 bucket name can be found here (up to the first forward slash).

## Data storage

Saving Amazon Connect data such as call recordings or scheduled reports requires access to an Amazon S3 bucket. Your data storage configurations for Amazon Connect is reflected below.

### Call recordings

Call recording will be stored here

arn:aws:s3:::connect-logs-us-east-1-111111111111-us-east-1

Edit

Encrypted using this key

connect-master-key

Copy this S3 bucket name into the *ConnectBucket* field.

### TargetEnvironment

This is the name of your target environment (dev, UAT, prod etc). If unsure, just leave as *prod*.

### ConnectMasterKeyId



Your call recordings from your Connect instance must be encrypted in order for speech analysis to work. Encryption is enabled by default for all call recordings using Amazon S3 server-side encryption with KMS. You can view more information about recording behaviour [here](#).

To find the Key ID search for and select *Amazon Connect* within your AWS account. Select your Connect instance.



## Enabling speech analysis using Contact Lens

### Amazon Connect virtual contact center instances

Select a virtual contact center instance to manage its directory, administrator(s), telephony options, data storage, and advanced features.

[Add an instance](#) [Remove](#) [Refresh](#)

Instance Alias	Access URL	Channels	Create Date	Status
<input type="checkbox"/> <a href="#">[alias]</a>	<a href="#">[url]</a>	Inbound, outbound telephony	05/05/2020	Active
<input type="checkbox"/> <a href="#">[alias]</a>	<a href="#">[url]</a>	Inbound, outbound telephony	05/05/2020	Active

[Feedback](#) [English \(US\)](#) [© 2008 - 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved.](#) [Privacy Policy](#) [Terms of Use](#) [Cookie preferences](#)

Click on *Data storage*.

[Amazon Connect](#) > [vf-dev-1](#)

Overview

Telephony

**Data storage**

Data streaming

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The alias name of your Key ID will be found here. Note this name down as you will need to search for it in the next step.

## Enabling speech analysis using Contact Lens

### Data storage

Saving Amazon Connect data such as call recordings or scheduled reports requires access to an Amazon S3 bucket. Your data storage configurations for Amazon Connect is reflected below.

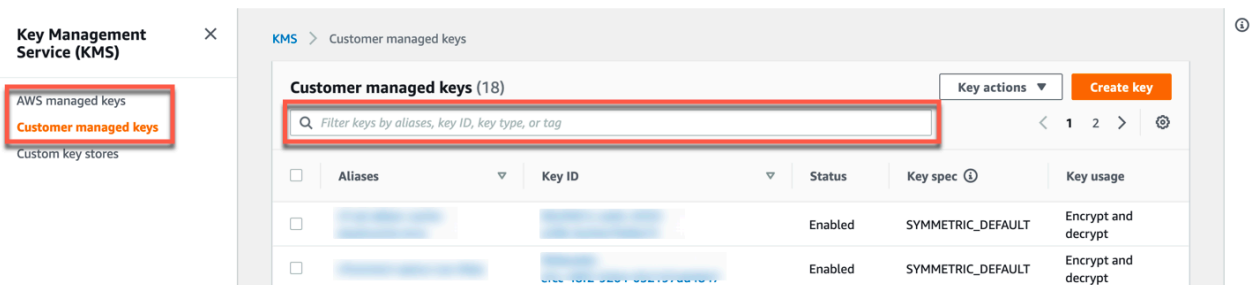
### Call recordings

Call recording will be stored here

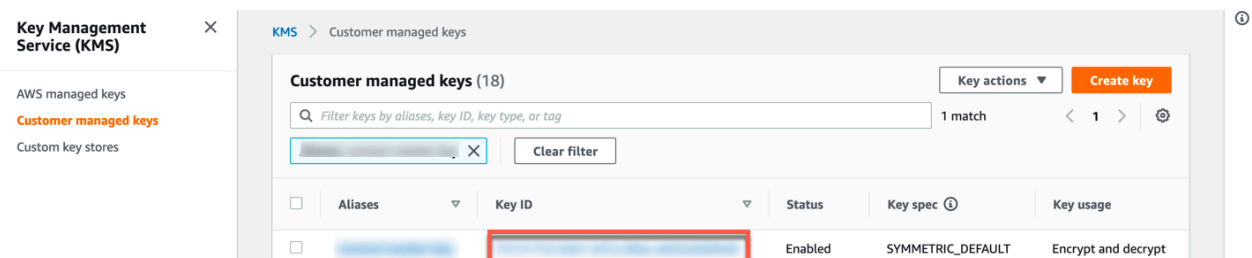
Edit

Encrypted using this key

In your AWS account, search for and select the *Key Management Service* service. Search for the alias name of your Key ID which you noted down in the previous step. Based on how you configured your encryption for recordings, you may need to search within both *AWS managed keys* and *Customer managed keys* to locate your Key ID.



Copy and paste the *Key ID* into the *ConnectMasterKeyId* field.



### ConnectURL

Enter your Connect instance URL (the format of the URL should be either *https://<connect-instance>.awsapps.com*, or *https://<connect-instance>.my.connect.aws*).

### TimeZone

Enter your local timezone in the following format (e.g. Australia/Sydney). View a full list of timezones [here](#).

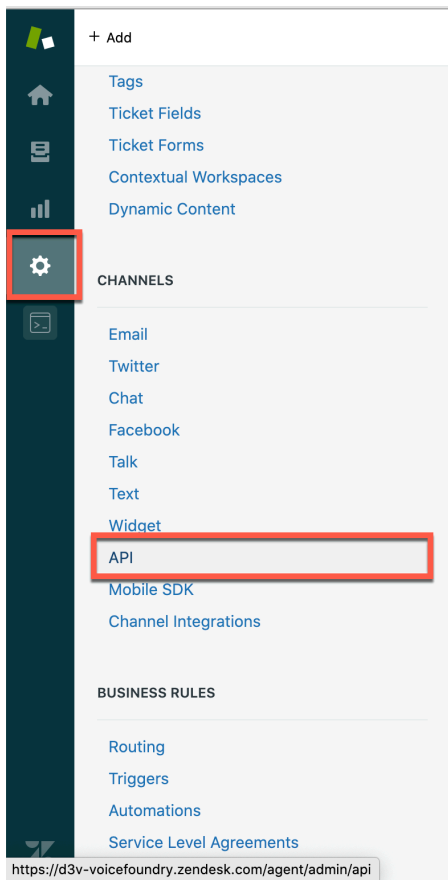
### ZendeskEmailID

Enter the verified email address of a Zendesk user for your Zendesk instance.

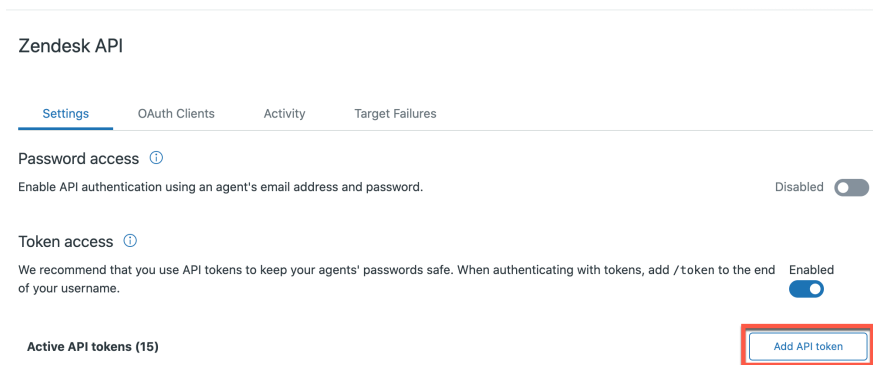
### ZendeskToken

Sign in to your Zendesk instance. Click on *Admin* within the left hand navigation bar, and under *Channels* select *API*.

## Enabling speech analysis using Contact Lens



Click on *Add API token*.



Click on *Copy*. Paste the API token into the *ZendeskToken* field.

## Enabling speech analysis using Contact Lens

### ZendeskURL

Enter the URL of your Zendesk instance. Ensure the URL begins with *https://* and does not include */* at the end of the URL or the stack will fail.

Select the checkbox to *create custom IAM roles* and click on *Deploy*.

**Application settings**

**Application name**  
The stack name of this application created via AWS CloudFormation

**ConnectBucket**  
S3 bucket name for your Connect data storage

**TargetEnvironment**  
Name of your target environment (dev, UAT, prod, ...)

▼ **functionUpdateTicket**

**ConnectMasterKeyid**  
Key ID of your KMS customer managed key with alias connect-master-key

**ConnectURL**  
Connect instance URL (either `https://<connect-instance>.awsapps.com`, or `https://<connect-instance>.my.connect.aws`).

**TimeZone**  
Time zone (eg. Australia/Sydney) to be used when linking to Connect Contact Trace Records. For a full list see [https://en.wikipedia.org/wiki/List\\_of\\_tz\\_database\\_time\\_zones](https://en.wikipedia.org/wiki/List_of_tz_database_time_zones)

**ZendeskEmailID**  
The Zendesk Admin Email ID for the selected Zendesk Instance

**ZendeskToken**  
Zendesk Token with Admin privileges. This needs to be generated as a pre-requisite for this installation.

**ZendeskURL**  
Zendesk URL (`https://<your-name>.zendesk.com`). The Zendesk instance needs to be created as a pre-requisite for this installation.

☒ I acknowledge that this app creates custom IAM roles. [info](#)

Cancel Previous **Deploy**

Once the stack has successfully been deployed, scroll down and click on *functionUpdateTicket*.

## Enabling speech analysis using Contact Lens

The screenshot shows the 'Set up your development environment' page in the AWS Lambda console. It lists several tools and services for building, testing, and deploying applications:

- Visual Studio**: Quickly create .NET Core functions from a blueprint. Compile, deploy, configure, and test your function from within Visual Studio.
- Visual Studio Code**: Configure the AWS Toolkit for Visual Studio Code to edit your serverless applications in Microsoft Visual Studio Code.
- JetBrains**: Configure the AWS Toolkit for JetBrains to edit your serverless applications in JetBrains IDEs.
- AWS SAM CLI**: Define the infrastructure for your serverless application in an AWS SAM template. Deploy your function and other application resources from the command line. Build, test, and debug function code locally in a Docker container that emulates the Lambda execution environment.

Below these tools, there is a link to 'View all the current AWS Lambda Partners'. The 'Resources (5)' section shows a table with the following data:

Logical ID	Physical ID	Type	Last modified
<b>functionUpdateTicket</b>	contactLensZendeskUpdate-uat	Lambda Function	last week
functionUpdateTicketscheduledEvent	zendeskRetrySchedule-uat	Events Rule	last month
tableZendeskRetries	zendeskUpdateRetries-uat	DynamoDB Table	last week

Click on *Add trigger*.

The screenshot shows the 'contactLensZendeskUpdate-uat' function configuration page in the AWS Lambda console. The 'Function overview' section displays the function's description, last modified date, function ARN, and application. The 'Configuration' tab is selected, showing the 'Triggers' section. The 'Add trigger' button is highlighted with a red box. The 'Triggers' section shows a search for 's3' with 0 matches.

Function overview:

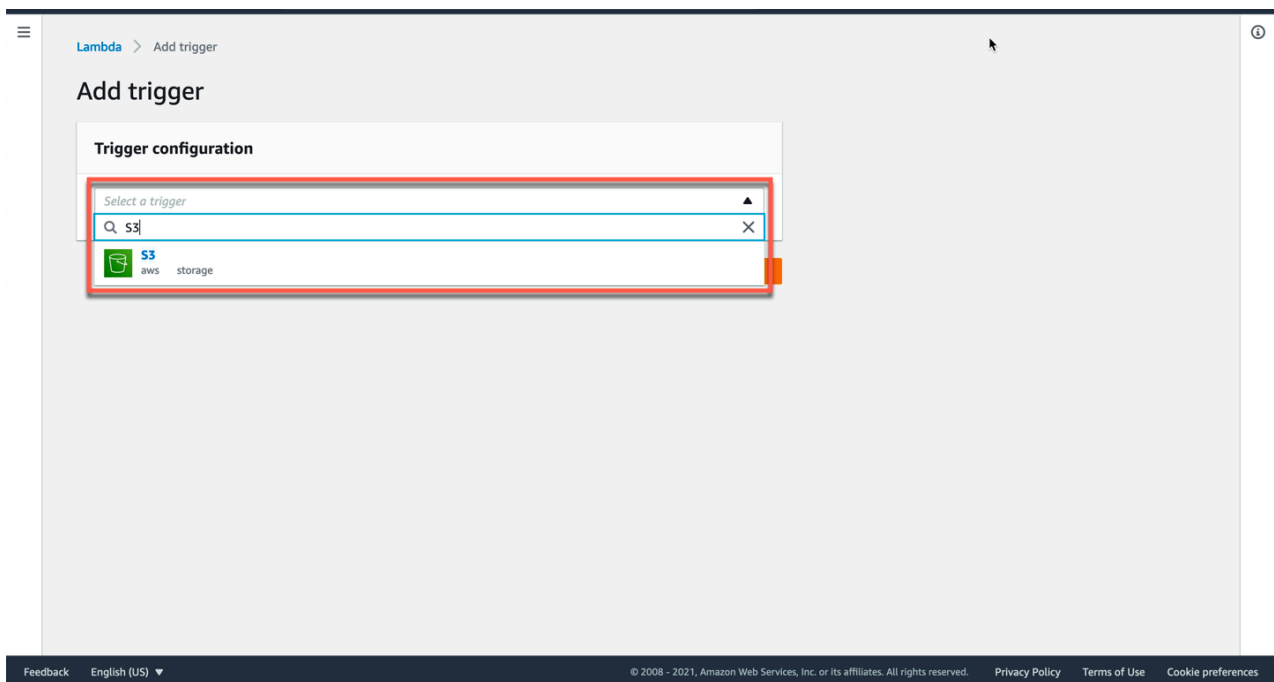
- Function name:** contactLensZendeskUpdate-uat
- Description:** Triggered on upload of Contact Lens analysis to S3 bucket, it finds and updates the matching Zendesk support ticket
- Last modified:** last week
- Function ARN:** arn:aws:lambda:ap-southeast-2:214558022353:function:contactLensZendeskUpdate-uat
- Application:** serverlessrepo-Contact-Lens-Analysis-for-Zendesk

Configuration tab:

- Triggers (1):** Search for 's3' (0 matches). No triggers were found.

In the dropdown search for and select S3.

## Enabling speech analysis using Contact Lens

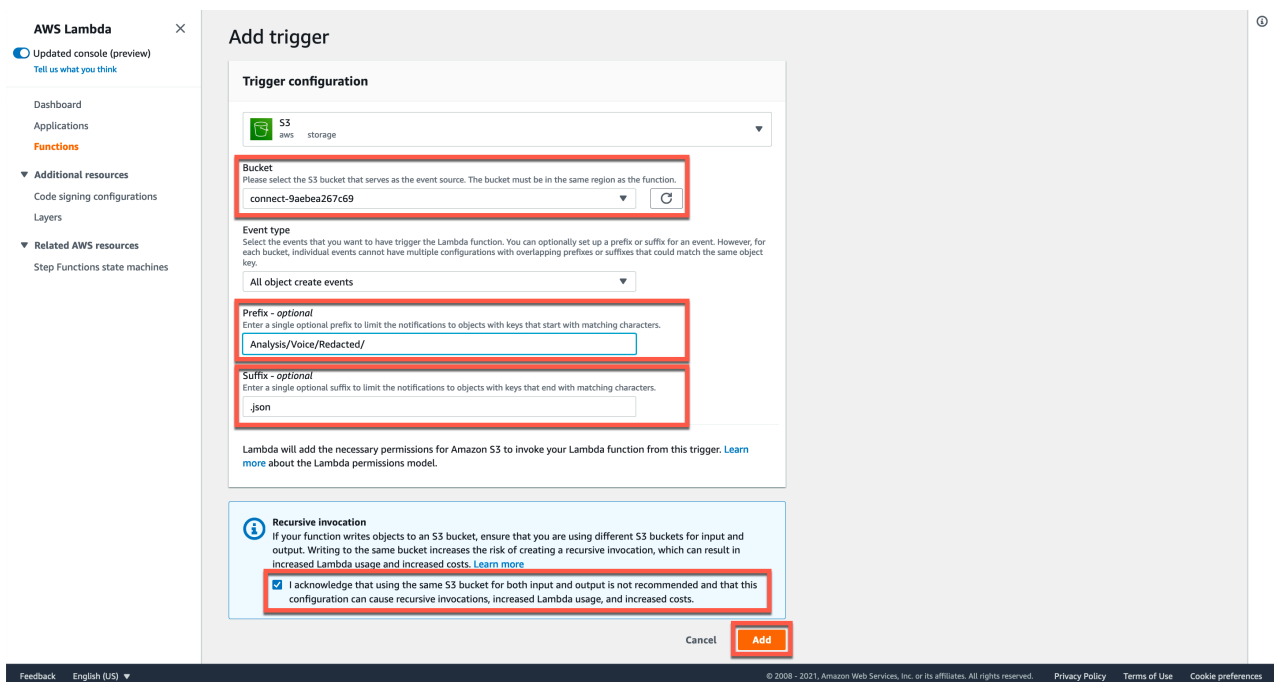


In the *Bucket* field select the S3 bucket that call recordings from your Connect instance are being saved in.

In the *Prefix* field enter *Analysis/Voice/Redacted/*.

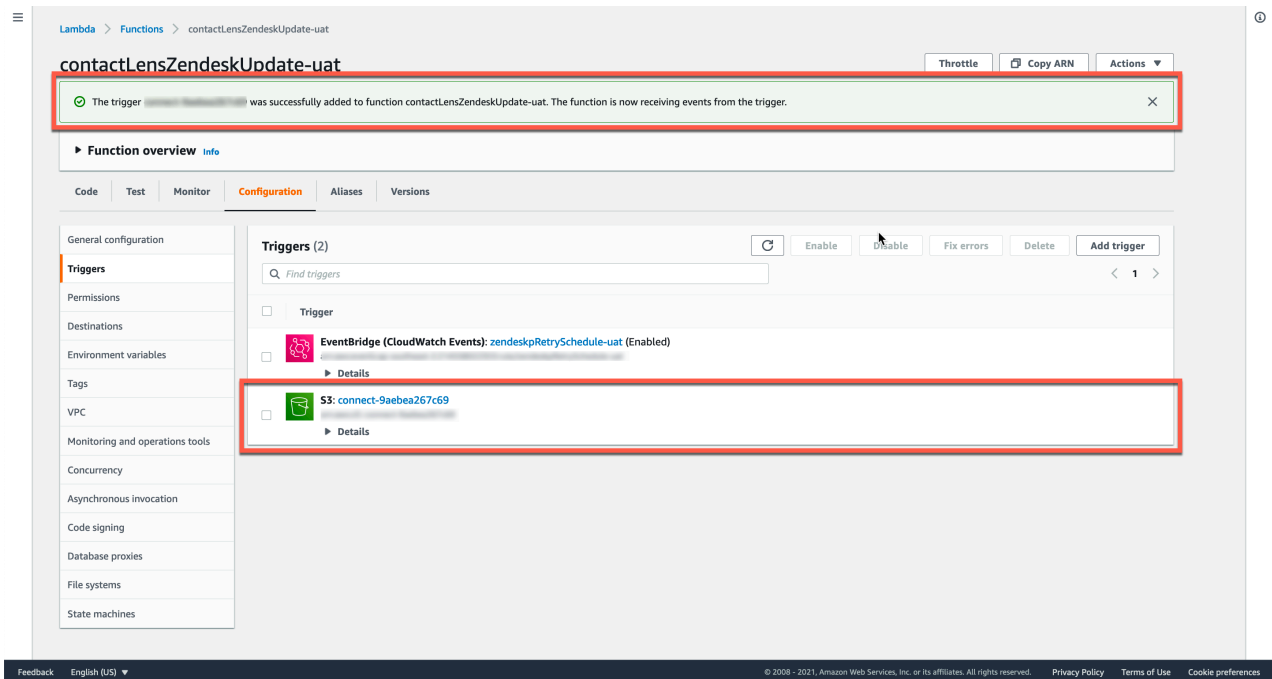
In the *Suffix* field enter *.json*.

Tick the *Recursive invocation* checkbox and click *Add*.



The trigger for S3 will be added.

## Enabling speech analysis using Contact Lens



Once the above has been configured, any calls with Contact Lens enabled within the contact flow will have the following attached to a Zendesk ticket.

- Call Transcription
- Customer and agent sentiment
- Categories based on rules set within Contact Lens
- Conversation characteristics

### 3.1 Attaching Contact Lens' speech analysis to Zendesk tickets

Once the following criteria has been met, Contact Lens will automatically attach its speech analysis to a Zendesk ticket.

1. Enable Contact lens for your Connect instance.
2. Run the CloudFormation template for Contact Lens.
3. Enable Contact Lens within the *Set recording and analytics behaviour* block of your inbound and outbound contact flows.

**NOTE:** The Amazon Connect app for Zendesk only supports analysis of **redacted** call recordings. As such please ensure that the following checkbox is ticked within the *Set recording and analytics behaviour* block of your inbound and outbound contact flows, otherwise you will not be able to attach Contact Lens' speech analysis to any of your tickets.

- ☒ Redact sensitive data

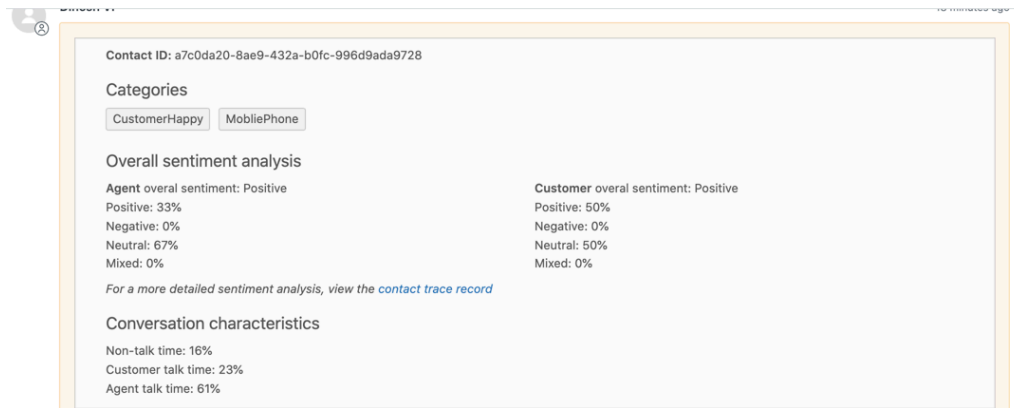
Redact sensitive data, such as personal information, in the Contact Lens output file and get a redacted audio recording. Sensitive data redaction is applied after the call disconnects, and is currently available for certain languages only.

[Learn more](#)

## Enabling speech analysis using Contact Lens

Once a call has ended, the following information will be attached to your Zendesk ticket.

### 3.1.1 Categories, overall sentiment analysis and conversation characteristics



Contact ID: a7c0da20-8ae9-432a-b0fc-996d9ada9728

**Categories**

CustomerHappy MobilePhone

**Overall sentiment analysis**

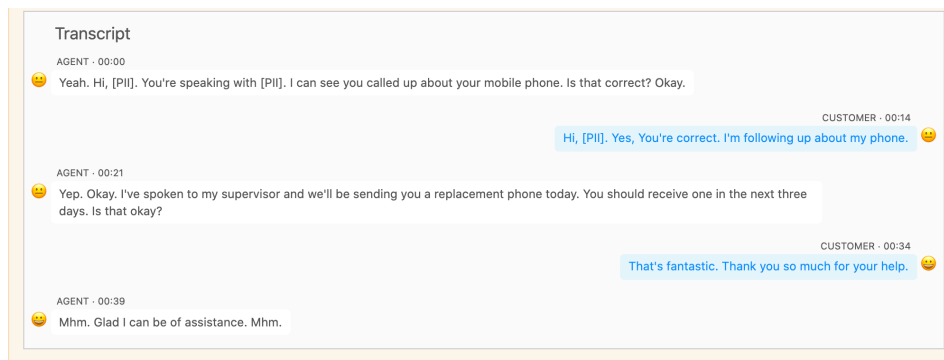
<b>Agent overall sentiment:</b> Positive	<b>Customer overall sentiment:</b> Positive
Positive: 33%	Positive: 50%
Negative: 0%	Negative: 0%
Neutral: 67%	Neutral: 50%
Mixed: 0%	Mixed: 0%

For a more detailed sentiment analysis, view the [contact trace record](#)

**Conversation characteristics**

Non-talk time: 16%  
Customer talk time: 23%  
Agent talk time: 61%

### 3.1.2 Transcript



**Transcript**

AGENT - 00:00  
😊 Yeah, Hi, [PII]. You're speaking with [PII]. I can see you called up about your mobile phone. Is that correct? Okay.

CUSTOMER - 00:14  
Hi, [PII]. Yes, You're correct. I'm following up about my phone. 😊

AGENT - 00:21  
😊 Yep. Okay. I've spoken to my supervisor and we'll be sending you a replacement phone today. You should receive one in the next three days. Is that okay?

CUSTOMER - 00:34  
That's fantastic. Thank you so much for your help. 😊

AGENT - 00:39  
😊 Mhm. Glad I can be of assistance. Mhm.