Amazon Connect Workshop Guide

October 2019

Table of Contents

Introduction

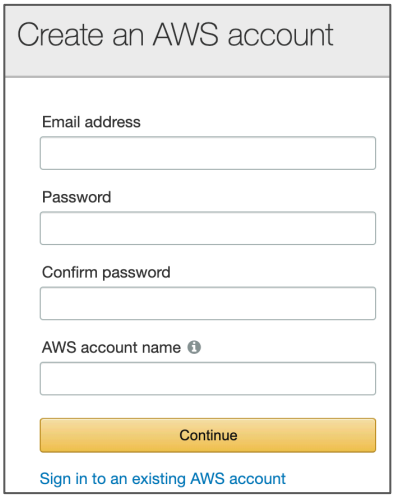
The purpose of this guide is to walk through several examples that expand on beginner and advanced topics using Amazon Connect. The labs contained in this guide are split-up and slowly introduce concepts that build on each other. It is important to start sequentially from Lab 1 in order to best understand the presented material. Certain labs will present methods that use additional AWS services that compliment Amazon Connect. Ensure the account used to follow-along have the necessary level of access for both Amazon Connect and additional AWS services.

At the completion of this guide, you will have learned how to get started working with Amazon Connect, implemented a proper role-based method to route callers to the correct agent to handle, understood how to export and import contact flow for A/B testing or backup purposes, how to work with customer data that is entered during an existing call, and how to query and import external data to make decisions and cater the experience to callers.

Part 1: Create your AWS instance

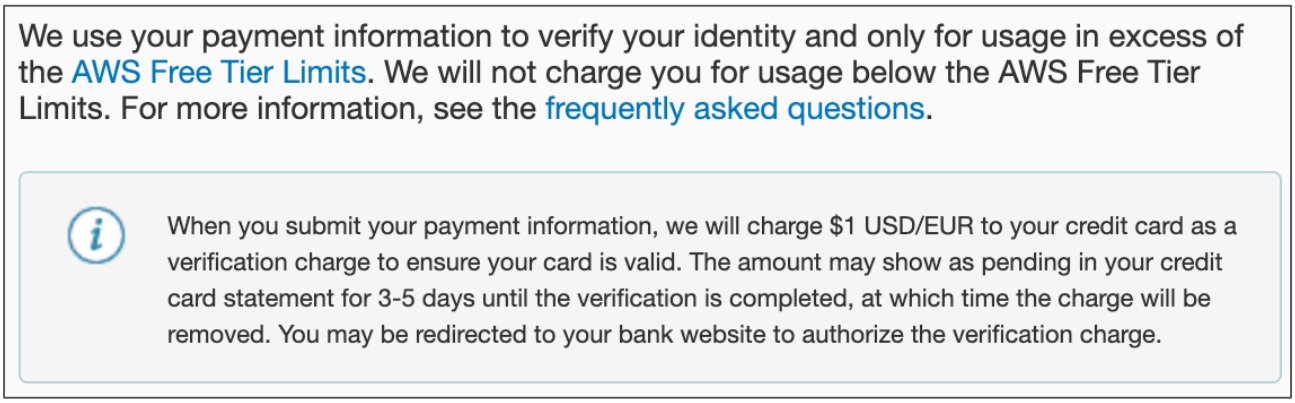
Objective: Create an AWS instance
By the end of this section, you will have created an AWS where you can have access to Amazon's services you will be using throughout this workshop.

1) If you do not have a AWS account, navigate to https://portal.aws.amazon.com/billing/signup#/start. Go through the steps to have your own FREE account.

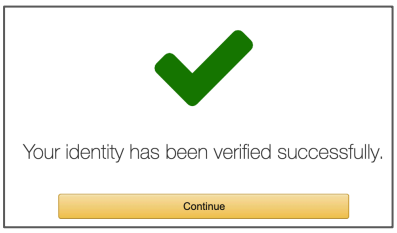


2) Click on "Professional", enter in your company's address and information.

3) Enter in your Credit Card information. Note that $1 charge will be removed once card is verified.

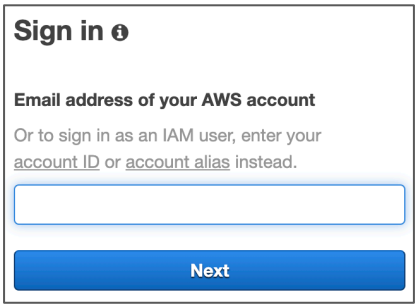


4) Verification of your account via SMS or Phone Call.



5) Click on “Free”

6) Sign into the Management Console. Input the email address and password used.



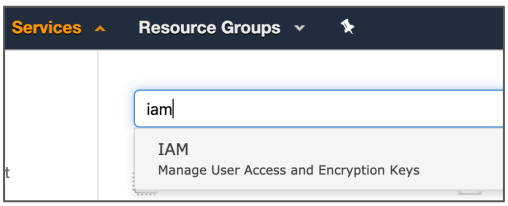
You are all set!

Part 2: IAM (Identity and Access Management)

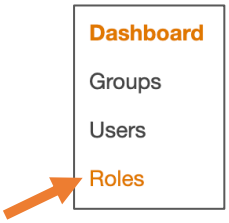
Objective: Setting up the rights and permissions for your lambda function.

By the end of this part, you should be able to navigate and understand where to set up restricted rights for services in AWS.

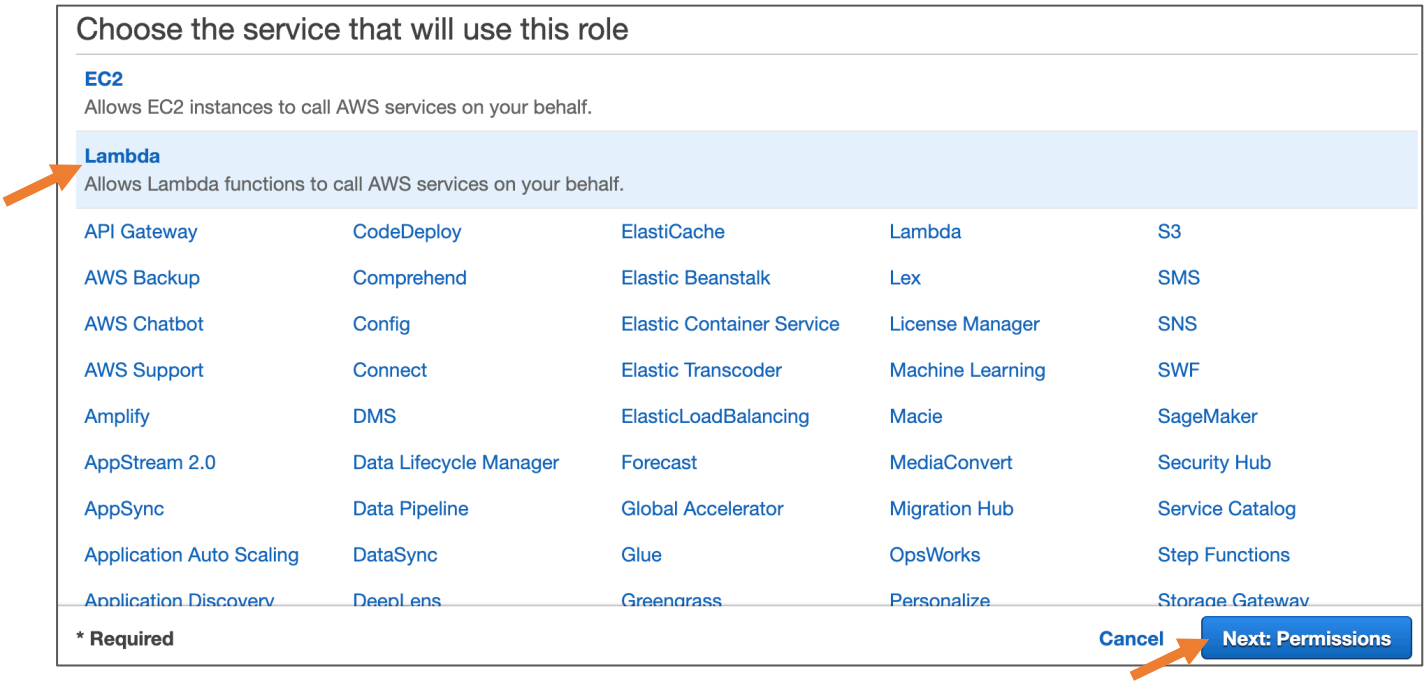
1) Navigate to management console. Enter in **IAM.**



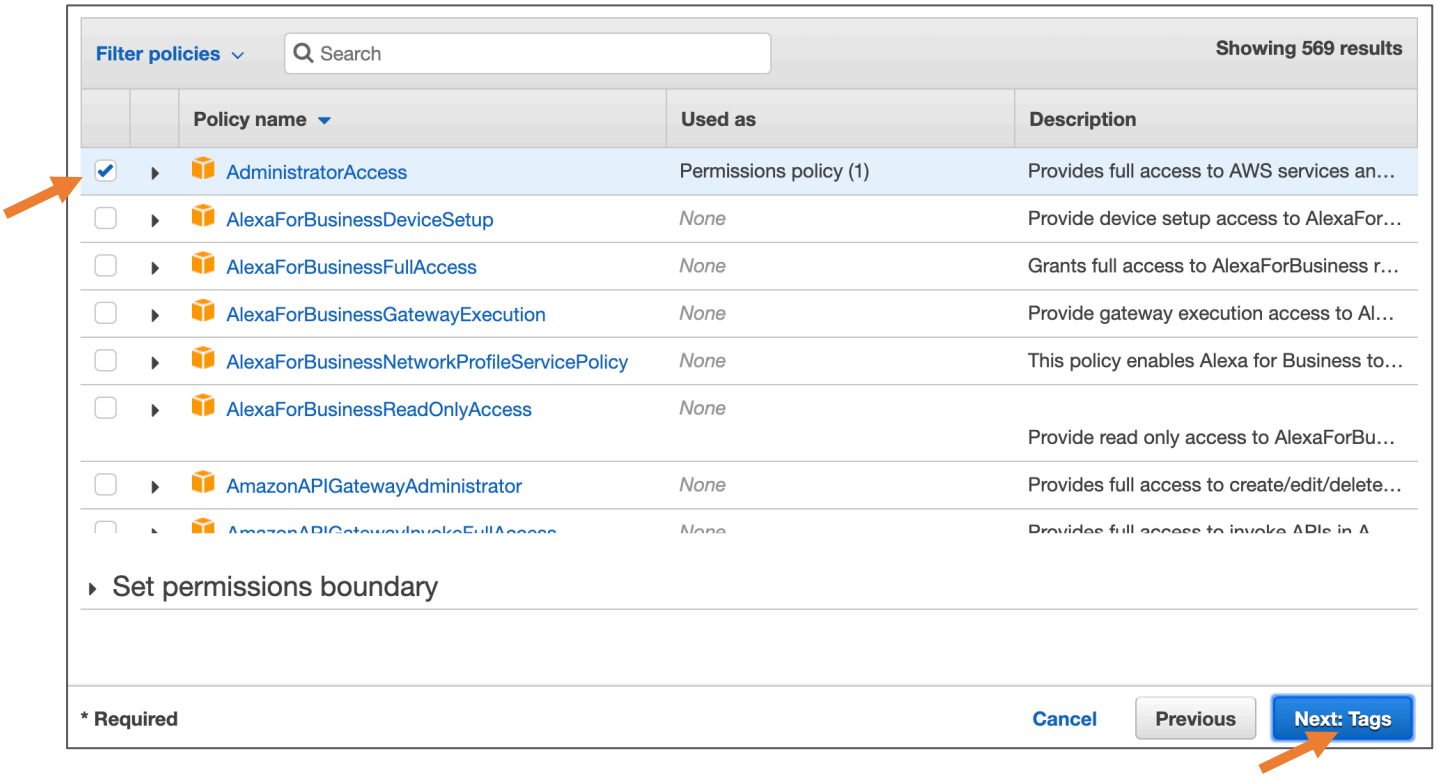
2) On the left-hand column, click on **Roles.**



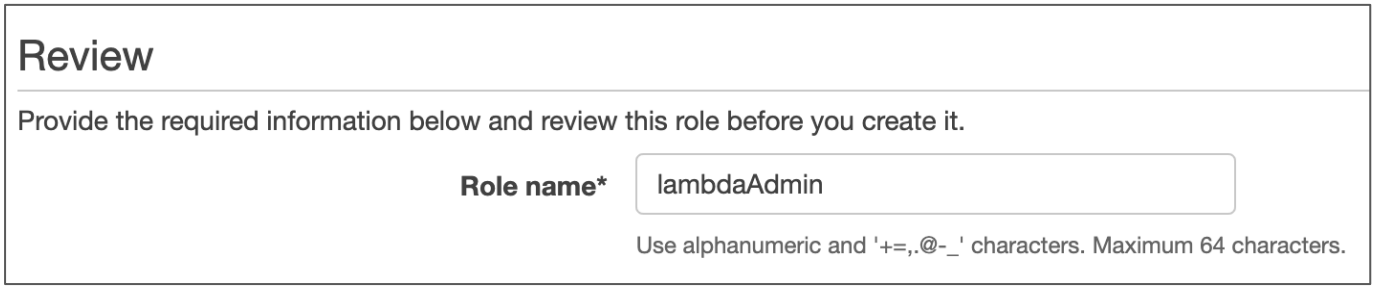
3) Click on the button in blue **Create Role**
4) Click on **Lambda** and click on **Next: Permission** button.



5) Select AdministratorAccess and click Next: Tags.



6) No need for any tags, click on **Next: Review**
7) Give the role a name **lambdaAdmin**. And go ahead with the creation of the role.



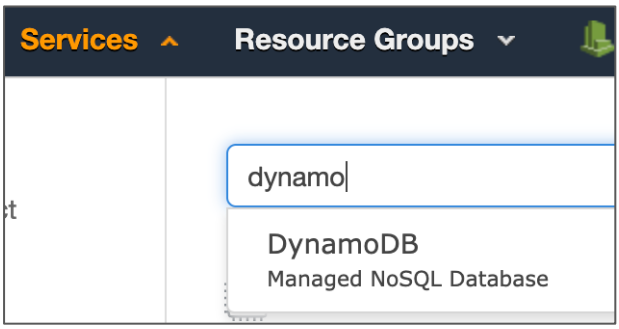
8) All set for your permission set up for the lambda function we are going to use later on!

Part 3: DynamoDB Table

Objective: Simulating your CRM/contact information

By the end of this part, you would have a greater understanding on how we are simulating data that exists in your existing backend systems or CRM that you may have. We will be leveraging this table as a data dip point later on in the parts.

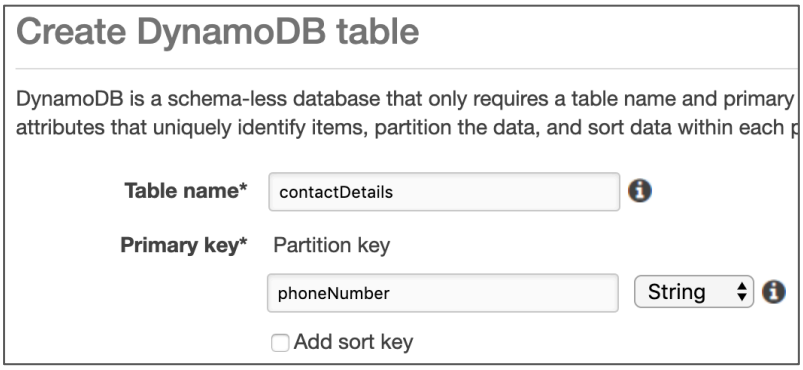
1) Go back into your management console. Search for **DynamoDB**. Click into it.



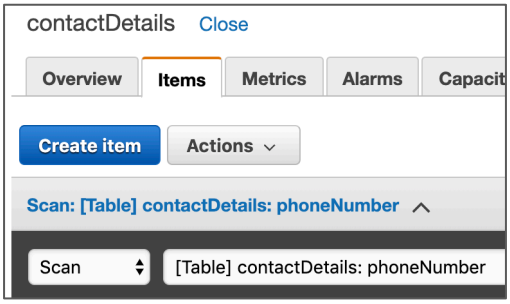
2) Click on 

3) Enter in **contactDetails** for the table name, and **phoneNumber** for the primary key. Click on the blue Create table at the bottom of the page. Table will take a short while to be created.

*NOTE: Names are cap sensitive



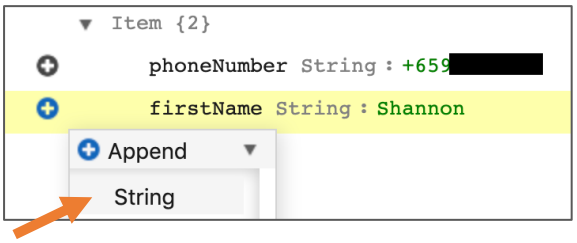
4) Create new line items in the table. Click on **Create item.**

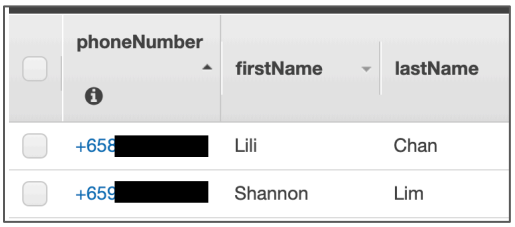


5) Enter in your **phoneNumber**, **firstName** and **lastName**. To add more fields, click on the plus sign, Append and String.

   Again, do take note that field names are cap sensitive. Input the country code and phone number without spacing.

   You table should look like the table on the right.





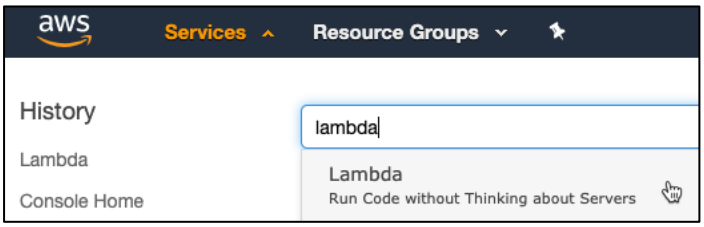
6) All set for your table! You can come back in to DynamnoDB add more lines or edit this table.

Part 4: Lambda

Objective: Creating your first lambda code to do an API call out

Pulling in custom attributes from DynamoDB table by using lambda. Lambda is a service that lets you run codes without a need to provision or manage any servers. This will be the main way for you to run codes, data dip etc.

9) Go to your Amazon management console. Search for **Lambda.**



10) Click on the orange button on the right **Create function.**

11) Enter in function name of **DDB_Read.** Or any name you prefer. Leave the runtime as **Node.js 10.x.**

12) Click on the arrow for the dropdown of Choose or create an execution role. Select Use an existing role

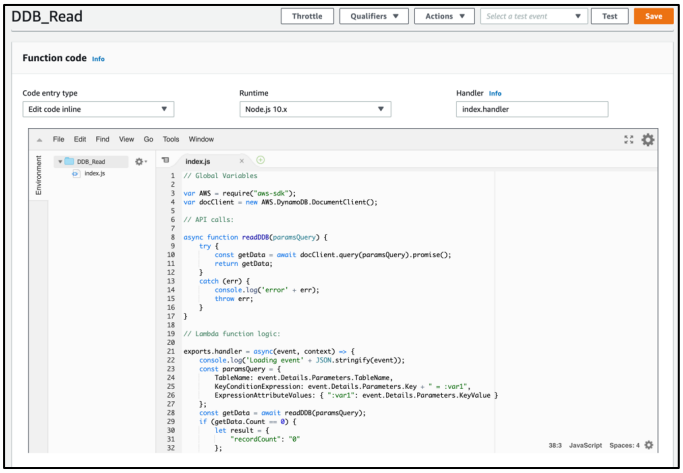
13) Select **lambdaAdmin** in the IAM section above which you have previously created.

14) Click on Create function

15) Go to http://bit.ly/asean-codeshare

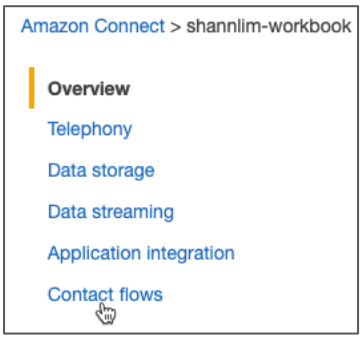
16) Copy and paste the codes from line 1 to line 38.

17) Save the lambda function

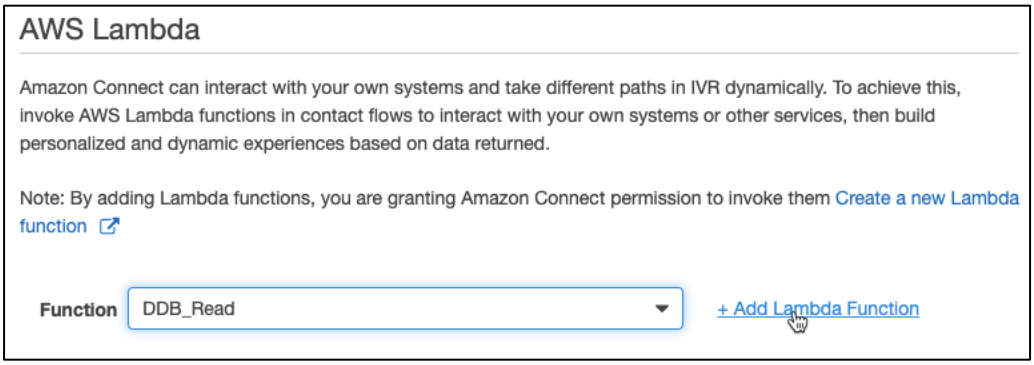


18) Go on to management console, select **Amazon Connect**

19) Click on Contact Flows



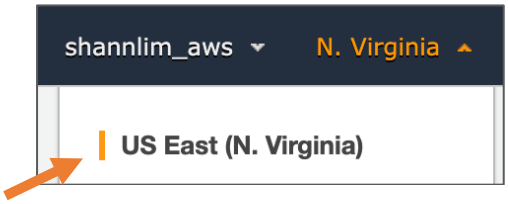
20) Scroll down and search for **AWS Lambda**. Add in the **DDB_Read** function you have just created. And click **+ Add Lambda Function**



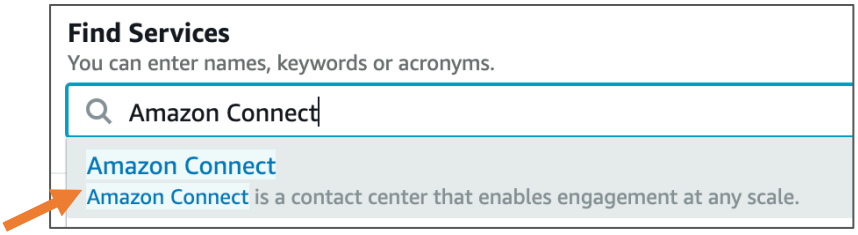
Part 5: Create Amazon Connect Instance

Objective: Creating your very first Amazon Connect instance
By the end of this section, you will have created an Amazon Connect Instance on your AWS account. This instance will be used in future labs, so it is essential this section be completed in its entirety.

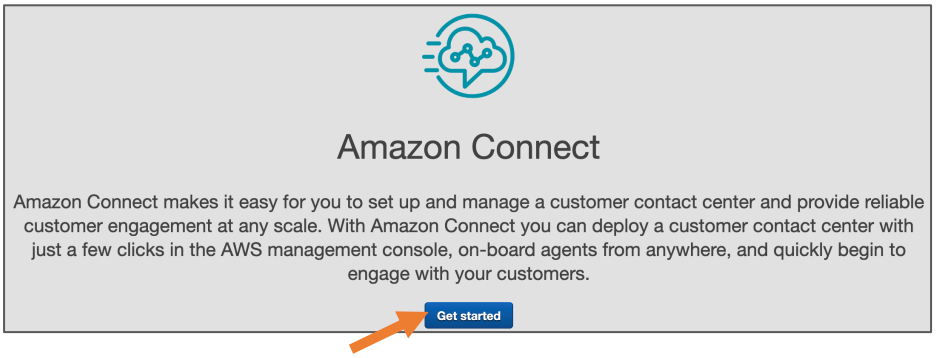
1) Check that you are in the US East (N. Virginia) region. If you are in other region, click on “US East (N. Virginia)”.



2) Within the AWS Search bar, type **Amazon Connect** and click the header that appears.



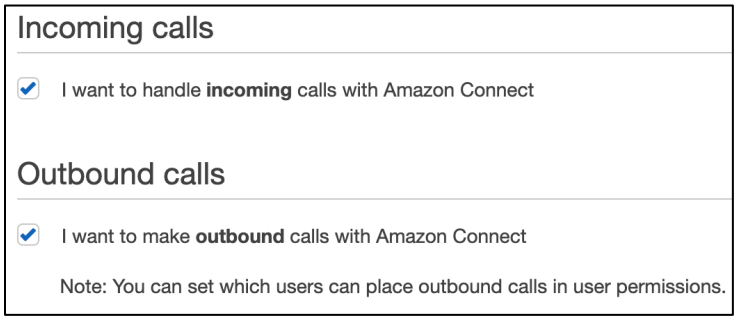
3) If this is your first time navigating to Amazon Connect, click **Getting Started**. Otherwise, you will see a list of instances that have already been built with an **Add an Instance** button. Click either **Add an Instance** or **Getting Started.**



4) Leave the **Store users within Amazon Connect** selected and name your Amazon Connect Instance. Click **Next** to continue.
NOTE: Amazon Connect Instances require globally unique names. Select a unique name else it will be rejected.

5) Enter your name and password.
The next screen asks for you to enter a local Administrator for your Amazon Connect instance. For simplicity, enter the same credentials used for the AWS Account login. Click **Next Step**

6) Leave the Inbound and Outbound options checked and click **Next Step**.

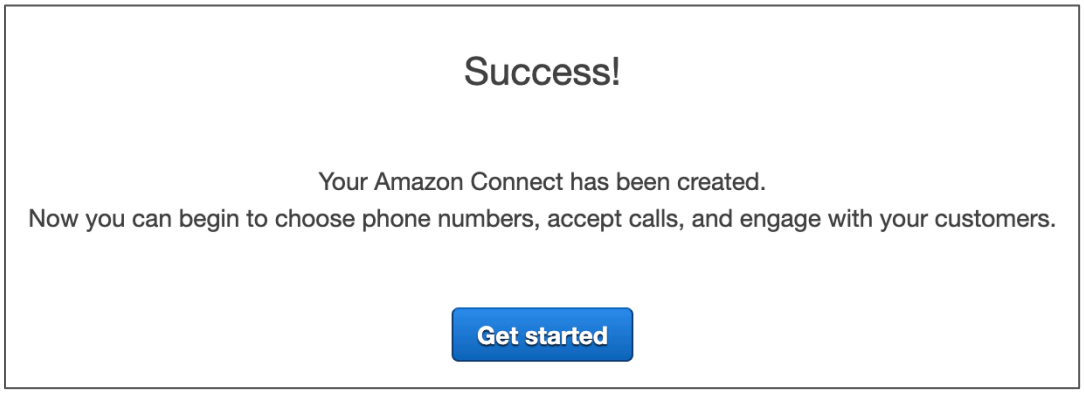


7) Click **Next Step**
The Data Storage screen allows you to customize where call reports and recording are to be stored. To explore the details of these settings, click Customize Settings, else move along and click Next Step.

8) Review the details listed on the final confirmation screen and click **Create Instance.**

9) Once complete, click **Getting Started** on the success page.

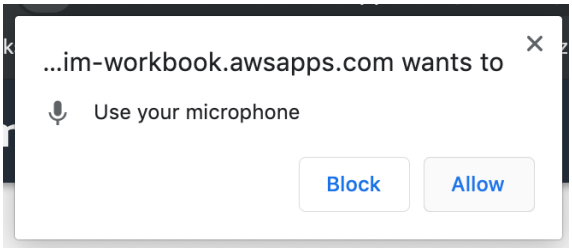
10) The creation process will begin and take about 2 minutes to complete. Once complete you will have a fully enabled Amazon Connect contact center instance ready for configuration and calls.



Part 6: Configuring Amazon Connect

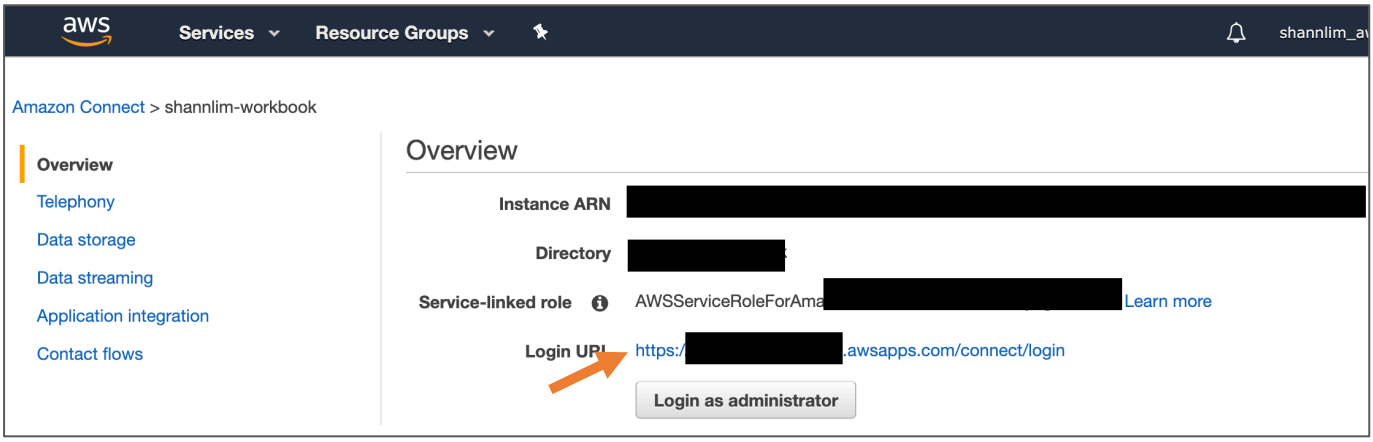
Objective: Setting up your Amazon Connect instance

NOTE: If the popup appears, please click on Allow.



1) Go to Management Console. Click on Amazon Connect.

2) Navigate to the URL created for your Amazon Connect instance and click to log in. Use the administrative username and password configured during deployment.

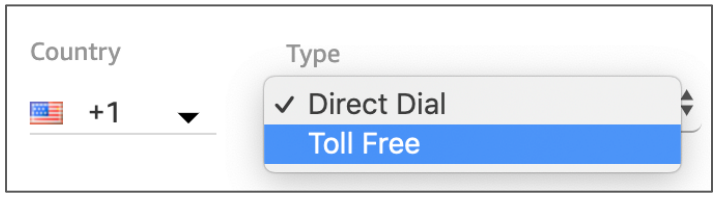


Part 6.1: Claim number

Amazon Connect supports numbers claimed directly for the service. Numbers claimed will become linked to a contact flow (“IVR”) once saved. Amazon Connect includes several default IVR’s which will be referenced, for now, until we are ready to build our own IVR for use.

1) Navigate to the Routing > Phone Number section
2) Click Claim a number

Select either **Toll Free** or **DID**. Select **United States** for country. Choose a number listed.

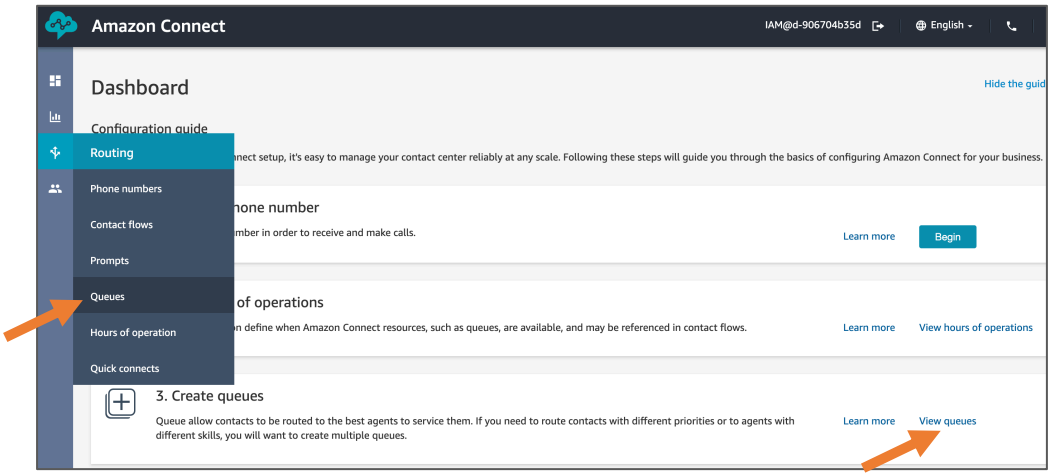


Part 6.2: Queues

Objective: Creating Queues for calls to be routed to and queues for agents to work.
By the end of this lab, you will have created a series of queues that calls that enter Amazon Connect can be routed to. You also will have been introduced to the concept of Routing Profiles and better understand how these profiles are applied to agents and used when making call routing decisions.

Amazon Connect implements the concept of Routing Profiles. A routing profile is a collection of created queues that are arranged based on priority and differing delay values. Once a routing profile is created, it becomes easy to assign this profile to an agent who inherits the queues contained within the profile. Pending calls become available for agents based on priority and delay values configured within the routing profile. Routing Profiles make it easy to make bulk changes that impact many users with a single configuration change. Sudden changes in call volume can be addressed by adjusting delay values that traditional would require rebasing in order to compensate for the sudden increase in call volume. Lastly, routing profile values are limited to the discrete queues that have been created. This prevents significant overhead common in skills management and allows routing administrators and IVR administrators collaboration when designing a customer-centric contact center.

1) Two ways of navigating to Queues. and navigate to the **Routing > Queues** section



2) Notice the **Basic Queue** option. Amazon Connect comes preconfigured with a sample queue to help get started. Leave this alone and select Add new queue.

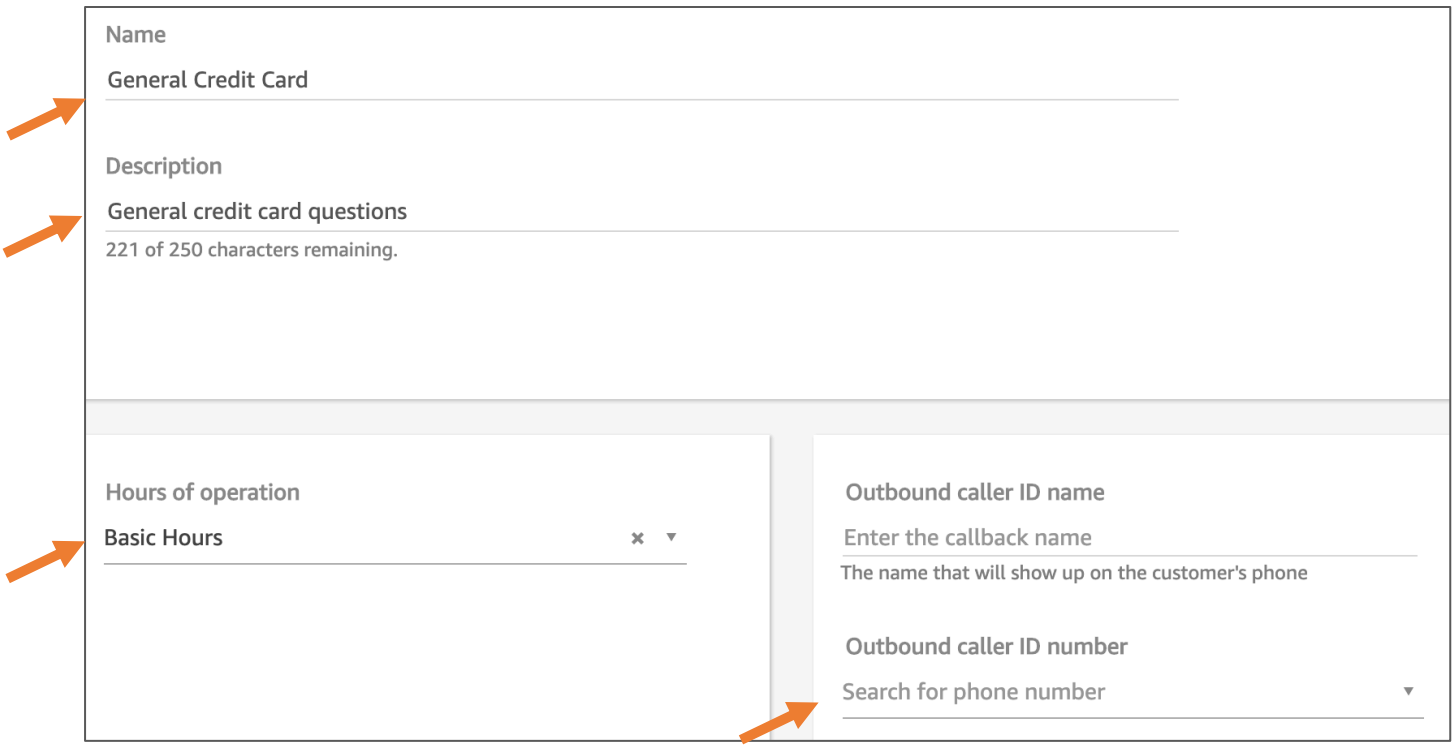
3) Queue names should reflect the skills required to solve problems. When naming, ensure the name aligns with the skill required for agents who work this queue. For example, if agents are expected to have knowledge in general credit card questions, name your queue **General Credit Card** questions. However, if you'd like to separate agents who have specialized skills, such as **Lost or Stolen cards**, name it accordingly.

   In our example, we'll be building several queues.

   Enter a **description** for your queue.

Hours of Operation are required; for now, select **Basic Hours**

A callback number of the queue is also required in case configured to allow callbacks. Select this box and choose the number listed. This number is the one created in Part 6.1.



Leave the remaining options as they are and click **Add new queue**

Repeat this process for the queues listed below. By the end, you should have **3** discrete queues configured for use.

4) Repeat step 3. For 2 other queues with queue names below.
    a. General Credit Card
    b. Fraud Assistance
    c. Technical Assistance

Part 6.3: Routing Profiles (Optional)

Objective: Configuring routing profiles

Gives an understanding of how to configure agents to the queues.

We'll create 3 different routing profiles with the below agent workflows:

- **Generalized** - Agents who are generalists and front-line support.
- **Specialized -** Agents who only work specialized calls.
- **Escalations -** Agents who primarily work escalations

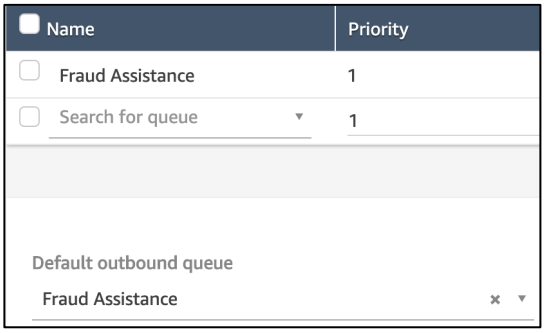
1) Navigate to Users > Routing Profiles

2) Notice the Basic Routing Profile included. Like with Basic Queue, Amazon Connect includes a Basic Routing Profile to assist getting started. Create your own profile by clicking **Add new profile**

3) Enter a **Name** for the profile and **Description**. Start with **Generalized** and the description below.

4) Continue for the remaining two queues.

Queue Name	Routing Profile
General Credit Card	Generalized
Fraud Assistance	Escalations
Technical Assistance	Specialized



Part 6.4: Contact Flow

Objective: Understand contact flow creation and working with data

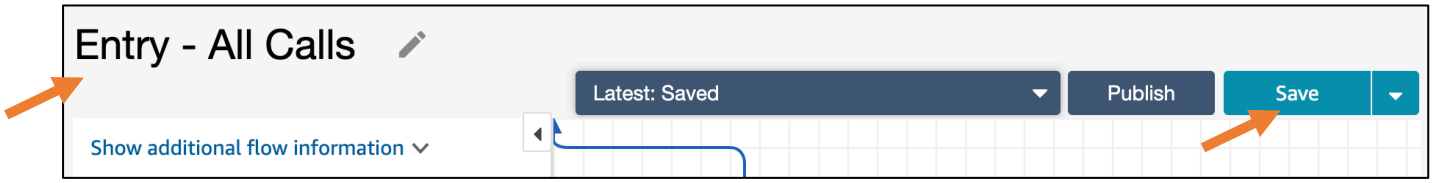
By the end of this section, you would have created a whole contact flow from scatch and understand how to leverage lambda to data dip whenever needed.

In this section, we'll create a basic customer contact flow that can be used for a phone number claimed on Amazon Connect. This flow will greet a caller, prompt for simple DTMF entry of digits, and end. This serves as the basis of getting started with contact flow design in Amazon Connect.

1) Routing > **Contact Flow**

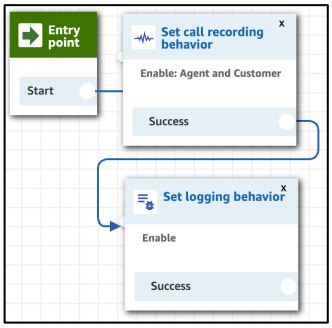
2) Click **Create Contact Flow**

3) Enter a Name of **Entry – All Calls** or something similar. Enter a description of your choice and click **Save**.

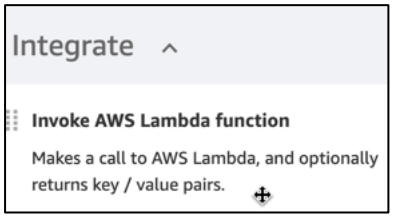


4) Notice the green **Entry Point** box now has a line added. Start adding blocks to build the contact flow from the left and connect the lines to blocks.

5) Expand the **Interact** group and click and drag the **Set call recording behavior** and **Set logging behavior** blocks to the canvas.

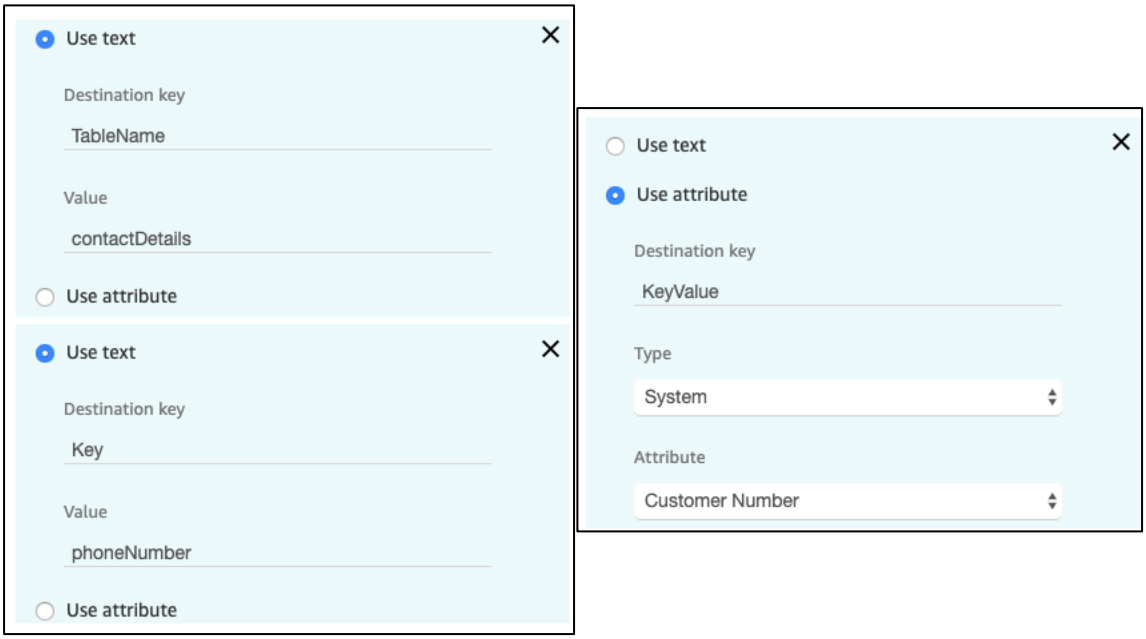


6) On the left column of options, drag out **Invoke AWS Lambda function**.



7) Select the lambda function you have created. **DDB_Read.**

8) Click on **Add a parameter**. Add in the destination key and value as below.



9) You should have 3 parameters as seen above. Note that the destination key and value is cap sensitive.

   TableName is the table name of the DynamoBD table you have created in Part 5 above.

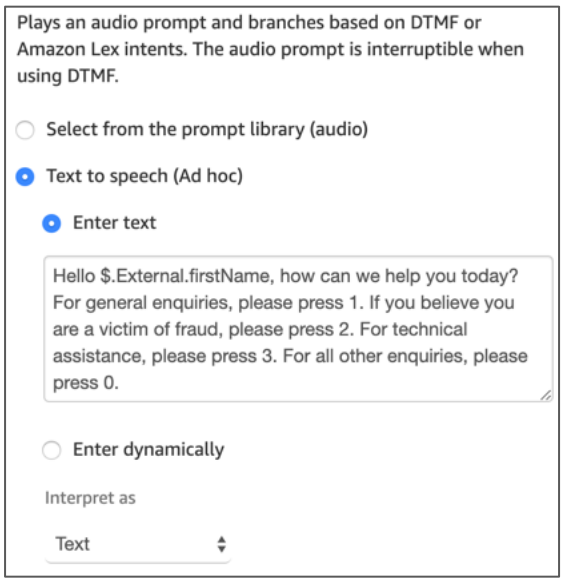
   phoneNumber is the key name of your DynamoDB table.

   And we are using the system attribute of incoming call number as the search key.

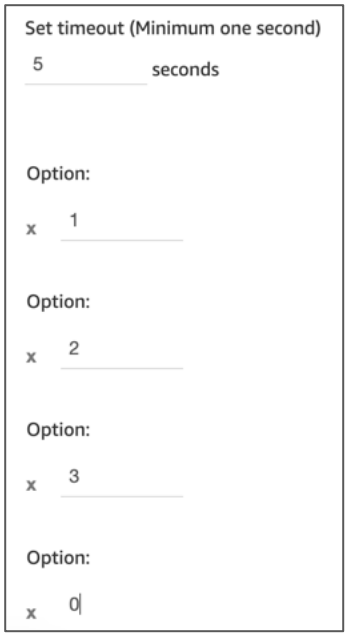
10) Drag over the **Get customer input** box.

11) Click on the box on the canvas and a sidebar of options will appear for this block. Select **Text to Speech (Ad hoc)**. Enter a greeting text of as follows.

> ***Hello $.External.firstName, how can we help you today? For general enquiries, please press 1. If you believe you are a victim of fraud, please press 2. For technical assistance, please press 3. For all other enquiries, please press 0.***

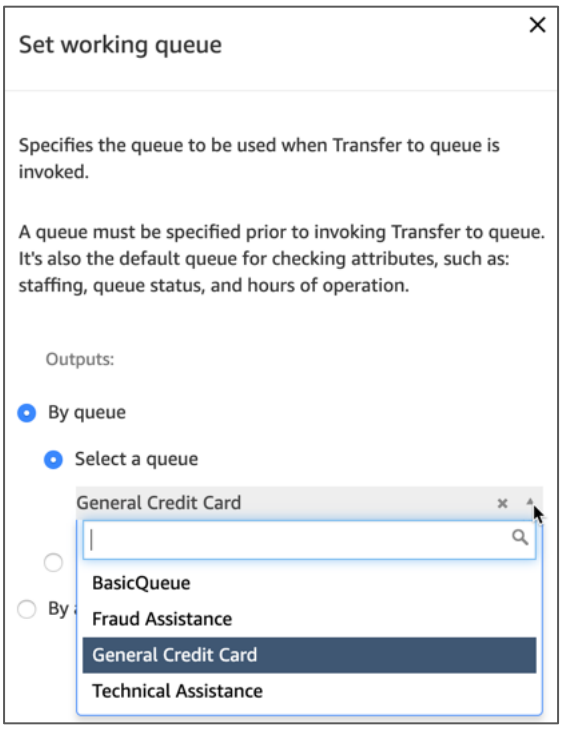


12) Do not close this box—scroll down within the block until you see the **DTMF** header and the link **Add another condition**. Click this link four times and enter **1** in the first line, **2** in the second, **3** in the third, **0** in the fourth. Click **Save**.



Take note of $.External.attribute section. For more information. Read here: https://docs.aws.amazon.com/connect/latest/adminguide/using-contact-attributes.html

13) On the left-hand side options, under the Set options. Drag and pull out **Set working queue** block. Go ahead and set the block to a **General Credit Card** queue.



14) Repeat step 13 by pulling out two other **Set working queue** block and setting them respectively for **Fraud Assistance** and **Technical Assistance**.

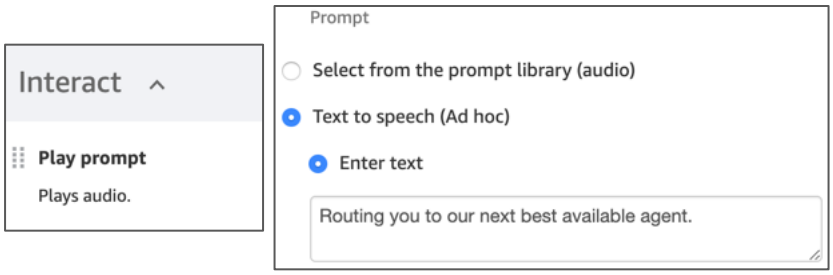
15) Connect option 1 to the General Credit Card block.

    Connect option 2 to the Fraud Assistance block.

    Connect option 3 to the technical assistance.

16) Drag the Play prompt block and enter in the following text.

    Routing you to our next best available agent.

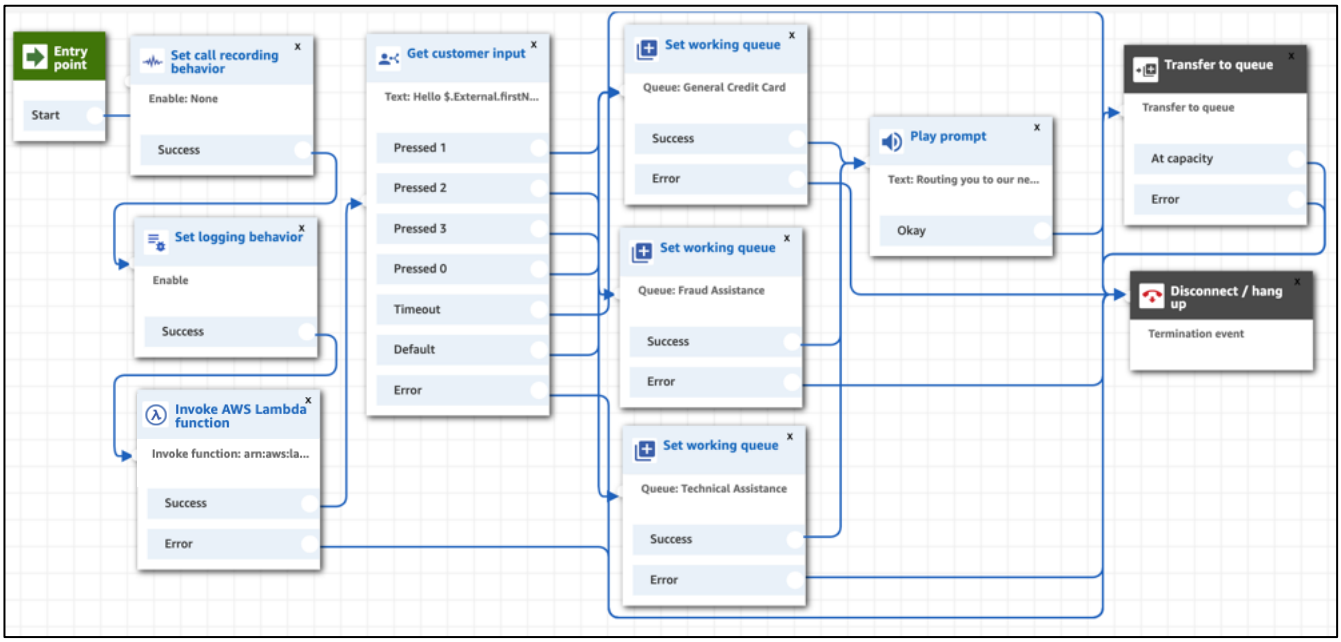


17) Connect the 3 **Set working queue** blocks to the **Play prompt** block you have just created.

18) Pull out a **Transfer to queue** block and have all three successful option from **Set working queue** block go to this **Transfer to queue** block.

19) Contact require all nodes to be connected. For all other failure options or time out options, drag out and connect them to the **Disconnect / hang up** block.

20) Your contact flow should look like below. (Or a more organized version ☺)

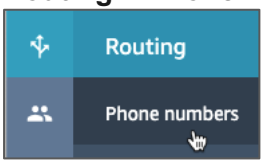


21) We now need to publish our contact flow so it becomes live. Click the **drop-down arrow** and select **Save.** Select **Publish** if there are no errors.

If there are errors, check that all nodes is connected.

Note: You can important and export flows for sharing and archival purposes.

22) We need to now change our claimed phone number to use this contact flow. Navigate to **Routing > Phone Numbers.** Click onto the number claimed.



23) Under **Contact flow/ IVR,** change this setting to the name of our Contact flow (**Entry – All Calls**)

24) Click **Save.**

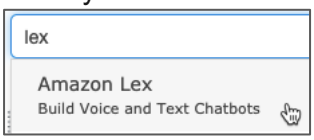
25) Dial this number and listen to the interaction. Check that flow is as you have set up. Notice how the call is put into queue for an agent. Since we have no agents working, it will remain in queue until you disconnect.

26) Congratulations on your first successful contact flow!

Part 7: Creating Amazon Lex

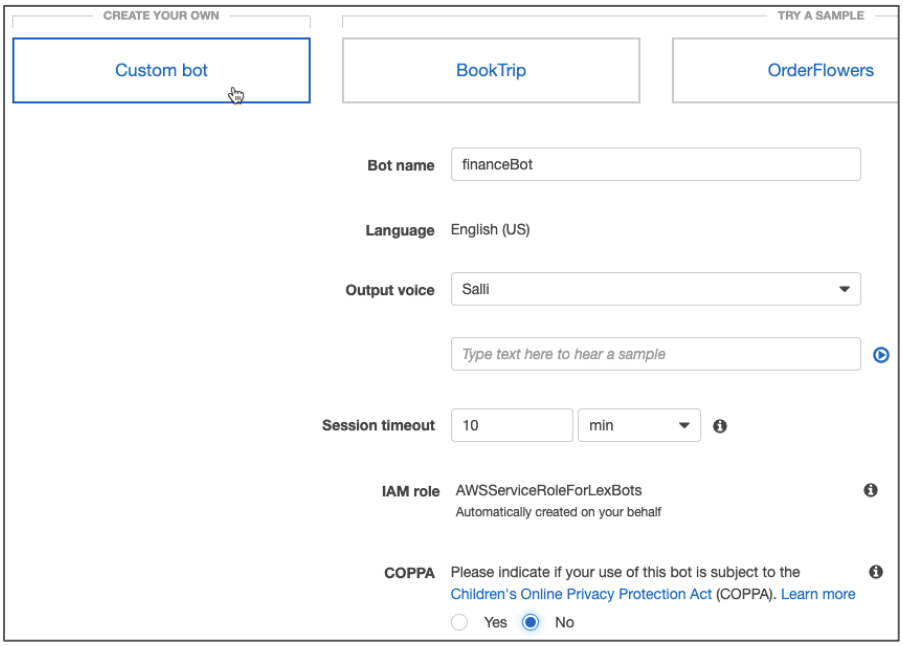
Objective: Creating your first Lex bot

1) Go to your Amazon management console. Search for **Amazon Lex.**



2) Go ahead and click on **Get Started.**

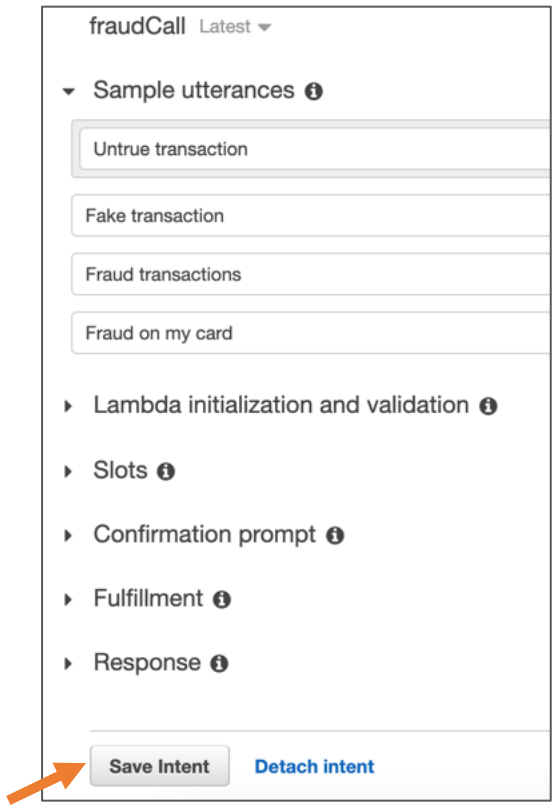
3) Select **Custom bot**. Enter in your bot's name. I have used **financeBot** here in this example. Use any output voice you prefer and a session timeout. **No** for COPPA. Then click on the Create button.



4) Click on the + Create Intent button to create your first intent. Select Create Intent.

5) We will be creating 3 intents in total. We want our caller to say what the call is about instead of using DTMF. This will replace the DTMP menu option in the contact flow we have created earlier. Enter in an intent name of **fraudCall.**

6) Under sample utterance. Enter in what caller would say if their intention is to say they are calling for Fraud. Below is a sample of what you can enter in. You can enter in more if you have!

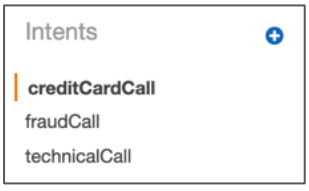


7) Do remember to **Save the Intent**.

8) Go ahead and create the other two intent

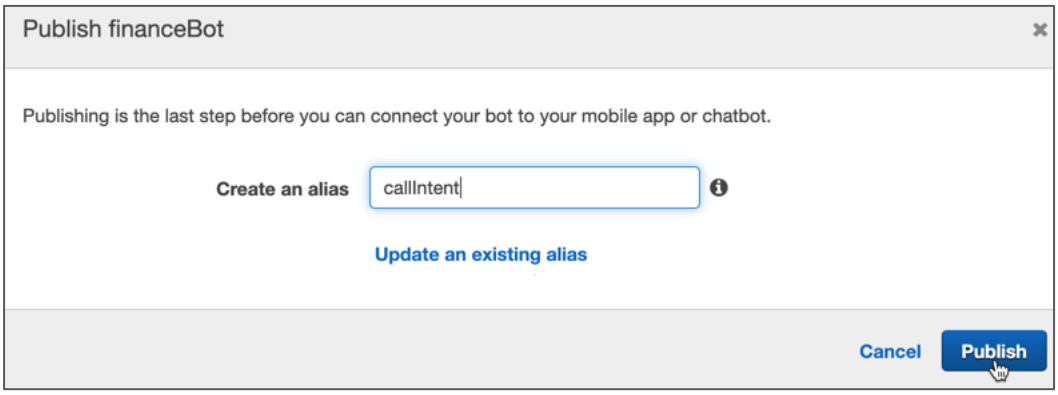
9) Name the intent **TechnicalCall.** go ahead and do the same as step 6 above. Enter in what the caller would usually say if they are calling for technical help. Save it.

10) For the last intent, name it **creditCardCall**. And do the same as step 9.



11) On the top right hand side of the page. You can see the Build and Public buttons. Go ahead to **Build** the bot.

12) Then **Build** the bot. It will ask for an alias. Enter in **callIntent.** Go ahead and click on the **Publish** button.

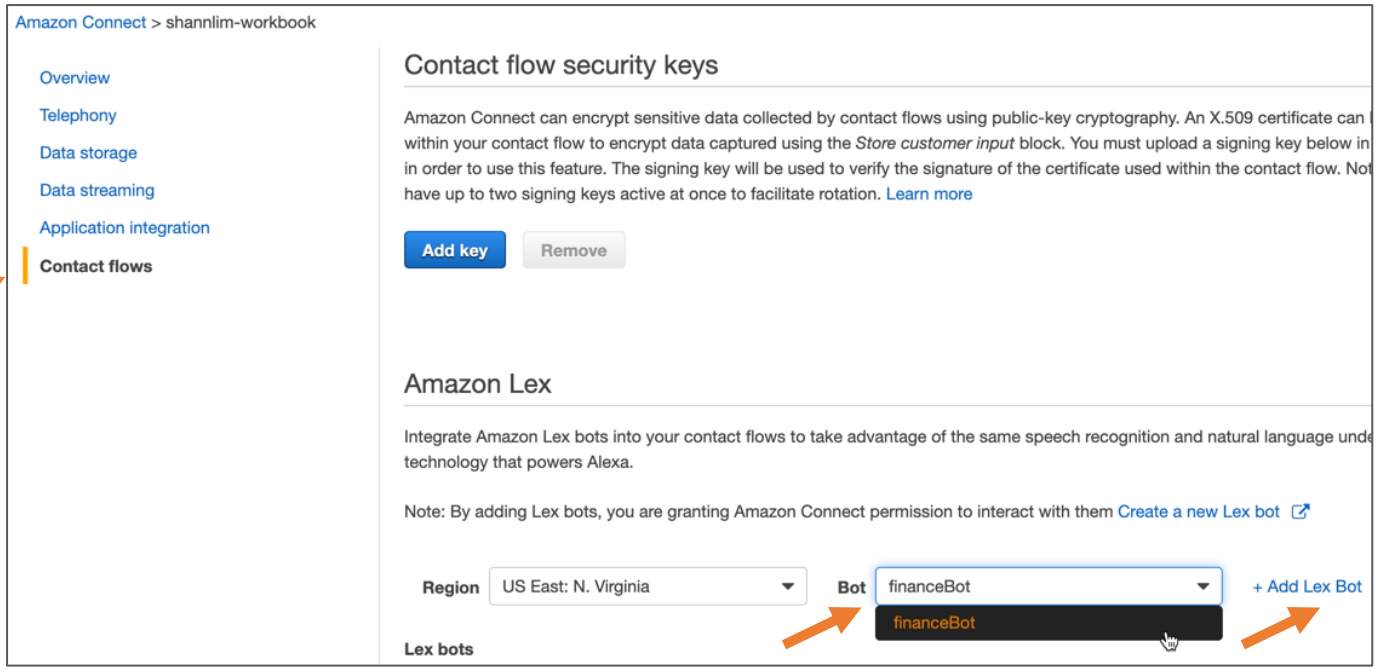


13) It will give you a successful message and you're all set!

Part 8: Leveraging Amazon Lex

Objective: Understanding and working with Amazon Lex, our voice bot

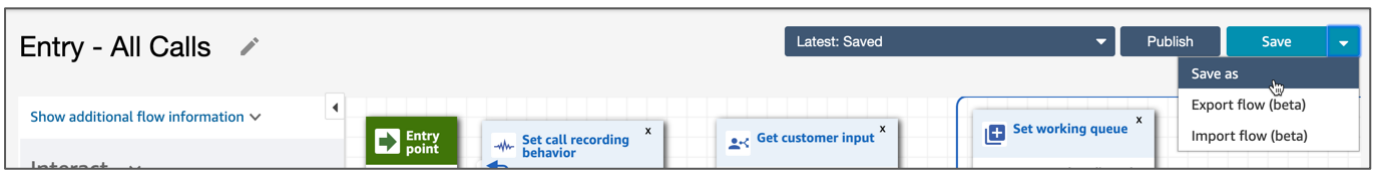
By the end of this section, you would have edited the DTMF contact flow you have created and leveraged Amazon Lex.



1) Go in to your management console. Click in to **Contact flows**. Add in the bot you have just published. And importantly, click on **+ Add Lex Bot**.

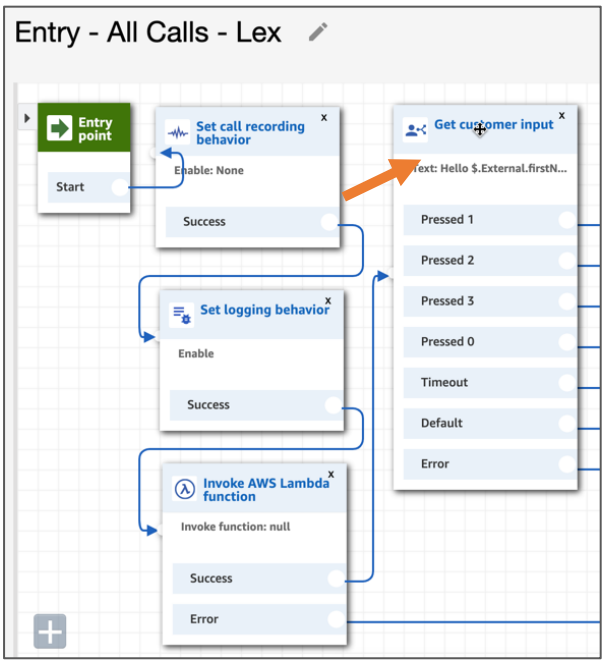
2) Go into your call flow. Save as **Entry – All Calls – Lex** or something similar to differentiate it from your DTMF contact flow.

3) Click into your existing **Invoke AWS lambda** block. You would have to re-enter all the variable as you have did so earlier. Refer to part 6.4 above.



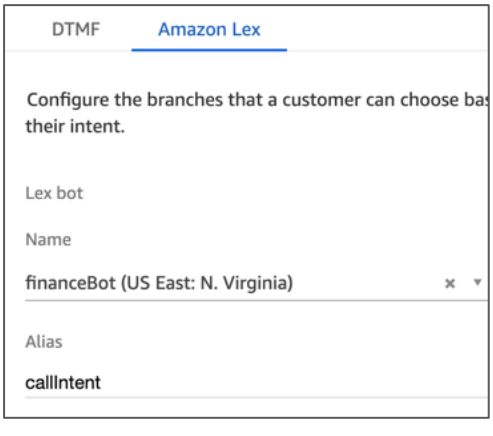
4) In your first **Get customer input** block, click in to it and change the text to

Hello $.External.firstName, how can we help you today? For general credit card enquiries, please say credit card. If you believe you are a victim of fraud, please say fraud transactions. For technical assistance, please say technical help. For all other enquiries, please hold.

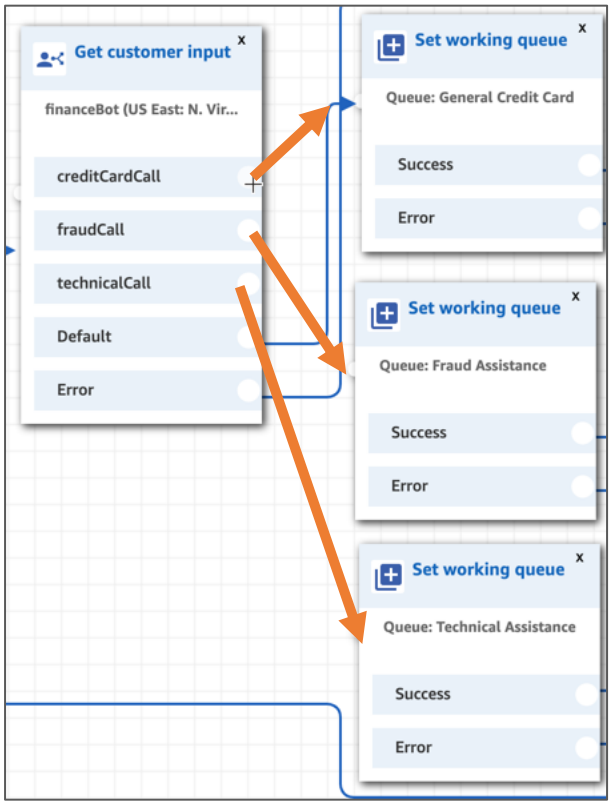


5) Scroll down the edit section of the block. You will see **Amazon Lex** as another tab beside DTMF. Click into it. Your bot should appear in the picklist. Select it.
You gave the intents an alias earlier in the Lex section. Enter in **callIntent** if you did not change the workbook's recommended alias.

Enter in the names of the intent you have created earlier in Lex. Go ahead and save it.



6) Go ahead and connect the nodes to the right blocks as it was for DTMF.



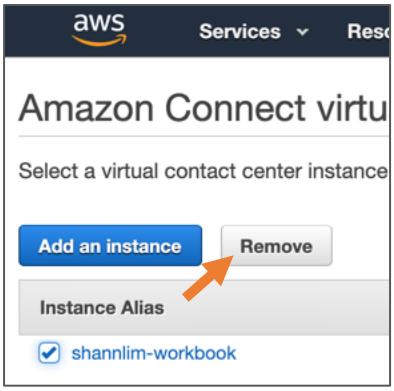
7) Publish it. And test it out!

Part 9: Deleting account

Objective: Delete your account to prevent any incidental costs.

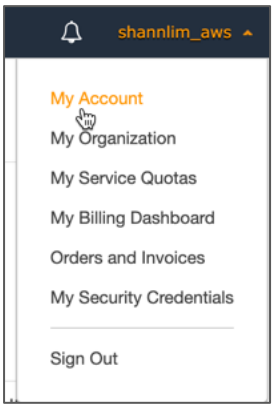
1) Go into your management console. Search and click into **Amazon Connect.**

2) You will be able to delete your account from there.

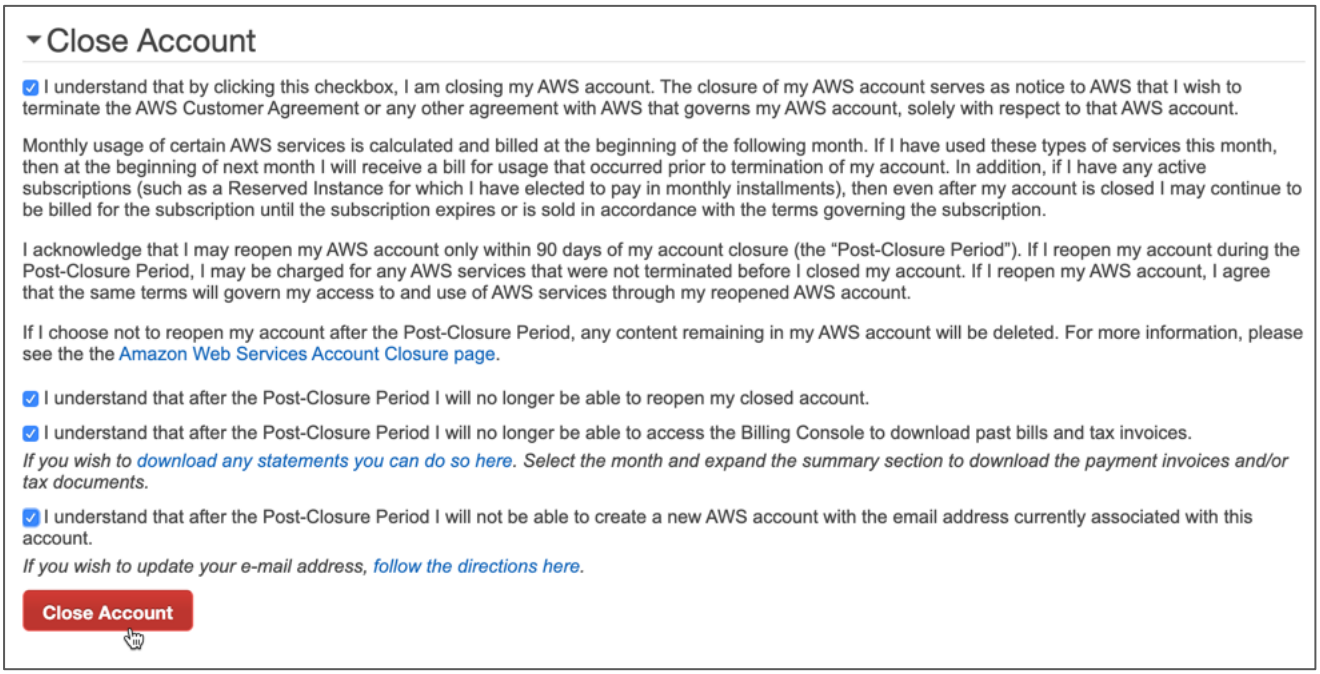


IF you would like to delete your entire AWS account.

1) On the right hand side, click on your account name with the drop down of **My Account**.



2) Scroll to the very bottom of the **My Account** page. You will be able to close off your entire AWS account from here.



Thank you for going through the workshop guide with us! Keep building!