

Amazon Connect Integration

MODULE 4 – CHAT



Amazon Connect – Chat

Amazon Connect enables a chat channel that uses the same contact flows as the voice channel. In a truly omnichannel design, the only distinction between a chat interaction and a voice interaction is the channel field in the data.

To deploy chat, you need to enable it in the routing profiles, the contact flows, and you need to enable the ingress of the chat conversation, which is usually your customer webpage.

This course will step you through the process to deploy and test a chat demo with your Amazon Connect contact flows.

Learning objectives

After completing this training, you will be able to:

- Describe the Amazon Connect architecture and chat solution.
- Setup the prerequisite environment in your contact flow.
- Create a website with a prebuilt chat widget.
- Build the chat solution and connect to an Amazon Connect agent

Amazon Connect – Chat

Solution architecture

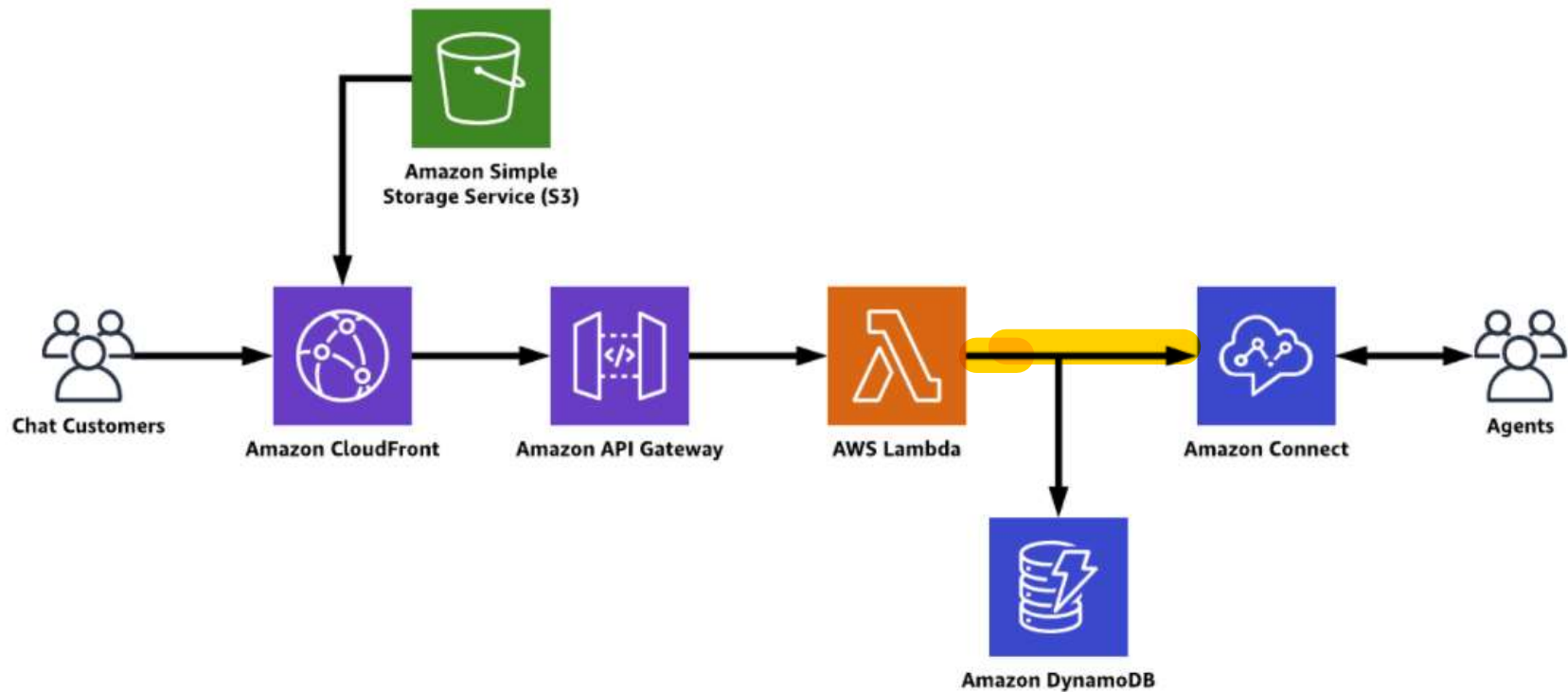
The solution you will build creates a simple website that enables a customer to start a chat with a prebuilt widget. The end user enters their name and the username of the agent they would like to speak with, which puts the customer into that agent's queue.

The AWS CloudFormation stack creates a website hosted in Amazon S3 that is served by Amazon CloudFront. The website calls an Amazon API Gateway endpoint that triggers an AWS Lambda function. This Lambda function invokes the Amazon Connect service StartChatContact API, stores the result in Amazon DynamoDB, and returns the result to the front end.

https://docs.aws.amazon.com/en_pv/connect/latest/APIReference/API_StartChatContact.html

Amazon Connect – Chat

Solution architecture



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Active chat open

In addition to starting the chat and storing the results in DynamoDB (DDB), the Lambda function helps determine whether the user has an active chat open. Before starting the chat, the Lambda function checks the DDB to see whether there is an existing chat open for that user. If so, the current chat is returned to the website instead of starting a new one. This enables your user to pick up the existing chat where they left off on any device.

This functionality is possible by knowing who the user is and keeping track of whether there is an open chat session. An open chat session is determined by the presence of a chat transcript in Amazon S3. At the end of a chat conversation, when the chat transcript is uploaded to S3 bucket, a Lambda function is triggered to update the DDB with the S3 bucket location of the chat transcript. If there is no S3 bucket location for a chat, then we assume the chat is still in session.

Amazon Connect – Chat

Prerequisites to Enable Chat

Within an existing instance

For this lesson, you will need to enable the chat testing mode to use the simulated environment provided for testing.

There are two parts to this process:

1. Enabling the chat testing mode in your instance.
2. Enabling chat in the Routing Profile.

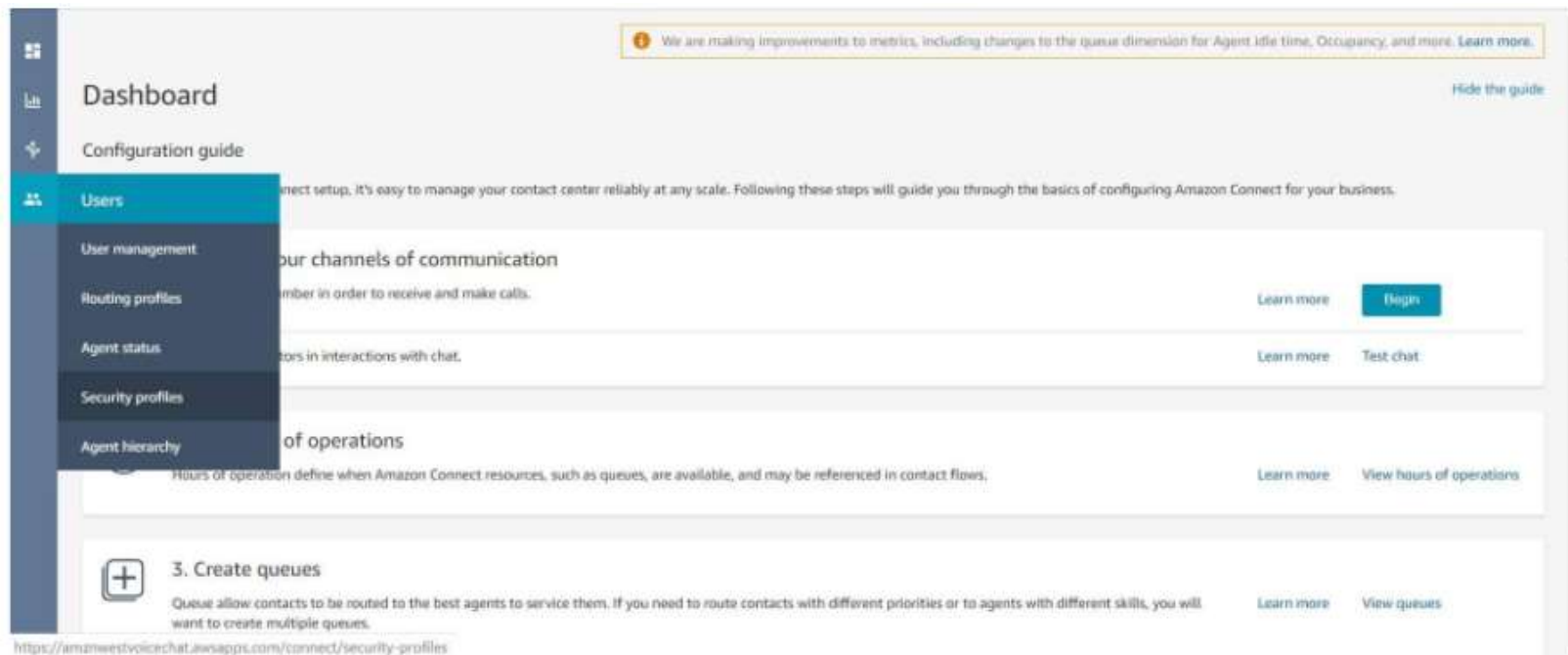
Note: Another option for enabling the chat testing mode is to create a new security profile specifically for testing chat and assign testers to that profile.

Amazon Connect – Chat

Enabling Chat Testing Mode

Security Profile Dashboard

From the main dashboard, go to the Security Profile.



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Admin Profile

Click the **Admin Profile**

Manage security profiles

Remove Add new security profile

Name	Description	Permissions
Admin	An administrator can perform all actions available.	Routing: All NumFlow: All UserPerm: All CCP: All MetricsQuality: All HistoricalChanges: All
Agent	An agent is a user of the system that is focused on customer care and/or sales. Their role is unlikely to be technical.	CCP: All
CallCenterManager	A call center manager (or call center admin) manages the day-to-day aspects of the call center.	Routing: All NumFlow: Prompts NumFlow: ContactFlows NumFlow: PhoneNumbers Users:View Users:Edit Users:Create Users:EnableAndDisable UserPerm: AgentStatus MetricsQuality: All
QualityAnalyst	A quality analyst works to improve the customer experience and keeps track of live service metrics.	MetricsQuality: AccessMetrics MetricsQuality: ContactSearch MetricsQuality: ContactAttributes MetricsQuality: AgentTimeCard

Rows per page: 25 1 - 4 of 4

<https://amazonwestvoicechat.awsapps.com/connect/security-profiles/edit?id=arn:aws:connect:us-west-2:593007389919:instance/bba5df5c-6a5f-421f-a81d-9c16402bfc0a/security-profile/c5964e9c-964e-42ec-82b9-81eeffdb86b9>

Amazon Connect – Chat

Enable Chat

Enable Chat under the Chat Test Mode.

Scroll down and click **Save**

The screenshot shows the Amazon Connect console interface. At the top, there is a 'Description' field with the text 'An administrator can perform all actions available.' and a character count '198 of 250 characters remaining'. Below this is the 'Security profile permissions' section. It contains several expandable panels: 'Routing', 'Numbers and flows', 'Users and permissions', and 'Contact Control Panel (CCP)'. The 'Numbers and flows' panel is expanded, showing a table of permissions. The 'Chat test mode' row has its 'Enable / Disable' checkbox checked, which is highlighted with a red circle.

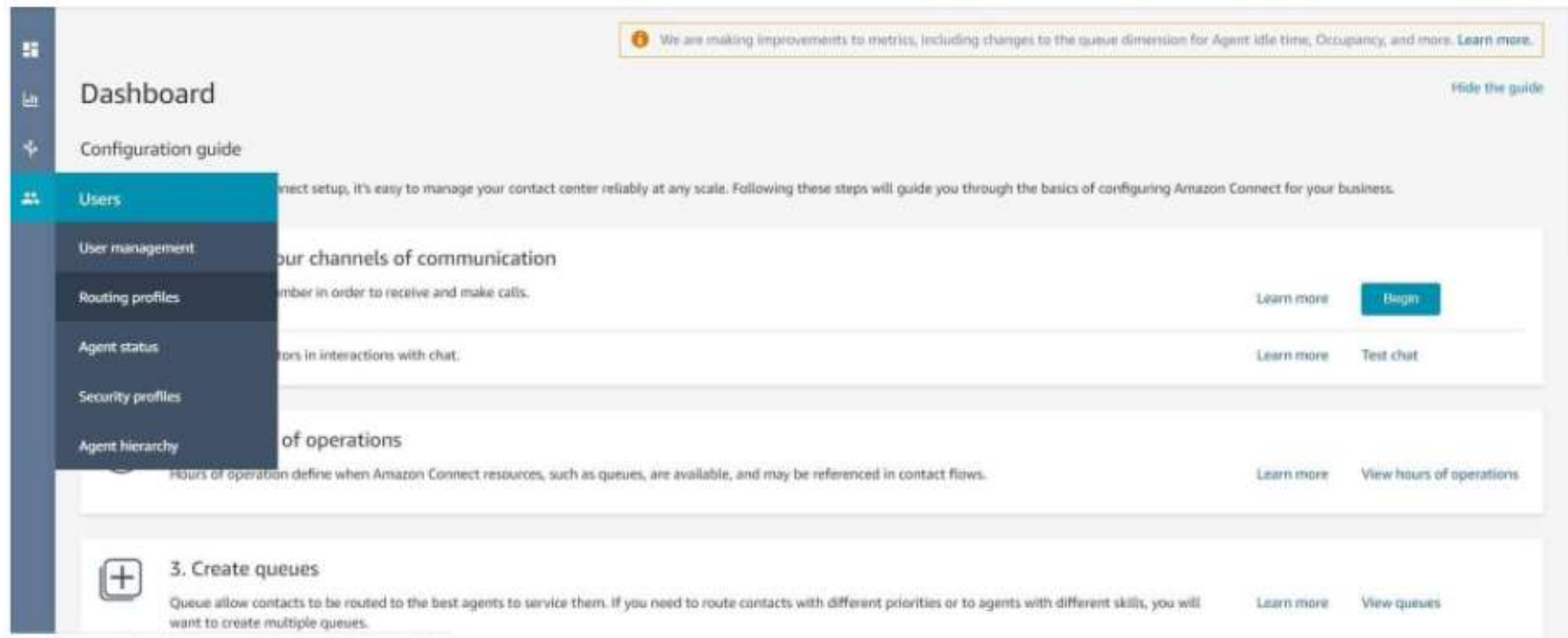
Type	All	View	Edit	Create	Remove	Save & Publish	Claim	Release	Enable / Disable
Prompts	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contact flows	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Phone numbers	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Chat test mode	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Amazon Connect – Chat

Enabling Chat in the Routing Profile

Instance - Routing Profile

Go into your instance's website and go to the **Users > Routing Profiles**



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Enabling Chat in the Routing Profile

Choose Routing Profile

Choose the routing profile that needs Chat enabled.

Routing profiles

Filter by name: Filter by description: [Add new profile](#)

Name	Description	No. of associated queues	No. of agents staffed
Basic Routing Profile	A simple routing profile.	2	2

Rows per page: 25 1 - 1 of 1

[View historical changes](#)

<https://amazonwestvoicechat.awsapps.com/connect/routing-profiles/edit?d=amazonconnectus-west-2593007389912:instance/bba5d5c-6e5f-421f-a81d-9c16402bfc0a/routing-profile/5ab113d9-8cd2-4dd6-aa7c-e915e0a2776c>

Amazon Connect – Chat

Enabling Chat in the Routing Profile

Enable Chat in the Routing Profile

Add the **Basic Queue** to the profile and under Channels, check the box to enable **Chat**.

A simple routing profile.
225 of 250 characters remaining.

Set channels and concurrency
Defines what channels that agents can handle in CCP.
Note: If both channels are selected, agents will only have access to one channel at a time for inbound contacts. Learn more.

☒ Voice
☒ Chat
Maximum chats (per agent)
4

Routing profile queues
If no queue is added, the agent will only be able to make outbound calls. At least one queue is needed for inbound calls, and must not be a duplicate.

Name	Channels	Priority	Delay (in seconds)
<input type="checkbox"/> BasicQueue	<input checked="" type="checkbox"/> Voice <input checked="" type="checkbox"/> Chat	1	0
<input type="checkbox"/> Multichannel	<input checked="" type="checkbox"/> Voice <input checked="" type="checkbox"/> Chat	1	0
<input type="checkbox"/> Search for queue	<input checked="" type="checkbox"/> Voice <input checked="" type="checkbox"/> Chat	1	0

Amazon Connect – Chat

Contact flows blocks

Your existing contact flows will work for chat, however, you will need to review how they work. The introduction of the chat feature has added two new blocks and updated a number of existing action blocks which are listed in the table below.

New	Updated for Chat
Wait Set Disconnect Flow	Play Prompt Get Customer Input Store Customer Input Set Recording Prompt

Amazon Connect – Chat

Reports and CTRs

With the addition of chat, your metric reports and the contact trace records (CTRs) will reflect chat as a channel.

Note the following changes to metrics:

- **Agent Activity:** Existing reports that used Agent Status as the column name will use Agent Activity as the column name.
- **Availability:** This metric has a new definition to account for chat. The change has no impact on metrics for voice calls.
- **Capacity:** This is a new real-time metric.
- **Contact State:** This metric has a few changes so the states are better aligned to what the agent sees in the updated Call Control Panel (CCP).

Amazon Connect – Chat

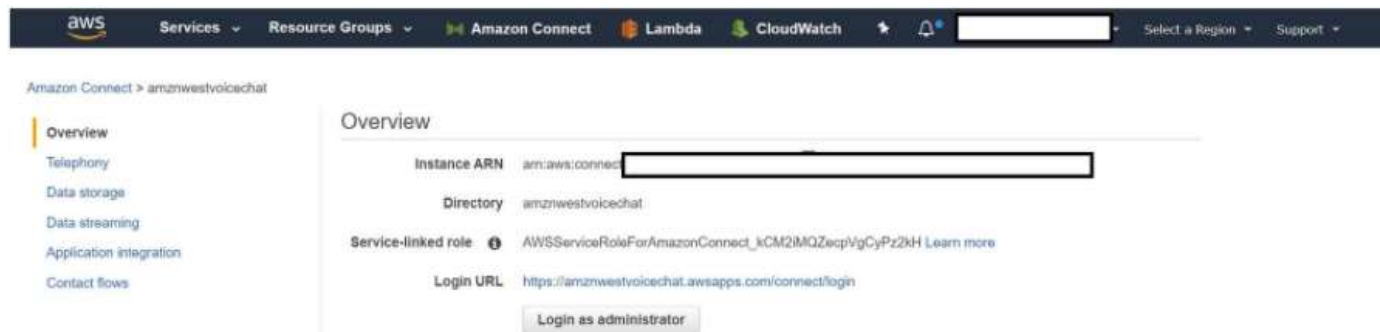
Chat transcripts

You can enable chat transcripts in Amazon Connect by viewing your instance settings, clicking on the Data Storage section, and adding an S3 bucket in the Chat Transcripts section.

Follow the steps shown here.

Select your Instance – Overview

Got to Amazon Connect Console and select the instance to get to the **Overview** page.



Amazon Connect – Chat

Chat transcripts

Instance - Data Storage

Select the **Data Storage** tab in the menu on the left.

Select the check box **Chat Transcripts** to enable Amazon Connect to store the transcripts.

The screenshot displays the 'Chat transcripts' configuration page in the Amazon Connect console. The page is titled 'Chat transcripts' and includes a 'Cancel' button and a 'Save' button (highlighted with a red box). The 'Enable chat transcripts' checkbox is checked. Below this, there are two radio button options: 'Create a new S3 bucket for me (recommended)' (highlighted with a red box) and 'Select an existing S3 bucket'. The 'Name' field is set to 'connect-f61de5a32741' and the 'Path prefix' is 'ChatTranscripts'. The 'Location' is shown as 'connect-f61de5a32741/connect/amznswestvoicechat/ChatTranscripts'. Under the 'Encryption options for chat transcripts' section, the 'Enable encryption' checkbox is checked (highlighted with a red box). The 'Select KMS key by name' radio button is selected. The 'KMS master key' is set to 'aws/connect'. The 'ARN / ID' field shows 'arn:aws:kms:us-west-2: [redacted] :key/0c7a2e17-9a24-46e3-9d43-c3163713bca7'. The 'Description' is 'Default master key that protects my Connect calls when no other key is defined'. The 'Account' field is empty.

Amazon Connect – Chat

Chat transcripts

Instance - Chat Transcripts

Select the **S3 bucket** to store the transcripts and check **Enable Encryption** to encrypt the data in the bucket.

Select **Save**.

Chat transcripts

☒ Enable chat transcripts

☒ Create a new S3 bucket for me (recommended)

☐ Select an existing S3 bucket

Name: connect-R01de5a32741

Path prefix: ChatTranscripts

Location: connect-R01de5a32741/connect/amznvoicechat/ChatTranscripts

Encryption options for chat transcripts

☒ Enable encryption

☒ Select KMS key by name ☐ Enter key ARN/ID

KMS master key: aws/connect

ARN / ID: arn:aws:kms:us-west-2:123456789012:key/0c7a2e17-9a24-46e3-0d43-c3163713bca7

Description: Default master key that protects my Connect calls when no other key is defined

Account:

Cancel Save

Amazon Connect – Chat

Amazon Lex bots

If you are using Amazon Lex bots in your contact center, and your Amazon Connect instance was created before October 12, 2018, we recommend that you add a new Lex bot (which you can later remove) to automatically update permissions to ensure your service-linked role has "lex:PostText" permissions.

CCP interface

When you're ready to deploy the updated CCP, give the URL to those agents who are going to handle voice and chat contacts, or only chat contacts. Those agents who are only handling voice contacts can continue using the original CCP.

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Deploy the Chat Demo

Import Contact Flows

To create the required contact flows for this solution, you need to download the following two JSON files from the GitHub Repository and import them into your Amazon Connect instance.

- Basic Chat.json
- Basic Chat Disconnect Flow.json

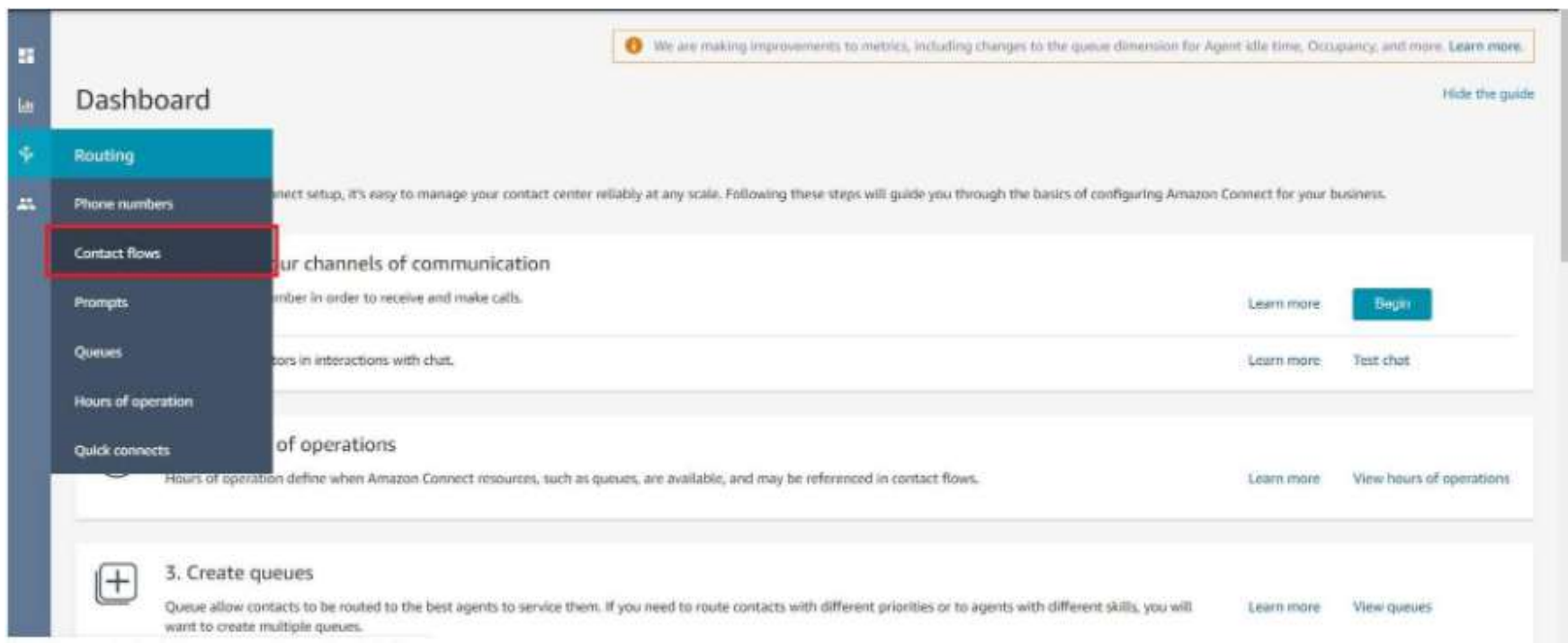
<https://github.com/amazon-connect/amazon-connect-chat-ui-examples/tree/master/cloudformationTemplates/asyncCustomerChatUX>

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Deploy the Chat Demo

Choose Contact Flow

Under the Routing menu choose Contact Flow.

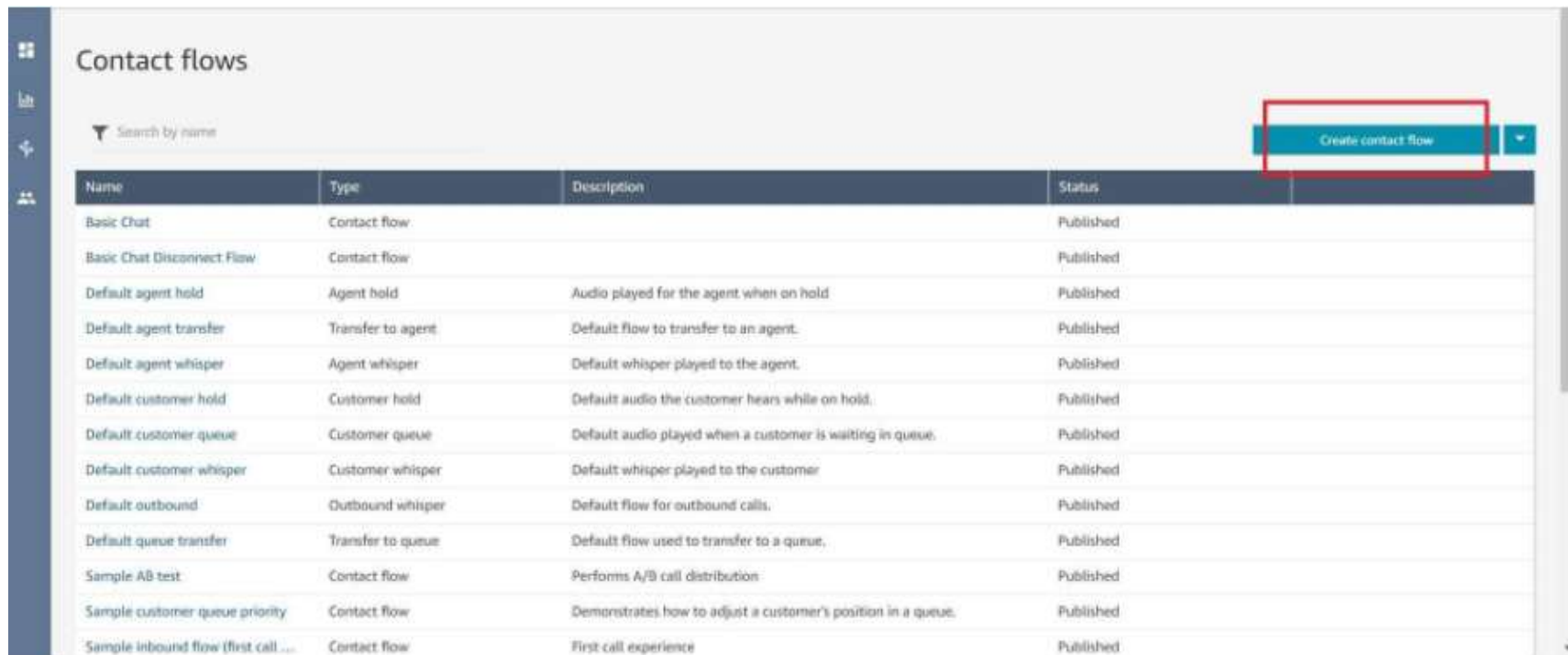


Amazon Connect – Chat

Deploy the Chat Demo

Create Contact Flow

Select **Create Contact Flow**.



The screenshot shows the 'Contact flows' page in the Amazon Connect console. On the right side, there is a teal button labeled 'Create contact flow' which is highlighted with a red rectangular box. Below this button is a table listing various contact flows.

Name	Type	Description	Status
Basic Chat	Contact flow		Published
Basic Chat Disconnect Flow	Contact flow		Published
Default agent hold	Agent hold	Audio played for the agent when on hold	Published
Default agent transfer	Transfer to agent	Default flow to transfer to an agent.	Published
Default agent whisper	Agent whisper	Default whisper played to the agent.	Published
Default customer hold	Customer hold	Default audio the customer hears while on hold.	Published
Default customer queue	Customer queue	Default audio played when a customer is waiting in queue.	Published
Default customer whisper	Customer whisper	Default whisper played to the customer	Published
Default outbound	Outbound whisper	Default flow for outbound calls.	Published
Default queue transfer	Transfer to queue	Default flow used to transfer to a queue.	Published
Sample A/B test	Contact flow	Performs A/B call distribution	Published
Sample customer queue priority	Contact flow	Demonstrates how to adjust a customer's position in a queue.	Published
Sample inbound flow (first call ...)	Contact flow	First call experience	Published

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Deploy the Chat Demo

Import Flow

Select the **Save** drop-down and choose **Import flow (beta)**

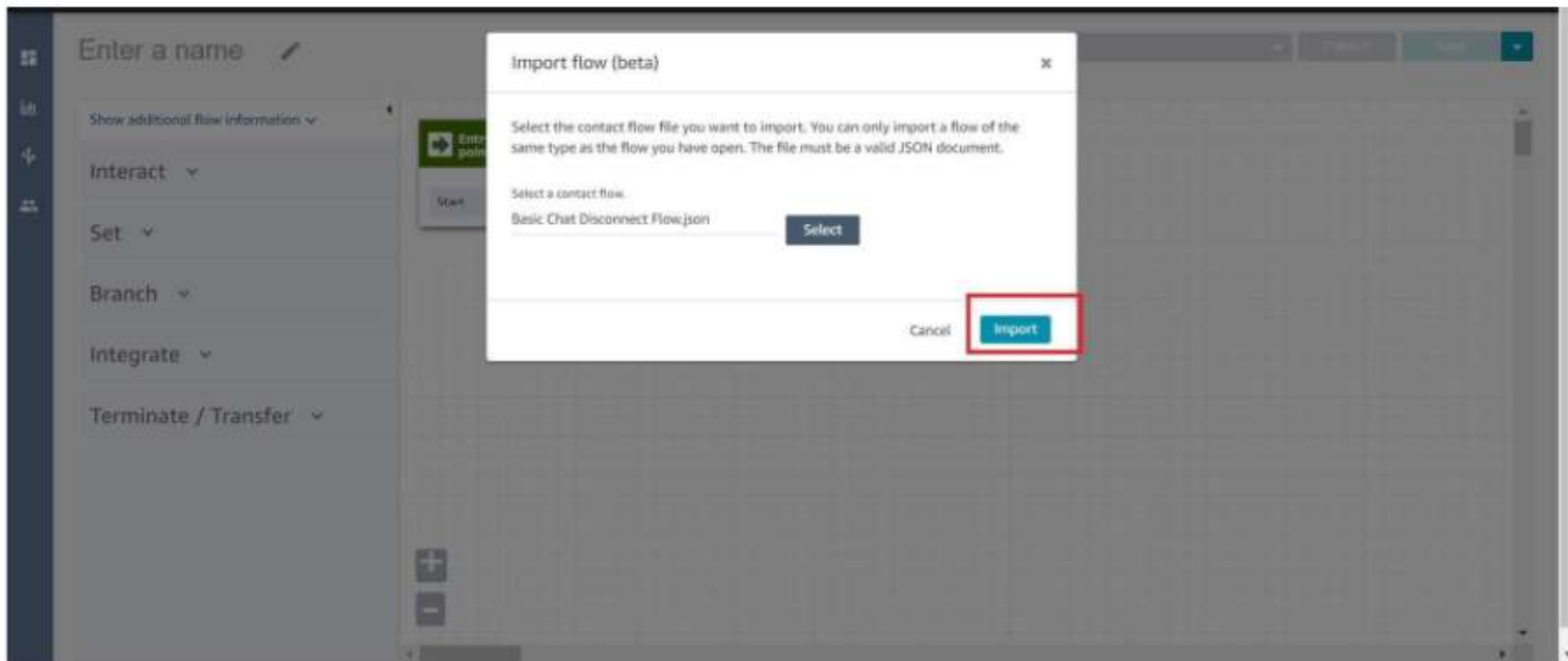


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Deploy the Chat Demo

Import Basic Chat Disconnect

Import the Basic Chat Disconnect Flow.json

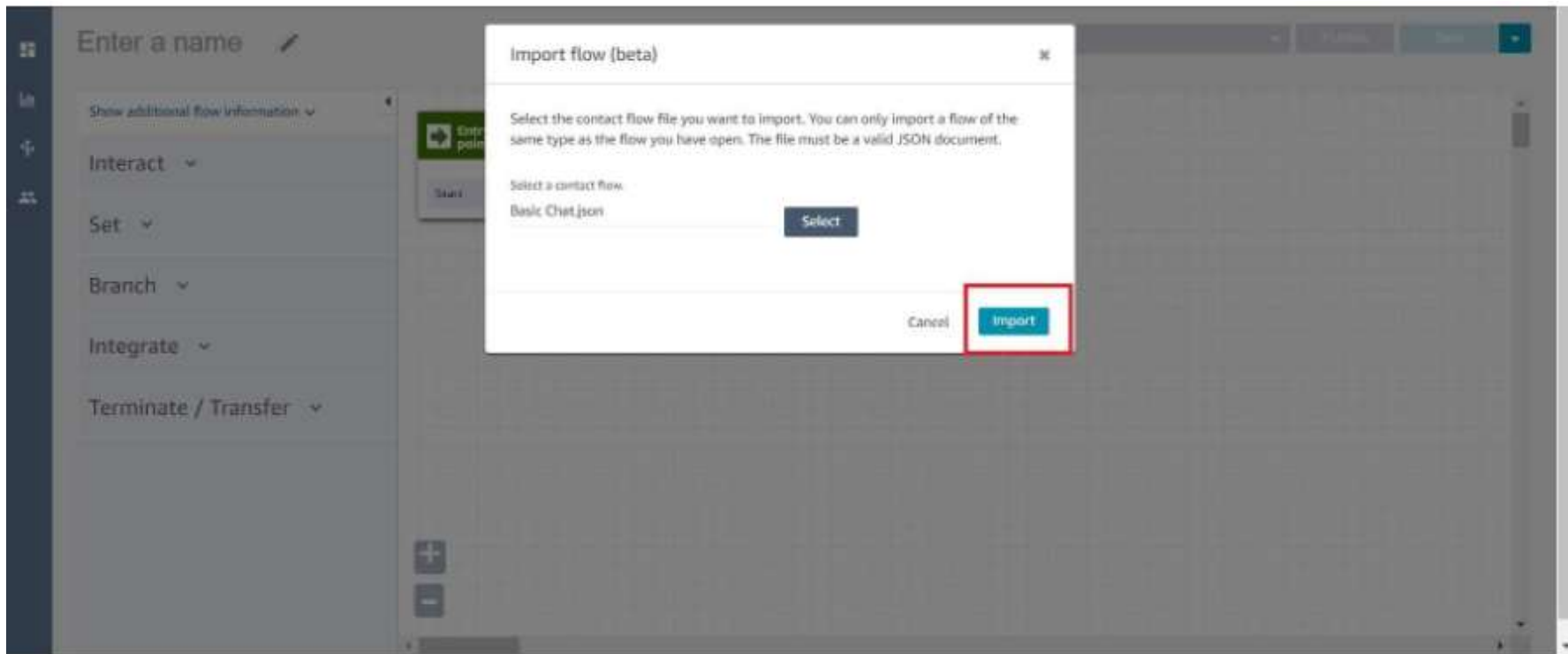


Amazon Connect – Chat

Deploy the Chat Demo

Import Basic Chat

Import the Basic Chat.json.



Amazon Connect – Chat

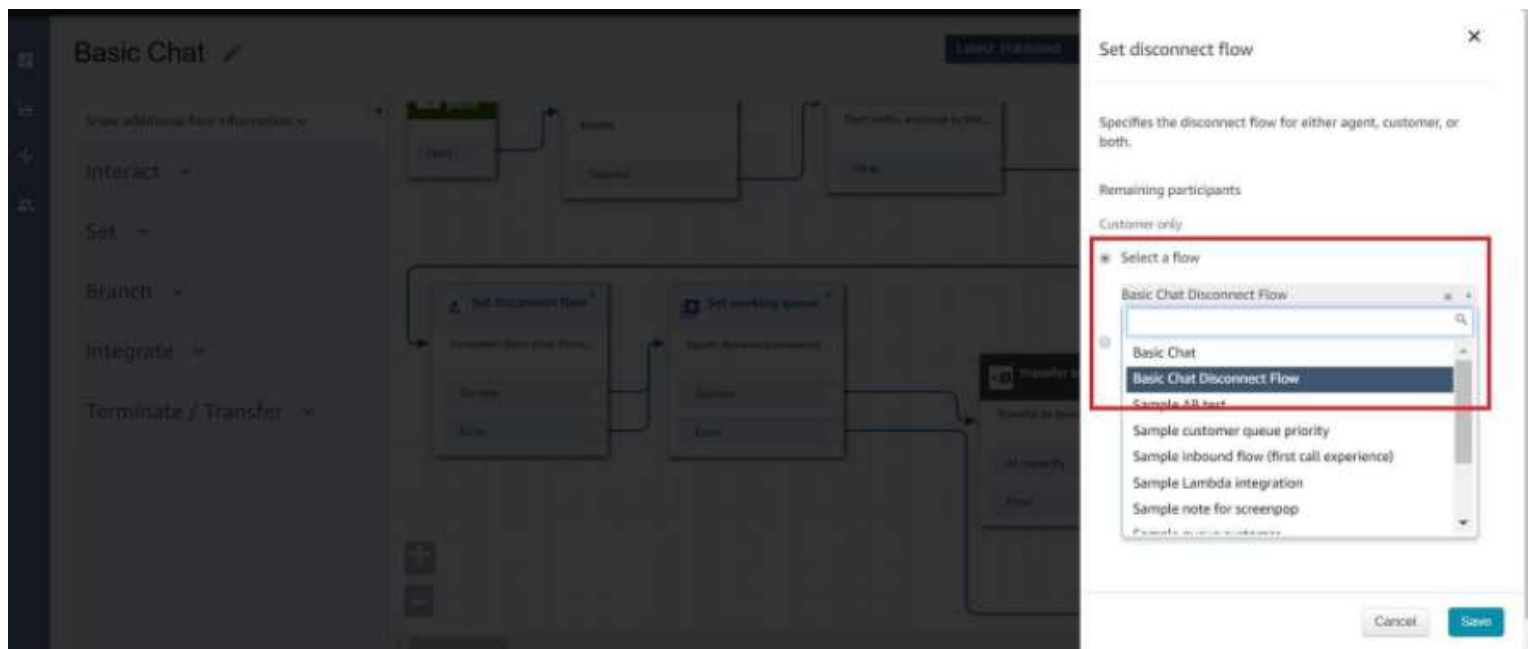
Deploy the Chat Demo

Update Set disconnect flow block

Open the **Basic Chat** contact flow.

Select the **Set disconnect flow** block and point to the Basic Disconnect Flow, then select **Save**.

Click **Publish** to adapt to the change



Amazon Connect – Chat

Launching the CloudFormation template

The next step in the process is to launch the CloudFormation template . The template is used to provision the resources required to launch a website for a customer-facing chat interaction with Amazon Lex and Amazon Connect Agents.

Amazon Connect – Chat

Launching the CloudFormation template

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Updating parameters

When creating the template stack, you will need to review the parameters defined in the template and input custom values. Examples are explained here:

- WebsiteS3BucketName:

This should be the name of a new S3 bucket that will be created on your behalf to store the website contents

Amazon Connect – Chat

Updating parameters

- **contactFlowId:**

This is the ID of the Basic Chat Flow you imported in earlier. You can find the contact flow ID when viewing the contact flow and clicking on the Additional information link.

For example, if the ARN for your flow is 'arn:aws:connect:us-west-2:123456789012:instance/11111111-1111-1111-1111-111111111111/contact-flow/22222222-2222-2222-2222-222222222222', the contact flow id is '22222222-2222-2222-2222-222222222222'

- **instanceId:**

This is the ID of the Amazon Connect instance you want to use. You can find this on the Amazon Connect console or when viewing the contact flow.

For example, if the ARN for your flow is 'arn:aws:connect:us-west-2:123456789012:instance/11111111-1111-1111-1111-111111111111/contact-flow/22222222-2222-2222-2222-222222222222', the instance id is '11111111-1111-1111-1111-111111111111'

Amazon Connect – Chat

Updating parameters

- `AmazonConnectS3BucketName`:

This is the bucket that holds the chat transcripts for your Amazon Connect instance. You can find this in the Amazon Connect console when viewing the Data Storage section in your instance details.

For example, if your instance has `connect-xxx/connect/instanceName/ChatTranscripts`, enter `connect-xxx`

- `transcriptPath`:

This is the path in the S3 bucket that contains the chat transcripts. You can find this in the Amazon Connect console when viewing the Data Storage section in your instance details.

For example, if your instance has `connect-xxx/connect/instanceName/ChatTranscripts`, enter `connect/instanceName/ChatTranscripts`.

Amazon Connect – Chat

Choose a region to deploy the template

You can deploy the CloudFormation template from one of the regions that supports Amazon Connect

Select the link for your region and sign into the AWS Management Console. CloudFormation will open in the chosen region at the Create stack page.

Follow the steps shown here to continue set up of the CloudFormation template.

The screenshot shows the AWS Management Console interface for the 'Create stack' page in the CloudFormation service. The top navigation bar includes the AWS logo, 'Services', 'Resource Groups', and several service icons: Amazon Connect, Lambda, CloudWatch, Kinesis, and others. The breadcrumb trail indicates the path: CloudFormation > Stacks > Create stack. On the left, a sidebar lists four steps: Step 1: Specify template (selected), Step 2: Specify stack details, Step 3: Configure stack options, and Step 4: Review. The main content area is titled 'Create stack' and contains two sections. The first section, 'Prerequisite - Prepare template', explains that every stack is based on a template (JSON or YAML) and provides three radio button options: 'Template is ready' (selected), 'Use a sample template', and 'Create template in Designer'. The second section, 'Specify template', explains that a template is a JSON or YAML file describing stack resources and properties. It includes a 'Template source' section with two radio button options: 'Amazon S3 URL' (selected) and 'Upload a template file'. Below this, there is a text input field for the 'Amazon S3 URL' containing the value: 'https://s3-us-west-2.amazonaws.com/us-west-2-amazon-connect-advanced-customer-chat-cfn/cloudformation.yaml'. At the bottom of the console, a footer bar contains a 'Feedback' button, the language 'English (US)', and copyright information for Amazon Web Services, Inc. (2008-2020).

Amazon Connect – Chat

Specify stack details 1

Enter a unique name for the following:

- Stack: asyncCustomerChatUX
- S3 Bucket: Where the chat transcripts will reside; chat-transcript-s3-bucket
- S3 Bucket: Where the website will be created for testing; new-website-bucket-name

The screenshot shows the AWS CloudFormation console interface. The top navigation bar includes the AWS logo, 'Services', 'Resource Groups', 'Amazon Connect', 'Lambda', 'CloudWatch', and a search bar. The breadcrumb trail indicates the path: CloudFormation > Stacks > Create stack. On the left, a sidebar shows the progress: Step 1: Specify template, Step 2: Specify stack details (active), Step 3: Configure stack options, and Step 4: Review. The main content area is titled 'Specify stack details'. It contains a 'Stack name' section with a text input field containing 'asyncCustomerChatUX'. Below this, a 'Parameters' section lists two parameters: 'AmazonConnectS3BucketName' with the value 'chat-transcript-s3-bucket' and 'WebsiteS3BucketName' with the value 'new-website-bucket-name'. Each of these three input fields is highlighted with a red rectangular box. The footer of the console shows 'Feedback', 'English (US)', and copyright information for Amazon Web Services, Inc. or its affiliates.

Amazon Connect – Chat

Specify stack details 2

Scroll down and choose the CloudFront PriceClass based on your needs.

Enter the details for your Amazon Connect Instance settings below.

- **contactFlowId**
- **InstanceId**
- **transcriptPath**.

Once all the details are entered and verified, select Next.

The screenshot shows the AWS Management Console for Amazon Connect. The 'Specify stack details 2' step is active. The form contains the following fields:

- WebsiteS3BucketName**: A text input field with the value 'new-website-bucket-name'.
- cloudFrontPriceClass**: A dropdown menu with 'PriceClass_100' selected.
- contactFlowId**: A text input field with the value '12345678-1234-1234-1234-123456789012'.
- InstanceId**: A text input field with the value '12345678-1234-1234-1234-123456789012'.
- transcriptPath**: A text input field with the value 'connect/instanceName/ChatTranscripts'.

At the bottom right, there are three buttons: 'Cancel', 'Previous', and 'Next'. The 'Next' button is highlighted in orange.

Amazon Connect – Chat

Configure stack options

Review the stack options, make changes if required, and click Next

The screenshot shows the AWS CloudFormation console interface for configuring stack options. The top navigation bar includes the AWS logo, 'Services', 'Resource Groups', and links to 'Amazon Connect', 'Lambda', 'CloudWatch', and 'Kinesis'. The main content area is titled 'Configure stack options' and features a left-hand sidebar with a progress indicator showing four steps: 'Step 1: Specify template', 'Step 2: Specify stack details', 'Step 3: Configure stack options' (which is the current step), and 'Step 4: Review'. The main panel is divided into three sections: 'Tags', 'Permissions', and 'Advanced options'. The 'Tags' section allows users to add key-value pairs to resources, with a note that up to 50 unique tags can be added per stack. The 'Permissions' section prompts the user to choose an IAM role for CloudFormation to use, with a dropdown menu showing 'Sample-role-name'. The 'Advanced options' section is partially visible at the bottom. The footer contains a 'Feedback' link, the language 'English (US)', and copyright information for Amazon Web Services, Inc. (2008-2020).

Amazon Connect – Chat

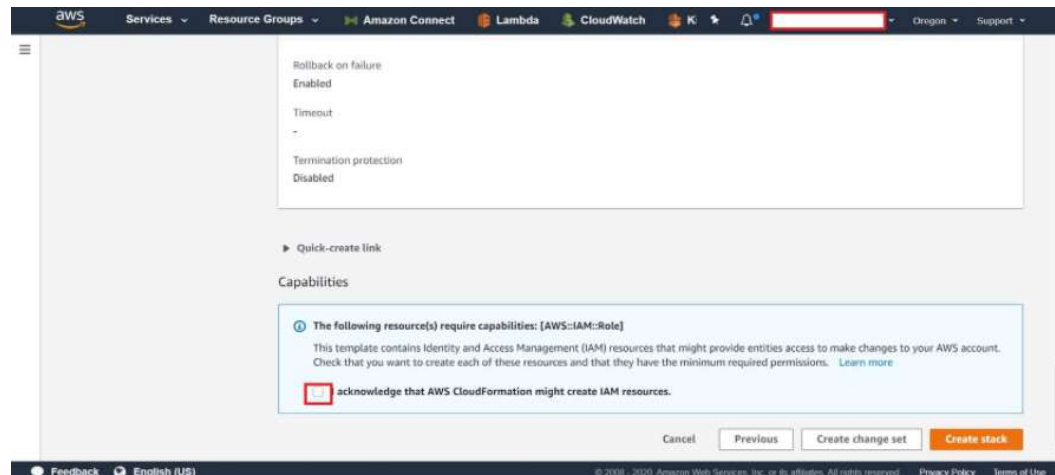
Review

Review all your inputs, then scroll down and select the check box
I acknowledge that AWS CloudFormation might create IAM resources, so that the
requested resources can be created.

Select Create stack.

Wait for the CloudFormation template to complete the creation process. Check the stack
status to ensure it says `CREATE_COMPLETE`.

Note: This process can take several minutes to complete. Expect to wait at least 5
minutes for the CloudFormation stack to deploy.



Amazon Connect – Chat

Test Amazon Connect Chat

Once the CloudFront distribution is ready, it's time to test the chat!

1. Find the CloudFront URL under the Outputs tab of the CloudFormation stack, next to the key cloudFrontDistribution.

Note: If you get an Access Denied error saying it cannot read the file from S3 bucket, the CDN is not ready. It could take over an hour to be ready.

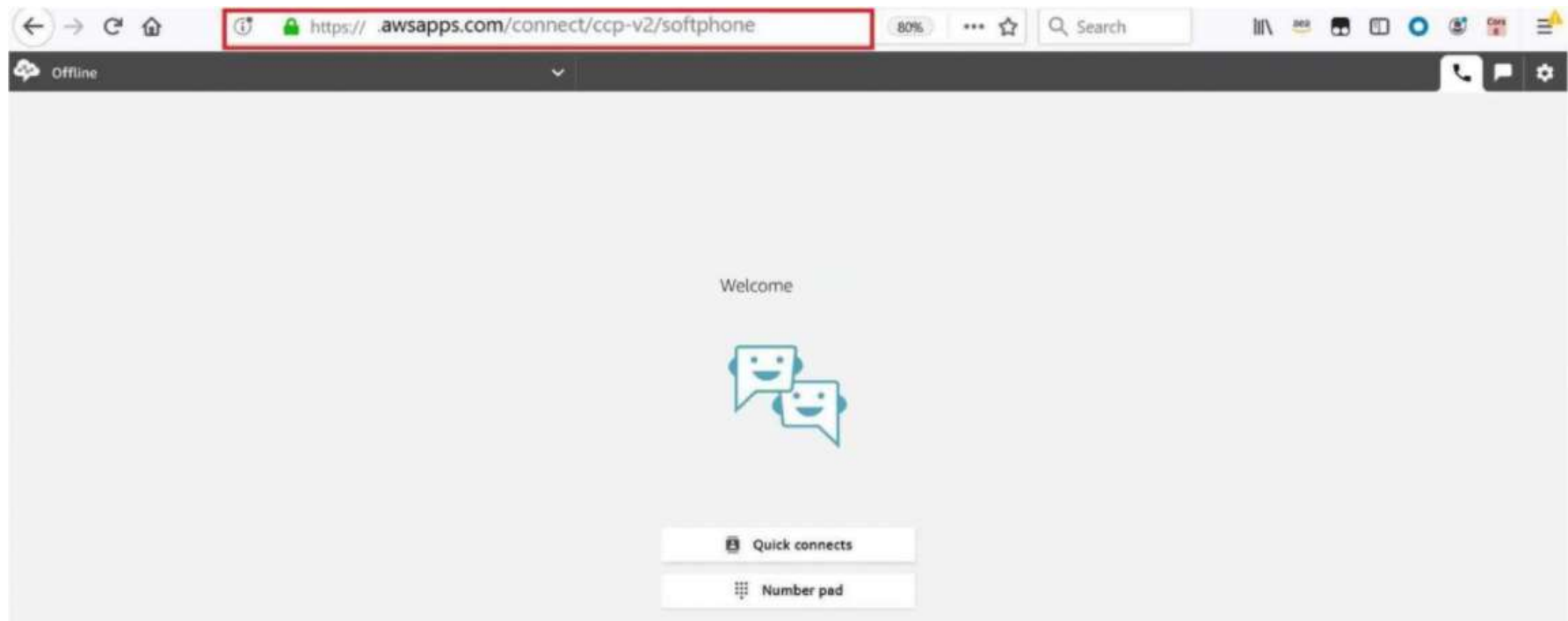
The screenshot shows the AWS CloudFormation console interface. The left sidebar contains navigation links for Stacks, Stack details, Drifts, StackSets, Exports, Designer, CloudFormation registry, and Resource types. The main content area displays the 'aa1-chat' stack with a status of 'CREATE_COMPLETE'. The 'Outputs' tab is selected, showing a table of outputs. The 'cloudFrontDistribution' output is highlighted with a red box, indicating the CloudFront URL.

Key	Value	Description	Export name
chatContactDataTable	aa1-chat-chatContactDataTable-SCOPAT4DZONC	Name of the new table to store the contact data related to chats.	-
cloudFrontDistribution	d21ny1lfxqfii.cloudfront.net	The domain name of the CloudFront Distribution to host the chat website	-
initiateChatLambda	arn:aws:lambda:us-west-2:593007389919:function:aa1-chat-InitiateChatLambda-11WT3EEIO6HG5	The ARN of the Lambda function created to initiate chat	-

Amazon Connect – Chat

Test Amazon Connect Chat

2. To update the Agent Call Control Panel URL, open the CCP URL from Amazon Connect and change the /ccp portion of the URL to /ccp-v2

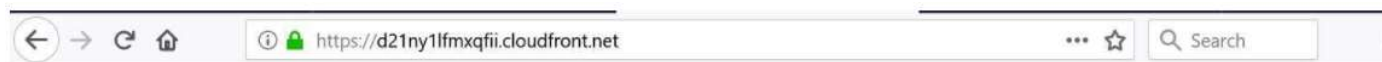


Amazon Connect – Chat

Test Amazon Connect Chat

3. Customer Login: On your CloudFront web page, enter the username of the agent you would like to speak to. The Contact Flow connects you to the agent specified in the username field. Then select Start Chat.

Note: Ensure the agent is configured under your instance and logged in to take the chat interaction. If the username entered cannot be found, it puts the caller into the Basic Queue.



Amazon Connect Omni-Channel Demo

<input type="text" value="First Name"/>	<input type="text" value="Username"/>	<input type="button" value="Start Chat"/>
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Customer Login

You have successfully built the solution which enables your customers to connect and chat with an agent through your website.

Amazon Connect – Chat

Test Amazon Connect Chat

The screenshot displays a web browser window with multiple tabs. The active tab is titled "Amazon Connect Chat Demo" and shows a URL starting with "https://d21ny1lfxqfii.cloudfront.net". The main content area is titled "Amazon Connect Omni-Channel Demo" and features a form with two input fields labeled "First Name" and "Username", followed by a "Start Chat" button.

On the right side of the browser window, a "Chat Demo" sidebar is open. It indicates "You are now chatting with BOT". The chat history shows a welcome message from the bot: "Hello, welcome to Help Desk." followed by "How can I help you today". A user named "Steve" has responded with "speak to an agent". A system message states "Warren has joined the chat". At the bottom of the chat window, there is a text input field labeled "Type a message" and an "End chat" button.

Some layout options



Current Options Are Not Solving the Problem

STAFFING AGENCY

Do not help with
shortage

CAMPUS HIRING

Not enterprise ready

VISA TALENT

High compliance &
legal costs; delays

INTERNAL TRAINING

Not core competency;
bureaucratic

BOOTCAMPS

Demand-supply
mismatch; fragmented