



Amazon AWS Connect HERE Location Services Integration

Amazon Connect

Users should be familiar with Amazon Connect and Amazon Web Services (AWS) prior to leveraging the HERE Location Services (HLS). Please refer to the Amazon Connect User Guide and the AWS Lambda Developer Guide for detailed information on both services.

HERE Location Services

HERE has created an integration with Amazon Connect that enables customers to utilize a rich set of Maps and Location services including Geocoding, Places Search, Basic Routing, and ETAs. Before integrating, please contact HERE for pricing information and access to the service via an API key.

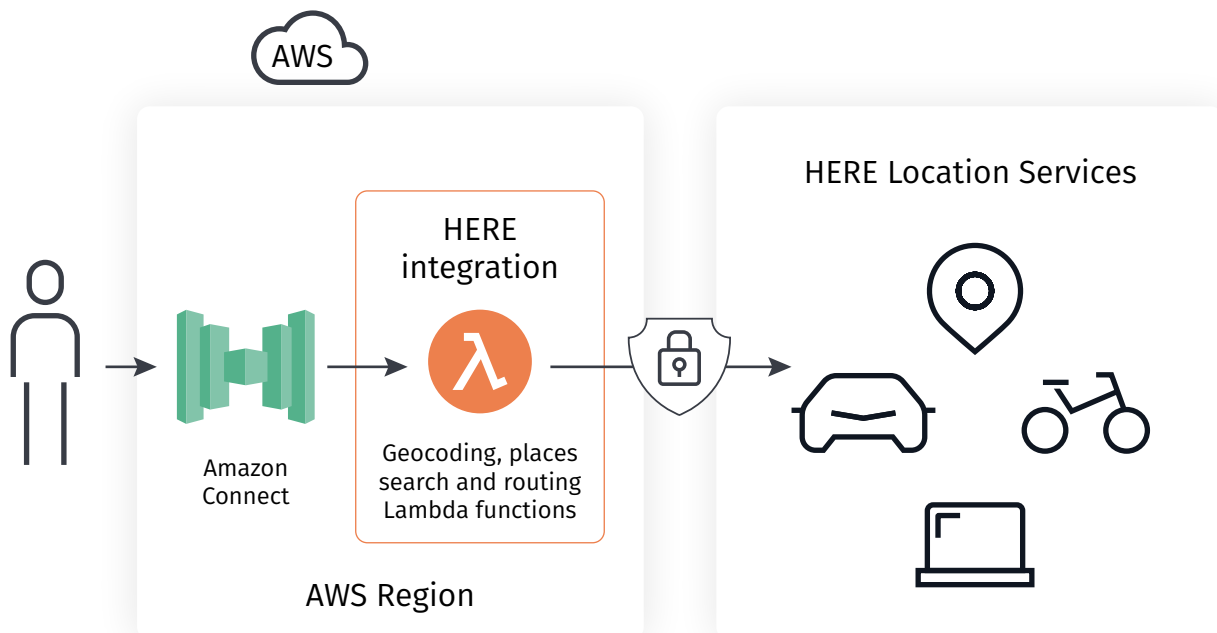


Figure 1 – Dataflow diagram of HERE architecture within Amazon Connect



Step-by-step

1. Create a Connect instance and write down your instance ARN.
2. Sign up for a HERE account at developer.here.com/plans to get an App ID/Code.
3. Deploy the HERE Integration Lambda functions into your account using the CloudFormation templates (see below).
4. Create a ContactFlow using “invoke AWS Lambda function” blocks. There is a demo walkthrough below.

HERE lambda function parameters

Service	Input parameters	Output parameters
Geocoder	• State - currently supporting US states, either as full “California” or abbreviated “CA” • City - currently US cities • Address - the street address “223 Main Street”	• Position - the position with lat/ lng as “38.543443;- 122.463644”
Places	• Position - the position with lat/lng as “38.543443;- 122.463644” • Radius - the radius for the search in meters “50.0” • Category (optional) - the category of places described in Place Categories	• PlacesCount - number of position • PositionFirst - the position of the highest ranked place with lat/lng as “38.543443;- 122.463644”
Routing	• PositionFrom - the position with lat/lng as “38.543443;- 122.463644” • PositionTo - the position with lat/lng as “38.543443;- 122.463644”	• TravelTime - the travel time in minutes under current traffic circumstances



Configuring service using the cloud formation template

1. Open one of the following template URLs to deploy the HERE integrations you need:
 - HERE Geocoder
 - HERE Places
 - HERE Router
2. On the Create stack page, change the stack name if needed. Review the parameters for the template. Provide values for the parameters that require input. For all other parameters, review the default settings and customize them as necessary. When you finish reviewing and customizing the parameters, choose Next.

Parameters include:

Parameter	Default	Description
HERE Location Suite Application ID	Required	Your HERE Location Services App ID.
HERE Location Suite Application Code	Required	Your HERE Location Services App Code.

Grant Amazon Connect permissions to use HERE integration lambdas

1. Go to your Amazon Aws Console's Connect Instances list and click on your new Connect Instance
2. Navigate to "Contact flows" page
3. In the AWS Lambda section: Find the HERE lambdas in the "Function" drop down and click "+Add Lambda Function"

AWS Lambda

Amazon Connect can interact with your own systems and take different paths in IVR dynamically. To achieve this, invoke AWS Lambda functions in contact flows to interact with your own systems or other services, then build personalized and dynamic experiences based on data returned.

Note: By adding Lambda functions, you are granting Amazon Connect permission to invoke them [Create a new Lambda function](#)

Function Select

+ Add Lambda Function

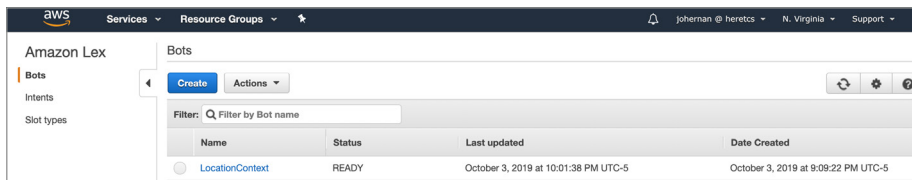
Lambda Functions

Amazon-Connect-HERE-Location-GeocoderLambdaFunction-1DQ2PO3AKGC69	arn:aws:lambda:us-east-1:[redacted]:function:Amazon-Connect-HERE-Location-GeocoderLambdaFunction-[redacted]	 Remove
Amazon-Connect-HERE-Location-PlacesLambdaFunction-U7MDVR5GYOAM	arn:aws:lambda:us-east-1:[redacted]:function:Amazon-Connect-HERE-Location-PlacesLambdaFunction-[redacted]	 Remove
Amazon-Connect-HERE-Location-RoutingLambdaFunction-1RK7AY65UNZ2D	arn:aws:lambda:us-east-1:[redacted]:function:Amazon-Connect-HERE-Location-RoutingLambdaFunction-[redacted]	 Remove



Create simple Amazon lex bot to get caller input

1. Go to your Amazon Aws Console's Connect Instances list and click on your new Connect Instance
2. Navigate to "Contact flows" page
3. In the "Amazon Lex" section select "Create a new Lex bot"
4. Click "Create"



5. Set the following options in the "Create your bot" page then click "Create"
 - Choose the "Custom bot" option
 - Bot name: MyLocationContext
 - Output voice: Joanna (or any other voice you prefer)
 - Session timeout: 1 min (or any other timeout value you prefer)
 - COPPA: no
6. The Amazon Lex bot is now created. Next, create an Intent to define the information needed. Go to your Amazon Lex bot's Editor tab and set the following configurations then click "Save intent"
 - Intent name: Find
 - Sample utterance: Find a coffee shop
 - Slots

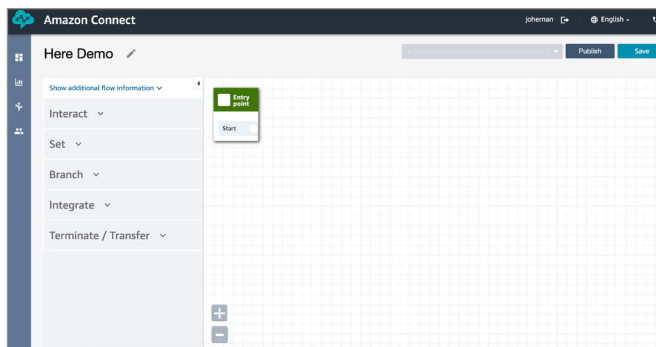
Required	Name	Description	Prompt
Yes	State	AMAZON.US_STATE	Please say the state you're in.
Yes	City	AMAZON.US_CITY	Please say the city you're in.
Yes	Address	AMAZON.StreetAddress	Please say your street address.

7. Click Build then click Publish
 - This will prompt for an Alias name. Set alias to "MyLocationContextBot"
8. Go back to the "Contact Flows" page from step 2 and now add MyLocationContext bot in the Amazon Lex section

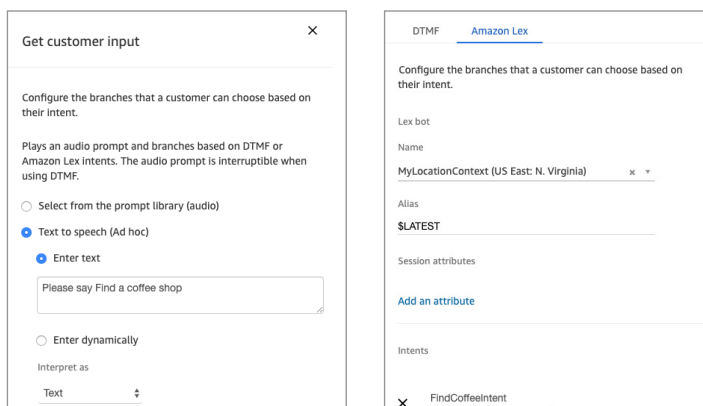


Add lex bot and HERE integration lambdas to connect contact flow

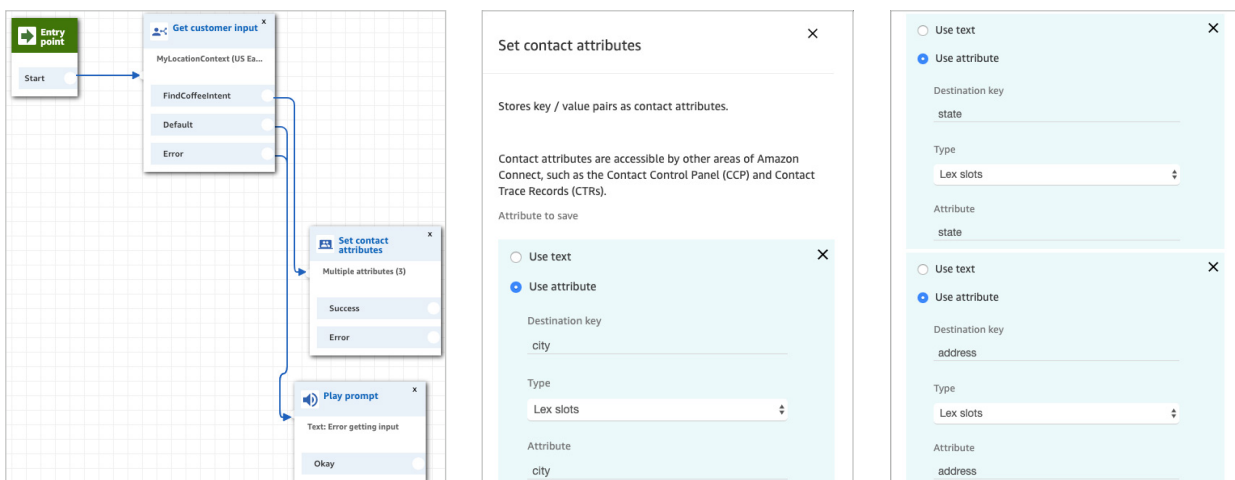
1. Go to your Amazon Connect Instance Dashboard à View contact flows
 - Select “Create contact flow”
2. Set your workflow name to “Here Demo”



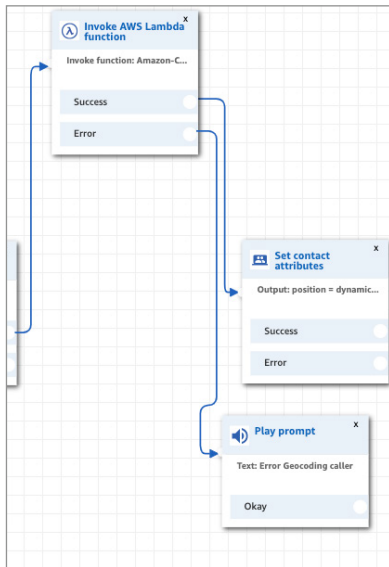
3. From the “Interact” section drag a “Get Customer Input” action block and configure it to use MyLocationContext Lex bot.



4. Connect the output of the Customer Input action block to a “Set Contact Attributes” block



5. Drag “Invoke AWS Lambda function” and set the HERE Geocoder Lambda in order to Geocode caller’s address. Then connect the output of the Lambda to a “Set contact attributes” block



Invoke AWS Lambda function

Makes a call to AWS Lambda, and optionally returns key / value pairs.

The returned key value pairs can be used to set contact attributes.

Function ARN

☒ Select a function

arn:aws:lambda:us-east-1:434581861845:function:Amaz

☐ Use attributes

Function input parameters

☐ Use text

☒ Use attribute

Destination key

City

Type

User Defined

Attribute

city

☐ Use text

☒ Use attribute

Destination key

State

Type

User Defined

Attribute

state

☒ Use text

Destination key

Address

Value

address

☐ Use attribute

Add another parameter

Set contact attributes

Stores key / value pairs as contact attributes.

Contact attributes are accessible by other areas of Amazon Connect, such as the Contact Control Panel (CCP) and Contact Trace Records (CTRs).

Attribute to save

☐ Use text

☒ Use attribute

Destination key

position

Type

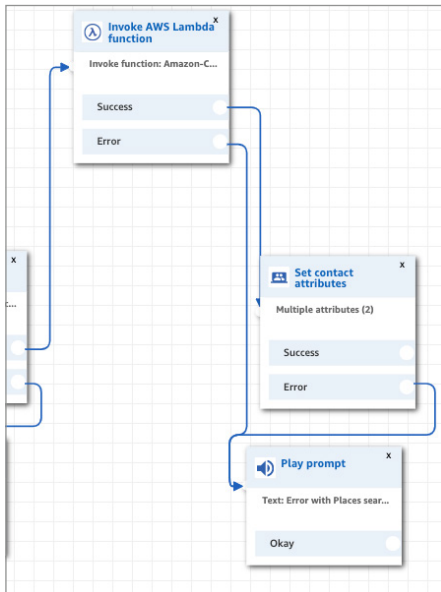
External

Attribute

position



6. Drag “Invoke AWS Lambda function” and set the HERE Places Lambda in order to search for coffee shops around the caller’s location. Then connect the output of the Lambda to a “Set contact attributes” block



Invoke AWS Lambda function

Makes a call to AWS Lambda, and optionally returns key / value pairs.

The returned key value pairs can be used to set contact attributes.

Function ARN

☒ Select a function

Amazon-Connect-HERE-Location-PlacesLambdaFunction

☐ Use attributes

Function input parameters

☐ Use text

☒ Use attribute

Destination key

position

Type

User Defined

Attribute

position

☐ Use text
 ☒ Use attribute

Destination key

radius

Type

User Defined

Attribute

radius

☒ Use text
 ☐ Use attribute

Destination key

Category

Value

coffee

☐ Use attribute

Add another parameter

Timeout (max 8 seconds)

3

Set contact attributes

Stores key / value pairs as contact attributes.

Contact attributes are accessible by other areas of Amazon Connect, such as the Contact Control Panel (CCP) and Contact Trace Records (CTRs).

Attribute to save

☐ Use text
 ☒ Use attribute

Destination key

coffeePosition

Type

External

Attribute

positionFirst

☐ Use text
 ☒ Use attribute

Destination key

coffeeName

Type

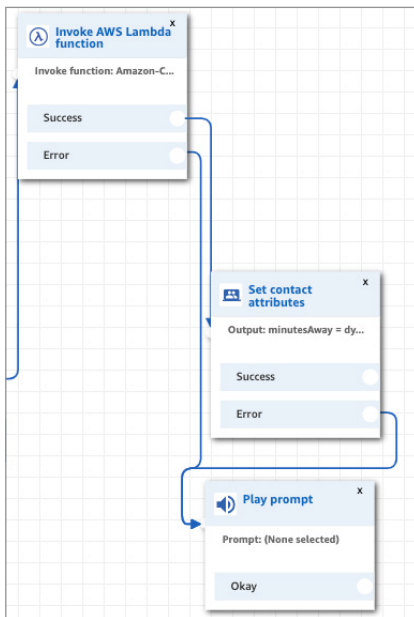
External

Attribute

NameFirst

8

7. Drag “Invoke AWS Lambda function” and set the HERE Routing Lambda in order to calculate traveltime to the first Coffee shop option. Then connect the output of the Lambda to a “Set contact attributes” block



Invoke AWS Lambda function

Makes a call to AWS Lambda, and optionally returns key / value pairs.

The returned key value pairs can be used to set contact attributes.

Function ARN

☒ Select a function

Amazon-Connect-HERE-Location-RoutingLambdaFunc

☐ Use attributes

Function input parameters

☐ Use text

☒ Use attribute

Destination key
positionFrom

Type
User Defined

Attribute
position

☐ Use text

☒ Use attribute

Destination key
positionTo

Type
User Defined

Attribute
coffeePosition

[Add another parameter](#)

Timeout (max 8 seconds)
3

Set contact attributes

Stores key / value pairs as contact attributes.

Contact attributes are accessible by other areas of Amazon Connect, such as the Contact Control Panel (CCP) and Contact Trace Records (CTRs).

Attribute to save

☐ Use text

☒ Use attribute

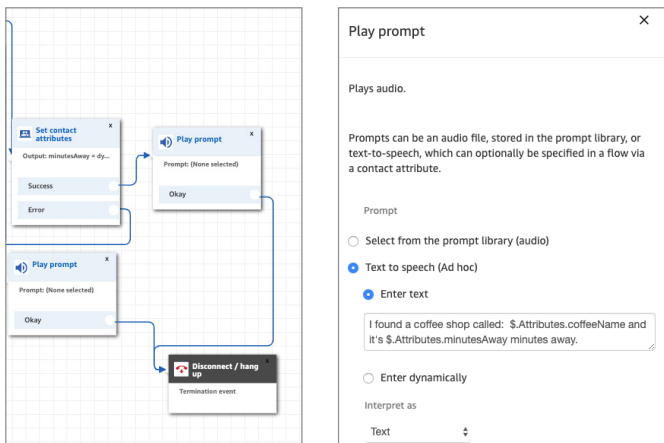
Destination key
minutesAway

Type
External

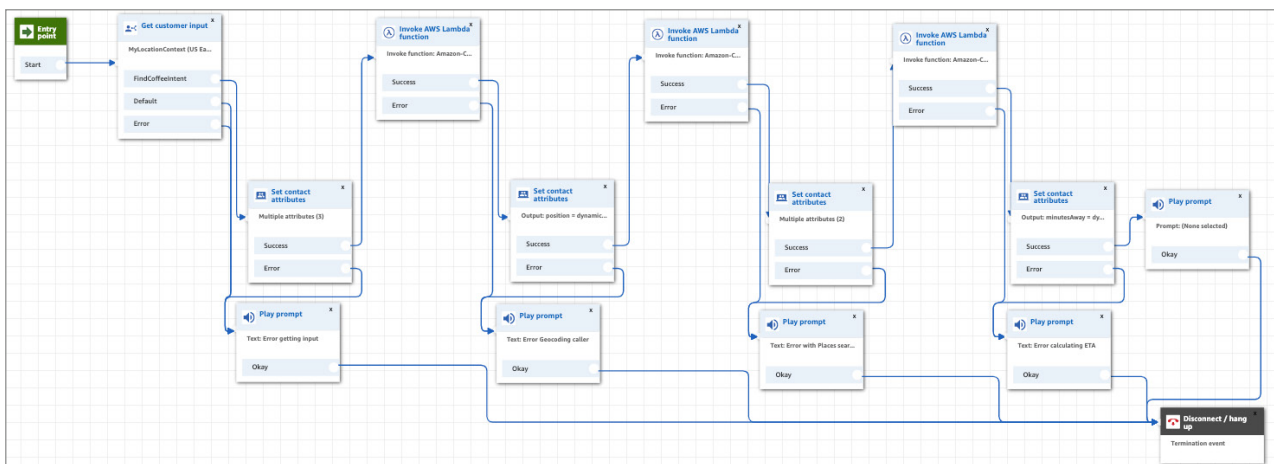
Attribute
TrafficTime



8. The application now has all the information needed to respond with the near coffee shop and ETA calculation. Drag a Play prompt to state this information to the customer.



9. Click “Save” then “Publish”



10. You can now set this contact flow to your Amazon Connect number.

The 'Edit Phone number' form shows a phone number field with a country code of '+1' and a blacked-out number. The 'Description' field contains 'First Phone Number'. The 'Contact flow / IVR' dropdown menu is set to 'Here Demo'. The form has 'Save' and 'Cancel' buttons at the bottom.

11. Test your new contact flow. Call your Amazon Connect phone number and say “Find coffee shop” when prompted. You can try the following address or use your own.
- State: “Illinois”
 - City: “Chicago”
 - Address “425 W Randolph Street”



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