

Setup and Installation Guide



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Abstract

This guide details the integration between Amazon Connect and Salesforce Lightning. It covers the installation, configuration, and operation of the two primary components of the integration: the Amazon Connect CTI Adapter for Salesforce and the AWS Serverless Application Repository for Amazon Connect Salesforce integration.

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Release Notes

Important: when upgrading the CTI Adapter, please make sure that the Salesforce Lambdas are also updated to the newest version. Also review the [CTI Adapter Installation Troubleshooting and Common Issues](#) section for known issues and troubleshooting.

5.15 July 2021

- **Feature: Guided Setup** The Guided Setup feature helps make the setup process easier. See [Guided Setup](#) for more details.
- **Feature: Chat Widget Integration for SalesForce Experience Cloud(formerly Community Cloud)**
Added VisualForce Page component that allows you to add Amazon Connect Chat Widget in your Salesforce Experience Cloud Site.
- **Enhancement:** Changed the default audio recording component in the Contact Channel Analytics for easier setup. See [Contact Channel Analytics](#) for more details.
- **Enhancement:** Created the ExecuteAwsService service for simpler communication between Salesforce and AWS. **WARNING:** If you are using Contact Lens for audio recording you *must* replace your existing AwsGenerateAudioRecordingUrl named credential with the ExecuteAwsService named credential. See [here](#) for more details.
- **Bug Fix:** Fixed an issue with the lambda package that caused Contact Lens Call Recording Streaming to be broken for redacted calls.
- **Bug Fix:** Fixed an issue that caused the "Clear All Properties" CTI Flow Block to clear properties important to the CTI adpater working.
- **Bug Fix:** Added the `DISCONNECT` field to the `Initiation Method` field in Contact Trace Records.

5.14 June 2021

- **Bugfix:** The issue that caused an Attribute label to not display properly in the attributes panel has been fixed.
- **Bugfix:** The issue that caused AC Queue Metrics tab's name showing blank has been fixed.
- **Bugfix:** The issue that caused the Recording Panel button to fail when a url is used for connect instance alias has been fixed.
- **Enhancement:** We now make it possible for voicemail drops to work with queue callbacks.
- **Enhancement:** You can now configure the CT Action Recording Panel's initial state using contact attributes. If you're recording your call, make sure to add an attribute named `RECORDING_STARTED` whose value is `true` in your Contact Flow.
- **Enhancement:** We have added `IfCurrentAgentState` tag to `SetAgentStatusOnSessionEnd` feature, which allows customers to condition this feature on the Agent's current state.

5.13 April 2021

- **Feature: CTI Actions - programmable buttons within the CCP overlay**

In this release, we have added a feature called CTI Action which are programmable buttons for your CTI Flows. Each CTI Action is a button that can be programmed to trigger a CTI Flows whose source value is "CTI Action." In addition, CTI Actions can be programmed to ask the agent for additional information via a data entry form. You can use the agent's entry in your CTI Flow with the help of "Get Payload" block. This is a great way to ask your agents to enter ad-hoc data prior to running the CTI Flow to provide additional information as part of a workflow to automate case creation, or start a customer refund process. **If you are upgrading from a previous version of the CTI Adapter, please be sure to review the additional setup steps required for CTI Actions.**

- **Feature: CTI Actions: recording API integration within the CCP overlay**

The CTI Adapter now includes integration with Connect's recording API. This feature allows the agent to control when to start and stop recording a call. Once the recording has started, they can also pause and resume it. For example, agents can pause a recording before asking for sensitive information from your customers. Once the agent stops a recording, you cannot start it again. Use pause/resume buttons after you've started recording a call to control the recording.

- **Enhancement: Voicemail Drops (beta)**

The **beta Voicemail Drops** feature now integrates with CTI Actions. In the beta, voicemail drops were loaded directly into the CCP Overlay. As of 5.13, you will need to create a CTI Action, and use the newly

added "Leave a Voicemail" block in the CTI Flow where you can configure the specific voicemail drop and the quick connect name to use for the voicemail.

- **Feature: CCP Overlay: Data panel to receive data from CTI Flows.**

You can now send data from a CTI Flow to the CCP Overlay. The Data panel on CCP Overlay will display any object you pass it from "Send Data to CCP Overlay" block.

- **Feature: CTI Flow Blocks: "Start Recording" and "Stop Recording"**

With "Start Recording" and "Stop Recording" blocks, you can control the voice recording of the call within your CTI Flows.

- **Feature: CTI Flow Block: "Update Contact Attributes"**

You can now update contract attributes using CTI Flows. This block accepts a list of key-value pairs and assigns them to the currently active contact. It may come handy for passing Case id and other important information to the next agent when transferring a call.

- **Feature: CTI Flow Block: "Get Payload"**

The `payload` object contains the arguments passed to the CTI Flow. Now you will be able to use "Get Payload" block to reference a payload key as an input in other blocks on your CTI Flow.

- **Feature: CTI Flow Block: "Send Data to CCP Overlay"**

This block allows you to send data to your agent from a CTI flow. The agent will see this information in the CCP Overlay in a panel entitled "Data."

- **Feature: CTI Flow Block: "Leave a Voicemail"**

This block works with the beta Voicemail Drops feature. When you configure the `voicemailDropName` and `quickConnectName`, it will pass the contact to an IVR to leave a voicemail on the agent's behalf.

- **Feature: CTI Flow Block: "Get Salesforce Lead ID":** This block allows you to get a Salesforce lead by using a phone number.
- **Enhancement:** "Get Salesforce Contact Id" block now uses FIND syntax to search across multiple fields.
- **BugFix:** For the `SetAgentStatusOnSessionEnd` feature, it would occasionally fail if the agent hadn't interacted with the webpage. We solve this by creating a popout to monitor the agent session.
- **Enhancement:** For the `SetAgentStatusOnSessionEnd` attribute, you can now specify multiple values.

- **Enhancement:** When `SetAgentStatusOnSessionEnd` feature is enabled, you can now configure which state the agent should be shown as when they login with the `InitialAgentState` setting.
- **Enhancement:** When `SetAgentStatusOnSessionEnd` feature is enabled, you can now configure which agent to logout when all tabs are closed by setting the Status to Logout.
- **Bugfix:** Addressed issue that caused CTI Flows to be run on every open Salesforce tab.
- **Bugfix:** Addressed an issue in "Get Salesforce Contact Id" block that caused the query to fail if the phone number was in E164 format.
- **Enhancement:** Added the `onDestroy` Event to certain CTI Flow Sources

5.12 March 2021

- **Feature:** Added custom setting which will allow customers to enable and disable non-essential triggers (They are disabled by default now). [More details in the troubleshooting section](#)
- **Bugfix:** Addressed additional trigger issue that prevented orgs with 200k+ CCA records from updating Case and Contact records.
- **Bugfix:** Addressed issue where AC Permission sets did not include the `CustomerEndpointAddress` field for the `ContactChannelAnalytics` object.
- **Bugfix:** Addressed issue where AC Permission sets did not include the `MedialessPopout` page.

5.11 March 2021

- **Bugfix:** Addressed trigger issue that prevented community and partner users from updating Contact and Case records.

5.10 February 2021

- **Feature:** *Contact Control Panel (CCP) Audio Device settings option.* Admins can toggle Phone type settings and the new [Audio Devices settings](#) for agents to see on their CCP. [Audio Device settings](#) allow the agents to choose audio devices for their speaker, microphone, and ringer.
- **Feature:** *Custom Ringtone for chat.* Admins can configure a custom ringtone for chat (separate from CCP) from the CTI Adapter configuration page.
- **Enhancement:** The Salesforce built-in Cross Site Request Forgery (CSRF) protection is enabled for Visualforce pages in the CTI Adapter package which improves organizational security to protect against cross site request forgeries.
- **Bugfix:** Decision blocks no longer requires both sockets to be connected.

- **Bugfix:** Click to Dial stopped working after first use until the agent refreshed the page.
- **Bugfix:** Error that prevented Contact Lens app resources from being hosted on a different domain than the Salesforce instance.
- **Bugfix:** Error that prevented Contact Lens app from displaying intermittently when Transcribe was enabled.
- **Bugfix:** Changed the logic for the IsContactTransfer CTI Flow Block which always returned true.
- **Bugfix:** Medialess popout not closing after Salesforce tabs are closed.
- **Bugfix:** Login window did not close automatically after logging into Connect.
- **Bugfix:** Unable to upgrade the package if the Case or Contact object contained encrypted fields.

5.9 December 2020

- **Feature:** Contact Lens Integration
- **Feature:** Tasks Integration - Added the Amazon Connect Task Contact as a source to CTI Flow in addition to Task specific events
- **Feature:** CTI Block - Is Task Contact? - Check if the contact is a task
- **Feature:** CTI Block - Create Task Contact - Creating a new task contact with certain inputs.
- **Feature:** CTI Block - Pop Task Contact's ReferenceUrls - Pop any reference urls that are related to the task contact
- Upgraded Salesforce API to v50.0.
- **Feature update:** If you have CCP open on multiple tabs, CTI Flows will be executed only on one of them. The execution will be performed on the current tab, by default. If the agent is currently looking at a different site, a random tab will be selected to perform the execution.
- **Enhancement:** \$User.ProfileId is now available through "userProfile" property.
- **Enhancement:** CTI Flow execution timeout window has been increased to 60 seconds.
- **Feature update:** When the CCP popout is opened, we now ask for a confirmation before refreshing or closing the tab that opened it. Note that if you do close the original tab, the pop out might also be closed.
- **Bugfix:** Voicemail Drops feature has been fixed.
- **Bugfix:** CTI Flow "Open Subtab" block has been fixed.

5.7 November 2020

- **Feature update:** Change audio recording feature in the Contact Channel Analytics page to use an audio streaming approach. Please review the updated [Contact Channel Analytics](#) section for the setup details.
- **Feature:** Add permission set specifically for the audio recording feature

- **Feature:** Localization into 9 languages.
- **Feature:** Add callType to return fields of "Get Contact Properties" block
- **Feature:** Add formatted phone number to return fields of "Get Contact Properties" block
- **Feature:** Add script name to CTI flow definition file.
- **Feature:** Remove context from log outputs
- **Bugfix:** Return field of "Open Primary Tab" was value, not id, as specified. We now provide it in both `value` and `id` fields for backward compatibility.
- **Feature:** Make the error message shown when the execution runs too long more informative.
- **Feature:** Make sure the attributes overlay doesn't open automatically when CCP is opened.
Documentation: "Create and pop that task" default flow is fixed.
- **Bugfix:** update return value of "Get Agent Configuration" block to match the documentation.
- **Feature:** Increase CTI Flow timeout to 10 seconds.
- **Bugfix:** remove the leading wildcard matcher in "Get Salesforce Contact Id" block query. The wildcard matcher caused performance issues with the query. Going forward make sure the phone number is an exact match to the one in file.
- **Bugfix:** Ensure "Join Strings" block does not ignore boolean false values.
- **Bugfix:** Ensure "Log to Console" block does not ignore boolean false values.
- **Feature:** Add uid field on top of the block on the canvas.
- **Bugfix:** Remove the loginWindow object from log output because it errors with "Cannot convert object to primitive value."
- **Bugfix:** ContactChannel object updates to new agent if previous agent rejected or missed a contact
- **Bugfix:** Changing status to logout now correctly logs agent out
- **Feature:** Rename "Enable Click to Dial?" to "Can Make Outbound Calls?".
- **Feature:** CTI Flow Block - math function - "Multiply"
- **Feature:** CTI Flow Block - math function - "Divide"
- **Feature:** CTI Flow Block - "Get Tab Object Map"
- **Feature:** CTI Flow Block - "Close Salesforce Tab"
- **Feature:** CTI Flow Block - "Delay"
- **Feature:** CTI Flow Block - "Get Primary Tab Ids"
- **Feature:** Improve browser log formatting.
- **Feature:** CTI Flow Block - "Get Tabs With Matching Url"
- **Feature:** *Update Connect agent status when all Salesforce tabs are closed:* You can set the agent status to a specific state if the SetAgentStatusOnSessionEnd feature is turned on and the agent's routing profile name includes the value of IfProfileNameIncludes setting, such as "On-Call." By default, the agent status is set to "Offline" if the feature is enabled and nothing is specified for IfProfileNameIncludes. If this feature is enabled, the agent will be automatically shown as available when they login to Salesforce and the CCP.
- **Feature:** CTI Flow Block - Length"

- **Feature:** CTI Flow Block - "Slice"
- **Feature:** CTI Flow Block - "Cast a Value to a Type"
- **Bugfix:** Agent is able to accept calls when Medialess is turned on.
- **Feature:** CTI Flow Block - "Get CCP Logs" Remove "Initialization" and "Browser" sources
- **Feature:** Allow users to specify Amazon Connect Instance url in CTI Adapter details in addition to Amazon Connect Instance Alias

5.5 October 2020

- **Feature:** CTI Flow Block - "Clear All Properties"
- **Feature:** CTI Flow Block - "Unset Property"
- **Feature:** CTI Flow Block - "Show All Attributes"
- **Bugfix:** Attributes panel can now display attributes of transferred contacts.

5.4 Late September 2020

- **Feature:** You can now provide additional ad-hoc fields to "Create a Task" block. (Note: the values of these fields don't have a lookup dropdown yet.)
- **Feature:** New CTI Block! - You can now create "counters" with the "Update Counter" and read the value of your counters using "Get Counter" block.
- **Feature:** You can now get the number of open tabs from `openAgentTabs` counter.
- **Feature:** You can now compare multiple things using "Is One Of?" block in CTI Flows.
- **Feature:** New CTI Block! - You can now extract a value from a complex value, such as an array or an object, using the "Extract Value" block. (This comes handy when you retrieve a Salesforce object.)
- **Feature:** New CTI Block! - You can use the Salesforce retrieve API to fetch a record from the server by id using "Retrieve Salesforce Record" block.
- **Feature:** New CTI Block! - You can use the "Get Salesforce Contact Id" to fetch the id of a Salesforce contact by its phone number.
- **Feature:** New CTI Block! - You can now show a window alert using "Alert" block.
- **Feature:** New CTI Block! - You can now use create a complex string using string templates and multiple variables with the help of "String Template" block.
- **Bugfix:** When a screenpop is "deferred," the CTI Block used to return an inexact match and the Id field in the return value of the block would be blank. This issue has been fixed in this release.
- **Bugfix:** Presence sync is working again. The current release also reduces the wait threshold between each presence sync update from 1 second to 100ms, i.e. co-occurring events won't get lost anymore (as much).

- **Bugfix:** The encoding issue affecting "SOQL Block" has been fixed. The single quotes in the SOQL query are no longer encoded as HTML entities.
- **Bugfix:** To access the return value of another block, power users use "magic strings," e.g. `\$.actions.<blockId>.results.<fieldName>`, but these strings used to be cleared in the UI when the block is selected on the canvas. This issue is now fixed.
- **Bugfix:** The spelling of `TaskSubtype` field in "Create a Task" block has been fixed. Your TaskSubtype won't get lost anymore.
- **Bugfix:** Call recording view for a Case has been fixed.
- **Bugfix:** "Is Contact Inbound?" block is working again.
- **Bugfix:** "Is Truthy?" block now works with boolean input values.
- **Bugfix:** Salesforce UI onNavigationChange event listener is working again.
- **Bugfix:** We now alert you to change your instance alias if you try to sign in with instance alias set to "default."

5.3 September 2020

- **Bugfix:** Fix the issue that caused ACSFCCP_CallRecordingTask component to not work.

5.1 Late August 2020

- **Bugfix:** Ensure "Get App View" CTI Flow block doesn't break the sidebar
- **Enhancement:** Add "queueARN" field to "Dial Number" CTI Flow block
- **Bugfix:** Ensure some required CTI Flow block fields are not shown as "optional"
- **Bugfix:** Ensure "Save (or Create) a Record" block works as expected
- **Bugfix:** Fix the validation error on "CallDurationInSeconds" field in "Create a Task" block
- **Bugfix:** Fix phantom scrollbar on Windows machines
- **Bugfix:** Fix issue where copying contact attributes to clipboard doesn't work
- **Bugfix:** Fix issue where "saveLog" CTI Flow block throws an error
- **Bugfix:** Fix issue with onOffline Flow event not firing
- **Bugfix:** Fix various omnichannel presence sync bugs
- **Bugfix:** Ensure the CCP default dimensions are adjusted to CCPv2 defaults
- **Feature:** Add block "Set Agent Status By Name on Connect."

5.0 August 2020

- **This release has new features and updates:** Please test and validate version 5.0 in your Salesforce sandbox before upgrading this in production.
- **CTI Flows:** CTI Flows replace Lightning CTI Extensions in allowing customers to build their agent for Lightning and Classic via a drag drop UI. Many of the CTI blocks are similar to the Lightning CTI Extension script API calls and can be mapped similarly. Lightning CTI Extension scripts are NOT automatically migrated to CTI Flows. When upgrading the with existing scripts, it will give you the option to download the existing script for reference before building your CTI Flows. We strongly recommend you validate this install/upgrade in a test environment and fully test the CTI Flows against your previous scripts functionality. Please open a support ticket if there is additional functionality you require from your current scripting implementation.
- **Security Profile improvements:** AC Administrator, AC Agent, and AC Manager permission sets to enforces objects access and fields level (FLS) as per Salesforce security guideline for managed package. To Amazon Connect Objects and fields, user should either one of Amazon Connect permission sets AC Administrator, AC Agent, and AC Manager.
- **Attributes:** Amazon Connect CCP (Contact Control Panel) in Lightning Classic now display an overlay for showing attributes consistently.
- **AWS Secrets Manager** support for storing Salesforce credentials.
- **VPC Support:** ability to place Lambdas in VPC
- **New Salesforce API integration:** Exposed new operations in sfinvokeapi read or create Salesforce records(query queryOne, createChatterPost, createChatterComment, lookup_all, delete)
- **Upgrade:** Amazon Connect Streams API bumped up to version 1.5.
- **Bugfix:** Task creation issue for non connect users - Fixed task trigger apex code, added a validation before security access check for Amazon managed package objects
- **Bugfix:** Contact interaction fixed.
- **Other minor bugfixes and improvements**

4.5 April 2020

- **This release has new features and updates:** Please test and validate version 4.5 in your Salesforce sandbox before upgrading this in production.
- **Installation / Configuration:** AC_Administrator permission set has been added to manage CTI Configuration in addition to AC_Manager and AC_Agent. See documentation for further information.
- **API:** Updated support for CCPv2 in Classic/Console. See documentation for Call Center settings.
- **Bugfix:** Updated attribute display to resolve duplicated attributes.
- **Security:** Improved control access at the object-level, the record-level, and at the field level.

4.4 March 2020

- **This release has significant new features and updates:** Please test and validate version 4.4 in your Salesforce sandbox before upgrading this in production.
- **Documentation:** Guide has been rewritten and restructured based on feedback.
- **Installation / Configuration:** Improved installation and configuration guide
- **Installation / Configuration:** Added Enhanced Agent Logout functionality to Lightning.
- **API:** Updated to the latest Amazon Connect Streams and Chat libraries
- **API:** Additional extensibility methods provided
- **Setup:** Improved Presence Sync Rule editor
- **Setup:** CTI Adapter validation is performed upon initialization and will inform the user of common misconfigurations.
- **Setup:** Additional CTI Script examples are provided.
- **Setup:** The ability to place the lightning transcript view on Task, Contact Channel, and Contact Channel Analytics object has been added.
- **Bugfix:** Updated allowlisting steps to address login popup issue.
- **Bugfix:** OmniChannel workload data not being usable has been resolved
- **Bugfix:** CTI Attribute issue when processing multiple pieces of contact attribute data has been resolved.
- **Bugfix:** The call transcript now scrolls within a fixed region rather than consuming vertical space.
- **Bugfix:** Finding Task Record in Classic/Console fixed.
- **Security:** The ability to create, update, and delete AC_CtiAdapter, AC_CtiScript, AC_CtiAttribute and AC_PresenceSyncRule records has been removed from the AC_Agent permission set.

4.2 December 2019

- **This release has significant new features and updates:** Please test and validate version 4.2 in your Salesforce sandbox before upgrading this in production.
- **Installation / Configuration:** Improved installation and configuration guide
- **API:** Lightning CCP Extension scripts and reference guide
- **Setup:** A default CTI adapter and scripts for click-to-dial, voice contact pop, and chat contact pop are not included in the base installation.
- **Editor:** A more robust script editor is included for use in CTI adapter / script configuration.
- **Bugfix:** SSO issue has been resolved

4.1 November 2019

- **This release has significant new features and updates:** Please test and validate version 4.1 in your Salesforce sandbox before upgrading this in production. As we look to simplify documentation, this

release introduces a new [Amazon Connect CTI Adapter v4 for Salesforce Lightning](#) setup and installation guide. Please review this setup guide in detail to see all the latest changes for Lightning CTI Adapter installations.

- **Classic and Console CTI setup guide:** Please use the [Amazon Connect CTI Adapter v4 for Salesforce Classic](#) setup and installation guide for Classic and Console CTI Adapter installations.
- **Amazon Connect Chat and Contact Control Panel (CCP) v2:** support for Amazon Connect chat and integration of CCP v2. CCP v2 is required for Lightning CTI Adapter installations. CCP v1 is still supported for Classic / Console CTI Adapter installations.
- **Historical and Real-Time Reporting:** updated historical metric functionality with additional metrics and dashboards. Added real-time metrics and dashboards. This functionality requires an update of AWS Serverless Lambda functions for Salesforce.
- **Lightning CCP Extensions and configuration:** We have revamped the approach for the Call Center config and have added a new AC CTI Adapters Lighting config page.
- **High Velocity Sales:** CTI Adapter integration supported for Salesforce High Velocity Sales product.

 [Edit this page](#)

Key Benefits and Requirements

The key benefits of the Amazon Connect CTI Adapter are:

- **Amazon Connect Voice and Chat:** ability to take voice and chat calls in the salesforce agent experience and advanced screen pop on the incoming phone number, case, account or contact. Agents can also click to dial a number within their contacts.
- **Single Sign-On support:** seamless login with Connect and Salesforce with any standard SAML 2.0 provider.
- **Call disposition and activity management:** configure post call workflows to support your Agent's after call work.
- **Call logging and recording:** Voice and chat interactions can be logged as Salesforce activities and Amazon Connect call recordings can be played within the Salesforce.
- **Omnichannel Presence Sync:** enable Salesforce chat, sms and email to share presence with Amazon Connect. Amazon Connect will know when an agent is handling a Salesforce chat and make them unavailable for a voice call, and vice versa.
- **CTI Flows:** easily customize and extend behaviors within the CTI Adapter such as screenpop and activity management. Default flows along with the API guide provide key examples.

- **High-velocity sales (HVS):** using Salesforce HVS, enable your inside sales team to follow a repeatable pre-define sales cadence for your business. It enables sales managers and reps to work on prioritize list of prospects and follow best sequence of sales outreach activities defined by your sales process.

The key benefits of the AWS Serverless Application Repository for Salesforce are:

- **Access Salesforce Data:** easily inject salesforce data into the customer experience. Businesses can offer personalized greetings and dynamic routing based on customer information, create new objects, update existing records, and delete items based on customer choices in the IVR.
- **Contact center real-time reports:** display real-time contact center metrics within Salesforce from Amazon Connect.
- **Contact center historical reports:** display historical contact center metrics within Salesforce from Amazon Connect.
- **Contact analytics:** transcribe voice calls and perform analysis of the conversations using AI to surface sentiment, keywords, syntax, entities, etc.

We recommend that you initially install and configure the package into your Salesforce sandbox. This will allow you to test the integration, become more familiar with it, and modify it to your needs prior to deploying it to your production org.

If you are using Lightning, you can get a head start by working through the [Build an Amazon Connect Integration Salesforce Trailhead](#).

Requirements

To successfully deploy, configure, and implement the Amazon Connect integration with Salesforce, you must ensure that the following requirements and prerequisites are in place before.

Prerequisites - Amazon Connect CTI Adapter

In order to successfully install and configure the Amazon Connect CTI Adapter from the AppExchange you will need:

1. Salesforce
 - a. Salesforce org with Lightning experience
 - b. My Domain configured and deployed to users

2. An Amazon Connect instance

3. SAML Details (If using SAML)

Prerequisites - AWS Serverless Application Repository for Salesforce

In order to successfully install and configure the Salesforce functions from the Serverless Application Repository, you will also need:

1. A Kinesis stream configured for your Amazon Connect contact trace records (CTRs)

2. Salesforce:

a. An API user account

b. A new Connected App

Browser Compatibility

Amazon Connect requires WebRTC to enable soft-phone voice media stream and Websockets to enable soft-phone signaling. Consequently, users are required to use the latest version of either Google Chrome or Mozilla Firefox. For more information, please see the [Amazon Connect documentation](#).

Salesforce Lightning Support

Please note that following features are currently not supported in Salesforce Lightning:

- Outbound Campaign Calls using Salesforce Omni can be routed to the agent, but the automated screen pops and the dialing of the phone number will not work. The agent will have to click on the record links to open the records and use Salesforce's Click-to-Dial feature to make the phone call.
- Lightning Standard Navigation is not currently supported in App Options for the Amazon Connect CTI Adapter.

 [Edit this page](#)

Installing the CTI Adapter and Salesforce Lambdas

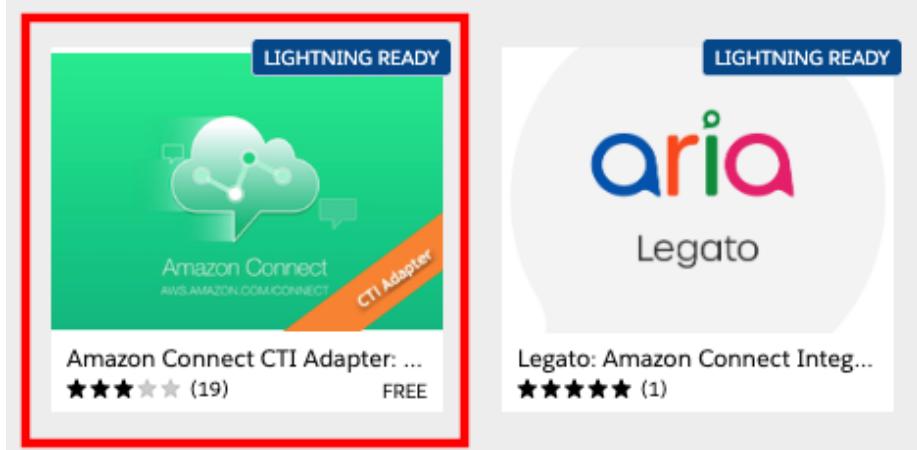
Amazon Connect Salesforce CTI Adapter Managed Package

The Amazon Connect CTI Adapter for Salesforce provides the core integration between the two platforms. It embeds the Amazon Connect Contact Control Panel into Salesforce which provides telephony control as well as access to event data coming from Amazon Connect. Using this adapter, you can configure screen pops based on customer data, automate contact center telephony functions like click-to-dial, and establish presence syncing rules for integration with Salesforce Omni-Channel. This is the base of the integration.

The first step in the deployment of the integration is to install the Amazon Connect CTI Adapter managed package from the AppExchange Marketplace.

1. Log in into your Salesforce org and go to **Setup**
2. In the **Quick Find**, type **AppExchange** (the results will populate without hitting enter)
3. Select **AppExchange Marketplace** from the links provided
4. In the AppExchange window, enter **Amazon Connect** into the **Search AppExchange** field and press enter
5. In the **Search Results**, select **Amazon Connect CTI Adapter**

< BACK
Search Results for "Amazon Connect"
48 Apps · Sorted by Relevance



6. On the **Amazon Connect CTI Adapter** detail page, select **Get It Now**

< BACK

Amazon Connect CTI Adapter: CTI | Contact Center | IVR | ACD | Call Recording

by Amazon Web Services

Bring the Power of Intelligent CTI to Salesforce Service Cloud



★★★★★

Free



DETAILS

REVIEWS

PROVIDER



Amazon Connect CTI Adapter for Salesforce Overview and Demo



Highlights

Setting up Amazon Connect is easy. With only a few clicks in the AWS Management Console, agents can take calls within minutes. The drag-and-drop interface makes it easy to build complex contact flows.

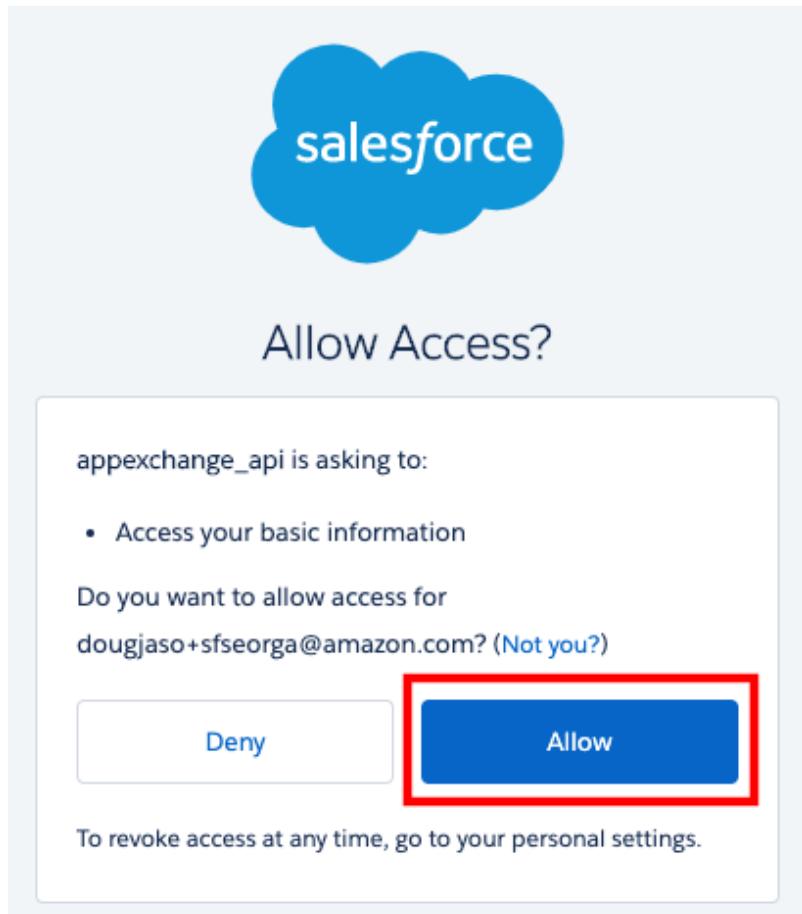
Contact Information

<https://aws.amazon.com/contact-us/>

Watch Demo

Get It Now

7. If you are presented with the Log In to AppExchange screen, select **Open Login Screen**. You should then be presented with an Allow Access Screen. Choose **Allow**



8. On the **Where do you want to install Amazon Connect CTI Adapter** page, choose the **Install Here** button in the **Install in This Org** section

Where do you want to install Amazon Connect CTI Adapter: CTI | Contact Center | IVR | ACD | Call Recording?

Before you install in a production org, we recommend testing in a sandbox first.

Install in This Org

Get going in the org where you're logged in right now.

Install Here

Install in a Sandbox Org

Test in a copy of a production org.

Install in Sandbox

Cancel

9. On the **Confirm installation details** screen, fill out the **Tell us about yourself** form, check the box to **agree with the terms and conditions**, and optionally select the box to **allow the provider to contact you**. Then select **Confirm and Install**

I have read and agree to the [terms and conditions](#).

Salesforce.com Inc. is not the provider of this application but has conducted a limited security review. Please [click here](#) for detailed information on what is and is not included in this review.

Allow the provider to contact me by email, phone, or SMS about other products or services I might like

Cancel

Confirm and Install

10. Select **Install for Admins Only**, then choose **Install**. **THIS SELECTION IS VERY IMPORTANT** - if you select the wrong option, then standard users may have access to objects and pages that they shouldn't have access to.



Install Amazon Connect - Universal Package

By

Install for Admins Only

Install for All Users

Install for Specific Profiles...

Install

Cancel

11. The CTI Adapter will take some time to install. While it installs, you will be presented with the **This app is taking a long time to install** screen.

12. Choose **Done**.

aws Install Amazon Connect CTI Adapter: CTI | Contact Center | IVR | ACD | Call Recording

By Amazon Web Services



This app is taking a long time to install.

You will receive an email after the installation has completed.

Done

13. Once you receive confirmation that the **installation has completed** via email, return to the browser

14. Close the **Amazon Connect CTI Adapter** detail page (if still open)

15. In Quick Find, enter **Installed**, then select Installed Packages from the result

Setup Home Objects

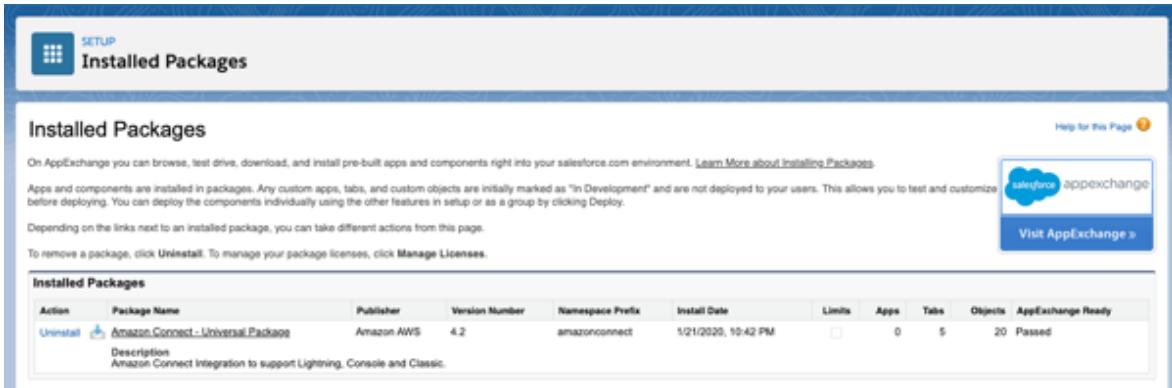
Installed

Apps

Packaging

Installed Packages

16. Once the **Installed Packages** page opens, validate that the **Amazon Connect -- Universal Package** is installed



The screenshot shows the 'Installed Packages' section of the Salesforce Setup. At the top, there's a message about AppExchange and a link to 'Learn More about Installing Packages'. Below that, a note says 'Apps and components are installed in packages. Any custom apps, tabs, and custom objects are initially marked as "In Development" and are not deployed to your users. This allows you to test and customize before deploying. You can deploy the components individually using the other features in setup or as a group by clicking Deploy.' A 'Visit AppExchange' button is also present. The main table lists one package:

Action	Package Name	Publisher	Version Number	Namespace Prefix	Install Date	Limits	Apps	Tabs	Objects	AppExchange Ready
Uninstall	Amazon Connect - Universal Package	Amazon AWS	4.2	amazonconnect	1/21/2020, 10:42 PM		0	5	20	Passed

Description: Amazon Connect Integration to support Lightning, Console and Classic.

Amazon Connect Salesforce Lambda package

The Amazon Connect Salesforce Lambda package adds considerable capability to the integration. It includes data connectivity between Amazon Connect and Salesforce for typical tasks like lookups, case creation, and updates. Additionally, it adds new features like real-time and historical data imports, contact trace record imports, recording import, transcription, and contact analytics functions. These capabilities are configurable and can be activated or deactivated on a call-by-call basis.

The Amazon Connect Salesforce Lambda package is delivered via the AWS Serverless Application Repository. The AWS Serverless Application Repository enables you to quickly deploy code samples, components, and complete applications. Each application is packaged with an AWS Serverless Application Model (SAM) template that defines the AWS resources used. There is no additional charge to use the Serverless Application Repository - you only pay for the AWS resources used in the applications you deploy.

1. In a new browser tab, login to the [AWS console](#)
2. Make sure you are in the same region as your Amazon Connect instance
3. Once you have selected the region, navigate to the [Amazon Connect Console](#)
4. Verify that the Amazon Connect instance that you wish to configure is listed
5. Once you have verified your Amazon Connect instance, Open the [Serverless Application Repository Console](#)
6. In the left navigation, select **Available Applications**

Serverless Application Repository

X

Available applications

Published applications

7. In the search area, make sure that **Public applications** is selected, check the box for **Show apps that create custom IAM roles or resource policies**, and enter **Salesforce** in the search field, this will automatically filter the available packages

The screenshot shows the 'Available applications' section of the Serverless Application Repository. At the top, there are two tabs: 'Public applications (4)' (which is selected) and 'Private applications'. Below the tabs is a search bar containing the text 'Salesforce'. Underneath the search bar is a checked checkbox labeled 'Show apps that create custom IAM roles or resource policies'. The main area displays a list of applications, with the 'AmazonConnectSalesForceLambda' application highlighted by a red box.

8. Select AmazonConnectSalesForceLambda

The screenshot shows the details page for the 'AmazonConnectSalesForceLambda' application. The application name is at the top, followed by a description: 'Creates custom IAM roles or resource policies'. Below the description is a paragraph explaining the functionality: 'The AWS Serverless application package contains a set of common Lambda functions to be used by Amazon Connect to interact with Salesforce, allowing lookup, create and update operations for different Salesforce objects, like Contacts and Cases.' There are several tags listed below the description: 'Integration', 'Connect', 'Amazon', 'Salesforce'. At the bottom, it shows '26 deployments' and '685 deploy...'. To the right, there is another application card for 'alexa-salesforce-notes-sample'.

9. When the Application loads, scroll down to the **Application settings** section

10. If you would like to use the Guided Setup feature, **don't change any parameters in the template** and select **Deploy**, and wait for the stack to finish deployment. Then, follow the section below on setting up the ExecuteAwsService named credential. If you are not using the Guided Setup feature, navigate to [here](#) for manual setup instructions (skipping the rest of the instructions on the page).

Deployment status for serverlessrepo-SFConsolidatedLambdaPackage

[Create a new app](#)[Test app](#)

Your application has been deployed

Review the application's README for what to do next.

[Permissions](#)[Resources](#)[View CloudFormation Stack](#)

Setting up the ExecuteAwsService Named Credential

The ExecuteAwsService Named Credential is the entrypoint for the CTI Adapter to communicate with your AWS account. The Apex code uses the Named Credential to call the `sfExecuteAwsService.py` lambda, which uses boto3 to make changes in and retrieve data from your AWS account. Setting up this Named Credential is **not required** if you do not wish to use the features that rely on it (Guided Setup and Contact Lens). In addition, you can alter the permissions given to the `sfExecuteAwsService` lambda to match your security requirements (NOTE: if you choose to do so, do so after you configure up the lambdas as some permissions are added/removed based on how the lambdas are configured).

Before you create the ExecuteAwsService Named Credential, **confirm that the application was installed for admins only**. If not, then standard users may be able to invoke methods that call named credentials. If you did this by accident, then you will have to [manually edit the profiles](#) to remove the permissions to the objects and pages created by the app.

Install Amazon Connect - Universal Package

By

Install for Admins Only Install for All Users Install for Specific Profiles...

[Install](#) [Cancel](#)

1. Navigate to the IAM console in your AWS account, select the **Users** tab, and select **Add Users** to create a new user.

Identity and Access Management (IAM)

Introducing the new Users experience
We've redesigned the Users experience to make it easier to use. Let us know what you think.

IAM > Users

IAM users (7) Info
An IAM user is an identity with long-term credentials that is used to interact with AWS in an account.

[Add users](#)

User name	Groups	Last activity	MFA	Console last sign-in
user1	group1	2023-10-01 12:00:00	N/A	2023-10-01 12:00:00
user2	group2	2023-10-01 12:00:00	N/A	2023-10-01 12:00:00
user3	group3	2023-10-01 12:00:00	N/A	2023-10-01 12:00:00
user4	group4	2023-10-01 12:00:00	N/A	2023-10-01 12:00:00
user5	group5	2023-10-01 12:00:00	N/A	2023-10-01 12:00:00
user6	group6	2023-10-01 12:00:00	N/A	2023-10-01 12:00:00
user7	group7	2023-10-01 12:00:00	N/A	2023-10-01 12:00:00

2. Give your IAM user a name (like `sfExecuteAwsServiceIamUser`). For the Access type, select **Programmatic access**. Click Next.

3. Select **Attach existing policies directly**, then search for and select `invokeSfExecuteAWSServicePolicy`.

Add user

1 2 3 4 5

Set permissions

Add user to group Copy permissions from existing user Attach existing policies directly

Create policy

Filter policies ▾ sfexecute

Policy name ▾	Type	Used as
<input checked="" type="checkbox"/> invokeSfExecuteAWSServicePolicy	Customer managed	None

4. Click next until the user is created. In the final screen, copy down the **Access Key ID** and the **Secret Access Key**.

Access key ID	Secret access key
[REDACTED]	[REDACTED]

5. Next, navigate to the Lambda Console. In the functions tab, search for `sfExecuteAwsService`.

Lambda > Functions

Functions (36) Last fetched 20 seconds ago Actions ▾ Create function

Filter by tags and attributes or search by keyword 2 matches < 1 > ⚙

"sfExecuteAWSService" X Clear filters

Function name	Description	Runtime	Code size	Last modified
[REDACTED]-sfExecuteAWSService-[REDACTED]		Python 3.7	3.8 MB	22 days ago

6. Copy down the name of the function. Make sure you are not copying any extra characters.

7. Navigate to your setup section of your Salesforce instance, and search for *Named Credentials*.



Search Setup

Setup

Home

Object Manager ▾

named cr

Security

Named Credentials

Didn't find what you're looking for?
Try using Global Search.



SETUP

Named Credentials

Named Credentials

A named credential specifies a callout endpoint and its required authentication parameter

View: All ▾ Create New View

New Named Credential

8. Select **New Named Credential**. For the values in the next screen, enter the following:

- **Label:** ExecuteAwsService
- **URL:** `https://lambda.{insert AWS region}.amazonaws.com/2015-03-31/functions/{insert lambda function name (copied above)}/invocations`
- **Identity Type:** Named Principle
- **Authentication Protocol:** AWS Signature Version 4
- **AWS Access Key ID:** Access Key ID copied above
- **AWS Secret Access Key:** Secret Access Key
- **AWS Region:** {insert AWS region}
- **AWS Service:** lambda

[Save](#)[Cancel](#)Label Name URL

▼ Authentication

Certificate Identity Type Authentication Protocol AWS Access Key ID AWS Secret Access Key AWS Region AWS Service

9. Click **Save**.

After following the above instructions, follow [these instructions](#) to navigate to the Guided Setup feature.

[!\[\]\(ab59d0598235e1fff2f06022b7b6963a_img.jpg\) Edit this page](#)

Setting Up The CTI Adapter Using Guided Setup

Guided Setup

Provision Amazon Connect Instance?

This setting will provision an Amazon Connect instance in your AWS account. You cannot provision an instance the same time you configure the Adapter or the Lambdas.

Set up Amazon Connect Salesforce CTI Adapter?

This setting will configure the Salesforce CTI Adapter in your Salesforce instance.

Set up Amazon Connect Salesforce Lambdas?

This setting will help you set up the Amazon Connect Salesforce Lambdas in your AWS account.

Set up Audio Recording for Contact Lens?

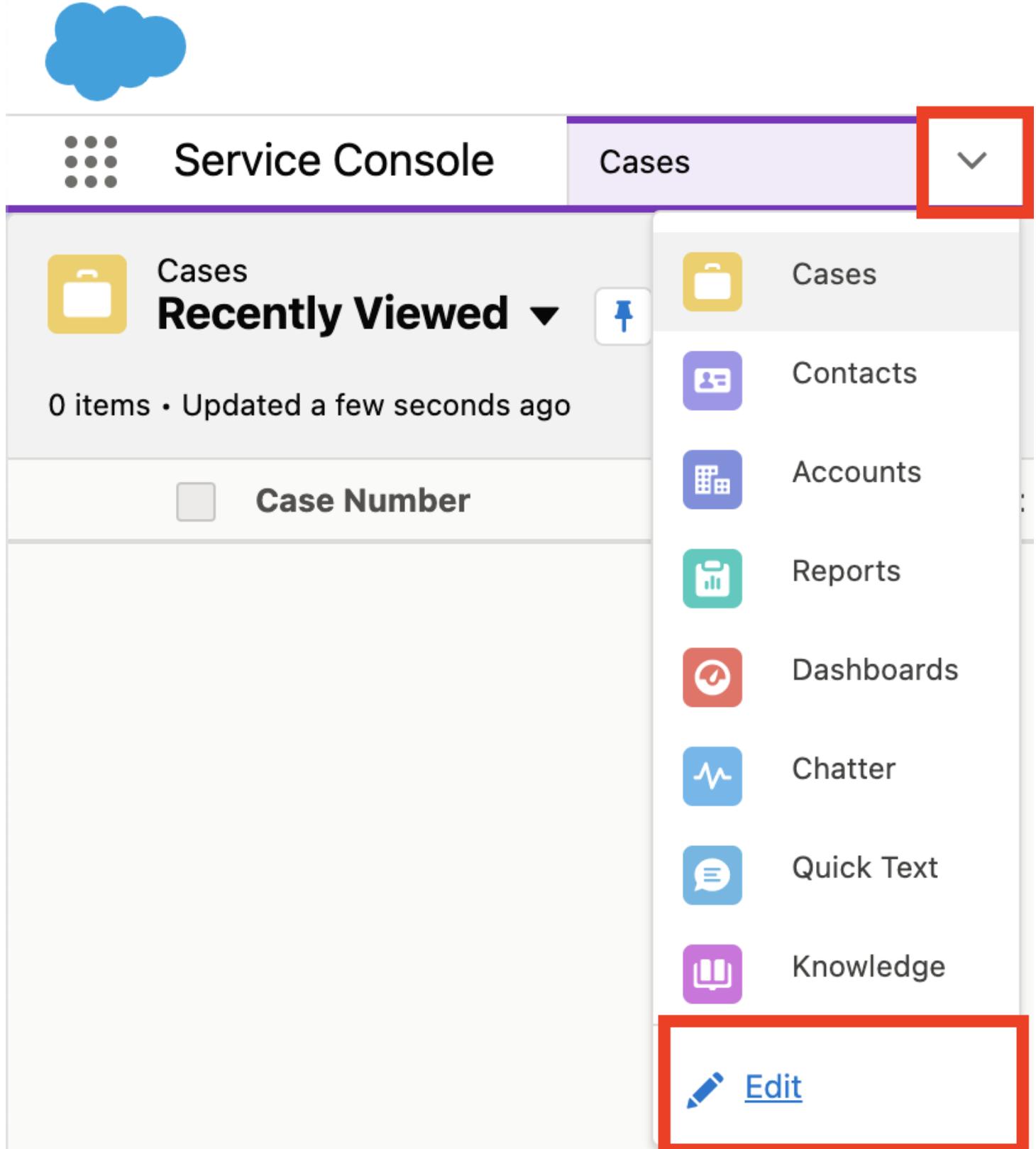
This setting will help you set up the Audio Recording for Contact Lens

[Next](#)

In order to navigate to the Guided Setup feature, perform the following steps (NOTE: If you are not an admin user then you must first add yourself to the AC_Administrator permission set, see [here](#) for more details):

1. Navigate to the Service Console in your Salesforce instance.

2. Click the dropdown button in the Service Console navigation bar, and select **Edit**.



3. In the proceeding popup, select **Add More Items**.

Edit Service Console App Navigation Items

Personalize your nav bar for this app. Reorder items, and rename or remove items you've added.

[Learn More](#) 

NAVIGATION ITEMS (8)

[Add More Items](#)

-  Cases
-  Contacts
-  Accounts
-  Reports
-  Dashboards
-  Chatter
-  Quick Text
-  Knowledge

Reset Navigation to Default 

[Cancel](#)

[Save](#)

4. Click the + button next to **AC Guided Setup**, then add the item and **save**.

5. Select the newly added **AC Guided Setup** button in the drawdown menu.



Cases

Recently Viewed ▾

0 items • Updated 6 minutes ago



Case Number



Contacts



Accounts



Reports



Dashboards



Chatter



Quick Text



Knowledge



AC Guided Setup



Edit

Guided Setup Prerequisites

The below sections are linked to from the Guided Setup feature. Only perform the below steps when the Guided Setup feature links to them.

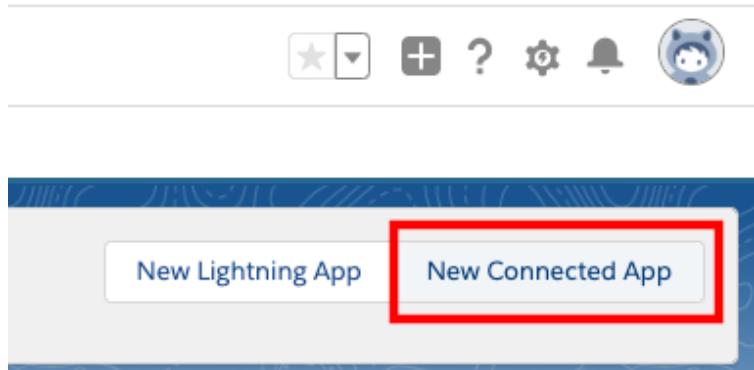
Create Named Credential

See [here](#) for instructions on setting up the Named Credential.

Create Connected App

To get access to the environment, a Connected App must be configured with OAuth settings enabled.

1. Log in into your Salesforce org and go to **Setup**
2. In the **Quick Find** field, type **app manager**, then select **App Manager** from the results
3. In the upper right corner, select **New Connected App**



4. On the New Connected App form, enter a name for the Connected App, such as **Amazon Connect Integration** and press tab. This will populate the API Name automatically. Then provide a contact email address

New Connected App

Connected App Name	Amazon Connect Integration
API Name	Amazon_Connect_Integration
Contact Email	dougjaso@amazon.com

5. Select the checkbox to **Enable OAuth Settings**

▼ API (Enable OAuth Settings)

Enable OAuth Settings

6. Set the **Callback URL** to <https://www.salesforce.com>

API (Enable OAuth Settings)

Enable OAuth Settings

Enable for Device Flow

Callback URL https://www.salesforce.com

7. In the Selected OAuth Scopes section, select the following and add them to the Selected OAuth Scopes:

8. Access and manage your data (api)

9. Access your basic information (id, profile, email, address, phone)

10. Select the checkbox for Require Secret for Web Server Flow

11. The **API (Enable OAuth Settings)** section should now look like this

The screenshot shows the 'API (Enable OAuth Settings)' configuration page. Under 'Selected OAuth Scopes', two items are listed: 'Access and manage your data (api)' and 'Access your basic information (id, profile, email, address, phone)'. These are highlighted with a red border. On the left, under 'Available OAuth Scopes', there is a long list of permissions. In the center, there are 'Add' and 'Remove' buttons. At the bottom of the page, several checkboxes are present: 'Require Secret for Web Server Flow' (checked), 'Introspect All Tokens' (unchecked), 'Configure ID Token' (unchecked), 'Enable Asset Tokens' (unchecked), and 'Enable Single Logout' (unchecked).

12. Select **Save** at the bottom of the screen.

13. Select **Continue** on the New Connected App page

14. You should now be at the new app's page

15. Copy the value for **Consumer Key** to your notepad

16. Select **Click to reveal** next to Consumer Secret and copy the value to your notepad

17. At the top of the detail page, select **Manage**

18. On the Connected App Detail page, select the **Edit Policies** button

19. Set Permitted Users to **Admin approved users are pre-authorized** and choose OK on the pop-up dialog

20. Set IP Relaxation to **Relax IP restrictions**

21. The OAuth Policies section should now look like the following

OAuth Policies

Permitted Users: Admin approved users are pre-authorized

Enable Single Logout

IP Relaxation: Relax IP restrictions

Refresh Token Policy: Immediately expire refresh token

22. Select **Save**

Guided Setup Additional Instructions

The below sections are linked to from the Guided Setup feature. Only perform the below steps when the Guided Setup feature links to them.

Retrieve Amazon Connect Instance Url

1. Navigate to the [Amazon Connect Console](#)
2. Select your Instance Alias
3. On the Overview page for your instance, copy the Login URL up until the `/` (if your login url has one).

Amazon Connect > guidedsetupinstance-8dh3j

The screenshot shows the Amazon Connect Instance Overview page. On the left, there's a sidebar with links like Overview, Telephony, Data storage, etc. The main area has a message box: "We are upgrading the Amazon Connect console. To maintain your current level of access, make sure that you have required permissions. [Learn more](#)". Below this is the "Overview" section with fields for Instance ARN, Directory, Service-linked role, and Login URL. The Login URL field contains a redacted URL starting with "https://". A warning message below it says: "⚠️ Warning: This login method will give you full permission within the Amazon Connect instance and should not be used for day-to-day operations. [Log in for emergency access.](#)"

Add users to the Call Center

1. Log in into your Salesforce org and go to **Setup**
2. In the **Quick Find** field, enter **Call Center**, then select **Call Centers** from the result list

Call Center

Feature Settings

Service

Call Center

Call Centers

Directory Numbers

Softphone Layouts

3. If you see the **Say Hello to Salesforce Call Center** page, select **Continue**

4. Select **AC Lightning Adapter**

All Call Centers

A call center corresponds to a single computer-telephony integration (CTI) system already in place. You can manage your Call Center features.

Action	Name ↑
Edit Del	AC Lightning Adapter
Edit Del	Amazon Connect CCP Adapter Classic 3.11
Edit Del	Amazon Connect CCP Adapter Console 3.11

5. On the **AC Lightning Adapter** detail page, select **Edit**

6. On the **AC Lightning Adapter: Manage Users** page, select **Add More Users**.

7. Set filters (if desired) and then choose **Find**.

8. Select the checkbox next to the user to add, then choose **Add to Call Center**.

Add to Call Center			Cancel
Full Name	Alias	Username	Role
<input checked="" type="checkbox"/> Douglas Jason	JDou	[REDACTED]	System Administrator
<input type="checkbox"/> User_Integration	Integ	Integration@00d90000004zrnwseak.com	Analytics Cloud Integration User
<input type="checkbox"/> User_Security	sec	Insightssecurity@00d90000004zrnwseak.com	Analytics Cloud Security User

9. Repeat the steps to add more users.

Add users to a Permission Set

All users must be assigned the required permission set to access Salesforce metadata. The Amazon Connect CTI Adapter includes two Permission Sets, one for agents and one for managers, that grant users the appropriate access for their role. More information on assigning user permissions can be found in the [Salesforce help documentation](#).

1. Log in into your Salesforce org and go to **Setup**

2. In **Quick Find**, enter **Permission** and select **Permission Sets** from the results

3. Choose **AC_Administrator**, **AC_Agent** or **AC_Manager** as appropriate for the user(s)

Permission Sets

On this page you can create, view, and manage permission sets.

In addition, you can use the Salesforce mobile app to assign permission sets to a user. Download Salesforce from the App Store or Google Play: [iOS](#) | [Android](#)

All Permission Sets		Edit Delete Create New View
Action	Permission Set Label	Description
Del Clone	AC Administrator	Allows the user to configure Amazon Connect setup and provides full access to Am...
Del Clone	AC Agent	
Del Clone	AC Manager	

4. Choose **Manage Assignments**.

5. Choose **Add Assignments**.

6. Select the users to assign the permissions, then choose **Assign**.

Assign Users							Help for this Page
All Users							
View All Users Edit Create New View							
Assign Cancel							
Action	Full Name	Alias	Username	Last Login	Role	Active	Profile
<input type="checkbox"/>	Chatter_Expert	Chatter	[REDACTED]@chatter.salesforce.com	1/21/2020, 10:40 PM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Chatter Free User
<input checked="" type="checkbox"/>	Dwoska_Jason	jdwoska	[REDACTED]		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	System Administrator
<input type="checkbox"/>	User_Integration	inteo	[REDACTED]		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Analytics Cloud Integration User
<input type="checkbox"/>	User_Security	sec	[REDACTED]		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Analytics Cloud Security User

7. Repeat these steps as needed for all users

AC_Administrator

Org Level Object Sharing Model	Object Access	Read	Create	Edit	Delete	View All	Modify All
Public	AC Agent Performance	<input checked="" type="checkbox"/>					
Public	AC Contact Channel Analytics	<input checked="" type="checkbox"/>					
Public	AC Contact Channels	<input checked="" type="checkbox"/>					
Public	AC Contact Trace Records	<input checked="" type="checkbox"/>					
Public	AC CTI Adapters	<input checked="" type="checkbox"/>					
Public	AC CTI Attributes	<input checked="" type="checkbox"/>					
Public	AC CTI Scripts	<input checked="" type="checkbox"/>					
Public	AC Events	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC Historical Queue Metrics	<input checked="" type="checkbox"/>					
Public	AC Presence Sync Rules	<input checked="" type="checkbox"/>					
Public	AC Queue Metric Events	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC Real Time Queue Metrics	<input checked="" type="checkbox"/>					
Private	AC Voicemail Drops	<input checked="" type="checkbox"/>					
Public	Amazon Connect Call Campaigns	<input checked="" type="checkbox"/>					

AC_Manager

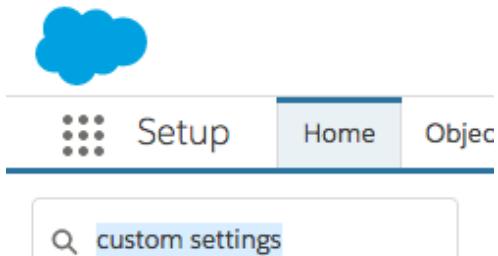
Org Level Object Sharing Model	Object Access	Read	Create	Edit	Delete	View All	Modify All
Public	AC Agent Performance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC Contact Channel Analytics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC Contact Channels	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC Contact Trace Records	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC CTI Adapters	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC CTI Attributes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC CTI Scripts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC Events	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC Historical Queue Metrics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC Presence Sync Rules	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC Queue Metric Events	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC Real Time Queue Metrics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Private	AC Voicemail Drops	<input checked="" type="checkbox"/>					
Public	Amazon Connect Call Campaigns	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

AC_Agent

Org Level Object Sharing Model	Object Access	Read	Create	Edit	Delete	View All	Modify All
Public	AC Agent Performance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC Contact Channel Analytics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC Contact Channels	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC Contact Trace Records	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC CTI Adapters	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC CTI Attributes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC CTI Scripts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC Events	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC Historical Queue Metrics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC Presence Sync Rules	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC Queue Metric Events	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC Real Time Queue Metrics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Private	AC Voicemail Drops	<input checked="" type="checkbox"/>					
Public	Amazon Connect Call Campaigns	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Configure the Toolkit settings

1. Navigate to **Setup** then in type **Custom Settings** in Quick Find



- Custom Code

Custom Settings

2. Next to the Toolkit for Amazon Connect custom setting, choose **Manage**

Custom Settings

Use custom settings to create and manage custom data at the organization, profile, and user levels. Custom settings data is stored in the database, so you can access it efficiently, without the cost of repeated queries. Custom settings data can be used by formula fields, Visualforce, Apex triggers, and other components.

The screenshot shows a table with columns: Action, Label, Visibility, Settings Type, Namespace Prefix, and Description. There is one row visible:

Action	Label	Visibility	Settings Type	Namespace Prefix	Description
Manage	Toolkit for Amazon Connect	Public	Hierarchy	amazonconnect	Configuration settings of the Toolkit for Amazon Connect.

3. Select New

Custom Setting

Toolkit for Amazon Connect

If the custom setting is a list, click **New** to add a new set of data. For example, if the custom setting is a list of phone numbers for different dialing codes.

If the custom setting is a hierarchy, you can add data for the user, for a specific user who is running the app, a specific profile, or just a general configuration.

New

▼ Default Organization Level Value

4. On the following page, provide the URL to your Amazon Connect instance. This value can be found in your Amazon Connect console.

Amazon Connect virtual contact center instances

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

The screenshot shows a table with columns: Instance Alias, Access URL, and Channels. There are two rows:

Instance Alias	Access URL	Channels
<input type="checkbox"/> [REDACTED]	https://[REDACTED].f.my.connect.aws	Inbound, outbound telephony
<input type="checkbox"/> [REDACTED]	https://[REDACTED].awsapps.com...	Inbound, outbound telephony

Toolkit for Amazon Connect Edit

Provide values for the fields you created. This data is cached with the application.

The screenshot shows a form titled "Edit Toolkit for Amazon Connect" with "Save" and "Cancel" buttons. The form has a section titled "Toolkit for Amazon Connect Information" with a "Location" field containing a "Url" input field with the value "https://yourinstancename.a".

You will also see the option to enable and disable certain triggers in the package, which you can configure to meet your needs. You can change these whenever you would like to. For more details, see the troubleshooting section.

5. Select **Save**

Create the Softphone Layout

The softphone layout settings will tell the console what resources are available for screenpop by default and what to do under different match conditions.

1. Log in into your Salesforce org and go to **Setup**
2. In the **Quick Find** box, type **Softphone**, then choose **Softphone Layouts** from the results
3. If you are presented with the Get Started message, choose **Continue**
4. On the Softphone Layouts page, choose **New**

A screenshot of the Salesforce 'Softphone Layouts' page. At the top right, there is a 'Help for this Page' link. Below it, a descriptive text states: 'A softphone is a customizable call control tool that appears in the sidebar of every salesforce.com page if a user is assigned to a call center and is working on a machine on which a CTI adapter has been installed. Similar to page layouts, you can design custom softphone layouts and assign them to call center users based on their user profile.' The main area shows a table with columns: Name, Default, Created By Alias, Created Date, Softphone Layout Assignment, Last Modified By Alias, and Last Modified Date. A red box highlights the 'New' button at the top left of the table. Below the table, a note says 'No records to display.'

5. Enter a name for the layout, such as **AmazonConnectDefault**, then select the **Is Default Layout** checkbox.

Softphone Layout Edit

Each softphone layout allows you to customize the appearance of a softphone for inbound, outbound, or page.

A screenshot of the 'Softphone Layout Edit' page. At the top right, there are 'Save' and 'Cancel' buttons. Below them, a form has a red box around the 'Name' field containing 'AmazonConnectDefault' and the 'Is Default Layout' checkbox, which is checked. The rest of the page is mostly blank.

6. Expand **Display these salesforce.com objects** and select objects that CTI Connector should be able to search, for a screen-pop query. In this example, Case has been added to the default selection, allowing search and screen-pop by CaseID.

Display these salesforce.com objects:

▼ Account, Contact, Lead, Case

The screenshot shows a configuration interface for selecting Salesforce objects. On the left, a list of available objects is displayed. On the right, a list of selected objects is shown, with 'Case' being the last item in the list and highlighted by a red box. Navigation buttons for adding, removing, and reordering items are also present.

7. If desired, configure the search behavior to your requirements

- ▶ If single Account found, display: Account Name
If multiple matches are found, only the Account Name is displayed in Salesforce Classic. In Lightning Experience, all the selected fields are displayed. [Edit](#)
- ▶ If single Contact found, display: Name
If multiple matches are found, only the Name is displayed in Salesforce Classic. In Lightning Experience, all the selected fields are displayed. [Edit](#)
- ▶ If single Lead found, display: Name
If multiple matches are found, only the Name is displayed in Salesforce Classic. In Lightning Experience, all the selected fields are displayed. [Edit](#)
- ▶ If single Case found, display: Case Number
If multiple matches are found, only the Case Number is displayed in Salesforce Classic. In Lightning Experience, all the selected fields are displayed. [Edit](#)

8. Additionally, validate the Screen Pop settings. Please note that the default behavior is to not pop a screen if there is more than one result

The screenshot shows the 'Screen Pop Settings' configuration page. It includes sections for 'Screen pops open within', 'No matching records', and 'Single-matching record'. The 'Multiple-matching records' section is expanded, showing options for 'Don't pop any screen', 'Pop to search page' (which is selected), 'Pop to Visualforce page' (with a search icon), and 'Pop to flow' (with a dropdown menu showing '--None--'). A 'Collapse' link is located at the bottom right of this section.

9. Once you have configured the search behavior, choose Save

Retrieve the Salesforce API Version

1. Log in into your Salesforce org and go to **Setup**

2. In the **Quick Find** field, type **apex**, then select **Apex Classes** from the results

apex

▽ Email

Apex Exception Email

▽ Custom Code

Apex Classes

Apex Settings

Apex Test Execution

Apex Test History

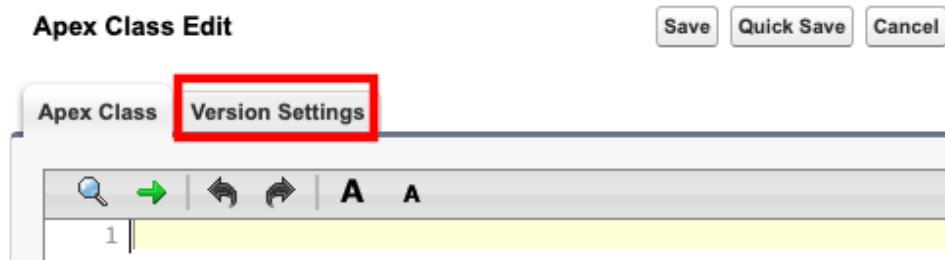
Apex Triggers

3. Select New



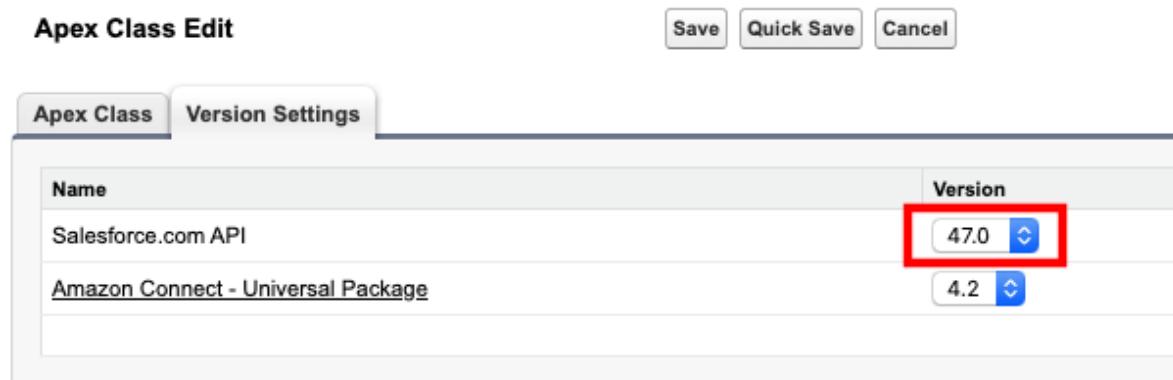
4. Select the Version Settings tab

Apex Class



5. Note the Salesforce.com API version in your notepad

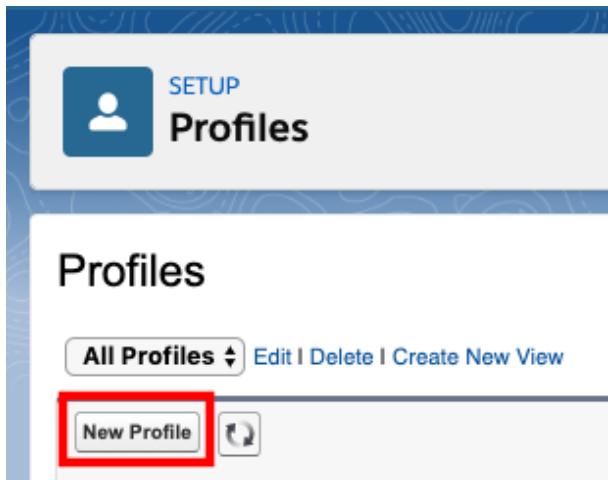
Apex Class



Setting up the Salesforce API User

The Lambda functions authenticate with Salesforce via user credentials. It is a common practice to create an API user account for this purpose.

1. Log in into your Salesforce org and go to **Setup**
2. In the **Quick Find** field, type **profiles**, then select **Profiles** from the results
3. Select New Profile



4. Provide a Profile Name, such as **API_ONLY**

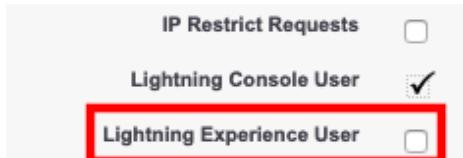
5. From the **Existing Profile** dropdown, select **System Administrator** **NOTE:** You're advised to use a full Salesforce License for the user to be able to set the below permissions and have full access to avoid any other errors.

Clone Profile

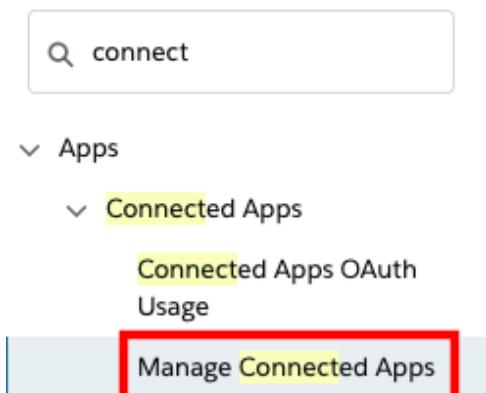
Enter the name of the new profile.

A screenshot of a "Clone Profile" dialog box. At the top, a message says "You must select an existing profile to clone from.". Below it, there are three input fields: "Existing Profile" with a dropdown menu showing "System Administrator", "User License" with the value "Salesforce", and "Profile Name" with the value "API_ONLY". At the bottom of the dialog are two buttons: "Save" and "Cancel".

6. Select **Save** to create the new profile
7. Once the new profile page opens, select the **Edit** button
8. Scroll down to the Administrative Permissions section
9. If the Lightning Experience User checkbox is selected, clear it



10. Scroll down to the **Password Policies** section at the bottom of the page
11. Set **User password expire in** to **Never expires** **NOTE:** Failure to this may lead to production outages.
12. Select **Save**
13. In the **Quick Find** field, type **connect**, then select **Manage Connected Apps** from the results



14. Select the app you have created earlier, **Amazon Connect Integration**
15. In the profiles section, select **Manage Profiles**
16. Select the new **API_Only** profile that you just created
17. Select **Save** at the bottom of the page
18. In the **Quick Find** field, type **users** then select **Users** from the results
19. Select New User
20. Set the required fields as:
 - a. Last Name: apiuser
 - b. Alias: apiuser
 - c. Email: provide a valid email address
 - d. Username: apiuser@<yoursalesforcedomain>.com
 - e. Nickname: apiuser
21. On the right-hand side, set **User License** to **Salesforce**

22. Set Profile to API_ONLY

23. Choose **Save**

24. In **Quick Find**, search for "Permission Sets". Select the **AC_Administrator** permission set.

The screenshot shows the Salesforce Setup interface. The top navigation bar includes a cloud icon, 'Setup' (selected), 'Home', and 'Object Manager'. A search bar at the top right says 'Search Setup'. On the left, a sidebar has 'Perm' in the quick find field. Under 'Permission Set Groups', 'Permission Sets' is selected. Other sections like 'Users' and 'Custom Code' are also listed. The main content area is titled 'Permission Sets' with a sub-header 'Permission Sets'. It says 'On this page you can create, view, and manage permission sets.' Below this is a note about using the Salesforce mobile app. A toolbar below the header has 'All', 'Edit', 'Delete', and 'Create New View'. A 'New' button is on the left. To the right are links for letters A through M. The main table lists permission sets:

Action	Permission Set Label	Description	Licenses
<input type="checkbox"/>	AC Administrator	Allows the user to configure Amazon Connect setup and provides ...	
<input type="checkbox"/>	AC Agent		
<input type="checkbox"/>	AC_CallRecording		
<input type="checkbox"/>	AC_Manager		

25. Select **Manage Assignments**. Add the apiuser you just created to the permission set.

26. A confirmation email with an **activation link** will be sent to the email address provided. Choose the link to activate your user and set their password

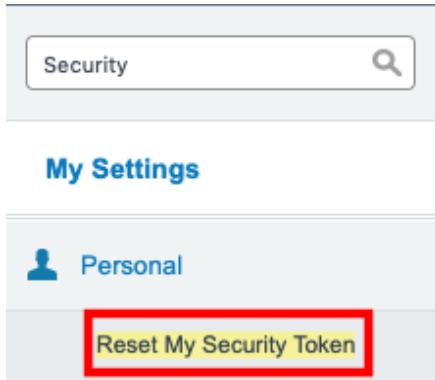
27. Fill out the form to set a password for the API user

28. Select **Change Password**. The API user will log into the Salesforce Classic view

29. Access the API user's personal settings by selecting the username in the top right corner, then choose **My Settings**

The screenshot shows the Salesforce classic user profile menu. At the top, it says 'APIUser' with a dropdown arrow. To the right is a 'Setup' button. The menu items are: 'My Profile' (highlighted in red), 'My Settings' (highlighted in blue), 'Developer Console', and 'Logout'.

30. In the **Quick Find** field, type **security** then select **Reset My Security Token** from the results



31. Select **Reset Security Token**. Your security token will be emailed to you

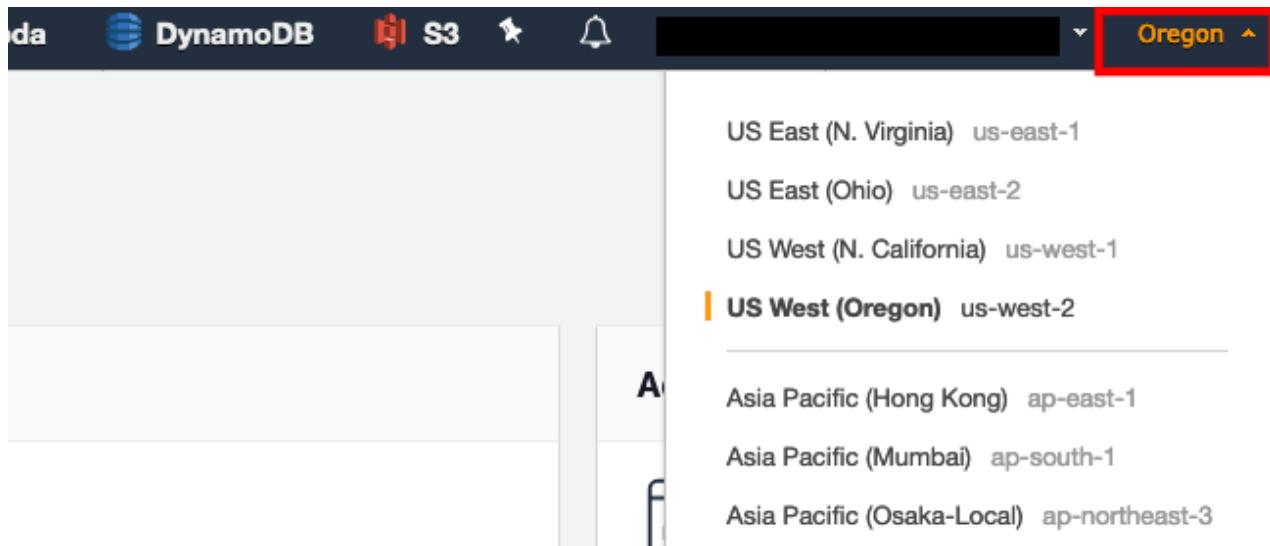
32. Copy the security token from the email to your notepad

Setting up the SecretsManager Secret

To ensure that your Salesforce credentials are secure, the Lambdas require that the credentials are stored in AWS Secrets Manager. AWS Secrets Manager is a highly secure service that helps you store and retrieve secrets.

1. In a new browser tab, login to the AWS console

2. Make sure you are in the same region as your Amazon Connect instance. You can set the region by expanding the region selector in the upper right and choosing the region



3. Navigate to the [Secrets Manager console](#)

4. Select **Secrets**

5. Select **Store a new secret**

6. Select **Other types of secrets**

7. Make sure **Secret key/value** is selected

8. Enter key value pairs that match the following:

- a. **Key:** Password, **Value:** the password for the API user that you configured in the previous section
- b. **Key:** ConsumerKey, **Value:** the Consumer Key for the Connected App you created in the previous section
- c. **Key:** ConsumerSecret, **Value:** the Consumer Secret for the Connected App you created in the previous section
- d. **Key:** AccessToken, **Value:** this is the access token for the API user that you configured in the previous section

9. For the encryption key, click **Add new key**

10. Select **Create Key**

11. Make sure key type is set to **symmetric**

12. Give your key an **alias**, like *SalesforceCredentialsSecretsManagerKey*

13. Click Next

14. Select administrators you want to have access permission to change the key policy. Make sure you are being as restrictive as possible

15. Click Next

16. Select the users and roles you want to have access to the Salesforce credentials in Secrets Manager. Make sure you are being as restrictive as possible

17. Click Next

18. Click Finish

19. Click on the managed key that you just created (which is *SalesforceCredentialsSecretsManagerKey* in this case).

20. Note down the ARN. This is *SalesforceCredentialsKMSKeyARN* that will be used later when installing the Amazon Connect Salesforce Lambda package.

21. Navigate back to the Secrets Manager setup tab

22. Select the key you just created

Specify the key/value pairs to be stored in this secret [Info](#)

Secret key/value

Plaintext

Password

Password

Remove

ConsumerKey

ConsumerKey

Remove

ConsumerSecret

ConsumerSecret

Remove

AccessToken

AccessToken

Remove

[+ Add row](#)

Select the encryption key [Info](#)

Select the AWS KMS key to use to encrypt your secret information. You can encrypt using the default service encryption key that AWS Secrets Manager creates on your behalf or a customer master key (CMK) that you have stored in AWS KMS.

SalesforceCredentialsSecretsManagerKey



[Add new key](#)

[Cancel](#)

[Next](#)

23. Click Next

24. Give your secret a name, like *SalesforceCredentials*

25. Click Next

26. Make sure **Disable automatic rotation** is checked.

27. Click Next

28. Click Store

29. Select the secret you just created, and copy the Secret ARN

SalesforceCredentials

Secret details

Actions ▾

Encryption key
SalesforceCredentialsSecretsManagerKey

Secret name
SalesforceCredentials

Secret ARN

Secret description
-

Test the Salesforce Lambda Core Functionality

The package provides a core Lambda function (`sflInvokeAPI`) that supports multiple operations, like lookup, create and update. For the initial validation, sample events are provided within the function. Validating this function provides a good check that the installation and configuration is correct.

Validating the lambda functions requires the use of test events to simulate data coming into the function as it would in a typical deployment. Each function has a set of test event samples included to make validation easier.

Validate the core functionality

1. In a new browser tab, login to the [AWS console](#)
2. Open the [AWS Lambda Console](#)
3. In the Filter field, enter `sflInvokeAPI` and press enter, this will filter your list out to the core function that we just installed

Functions (77)

Actions ▾

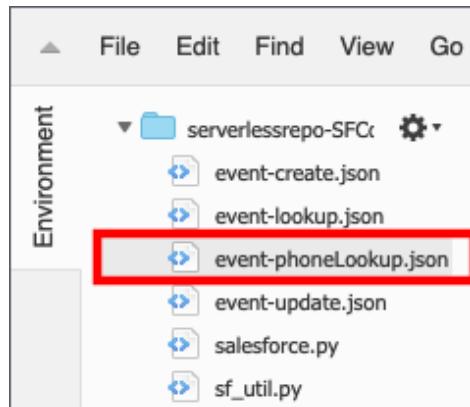
Add filter

Keyword : `sflInvokeAPI` (X)

Function name	Description	Runtime	Code size
<code>serverlessrepo-SFConsolidatedLambdaPac-sflInvokeAPI-5504EV6KL9E8</code>		Python 3.7	32.1 kB

4. Select the **function name**. First, we will validate a phone number lookup.

5. In the Environment pane, double-click the event-phoneLookup.json file



6. The test even JSON will open in the Lambda editor

7. Modify the value for sf_phone to match the phone number of the test contact you created when you setup the CTI adapter or for any valid contact in your Salesforce org\ NOTE: The phone number must be in E.164 format

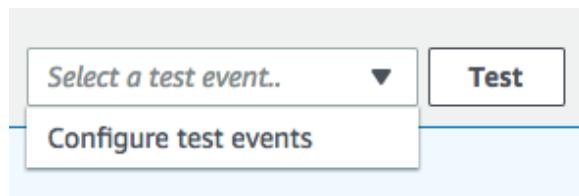
The screenshot shows the AWS Lambda Lambda editor. The tab bar has 'sfInvokeAPI.py' and 'event-phoneLoo' (partially visible). The code editor displays the following JSON:

```
1 {
2     "Details": {
3         "Parameters": {
4             "sf_operation" : "phoneLookup",
5             "sf_phone": "+14155551212",
6             "sf_fields": "Id, Name, Email"
7         }
8     }
9 }
```

The 'sf_phone' value '+14155551212' is highlighted with a red box.

8. Select the entire JSON event and copy it, then close the **event-phoneLookup.json** tab.

9. In the top-right corner, select drop-down arrow next to **Test** and choose **Configure test events**



10. Select the radio button for **Create new test event** and provide an event name, for example:
phoneLookup

11. Select the existing event JSON and **delete** it. Paste the modified JSON payload you copied from the **event-phoneLookup.json** file

Configure test event



A function can have up to 10 test events. The events are persisted so you can switch to another computer or web browser and test your function with the same events.

- Create new test event
- Edit saved test events

Event template

Hello World



Event name

phoneLookup

```
1 [{}]
2 "Details": {
3     "Parameters": {
4         "sf_operation": "phoneLookup",
5         "sf_phone": "+14155551212",
6         "sf_fields": "Id, Name, Email"
7     }
8 }
9 }
```

12. Select **Create** to save your test event

13. By default, your new test event should be selected in the drop-down list to the left of the Test button.

phoneLookup ▾ Test Save

14. Select **Test**

15. If successful, the result will contain fields defined in "sf_fields" parameter in the invocation event

Execution result: succeeded ([logs](#))

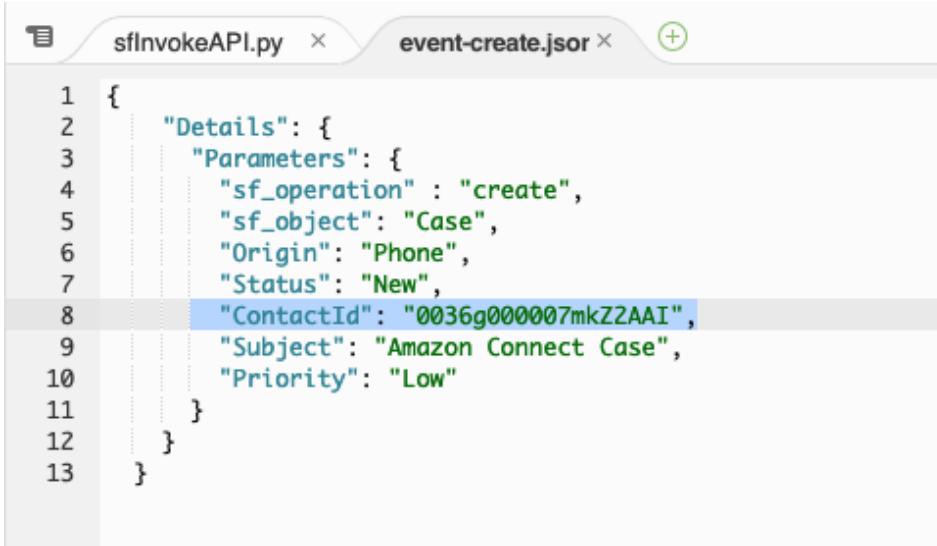
▼ Details

The area below shows the result returned by your function execution. [Learn more](#)

```
{{
  "Id": "0036g000007mkZ2AAI",
  "Name": "John Smith",
  "Email": null,
  "sf_count": 1
}}
```

16. Copy the value for the **Id** key in the response. Next, we are going to use that Id to create a Case in Salesforce.

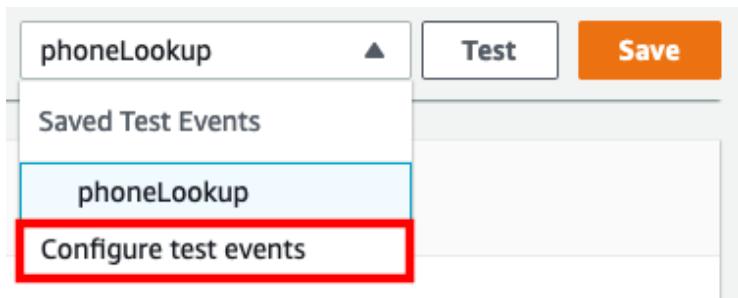
17. In the Environment pane, double-click the **event-create.json** file. Replace the existing ContactId value with the ID value you copied previously.



```
1  {
2      "Details": {
3          "Parameters": {
4              "sf_operation" : "create",
5              "sf_object": "Case",
6              "Origin": "Phone",
7              "Status": "New",
8              "ContactId": "0036g000007mkZ2AAI",
9              "Subject": "Amazon Connect Case",
10             "Priority": "Low"
11         }
12     }
13 }
```

18. Select the entire JSON event and copy it, then close the **event-create.json** tab.

19. In the top-right corner, select drop-down arrow next to **Test** and choose **Configure test events**



20. Select the radio button for **Create new test event** and provide an event name, for example:
createCase

21. Select the existing event JSON and **delete** it. Paste the modified JSON payload you copied from the **event-create.json** file

Configure test event



A function can have up to 10 test events. The events are persisted so you can switch to another computer or web browser and test your function with the same events.

- Create new test event
- Edit saved test events

Event template

phoneLookup



Event name

createCase

```
1  [{}  
2  "Details": {  
3  "Parameters": {  
4  "sf_operation": "create",  
5  "sf_object": "Case",  
6  "Origin": "Phone",  
7  "Status": "New",  
8  "ContactId": "0036g000007mkZ2AAI",  
9  "Subject": "Amazon Connect Case",  
10 "Priority": "Low"  
11 }  
12 }  
13 }
```

22. Select **Create** to save your test event

23. By default, your new test event should be selected in the drop-down list to the left of the Test button.



24. Select **Test**

25. If successful, the result will contain the Case Id

Execution result: succeeded ([logs](#))

▼ Details

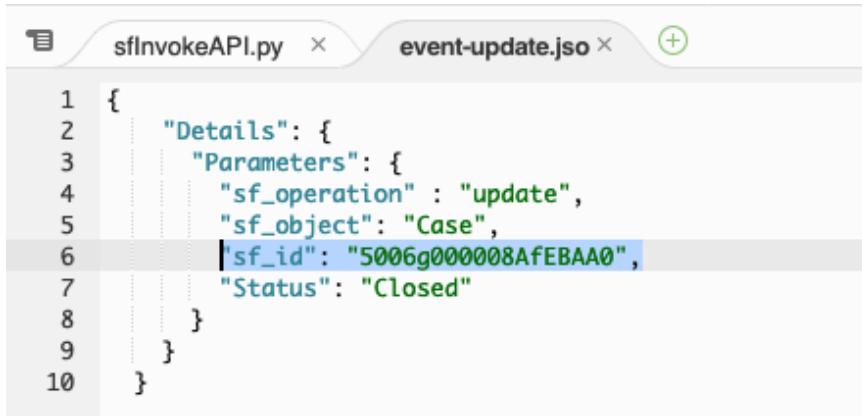
The area below shows the result returned by your function execution. [Learn](#)

```
{  
  "Id": "5006g000008AfEBAA0"  
}
```

26. Copy the value for the **Id** key in the response.

27. When we created the case, the **Status was set to New** and the **Priority to Low**. We are going to use the update operation to close the case.

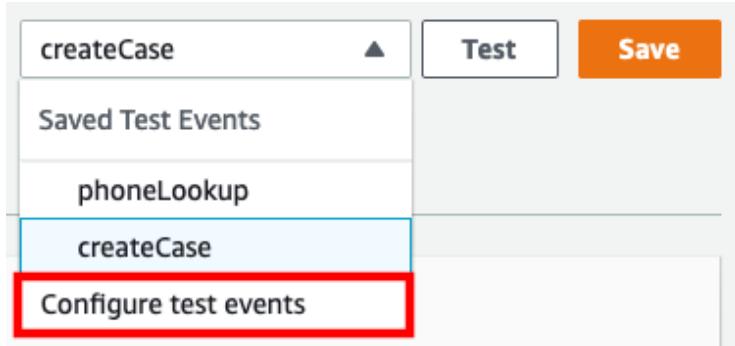
28. In the Environment pane, double-click the **event-update.json** file and replace the existing Case Id in "sf_id" parameter with the new one you copied from the last test result



```
1 {
2     "Details": {
3         "Parameters": {
4             "sf_operation" : "update",
5             "sf_object": "Case",
6             "sf_id": "5006g000008AfEBAA0",
7             "Status": "Closed"
8         }
9     }
10 }
```

29. Select the **entire JSON event** and copy it, then close the **event-update.json** tab.

30. In the top-right corner, select drop-down arrow next to **Test** and choose ****Configure test events**



31. Select the radio button for **Create new test event** and provide an event name, for example:
updateCase

32. Select the existing event JSON and **delete** it. Paste the modified JSON payload you copied from the **event-update.json** file

Configure test event



A function can have up to 10 test events. The events are persisted so you can switch to another computer or web browser and test your function with the same events.

- Create new test event
- Edit saved test events

Event template

createCase



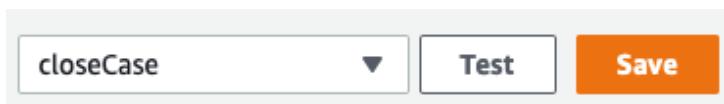
Event name

closeCase

```
1  [{}  
2  "Details": {  
3  "Parameters": {  
4  "sf_operation": "update",  
5  "sf_object": "Case",  
6  "sf_id": "5006g000008AfEBAA0",  
7  "Status": "Closed"  
8  }  
9  }  
10 }
```

33. Select **Create** to save your test event

34. By default, your new test event should be selected in the drop-down list to the left of the Test button.



35. Select **Test**

36. If successful, the result will be the **HTTP 204 No Content** success status response code

✓ Execution result: succeeded ([logs](#))

▼ Details

The area below shows the result returned by your function:

```
{  
  "Status": 204  
}
```

37. Log in into your Salesforce org and go to the **Service Console**

38. In the search box, change the object type to Cases and type Amazon Connect Case, then press enter

Cases ▾



Amazon Connect Case

39. You should find 1 case opened by the API user, and the status should be closed

Cases					
1 Result					
Case Number	Subject	Status	Date/Time Opened	Case Owner Alias	
00001026	Amazon Connect Case	Closed	1/23/2020, 10:13 PM	apiuser	

40. You have completed core function validation

Allow Amazon Connect to Access the sflInvokeAPI Lambda Function

Once you have validated function, you can use the Amazon Connect console to add the sflInvokeAPI Lambda function to your Amazon Connect instance. This automatically adds resource permissions that allow Amazon Connect to invoke the function.

Add the Lambda function to your Amazon Connect instance

1. In a new browser tab, login to the [AWS console](#)
2. Navigate to the [Amazon Connect Console](#)
3. Select your **Instance Alias**
4. In the navigation pane, choose **Contact flows**.

[Amazon Connect](#) > sfctifinal022020

The screenshot shows the Amazon Connect navigation pane. On the left, there is a vertical list of options: Overview (highlighted with a yellow bar), Telephony, Data storage, Data streaming, Application integration, and Contact flows (which is highlighted with a red rectangular box). To the right of the navigation pane, there is a large white area representing the main content area of the interface.

5. For **AWS Lambda**, select the function that includes sflInvokeAPI in the name

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 [+ Add Lambda Function](#)

6. Choose **Add Lambda Function**. Confirm that the ARN of the function is added under **Lambda Functions**.

Lambda Functions

serverlessrepo-AmazonConnectSalesforce-sfInvokeAPI-[REDACTED]	arn:aws:lambda:us-west-2:[REDACTED]function:serverlessrepo-AmazonConnectSalesforce-sfInvokeAPI-[REDACTED]	 Remove
---	---	--

7. The AWS Lambda function has been added to your Amazon Connect instance.

Create Public/Private key pair for the Cloudfront distribution

Use the following command to generate a private key:

```
openssl genrsa -out private_key.pem 2048
```

Use the following command to generate a public key from the private key: `openssl rsa -pubout -in private_key.pem -out public_key.pem`

Add Private Key, Access Key to Secrets Manager Secret

To retrieve the Access Key ID:

1. Navigate to the Cloudfront console.
2. In the left hand sidebar, select **Public keys**.
3. Look for the public key that was created by Guided Setup, and copy down the public key's ID

Cache statistics

Popular objects

Top referrers

Usage

Viewers

▼ Security

Origin access identities

Field-level encryption

▼ Key management

Public keys

To add the private key and access key to the Secrets Manager secret:

1. Copy and paste the contents of the private key .pem file into a text editor. Replace every newline character with a space, and then delete the last character. This is most easily done using a "find and replace" feature in your text editor. The resulting string of text should resemble the following:

```
-----BEGIN RSA PRIVATE KEY----- (64 character string) (64 character string)  
(64 character string) (64 character string) (64 character string) (64  
character string) (64 character string) (64 character string) (64 character  
string) (64 character string) (64 character string) (64 character string) (64  
character string) (64 character string) (64 character string) (64 character  
string) (64 character string) (64 character string) (64 character string) (64  
character string) (64 character string) (under 64 character string) -----END RSA  
PRIVATE KEY-----
```

2. Navigate to the "Secrets Manager" service. Select the **SalesforceCredentials**.
3. Under the "Secret value" tab, select "Retrieve secret value" and then "Edit".
4. For the **CloudFrontPrivateKey** field, copy and paste the modified contents of the private key .pem file. For the **CloudFrontAccessKeyId** field, copy and paste the **Access Key Id** you recorded above. Your Secrets Manager Secret should look like the following:

Public keys



Search public keys



ID



SalesforceCredentials

Secret details

Encryption key
aws/secretsmanager

Secret name
SalesforceCredentials

Secret ARN
[REDACTED]

Secret description
-

Actions ▾

Tags

Secret value info
Retrieve and view the secret value.

Secret key/value | **Plaintext**

```
{
  "CloudFrontPrivateKey": "-----BEGIN RSA PRIVATE KEY-----  
[REDACTED]  
-----END RSA PRIVATE KEY-----",
  "CloudFrontAccessKeyId": [REDACTED]
}
```

Edit tags | **Close** | **Edit**

Please note that your secret may also be formatted stored as a "Secret key/value" secret rather than a "Plaintext" secret; both secret types are valid.

 [Edit this page](#)

Setting Up The CTI Adapter Managed Package Manually

Below are manual setup instructions for the Salesforce CTI Adapter Managed Package. After following the below steps, be sure to follow the instructions for setting up the Salesforce Lambdas [here](#).

Set Access Permissions

All users must be assigned the required permission set to access Salesforce metadata. The Amazon Connect CTI Adapter includes two Permission Sets, one for agents and one for managers, that grant users the appropriate access for their role. More information on assigning user permissions can be found in the [Salesforce help documentation](#).

1. Log in into your Salesforce org and go to **Setup**
2. In **Quick Find**, enter **Permission** and select **Permission Sets** from the results
3. Choose **AC_Administrator**, **AC_Agent** or **AC_Manager** as appropriate for the user(s)

Permission Sets

On this page you can create, view, and manage permission sets.

In addition, you can use the Salesforce mobile app to assign permission sets to a user. Download SalesforceA from the App Store or Google Play: [iOS](#) | [Android](#)

All Permission Sets		Edit Delete Create New View
New		A B C D E
Action	Permission Set Label	Description
Del Clone	AC Administrator	Allows the user to configure Amazon Connect setup and provides full access to Am...
Del Clone	AC Agent	
Del Clone	AC Manager	

4. Choose Manage Assignments.

5. Choose Add Assignments.

6. Select the users to assign the permissions, then choose Assign.

Assign Users								Help for this Page
All Users								
View All Users Edit Create New View								
Action	Full Name	Alias	Username	Last Login	Role	Active	Profile	Manager
Edit	Chatter Expert	Chatter	[REDACTED]@chatter.salesforce.com	1/21/2020, 10:40 PM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Chatter Free User	
Edit	Douglas-Jason	jD2019	[REDACTED]		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	System Administrator	
Edit	User_Interaction	itme	[REDACTED]		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Analytics Cloud Interaction User	
Edit	User_Security	sec	[REDACTED]		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Analytics Cloud Security User	

7. Repeat these steps as needed for all users

AC_Administrator

Org Level Object Sharing Model	Object Access	Read	Create	Edit	Delete	View All	Modify All
Public	AC Agent Performance	<input checked="" type="checkbox"/>					
Public	AC Contact Channel Analytics	<input checked="" type="checkbox"/>					
Public	AC Contact Channels	<input checked="" type="checkbox"/>					
Public	AC Contact Trace Records	<input checked="" type="checkbox"/>					
Public	AC CTI Adapters	<input checked="" type="checkbox"/>					
Public	AC CTI Attributes	<input checked="" type="checkbox"/>					
Public	AC CTI Scripts	<input checked="" type="checkbox"/>					
Public	AC Events	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC Historical Queue Metrics	<input checked="" type="checkbox"/>					
Public	AC Presence Sync Rules	<input checked="" type="checkbox"/>					
Public	AC Queue Metric Events	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC Real Time Queue Metrics	<input checked="" type="checkbox"/>					
Private	AC Voicemail Drops	<input checked="" type="checkbox"/>					
Public	Amazon Connect Call Campaigns	<input checked="" type="checkbox"/>					

AC_Manager

Org Level Object Sharing Model	Object Access	Read	Create	Edit	Delete	View All	Modify All
Public	AC Agent Performance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC Contact Channel Analytics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC Contact Channels	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC Contact Trace Records	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC CTI Adapters	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC CTI Attributes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC CTI Scripts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC Events	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC Historical Queue Metrics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC Presence Sync Rules	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC Queue Metric Events	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC Real Time Queue Metrics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Private	AC Voicemail Drops	<input checked="" type="checkbox"/>					
Public	Amazon Connect Call Campaigns	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

AC_Agent

Org Level Object Sharing Model	Object Access	Read	Create	Edit	Delete	View All	Modify All
Public	AC Agent Performance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC Contact Channel Analytics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC Contact Channels	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC Contact Trace Records	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC CTI Adapters	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC CTI Attributes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC CTI Scripts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC Events	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC Historical Queue Metrics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC Presence Sync Rules	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Public	AC Queue Metric Events	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public	AC Real Time Queue Metrics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Private	AC Voicemail Drops	<input checked="" type="checkbox"/>					
Public	Amazon Connect Call Campaigns	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Configure the Lightning Experience

In this guide, we will configure the CTI Adapter for Service Console (Lightning Experience). You may use the same procedure described in this section for other applications.

Configure Service Console

First, you need to add the CTI softphone to your Service Console.

1. Log in into your Salesforce org and go to **Setup**
2. In the **Quick Find** box, type **App Manager**, then choose **App Manager** from the result list.

App Manager

Apps

App Manager

Didn't find what you're looking for?

Try using Global Search.

3. Expand the drop-down menu associated to Service Console and select **Edit**.

12	Salesforce Chatter	Chatter	The Salesforce Chatter social network, including profiles and feeds	1/21/2020, 8:46 PM	Classic	✓	▼
13	Service	Service	Manage customer service with accounts, contacts, cases, and more	1/21/2020, 8:46 PM	Classic	✓	▼
14	Service Console	LightningService	(Lightning Experience) Lets support agents work with multiple re...	1/21/2020, 8:46 PM	Lightning	✓	▼
15	Site.com	Sites	Build pixel-perfect, data-rich websites using the drag-and-drop Sit...	1/21/2020, 8:46 PM	Classic	Edit	▼

4. Once the **Lightning App Builder** opens, select **Utility Items** from the left Navigation

APP SETTINGS

App Details & Branding

App Options

Utility Items

Navigation Items

Navigation Rules

5. Choose **Add Utility Item**, then select **Open CTI Softphone**.

Utility Items

Give your users quick access to produc

Add Utility Item

Search...

Standard (16)

-  Chatter Feed
-  Chatter Publisher
-  Einstein Analytics Dashboard
-  Einstein Next Best Action
-  Flow
-  History
-  List View
-  Macros
-  Notes
-  Open CTI Softphone

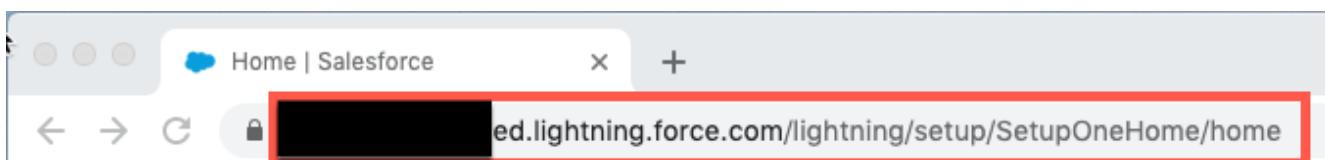
6. Change the Label, if desired, then choose **Save**.

Allowlist Your Salesforce Org with Amazon Connect

In order to embed the Amazon Connect Contact Control Panel (CCP) into your Service Console, you need to allowlist two (2) domains for your org with Amazon Connect. This allows for cross domain access to the underlying resources required for the CCP to function.

1. Log in into your Salesforce org and go to **Setup**

2. Copy the entire URL of this page and past it to a text document.



3. In the **Quick Find** field, type **visual**, then select **Visual Force Pages** from the results

visual

Custom Code

Visualforce Components

Visualforce Pages

Didn't find what you're looking for?

Try using Global Search.

4. Choose the **AC_LightningAdapter** Visualforce page

Visualforce Pages

Help for this Page

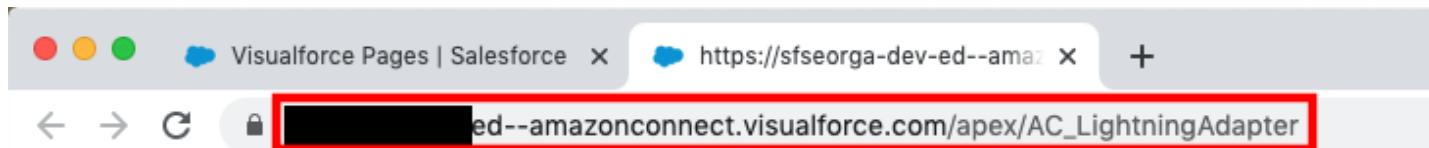
Visualforce Pages provide a robust and easy to use mechanism to create new and exciting user experiences for your application or to enhance existing applications to optimize your users' productivity.

View: All Create New View

A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Other

Action	Label	Name	Namespace Prefix	Api Version	Description	Created By Alias	Created Date	Last Modified By Alias	Last Modified Date
Security	AC_CreateCISAdapter	AC_CreateCISAdapter	amazonconnect	47.0	JDoog	1/21/2020, 10:41 PM	JDoog	1/21/2020, 10:42 PM	
Security	AC_LightningAdapter	AC_LightningAdapter	amazonconnect	47.0	JDoog	1/21/2020, 10:41 PM	JDoog	1/21/2020, 10:42 PM	
Security	AC_LightningScriptIncludes	AC_LightningScriptIncludes	amazonconnect	47.0	JDoog	1/21/2020, 10:41 PM	JDoog	1/21/2020, 10:42 PM	

5. On the Visualforce detail page, select the **Preview** button. This will open a new browser tab showing the page content, which should only be a button labelled Sign in to CCP. Copy the entire URL of this page and past it to a text document.



6. In a new browser tab, login to the **AWS console**

7. Navigate to the **Amazon Connect Console**

8. Validate that you are in the correct **AWS region** for your instance, then select your instance alias from the list of instances

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"/> sfseorga-testconsolidated	https://sfseorga-dev-ed--amaz...	Inbound, outbound telephony	1/21/2020	Active

9. Choose **Application Integration** from the left navigation

10. Select + Add origin

11. In the Enter origin URL field, enter the URL of the page that you copied in step 2. Only enter the url through the .com, for example:

<https://XXXXXXXXX-dev-ed-.lightning.force.com>

12. Select Add. You should see your org domain listed in the Approved origins section.

Approved origins

Once you integrated with a CRM product, add the origins (scheme + host + port) that Amazon Connect will need to have access to.

https://[REDACTED] dev-ed.lightning.force.com

[remove](#)

13. Select + Add origin

14. In the Enter origin URL field, enter the URL of the visualforce page that you copied in step 5. Only enter the url through the .com, for example:

https://XXXXXXXXX-dev-ed--amazonconnect.visualforce.com

15. Select Add. You should see your org domain listed in the Approved origins section

Approved origins

Once you integrated with a CRM product, add the origins (scheme + host + port) that Amazon Connect will need to have access to.

https://[REDACTED]-dev-ed--amazonconnect.visualforce.com

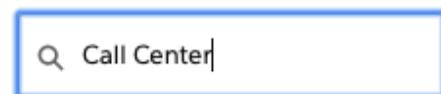
[remove](#)

Modify the Call Center

Now that you have allowlisted the org in the Amazon Connect Console, you will need to modify the Call Center that was configured in Salesforce when the AppExchange package was installed. Once you complete the configuration, you add users to the Call Center to provide access to it.

1. Log in into your Salesforce org and go to **Setup**

2. In the **Quick Find** field, enter **Call Center**, then select **Call Centers** from the result list



▼ Feature Settings

 ▼ Service

 ▼ Call Center

Call Centers

 Directory Numbers

 Softphone Layouts

3. If you see the **Say Hello to Salesforce Call Center** page, select **Continue**

4. Select **AC Lightning Adapter**

All Call Centers

A call center corresponds to a single computer-telephony integration (CTI) system already in place. You can add more Call Center features.

Action	Name ↑
Edit Del	AC Lightning Adapter
Edit Del	Amazon Connect CCP Adapter Classic 3.11
Edit Del	Amazon Connect CCP Adapter Console 3.11

5. On the **AC Lightning Adapter** detail page, select **Edit**

6. Replace the **CTI Adapter URL** with the AC Lightning Adapter visualforce page url you copied in the previous section.

7. Next, change the values for **Softphone Height to 570** and the **Softphone Width to 330**, and choose **Save**.

8. Once you return to the AC Lightning Adapter detail page, choose **Manage Call Center Users** in the Call Center Users section

9. On the **AC Lightning Adapter: Manage Users** page, select **Add More Users**.

10. Set filters (if desired) and then choose **Find**.

11. Select the checkbox next to the user to add, then choose **Add to Call Center**.

Full Name	Alias	Username	Role	Profile
Douglas Jason	JDoug	[REDACTED]	System Administrator	
User_Integration	Integ	integration@00d690000004znmwseak.com	Analytics Cloud Integration User	
User_Security	sec	insightssecurity@00d690000004znmwseak.com	Analytics Cloud Security User	

12. Repeat the steps to add more users.

Configure the Toolkit settings

1. Navigate to **Setup** then in type **Custom Settings** in Quick Find



Setup

Home

Objec

 custom settings

Custom Code

Custom Settings

2. Next to the Toolkit for Amazon Connect custom setting, choose **Manage**

Custom Settings

Use custom settings to create and manage custom data at the organization, profile, and user levels. Custom settings data is stored in the database, so you can access it efficiently, without the cost of repeated queries. Custom settings data can be used by formula fields, Visualforce, Apex, and other components.

Action	Label	Visibility	Settings Type	Namespace Prefix	Description
Manage	Toolkit for Amazon Connect	Public	Hierarchy	amazonconnect	Configuration settings of the Toolkit for Amazon Connect.

3. Select **New**

Custom Setting

Toolkit for Amazon Connect

If the custom setting is a list, click **New** to add a new set of data. For example, if the custom setting is a list of phone numbers, click **New** to add a new phone number to the list.

If the custom setting is a hierarchy, you can add data for the user, profile, or organization level. For example, if the custom setting is a hierarchy of phone numbers for specific users, click **New** to add a new phone number for a specific user.

[New](#)

▼ Default Organization Level Value

4. On the following page, provide the URL to your Amazon Connect instance. This value can be found in your Amazon Connect console.

Amazon Connect virtual contact center instances

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

Add an instance	Remove	
Instance Alias	Access URL	Channels
<input type="checkbox"/> [REDACTED]	https://[REDACTED]f.my.connect.aws	Inbound, outbound telephony
<input type="checkbox"/> [REDACTED]	https://[REDACTED]awsapps.com...	Inbound, outbound telephony

Toolkit for Amazon Connect Edit

Provide values for the fields you created. This data is cached with the application.

Edit Toolkit for Amazon Connect [Save](#) [Cancel](#)

Toolkit for Amazon Connect Information

Location

Url <https://yourinstancename.a>

You will also see the option to enable and disable certain triggers in the package, which you can configure to meet your needs. You can change these whenever you would like to. For more details, see the troubleshooting section.

5. Select Save

Create the Softphone Layout

Next, we need to create a softphone layout for the solution. The softphone layout settings will tell the console what resources are available for screenpop by default and what to do under different match conditions.

1. Log in into your Salesforce org and go to **Setup**

2. In the **Quick Find** box, type **Softphone**, then choose **Softphone Layouts** from the results

3. If you are presented with the Get Started message, choose **Continue**

4. On the Softphone Layouts page, choose **New**

Softphone Layouts

[Help for this Page](#)

A softphone is a customizable call control tool that appears in the sidebar of every salesforce.com page if a user is assigned to a call center and is working on a machine on which a CTI adapter has been installed. Similar to page layouts, you can design custom softphone layouts and assign them to call center users based on their user profile.

Name	Default	Created By Alias	New	Softphone Layout Assignment	Created Date	Last Modified By Alias	Last Modified Date
No records to display.							

5. Enter a name for the layout, such as **AmazonConnectDefault**, then select the **Is Default Layout** checkbox.

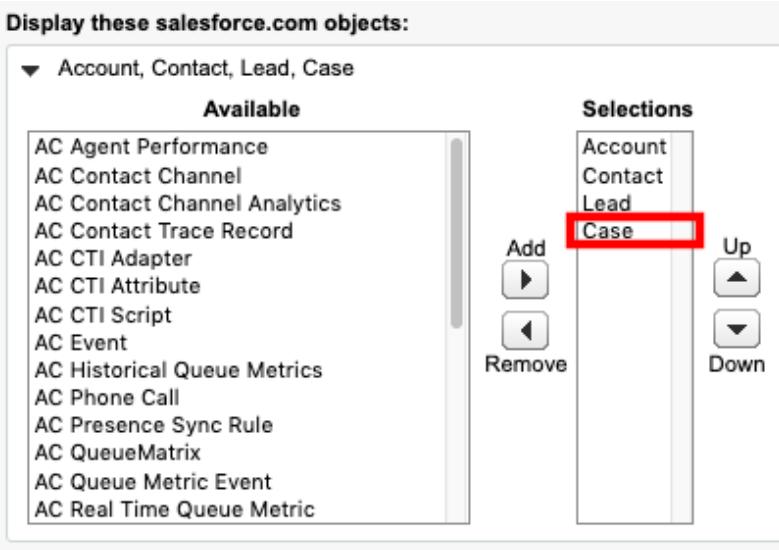
Softphone Layout Edit

Each softphone layout allows you to customize the appearance of a softphone for inbound, outbound, orivr page.



The screenshot shows a software interface for editing a softphone layout. At the top, there are 'Save' and 'Cancel' buttons. Below them, a 'Name' field contains the value 'AmazonConnectDefault'. To the right of the name is a checkbox labeled 'Is Default Layout' which is checked. Both the 'Name' field and the 'Is Default Layout' checkbox are enclosed in a red rectangular box.

6. Expand **Display these salesforce.com objects** and select objects that CTI Connector should be able to search, for a screen-pop query. In this example, Case has been added to the default selection, allowing search and screen-pop by CaseID.



The screenshot shows a configuration interface for selecting objects. On the left, under 'Available', there is a list of various Salesforce objects. On the right, under 'Selections', there is a list of objects that have been selected. The 'Case' object is highlighted with a red box. There are 'Add' and 'Remove' buttons between the two lists, and 'Up' and 'Down' buttons for reordering the selected objects.

7. If desired, configure the search behavior to your requirements



The screenshot shows a list of search behavior rules. Each rule is a bullet point followed by a detailed description and an 'Edit' link. The rules are:

- If single Account found, display: Account Name
If multiple matches are found, only the Account Name is displayed in Salesforce Classic. In Lightning Experience, all the selected fields are displayed. [Edit](#)
- If single Contact found, display: Name
If multiple matches are found, only the Name is displayed in Salesforce Classic. In Lightning Experience, all the selected fields are displayed. [Edit](#)
- If single Lead found, display: Name
If multiple matches are found, only the Name is displayed in Salesforce Classic. In Lightning Experience, all the selected fields are displayed. [Edit](#)
- If single Case found, display: Case Number
If multiple matches are found, only the Case Number is displayed in Salesforce Classic. In Lightning Experience, all the selected fields are displayed. [Edit](#)

8. Additionally, validate the Screen Pop settings. Please note that the default behavior is to not pop a screen if there is more than one result



The screenshot shows the 'Screen Pop Settings' configuration screen. It includes sections for 'Screen pops open within', 'No matching records', and 'Single-matching record'. Under 'Multiple-matching records', there is a dropdown menu with the following options:

- Don't pop any screen
- Pop to search page
- Pop to Visualforce page
- Pop to flow --None--

The 'Pop to search page' option is highlighted with a red box.

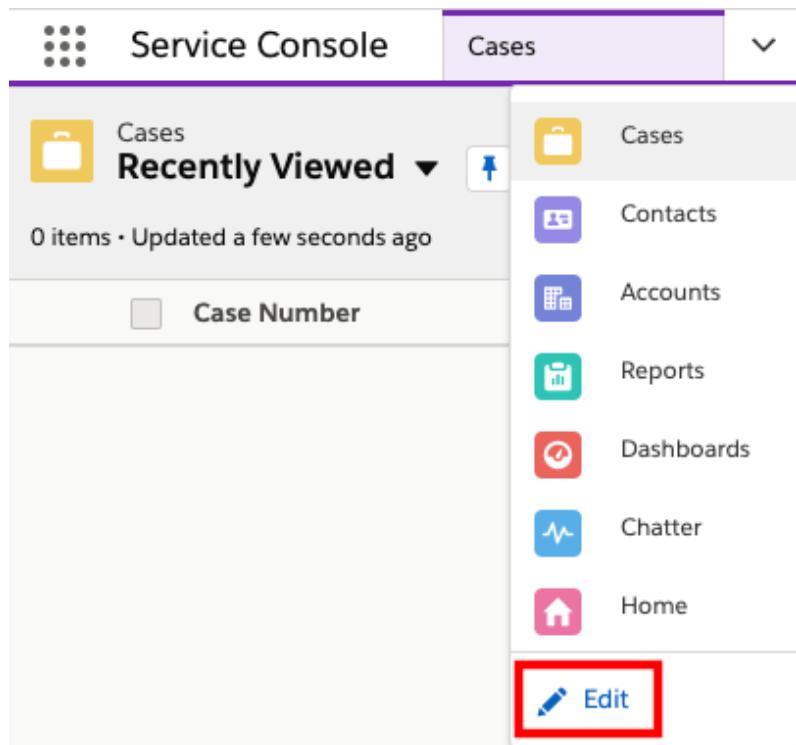
9. Once you have configured the search behavior, choose **Save**

Initial CTI Adapter Configuration

Once we have setup the Call Center, we need to do a final configuration of the CTI Adapter before we can test the basic configuration. This will tie the Lightning CTI adapter settings to the Call Center.

Add the CTI Adapter Console App

1. Log in into your Salesforce org and go to the **Service Console**
2. Expand the **navigation menu** by selecting the down arrow and choose **Edit**.



3. On the Edit Service Console App Navigation Items page, select **Add More Items**

A screenshot of the 'Edit Service Console App Navigation Items' page. The title is at the top. Below it is a section with the text 'Personalize your nav bar for this app. Reorder items, and rename or remove items you've added.' followed by a 'Learn More' link and an info icon. At the bottom left is a section titled 'NAVIGATION ITEMS (7)' with a list of items. On the right side, there's a large 'Add More Items' button, which is highlighted with a red rectangular box.

4. Select the + next to **AC CTI Adapters** and select the **Add 1 Nav Item** button

Add Items

AVAILABLE ITEMS

All 1

Search all items...

AC CTI Adapters X

1 item selected

AC CTI Adapters

AC Contact Channel Analytics

AC Contact Trace Records

AC Queue Metrics

AC Real Time Queue Metrics

App Launcher

Approval Requests

Assets

Authorization Form

Authorization Form Consent

Authorization Form Data Use

Authorization Form Text

Calendar

5. If desired, move the **AC CTI Adapters** button up in the navigation Items menu by dragging it up or down the list, then choose **Save** to save changes
6. Select **AC CTI Adapters** from navigation menu
7. If Recently Viewed is selected, select the drop-down and select **All** from the List Views menu.

AC CTI Adapters

Recently Viewed ▾

0 items

LIST VIEWS

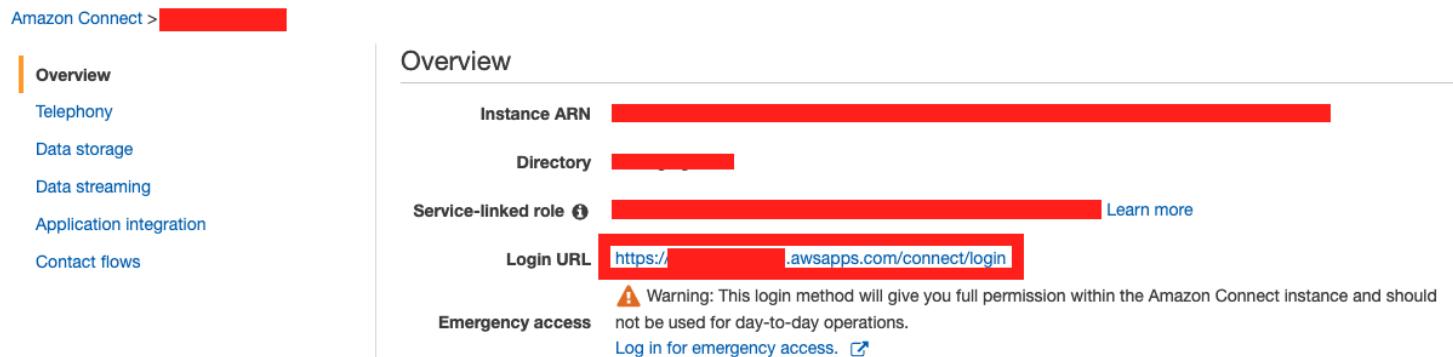
Recently Viewed (Pinned list)

8. If no ACLightningAdapter entry exists, then select the new button to configure your AC CTI adapters, otherwise select the **ACLightningAdapter**

9. Fill out or confirm the Details as follows:

10. CTI Adapter Name: **ACLightningAdapter**

11. Amazon Connect Instance: The url of your Amazon Connect Instance. You can find this in the Amazon Connect Console as shown below (remove everything after ".com"):

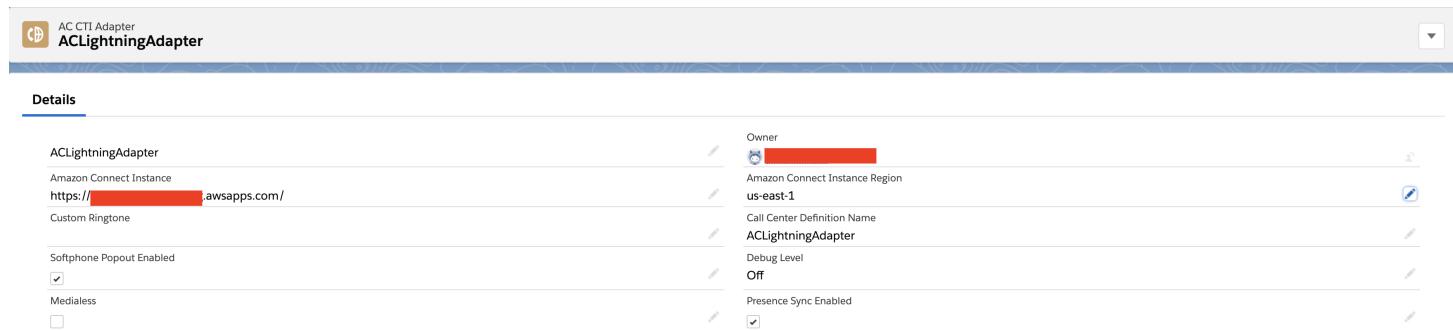


The screenshot shows the 'Overview' section of the Amazon Connect console. On the left, there's a sidebar with links like 'Telephony', 'Data storage', 'Data streaming', 'Application integration', and 'Contact flows'. The main area has several fields: 'Instance ARN' (redacted), 'Directory' (redacted), 'Service-linked role' (redacted) with a 'Learn more' link, 'Login URL' (https://[REDACTED].awsapps.com/connect/login), and 'Emergency access' with a warning message: 'Warning: This login method will give you full permission within the Amazon Connect instance and should not be used for day-to-day operations.' A 'Log in for emergency access' button is also present.

12. Amazon Connect Instance Region: This is the region that your Amazon Connect instance is deployed in. For this field, you will enter the region code. For example, if you have deployed your Amazon Connect instance in US East (N. Virginia), you would enter us-east-1. For a list of region codes, please refer to the [AWS Service Endpoints](#) reference

13. Call Center Definition Name: **ACLightningAdapter** **Note:** This is the value of the Internal Name in the call center in the Call Center definition

14. Leave all other settings at the default for now, and choose Save



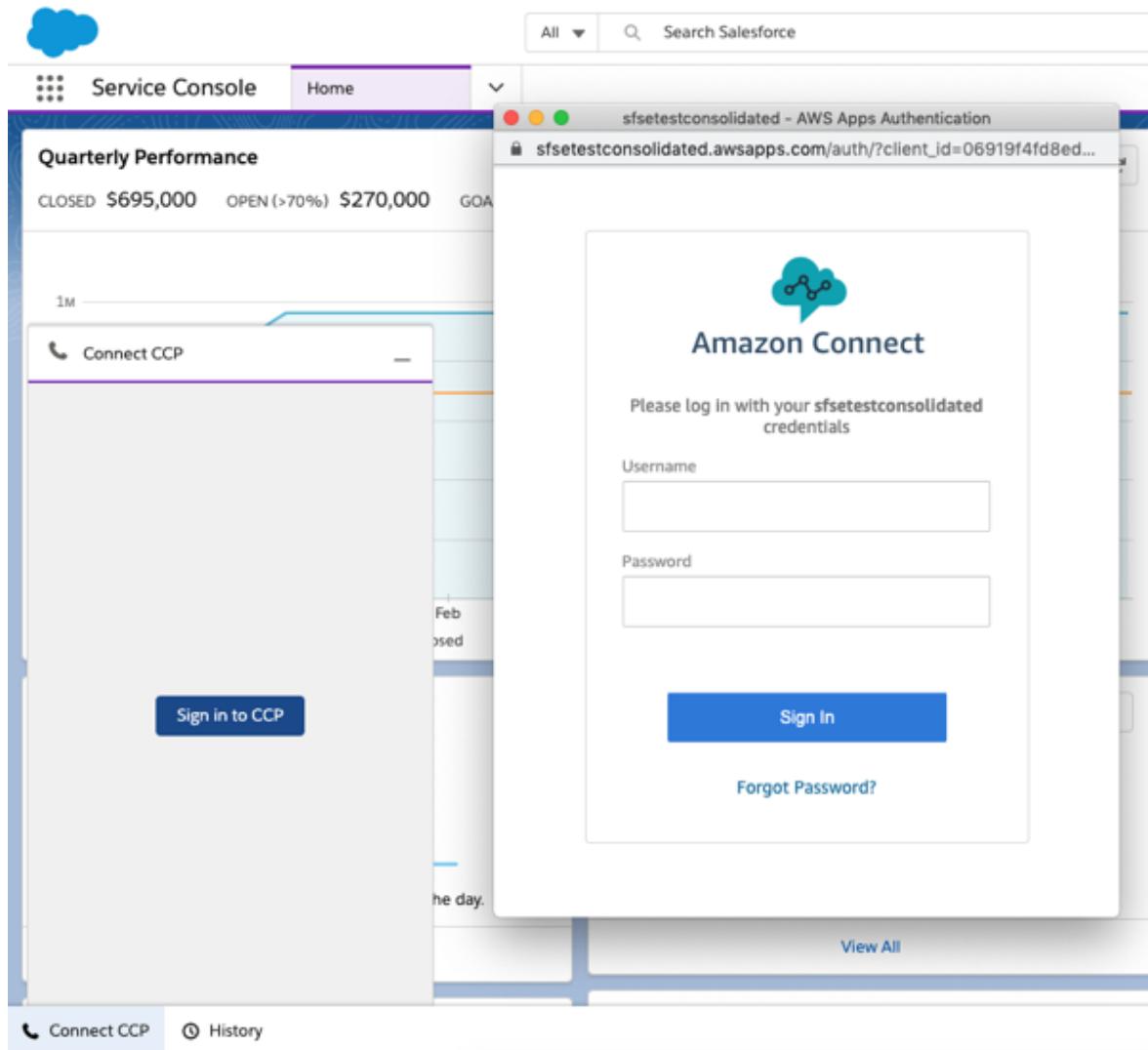
The screenshot shows the 'Details' tab of the AC CTI Adapter configuration page. It lists various settings: 'ACLightningAdapter' (Name), 'Owner' (redacted), 'Amazon Connect Instance Region' (us-east-1), 'Call Center Definition Name' (ACLightningAdapter), 'Debug Level' (Off), 'Presence Sync Enabled' (checked), 'Softphone Popout Enabled' (checked), 'Custom Ringtone' (Medialess), and 'Medialess' (unchecked).

15. Refresh the browser

16. In the bottom left corner of the Service Console, select the CTI Softphone icon

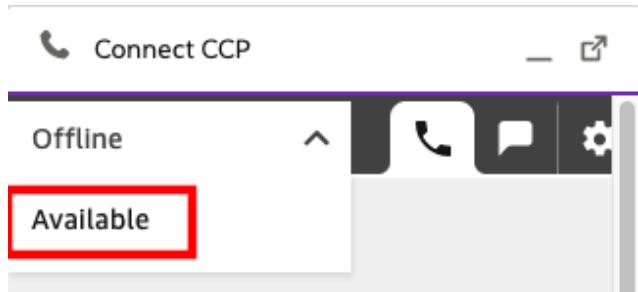


17. Select the **Sign in to CCP** button. A new window will pop up. Enter your Amazon Connect login credentials and select **Sign In**. Make sure to allow Microphone access (if asked by browser) **NOTE:** At this point, this process will only work for Amazon Connect instances configured for local user storage. If you are configuring SAML, please follow the SAML setup process in the [Single Sign On Settings](#) section before continuing.

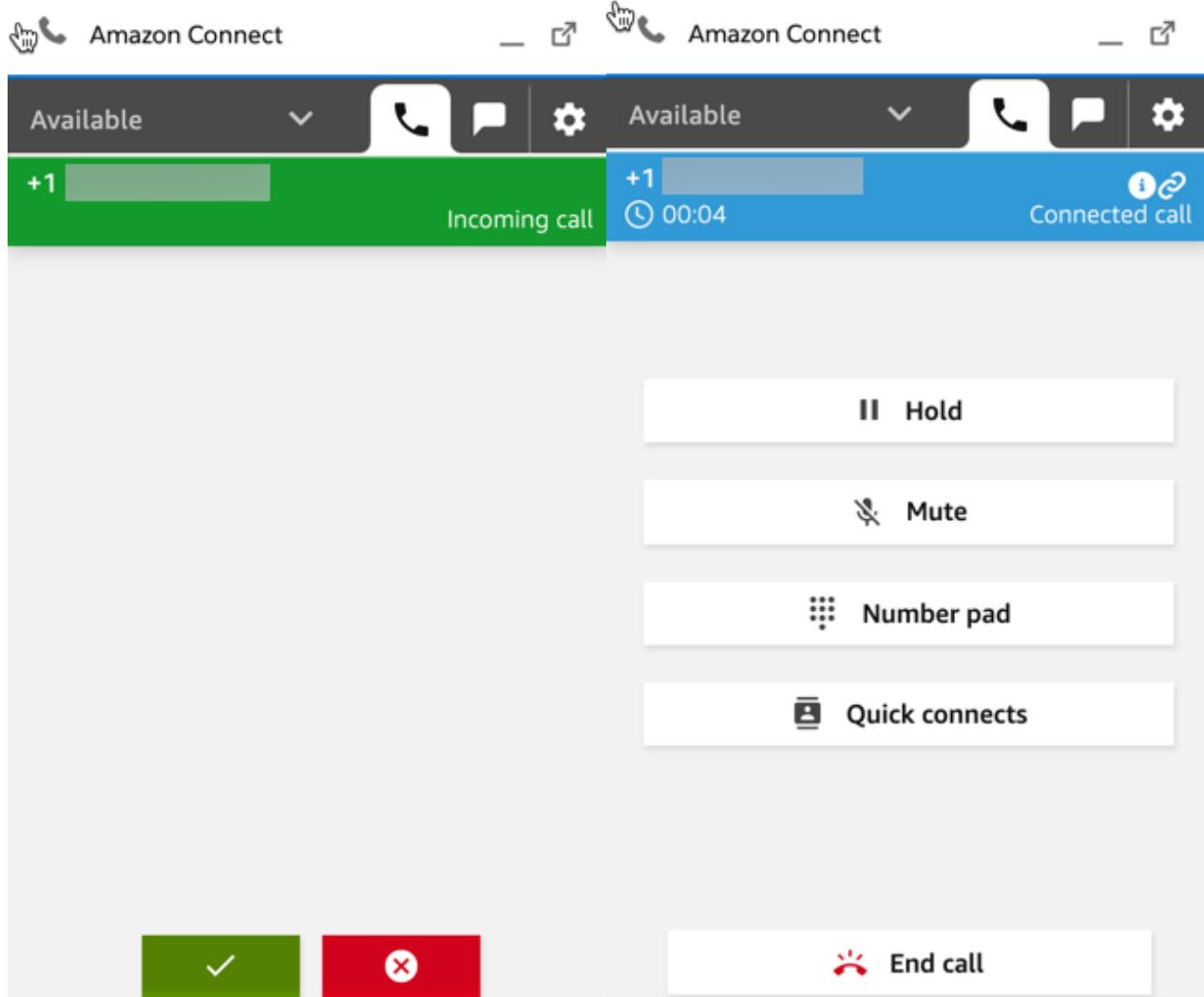


18. Once Login is successful, the pop-up window will automatically close.

19. Expand the status menu and choose Available



20. Make an inbound phone call to your Amazon Connect instance. The CCP will alert you to the incoming call and allow you to accept it. Once you do, the call will be connected



21. **End the call** and clear the contact

22. Set your agent back to **Available**

Enhanced Agent Logout

You can configure an agent status within "Manage agent status" with "Logout" (case-sensitive) in the status name to enable enhanced agent logout. When the agent selects that logout status in the Contact Control Panel, it will first set the agent in an offline status. It will then logout the agent in Connect and the AWS Console. Here is an example of the agent status configured within Connect:

Manage agent status

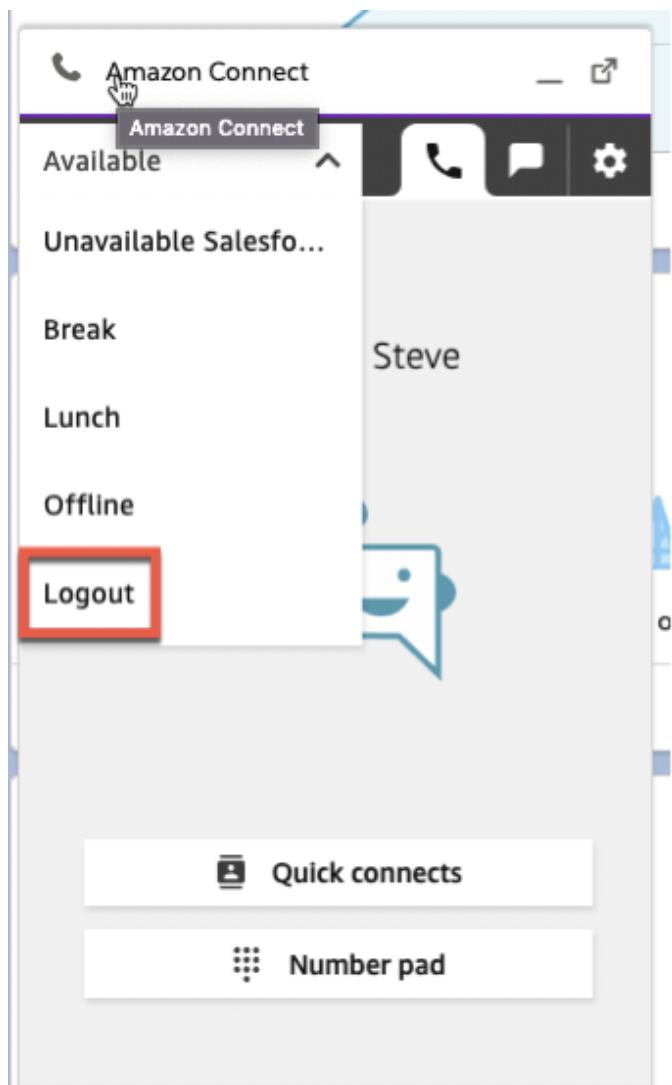
Create new agent status, and drag table rows to specify the order these statuses appear in the Contact Control Panel (CCP). To maintain integrity of historical metrics, agent status cannot be deleted. However, they can be disabled so that they no longer show in the CCP.

Add new agent status

Status name	Description	Type	Enabled for use in CCP
Unavailable Salesforce	Unavailable Salesforce	Custom	<input checked="" type="checkbox"/>
Break	Break	Custom	<input checked="" type="checkbox"/>
Lunch	Lunch	Custom	<input checked="" type="checkbox"/>
Available	Available state	Routable	<input checked="" type="checkbox"/>
Offline	Offline state	Offline	<input checked="" type="checkbox"/>
Logout	Sets the Connect user to offline and then completes logs out the Connect user	Custom	<input checked="" type="checkbox"/>

Save Cancel

Here is an example of an agent selecting the "Logout" status within the Contact Control Panel:



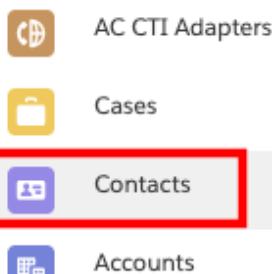
Validate Basic Screenpop

Next, we will add a contact to Salesforce that has your phone number assigned to it. This will allow us to validate the basic screenpop functionality that is provided with the CTI adapter.

1. Select **Contacts** from the dropdown menu

Quarterly Performance

CLOSED \$695,000 OPEN (>70%)

2. Select **New** from top-right corner

3. Complete the required fields. Make sure that your phone number is entered for the Phone field.

New Contact**Contact Information**

Contact Owner

Jason Douglas

* Name

Salutation

Mr.

First Name

John

* Last Name

Smith

Phone

7048076561

Home Phone

Account Name

Search Accounts...

Mobile

Title

Other Phone

Department

Fax

Birthdate

Email

Cancel

Save & New

Save

4. Select **Save**

5. Close the Contact tab by selecting the X next to the name of the contact that you just created

The screenshot shows the top navigation bar of the Salesforce Service Console. It includes a blue cloud icon, a search bar with the placeholder 'Search Contacts an...', a 'All' dropdown, and a magnifying glass icon. Below the bar, there are tabs for 'Service Console' and 'Contacts'. The 'Contacts' tab is currently selected. A contact record for 'John Smith' is displayed, with a red box highlighting the close ('X') button in the top right corner of the contact card.

6. Refresh your browser
7. Place another phone call into your instance
8. The new contact should automatically pop-up as it has been recognized by incoming phone number.

[Edit this page](#)

Setting Up The Salesforce Lambdas Manually

Below are manual setup instructions for the Salesforce Lambdas.

Prerequisite Configuration and Data Collection

In order to successfully deploy and utilize the functions in the Amazon Connect Salesforce Lambda package, you will need to validate and configure some items in your Salesforce Org and gather some information from your Amazon Connect instance.

- Check your Salesforce API version
- Create a new Connected App
- Create a new API user
- Gather Amazon Connect information

As you are preparing to deploy the package, it is a good idea to open a text editor and note information as you configure the environment. We will point out the items you will need to provide.

Check your Salesforce API Version

1. Log in into your Salesforce org and go to **Setup**
2. In the **Quick Find** field, type **apex**, then select **Apex Classes** from the results

apex

✓ Email

Apex Exception Email

✓ Custom Code

Apex Classes

Apex Settings

Apex Test Execution

Apex Test History

Apex Triggers

3. Select New

The screenshot shows the Salesforce Developer Console interface. At the top, there is a navigation bar with links for 'Developer Console', 'New' (which is highlighted with a red box), 'Generate from WSDL', 'Run All Tests', and 'Schedule Apex'. Below the navigation bar is a search bar with the placeholder 'Action Name ↑'. Underneath the search bar is a table header row with columns: Action, Name ↑, Namespace Prefix, Api Version, Status, Size Without Comments, Last Modified By, and Has Trace Flags. The 'New' button is located in the 'Action' column of the first row of the table.

4. Select the Version Settings tab

Apex Class

The screenshot shows the 'Apex Class Edit' page. At the top, there are three buttons: 'Save', 'Quick Save', and 'Cancel'. Below the buttons, there are two tabs: 'Apex Class' (selected) and 'Version Settings' (highlighted with a red box). The main area contains a toolbar with icons for search, create, back, forward, and font size, followed by a text editor window containing the number '1'.

5. Note the Salesforce.com API version in your notepad

Apex Class

The screenshot shows the 'Apex Class Edit' page with the 'Version Settings' tab selected. The main area displays a table with two rows. The first row has a 'Name' column containing 'Salesforce.com API' and a 'Version' column containing a dropdown menu with '47.0' selected (highlighted with a red box). The second row has a 'Name' column containing 'Amazon Connect - Universal Package' and a 'Version' column containing a dropdown menu with '4.2'.

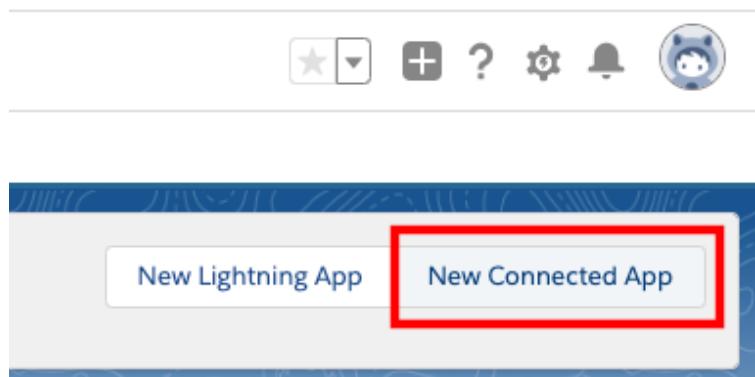
Create a New Connected App

To leverage the full potential of the integration, Salesforce data needs to be accessed from AWS environment. The package comes with a set of pre-built AWS Lambda functions to lookup, update and

create Salesforce objects within Amazon Connect Contact Flows. These Lambda function access Salesforce using the Salesforce REST API.

To get access to the environment, a Connected App must be configured with OAuth settings enabled.

1. Log in into your Salesforce org and go to **Setup**
2. In the **Quick Find** field, type **app manager**, then select **App Manager** from the results
3. In the upper right corner, select **New Connected App**



4. On the New Connected App form, enter a name for the Connected App, such as **Amazon Connect Integration** and press tab. This will populate the API Name automatically. Then provide a contact email address

New Connected App

The screenshot shows the 'Basic Information' section of the 'New Connected App' form. It includes fields for 'Connected App Name' (set to 'Amazon Connect Integration'), 'API Name' (set to 'Amazon_Connect_Integration'), and 'Contact Email' (set to 'dougjaso@amazon.com'). A red rectangular box highlights these three input fields.

5. Select the checkbox to **Enable OAuth Settings**

The screenshot shows the 'API (Enable OAuth Settings)' section of the form. It features a checkbox labeled 'Enable OAuth Settings' which is checked, indicated by a blue checkmark.

6. Set the **Callback URL** to <https://www.salesforce.com>

The screenshot shows the 'API (Enable OAuth Settings)' section of the form. It includes a 'Callback URL' field containing the value 'https://www.salesforce.com', which is also highlighted with a red vertical line.

7. In the Selected OAuth Scopes section, select the following and add them to the Selected OAuth Scopes:

8. Access and manage your data (api)

9. Access your basic information (id, profile, email, address, phone)

10. Select the checkbox for Require Secret for Web Server Flow

11. The **API (Enable OAuth Settings)** section should now look like this

The screenshot shows the 'API (Enable OAuth Settings)' configuration page. At the top, 'Enable OAuth Settings' is checked. Below it, 'Callback URL' is set to 'https://www.salesforce.com'. Under 'Selected OAuth Scopes', two items are listed: 'Access and manage your data (api)' and 'Access your basic information (id, profile, email, address, phone)'. There are 'Available OAuth Scopes' listed on the left, including 'Access and manage your Chatter data (chatter_api)', 'Access and manage your Eclair data (eclair_api)', etc. A red box highlights the 'Selected OAuth Scopes' section. At the bottom, 'Require Secret for Web Server Flow' is checked, along with other optional settings like 'Introspect All Tokens', 'Configure ID Token', 'Enable Asset Tokens', and 'Enable Single Logout'.

12. Select **Save** at the bottom of the screen.

13. Select **Continue** on the New Connected App page

14. You should now be at the new app's page

15. Copy the value for **Consumer Key** to your notepad

16. Select **Click to reveal** next to Consumer Secret and copy the value to your notepad

17. At the top of the detail page, select **Manage**

18. On the Connected App Detail page, select the **Edit Policies** button

19. Set Permitted Users to **Admin approved users are pre-authorized** and choose OK on the pop-up dialog

20. Set IP Relaxation to **Relax IP restrictions**

21. The OAuth Policies section should now look like the following

OAuth Policies

Permitted Users: Admin approved users are pre-authorized

Enable Single Logout: [i](#)

IP Relaxation: Relax IP restrictions

Refresh Token Policy: Immediately expire refresh token

22. Select Save

Create a new API user

The Lambda functions authenticate with Salesforce via user credentials. It is a common practice to create an API user account for this purpose.

1. Log in into your Salesforce org and go to **Setup**
2. In the **Quick Find** field, type **profiles**, then select **Profiles** from the results
3. Select New Profile

The screenshot shows the Salesforce 'Profiles' page under the 'SETUP' tab. The main title is 'Profiles'. Below it, there's a navigation bar with 'All Profiles' (with a dropdown arrow), 'Edit', 'Delete', and 'Create New View'. A prominent red box highlights the 'New Profile' button, which is located below the navigation bar. To the right of the 'New Profile' button is a small circular icon with a question mark.

4. Provide a Profile Name, such as **API_ONLY**
5. From the **Existing Profile** dropdown, select **System Administrator** **NOTE:** You're advised to use a full Salesforce License for the user to be able to set the below permissions and have full access to avoid any other errors.

Clone Profile

Enter the name of the new profile.

You must select an existing profile to clone from.

Existing Profile: System Administrator

User License: Salesforce

Profile Name: API_ONLY

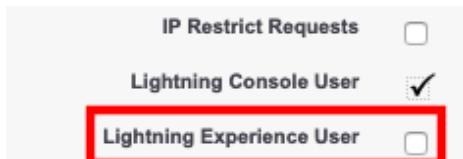
Save Cancel

6. Select **Save** to create the new profile

7. Once the new profile page opens, select the **Edit** button

8. Scroll down to the Administrative Permissions section

9. If the Lightning Experience User checkbox is selected, clear it

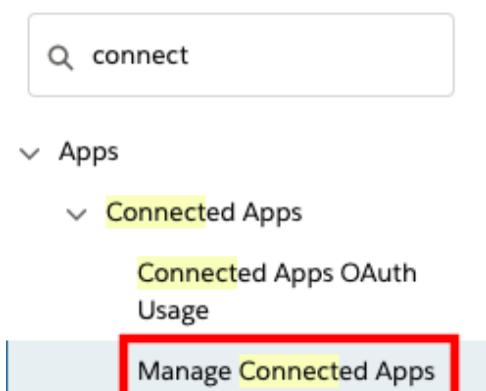


10. Scroll down to the **Password Policies** section at the bottom of the page

11. Set **User password expire in** to **Never expires** **NOTE:** Failure to this may lead to production outages.

12. Select **Save**

13. In the **Quick Find** field, type **connect**, then select **Manage Connected Apps** from the results



14. Select the app you have created earlier, **Amazon Connect Integration**

15. In the profiles section, select **Manage Profiles**

16. Select the new **API_Only** profile that you just created

17. Select **Save** at the bottom of the page

18. In the **Quick Find** field, type **users** then select **Users** from the results

19. Select New User

20. Set the required fields as:

a. Last Name: apiuser

b. Alias: apiuser

- c. Email: provide a valid email address
- d. Username: apiuser@<yoursalesforcedomain>.com
- e. Nickname: apiuser

21. On the right-hand side, set **User License** to **Salesforce**

22. Set Profile to **API_ONLY**

23. Choose **Save**

24. In **Quick Find**, search for "Permission Sets". Select the **AC_Administrator** permission set.

The screenshot shows the Salesforce Setup interface. The top navigation bar includes a cloud icon, 'Setup' (selected), 'Home', and 'Object Manager'. A search bar says 'Search Setup'. The left sidebar has sections for 'Users' (with 'Permission Set Groups' and 'Permission Sets' selected), 'Custom Code' (with 'Permissions' selected), and a global search bar. The main content area is titled 'Permission Sets' with a sub-section 'Permission Sets'. It says 'On this page you can create, view, and manage permission sets.' Below is a table with columns: Action, Permission Set Label, Description, and Licenses. The 'AC Administrator' row is highlighted with a red box. The table shows the following data:

Action	Permission Set Label	Description	Licenses
<input type="checkbox"/> Clone	AC Administrator	Allows the user to configure Amazon Connect setup and provides ...	A B C D E F G H I J K L M
<input type="checkbox"/> Clone	AC Agent		
<input type="checkbox"/> Clone	AC CallRecording		
<input type="checkbox"/> Clone	AC Manager		

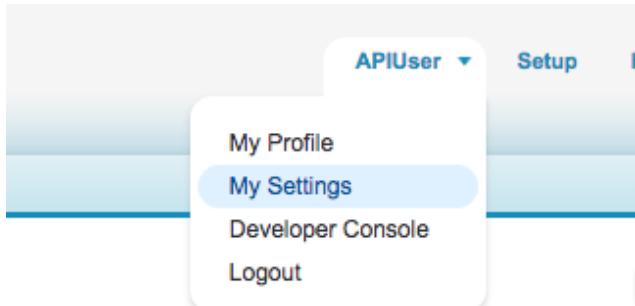
25. Select **Manage Assignments**. Add the apiuser you just created to the permission set.

26. A confirmation email with an **activation link** will be sent to the email address provided. Choose the link to activate your user and set their password

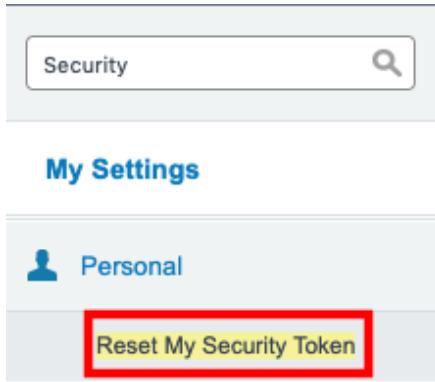
27. Fill out the form to set a password for the API user

28. Select **Change Password**. The API user will log into the Salesforce Classic view

29. Access the API user's personal settings by selecting the username in the top right corner, then choose **My Settings**



30. In the **Quick Find** field, type **security** then select **Reset My Security Token** from the results



31. Select **Reset Security Token**. Your security token will be emailed to you

32. Copy the security token from the email to your notepad

Gather Information from Your Amazon Connect Instance

The last thing to do before you can install the Amazon Connect Salesforce Lambda Package is gather some details about your Amazon Connect instance. These will be used during the package installation.

1. In a new browser tab, login to the [AWS console](#)
2. Navigate to the [Amazon Connect Console](#)
3. Select your Instance Alias
4. On the Overview page for your instance, copy the string following instance/ in the Instance ARN and paste it to your notepad. This is your Instance ID.

Overview

Instance ARN arn:aws:connect:us-east-1:YOUR_ACCOUNT_ID:instance/YOUR-INSTANCE-ID-XXX-XXXXXXX

5. In the left nav, select **Data storage**
6. On the **Data storage** page, copy the S3 bucket names for your Call recordings and Exported Reports. The bucket name is everything preceding the first / in the XX will be stored here sections

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	YOUR BUCKET NAME/connect/sfsetestconsolidated/CallRecordings	Edit
Encrypted using this key	aws/connect	

Chat transcripts

Chat transcripts will be stored here	YOUR BUCKET NAME/connect/sfsetestconsolidated/ChatTranscripts	Edit
Encrypted using this key	aws/connect	

Live media streaming

Live media streaming	Not enabled	Edit
----------------------	-------------	------

Exported reports

Exported reports will be stored here	YOUR BUCKET NAME/connect/sfsetestconsolidated/Reports	Edit
Encrypted using this key	aws/connect	

7. In the left nav, select **Data streaming**

8. Note the name of the Kinesis stream configured in the Contact Trace Records section, then select **Create a new Kinesis Stream**. This will take you to the list of Kinesis streams configured in this region.

9. Select the **Kinesis stream name** that matches what was configured in the previous step

10. On the stream detail page, copy the entire value for Stream ARN

Stream ARN `arn:aws:kinesis:us-east-1:YOUR_ACCOUNT_NUMBER:stream/YOUR_STREAM_NAME`

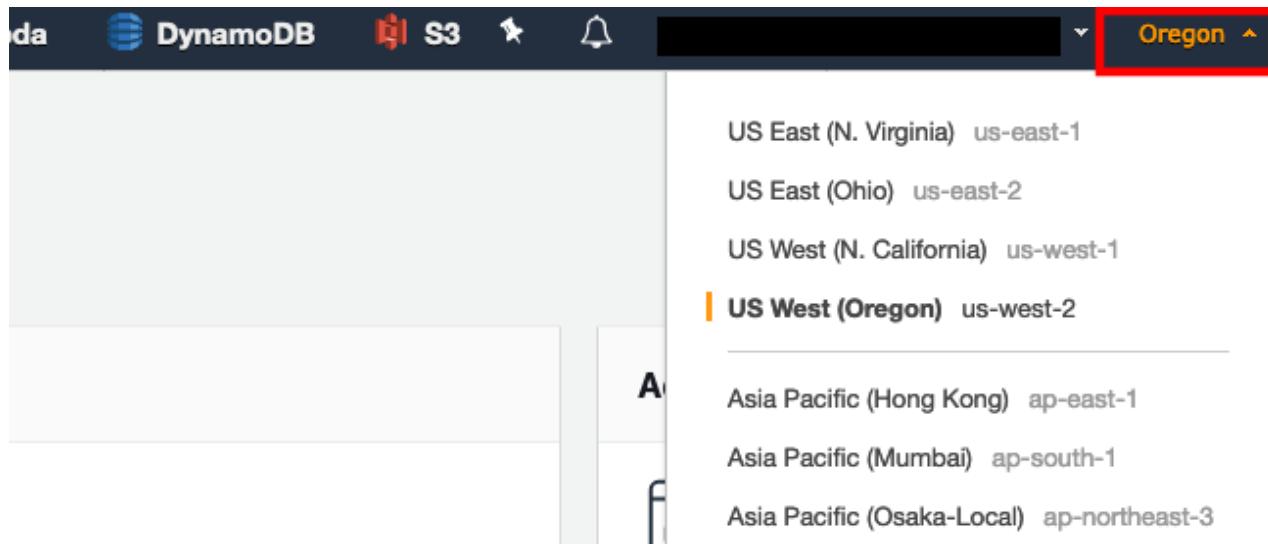
Status ACTIVE

Store Salesforce Credentials in AWS Secrets Manager

To ensure that your Salesforce credentials are secure, the Lambdas require that the credentials are stored in AWS Secrets Manager. AWS Secrets Manager is a highly secure service that helps you store and retrieve secrets.

1. In a new browser tab, login to the AWS console

2. Make sure you are in the same region as your Amazon Connect instance. You can set the region by expanding the region selector in the upper right and choosing the region



3. Navigate to the [Secrets Manager console](#)

4. Select **Secrets**

5. Select **Store a new secret**

6. Select **Other types of secrets**

7. Make sure **Secret key/value** is selected

8. Enter key value pairs that match the following:

- a. **Key:** Password, **Value:** the password for the API user that you configured in the previous section
- b. **Key:** ConsumerKey, **Value:** the Consumer Key for the Connected App you created in the previous section
- c. **Key:** ConsumerSecret, **Value:** the Consumer Secret for the Connected App you created in the previous section
- d. **Key:** AccessToken, **Value:** this is the access token for the API user that you configured in the previous section

9. For the encryption key, click **Add new key**

10. Select **Create Key**

11. Make sure key type is set to **symmetric**

12. Give your key an **alias**, like *SalesforceCredentialsSecretsManagerKey*

13. Click Next

14. Select administrators you want to have access permission to change the key policy. Make sure you are being as restrictive as possible

15. Click Next

16. Select the users and roles you want to have access to the Salesforce credentials in Secrets Manager. Make sure you are being as restrictive as possible

17. Click Next

18. Click Finish

19. Click on the managed key that you just created (which is *SalesforceCredentialsSecretsManagerKey* in this case).

20. Note down the ARN. This is *SalesforceCredentialsKMSKeyARN* that will be used later when installing the Amazon Connect Salesforce Lambda package.

21. Navigate back to the Secrets Manager setup tab

22. Select the key you just created

Specify the key/value pairs to be stored in this secret Info

Secret key/value **Plaintext**

Password	Password	Remove
ConsumerKey	ConsumerKey	Remove
ConsumerSecret	ConsumerSecret	Remove
AccessToken	AccessToken	Remove

+ Add row

Select the encryption key Info

Select the AWS KMS key to use to encrypt your secret information. You can encrypt using the default service encryption key that AWS Secrets Manager creates on your behalf or a customer master key (CMK) that you have stored in AWS KMS.

SalesforceCredentialsSecretsManagerKey	▼	C
Add new key		

Cancel **Next**

23. Click Next

24. Give your secret a name, like *SalesforceCredentials*

25. Click Next

26. Make sure **Disable automatic rotation** is checked.

27. Click Next

28. Click Store

29. Select the secret you just created, and copy the Secret ARN

The screenshot shows the AWS Secrets Manager interface. At the top, there's a breadcrumb navigation: AWS Secrets Manager > Secrets > SalesforceCredentials. Below the navigation, the secret name 'SalesforceCredentials' is displayed in large bold letters. Underneath the name, there's a section titled 'Secret details' which includes fields for 'Encryption key' (set to 'SalesforceCredentialsSecretsManagerKey'), 'Secret name' ('SalesforceCredentials'), and a redacted 'Secret ARN'. There's also a 'Secret description' field containing a single dash. On the right side of this section, there's a 'Actions' button with a dropdown arrow. The entire screenshot is framed by a light gray border.

30. You should now have all of the information you need to install the package

Install the Amazon Connect Salesforce Lambda package

1. In a new browser tab, login to the [AWS console](#)

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

3. Once you have selected the region, navigate to the [Amazon Connect Console](#)

4. Verify that the Amazon Connect instance that you wish to configure is listed

5. Once you have verified your Amazon Connect instance, Open the [Serverless Application Repository Console](#)

6. In the left navigation, select **Available Applications**

Serverless Application Repository

X

Available applications

Published applications

7. In the search area, make sure that **Public applications** is selected, check the box for **Show apps that create custom IAM roles or resource policies**, and enter **Salesforce** in the search field, this will automatically filter the available packages

The screenshot shows the 'Available applications' section of the Serverless Application Repository. At the top, there are two tabs: 'Public applications (4)' (which is selected) and 'Private applications'. Below the tabs is a search bar containing the text 'Salesforce'. Underneath the search bar is a checked checkbox labeled 'Show apps that create custom IAM roles or resource policies'. The main area displays a list of applications, with the third item, 'AmazonConnectSalesForceLambda', highlighted by a red box.

8. Select AmazonConnectSalesForceLambda

The screenshot shows the details page for the 'AmazonConnectSalesForceLambda' application. The application name is displayed at the top. Below it, a note states: 'Creates custom IAM roles or resource policies'. A description follows: 'The AWS Serverless application package contains a set of common Lambda functions to be used by Amazon Connect to interact with Salesforce, allowing lookup, create and update operations for different Salesforce objects, like Contacts and Cases.' Underneath the description are several tags: 'Integration', 'Connect', 'Amazon', 'Salesforce', and 'AmazonConnectSalesforceLambda'. At the bottom of the card, it says '26 deployments' and '685 deploy...'. To the right of this card are other application cards, one of which is 'alexa-salesforce-notes-sample'.

9. When the Application loads, scroll down to the **Application settings** section

10. Fill in the parameters using the data you gathered in your notepad in the previous section using the following notes:

- a. **Application name:** You can accept the default here or change it as desired

- b. **CTRKinesisARN:** This is the ARN for the Kinesis stream that was configured for Contact Trace Record streaming in Amazon Connect. This is the complete ARN. Amazon Kinesis Firehose is not supported.
- c. **ConnectRecordingS3BucketName:** This is the name of the S3 bucket used to store recordings for your Amazon Connect instance. This is ONLY the bucket name, no sub-folders or suffixes
- d. **ConnectReportingS3BucketName:** This is the name of the S3 bucket used to store exported reports for your Amazon Connect instance. This is ONLY the bucket name, no sub-folders or suffixes
- e. **HistoricalReportingImportEnabled:** true | false - if set to true, the package will include a feature to import Amazon Connect Queue and Agent Historical Metrics into your Salesforce Org. This feature requires you to provide **ConnectReportingS3BucketName**
- f. **LambdaLoggingLevel:** DEBUG | INFO | WARNING | ERROR | CRITICAL - Logging level for Lambda functions
- g. **PrivateVpcEnabled:** Set to true if functions should be deployed to a private VPC. Set VpcSecurityGroupList and VpcSubnetList if this is set to true.
- h. **RealtimeReportingImportEnabled:** true | false - if set to true, the package will include a feature to publish Amazon Connect Queue Metrics into your Salesforce Org. This feature requires you to provide **AmazonConnectInstanceId**
- i. **SalesforceAdapterNamespace:** This is the namespace for CTI Adapter managed package. The default value is **amazonconnect**. If a non-managed package is used, leave this field blank.
- j. **SalesforceCredentialsKMSKeyARN:** This is the ARN for KMS customer managed key that you created in the previous section.
- k. **SalesforceCredentialsSecretsManagerARN:** This is the ARN for the Secrets Manager Secret that you created in the previous section.
- l. **SalesforceHost:** The full domain for your salesforce org. For example `https://mydevorg-dev-ed.my.salesforce.com`. Please make sure that the host starts with `https`, and that the url ends with `.my.salesforce.com`. This url can be found in `Setup` -> `My Domain`.
- m. **SalesforceProduction:** true | false - True for Production Environment, False for Sandbox
- n. **SalesforceUsername:** The username for the API user that you configured in the previous section
- o. **SalesforceVersion:** This is the Salesforce.com API version that you noted in the previous section
- p. **VpcSecurityGroupList:** The list of SecurityGroupIds for Virtual Private Cloud (VPC). Not required if PrivateVpcEnabled is set to false.

- q. **VpcSubnetList:** The list of Subnets for the Virtual Private Cloud (VPC). Not required if PrivateVpcEnabled is set to false.
- r. **AmazonConnectInstanceId:** Your Amazon Connect Instance Id. Only required if you enable real time reporting
- s. **AmazonConnectQueueMaxRecords:** Enter record set size for list queue query. Max is 100.
- t. **ContactLensImportEnabled:** true | false - Set to false if importing Contact Lens into Salesforce should not be enabled.
- u. **CTREventSourceMappingMaximumRetryAttempts:** Maximum retry attempts on failure for lambdas triggered by Kinesis Events.
- v. **AmazonConnectQueueMetricsMaxRecords:** Enter record set size for queue metrics query. Max is 100.
- w. **PostcallCTRImportEnabled:** true | false - Set to false if importing CTRs into Salesforce should not be enabled on the package level. This setting can be disabled on a call-by-call basis.
- x. **PostcallRecordingImportEnabled:** true | false - Set to false if importing call recordings into Salesforce should not be enabled on the package level. This setting can be disabled on a call-by-call basis.
- y. **PostcallTranscribeEnabled:** true | false - Set to false if post-call transcription should not be enabled on the package level. This setting can be disabled on a call-by-call basis.
- z. **TranscribeOutputS3BucketName:** This is the S3 bucket where Amazon Transcribe stores the output. Typically, this is the same bucket that call recordings are stored in, so you can use the same value as found in **ConnectRecordingS3BucketName**. Not required if PostcallRecordingImportEnabled, PostcallTranscribeEnabled, ContactLensImportEnabled set to false.
- z. **TranscriptionJobCheckWaitTime:** Time between transcription job checks

11. Once you have completed the form, select **Deploy**

12. Deployment will take some time, with status updates being provided by the UI. Once it has completely deployed, you will receive a notification on the screen

Deployment status for serverlessrepo-SFConsolidatedLambdaPackage

Create a new app

Test app



Your application has been deployed

Review the application's README for what to do next.

Permissions

Resources

View CloudFormation Stack

Test the Core Functionality

The package provides a core Lambda function (`sflnvokeAPI`) that supports multiple operations, like lookup, create and update. For the initial validation, sample events are provided within the function. Validating this function provides a good check that the installation and configuration is correct.

Validating the lambda functions requires the use of test events to simulate data coming into the function as it would in a typical deployment. Each function has a set of test event samples included to make validation easier.

Validate the core functionality

1. In a new browser tab, login to the [AWS console](#)
2. Open the [AWS Lambda Console](#)
3. In the Filter field, enter `sflnvokeAPI` and press enter, this will filter your list out to the core function that we just installed

The screenshot shows the AWS Lambda Functions list page. At the top, there is a search bar with the placeholder "Add filter" and a keyword input field containing "Keyword : sflnvokeAPI". Below the search bar is a table header with columns: "Function name", "Description", "Runtime", and "Code size". A single function is listed in the table:

Function name	Description	Runtime	Code size
serverlessrepo-SFConsolidatedLambdaPac-sflnvokeAPI-5504EV6KL9E8		Python 3.7	32.1 kB

4. Select the **function name**. First, we will validate a phone number lookup.
5. In the Environment pane, double-click the `event-phoneLookup.json` file

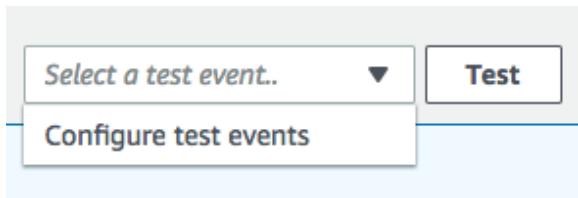
The screenshot shows the AWS Lambda Environment pane. On the left, there is a sidebar with a "File" menu and tabs for "Edit", "Find", "View", and "Go". The main area displays a file tree under the heading "Environment". The files listed are: "serverlessrepo-SFCx" (with a gear icon), "event-create.json", "event-lookup.json", "event-phoneLookup.json" (which is highlighted with a red rectangle), "event-update.json", "salesforce.py", and "sf_util.py".

6. The test even JSON will open in the Lambda editor
7. Modify the value for `sf_phone` to match the phone number of the test contact you created when you setup the CTI adapter or for any valid contact in your Salesforce org\ NOTE: The phone number must be in [E.164 format](#)

```
1 {  
2     "Details": {  
3         "Parameters": {  
4             "sf_operation": "phoneLookup",  
5             "sf_phone": "+14155551212",  
6             "sf_fields": "Id, Name, Email"  
7         }  
8     }  
9 }
```

8. Select the entire JSON event and copy it, then close the **event-phoneLookup.json** tab.

9. In the top-right corner, select drop-down arrow next to **Test** and choose **Configure test events**



10. Select the radio button for **Create new test event** and provide an event name, for example:

phoneLookup

11. Select the existing event JSON and **delete** it. Paste the modified JSON payload you copied from the **event-phoneLookup.json** file

Configure test event X

A function can have up to 10 test events. The events are persisted so you can switch to another computer or web browser and test your function with the same events.

Create new test event
 Edit saved test events

Event template

Hello World

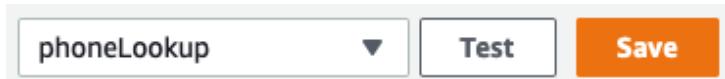
Event name

phoneLookup

```
1 {  
2     "Details": {  
3         "Parameters": {  
4             "sf_operation": "phoneLookup",  
5             "sf_phone": "+14155551212",  
6             "sf_fields": "Id, Name, Email"  
7         }  
8     }  
9 }
```

12. Select **Create** to save your test event

13. By default, your new test event should be selected in the drop-down list to the left of the Test button.



14. Select **Test**

15. If successful, the result will contain fields defined in "sf_fields" parameter in the invocation event

Execution result: succeeded ([logs](#))

▼ Details

The area below shows the result returned by your function execution. [Learn more](#)

```
{  
  "Id": "0036g000007mkZ2AAI",  
  "Name": "John Smith",  
  "Email": null,  
  "sf_count": 1  
}
```

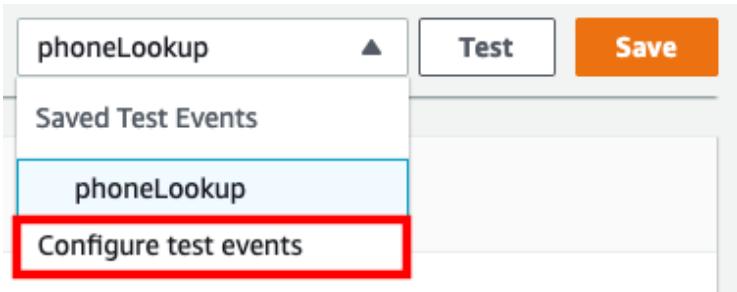
16. Copy the value for the **Id** key in the response. Next, we are going to use that Id to create a Case in Salesforce.

17. In the Environment pane, double-click the **event-create.json** file. Replace the existing ContactId value with the ID value you copied previously.

```
1 {  
2   "Details": {  
3     "Parameters": {  
4       "sf_operation" : "create",  
5       "sf_object": "Case",  
6       "Origin": "Phone",  
7       "Status": "New",  
8       "ContactId": "0036g000007mkZ2AAI",  
9       "Subject": "Amazon Connect Case",  
10      "Priority": "Low"  
11    }  
12  }  
13 }
```

18. Select the entire JSON event and copy it, then close the **event-create.json** tab.

19. In the top-right corner, select drop-down arrow next to **Test** and choose **Configure test events**



20. Select the radio button for **Create new test event** and provide an event name, for example: **createCase**

21. Select the existing event JSON and **delete** it. Paste the modified JSON payload you copied from the **event-create.json** file

Configure test event X

A function can have up to 10 test events. The events are persisted so you can switch to another computer or web browser and test your function with the same events.

Create new test event
 Edit saved test events

Event template

phoneLookup

Event name

createCase

```
1 - [ {  
2 -   "Details": {  
3 -     "Parameters": {  
4 -       "sf_operation": "create",  
5 -       "sf_object": "Case",  
6 -       "Origin": "Phone",  
7 -       "Status": "New",  
8 -       "ContactId": "0036g000007mkZ2AAI",  
9 -       "Subject": "Amazon Connect Case",  
10 -      "Priority": "Low"  
11 -    }  
12 -  }  
13 - }
```

22. Select **Create** to save your test event

23. By default, your new test event should be selected in the drop-down list to the left of the Test button.



24. Select **Test**

25. If successful, the result will contain the Case Id

Execution result: succeeded (logs)

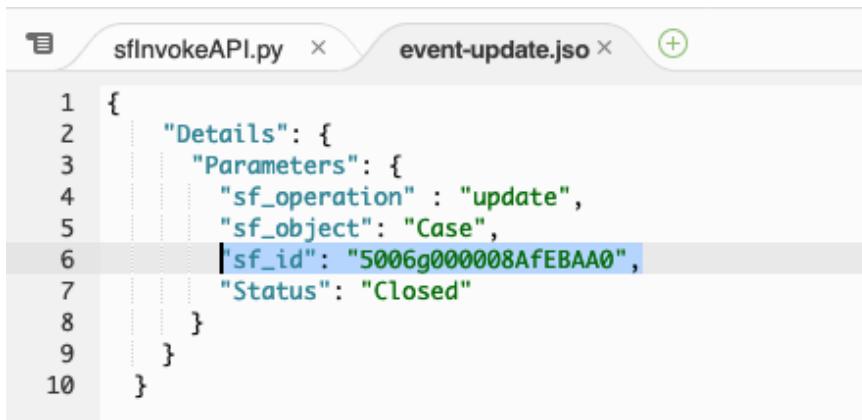
▼ Details

The area below shows the result returned by your function execution. [Learn](#)

```
{  
    "Id": "5006g000008AfEBAA0"  
}
```

26. Copy the value for the **Id** key in the response.

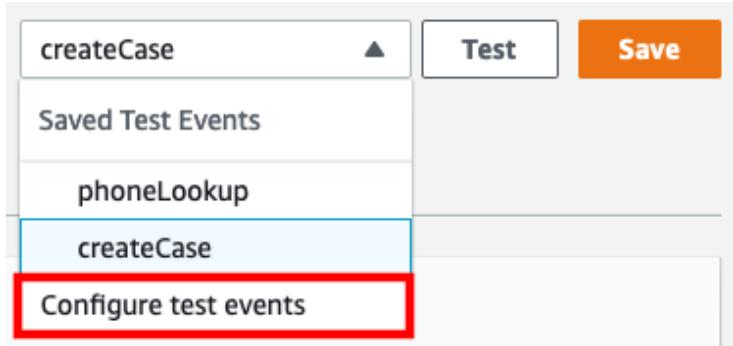
27. When we created the case, the **Status was set to New** and the **Priority to Low**. We are going to use the update operation to close the case.
28. In the Environment pane, double-click the **event-update.json** file and replace the existing Case Id in "sf_id" parameter with the new one you copied from the last test result



```
1 {  
2     "Details": {  
3         "Parameters": {  
4             "sf_operation" : "update",  
5             "sf_object": "Case",  
6             "sf_id": "5006g000008AfEBAA0",  
7             "Status": "Closed"  
8         }  
9     }  
10 }
```

29. Select the **entire JSON event** and copy it, then close the **event-update.json** tab.

30. In the top-right corner, select drop-down arrow next to **Test** and choose **Configure test events**



31. Select the radio button for **Create new test event** and provide an event name, for example: **updateCase**

32. Select the existing event JSON and **delete** it. Paste the modified JSON payload you copied from the **event-update.json** file

Configure test event



A function can have up to 10 test events. The events are persisted so you can switch to another computer or web browser and test your function with the same events.

- Create new test event
- Edit saved test events

Event template

createCase



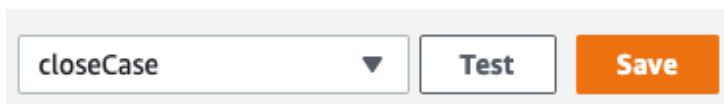
Event name

closeCase

```
1  [{}  
2  "Details": {  
3  "Parameters": {  
4  "sf_operation": "update",  
5  "sf_object": "Case",  
6  "sf_id": "5006g000008AfEBAA0",  
7  "Status": "Closed"  
8  }  
9  }  
10 }
```

33. Select **Create** to save your test event

34. By default, your new test event should be selected in the drop-down list to the left of the Test button.



35. Select **Test**

36. If successful, the result will be the **HTTP 204 No Content** success status response code

✓ Execution result: succeeded ([logs](#))

▼ Details

The area below shows the result returned by your function:

```
{  
  "Status": 204  
}
```

37. Log in into your Salesforce org and go to the **Service Console**

38. In the search box, change the object type to Cases and type Amazon Connect Case, then press enter

Cases ▾



Amazon Connect Case

39. You should find 1 case opened by the API user, and the status should be closed

Cases					
1 Result					
Case Number	Subject	Status	Date/Time Opened	Case Owner Alias	
00001026	Amazon Connect Case	Closed	1/23/2020, 10:13 PM	apiuser	▼

40. You have completed core function validation

Allow Amazon Connect to Access the sflInvokeAPI Lambda Function

Once you have validated function, you can use the Amazon Connect console to add the sflInvokeAPI Lambda function to your Amazon Connect instance. This automatically adds resource permissions that allow Amazon Connect to invoke the function.

Add the Lambda function to your Amazon Connect instance

1. In a new browser tab, login to the [AWS console](#)
2. Navigate to the [Amazon Connect Console](#)
3. Select your **Instance Alias**
4. In the navigation pane, choose **Contact flows**.

[Amazon Connect](#) > sfctifinal022020

The screenshot shows the Amazon Connect navigation pane. The 'Contact flows' link is highlighted with a red box. Other links like Overview, Telephony, Data storage, Data streaming, Application integration, and Contact flows are also visible.

5. For **AWS Lambda**, select the function that includes sflInvokeAPI in the name

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 [+ Add Lambda Function](#)

6. Choose **Add Lambda Function**. Confirm that the ARN of the function is added under **Lambda Functions**.

Lambda Functions

serverlessrepo-AmazonConnectSalesforce-sfInvokeAPI-[REDACTED]	arn:aws:lambda:us-west-2:[REDACTED]function:serverlessrepo-AmazonConnectSalesforce-sfInvokeAPI-[REDACTED]	 Edit	Remove
---	---	--	------------------------

7. The AWS Lambda function has been added to your Amazon Connect instance.

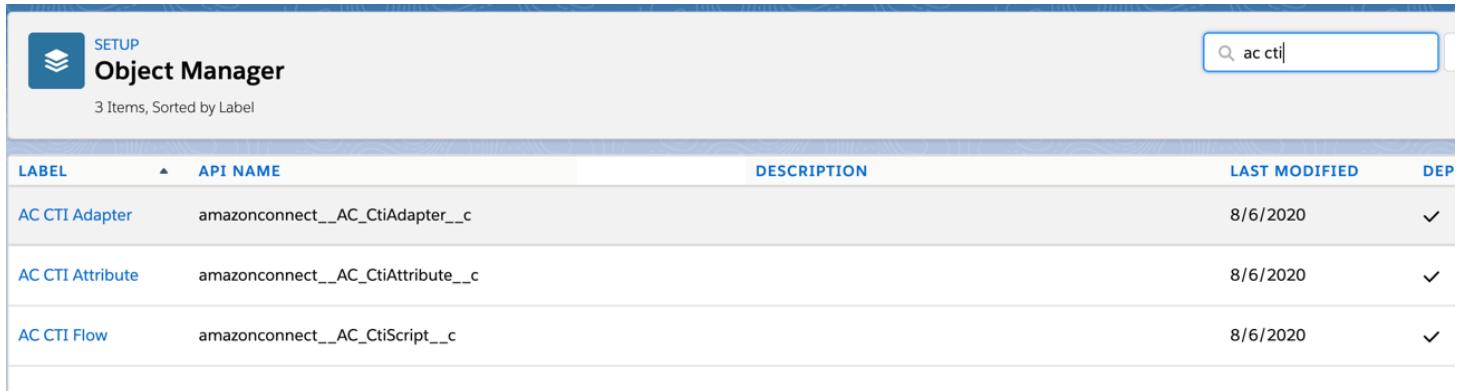
 [Edit this page](#)

Upgrading from an Earlier Version

If you are upgrading from an earlier version of CTI Adapter, there are a few additional things you need to do.

1. Go to the **Setup** section and search for **Object Manager**.

2. In Object Manager section, search for "AC CTI"



The screenshot shows the AWS Lambda Functions page. At the top, there is a search bar with the text "ac ct". Below it, a dropdown menu shows the selected function: "serverlessrepo-AmazonConnectSalesforce-sfInvokeAPI-[REDACTED]". To the right of the dropdown is a button labeled "+ Add Lambda Function".

LABEL	API NAME	DESCRIPTION	LAST MODIFIED	DEP
AC CTI Adapter	amazonconnect__AC_CtiAdapter__c		8/6/2020	✓
AC CTI Attribute	amazonconnect__AC_CtiAttribute__c		8/6/2020	✓
AC CTI Flow	amazonconnect__AC_CtiScript__c		8/6/2020	✓

3. Open up **AC CTI Adapter**

4. On the left sidebar, click on **Page Layouts**

5. Click on **Page Layout Assignment**

6. On the next page, click on **Edit Assignments**

7. Click on the grey bar at the top of the table to select all rows.

The screenshot shows the 'Edit Page Layout Assignment' page for the 'AC CTI Adapter' object. The left sidebar lists various setup categories like Details, Fields & Relationships, Page Layouts, etc. The main area is titled 'Edit Page Layout Assignment' for 'AC CTI Adapter'. It contains a table with two columns: 'Profiles' (listing user profiles) and 'Page Layout' (listing 'AC CTI Adapter Layout' for each profile). At the top of the table, there are buttons for 'Save' and 'Cancel', and a status bar showing 'Page Layout To Use: -- Select Page Layout --', '0 Selected', and '0 Changed'. A red arrow points to the very first row of the table, specifically to the header cell under 'Page Layout'.

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Related Lookup Filters

Search Layouts

Search Layouts for Salesforce Classic

Triggers

Help for this Page

Setup > Object Manager

AC CTI Adapter

Edit Page Layout Assignment
AC CTI Adapter

The table below shows the page layout assignments for different profiles. Use SHIFT + click or click and drag to select a range of adjacent cells. Use CTRL + click to select multiple cells that are not adjacent. Then choose a new page layout from the drop-down.

Profiles	Page Layout
Analytics Cloud Integration User	AC CTI Adapter Layout
Analytics Cloud Security User	AC CTI Adapter Layout
Chatter External User	AC CTI Adapter Layout
Chatter Free User	AC CTI Adapter Layout
Chatter Moderator User	AC CTI Adapter Layout
Contract Manager	AC CTI Adapter Layout
Cross Org Data Proxy User	AC CTI Adapter Layout
Custom: Marketing Profile	AC CTI Adapter Layout
Custom: Sales Profile	AC CTI Adapter Layout
Custom Support Profile	AC CTI Adapter Layout
Force.com - App Subscription User	AC CTI Adapter Layout
Force.com - Free User	AC CTI Adapter Layout
Gold Partner User	AC CTI Adapter Layout
Identity User	AC CTI Adapter Layout
Marketing User	AC CTI Adapter Layout
Minimum Access - Salesforce	AC CTI Adapter Layout
Partner App Subscription User	AC CTI Adapter Layout

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Related Lookup Filters

Search Layouts

Help for this Page

Setup > Object Manager

AC CTI Adapter

Edit Page Layout Assignment
AC CTI Adapter

The table below shows the page layout assignments for different profiles. Use SHIFT + click or click and drag to select a range of adjacent cells. Use CTRL + click to select multiple cells that are not adjacent. Then choose a new page layout from the drop-down.

Profiles	Page Layout
Analytics Cloud Integration User	AC CTI Adapter Layout
Analytics Cloud Security User	AC CTI Adapter Layout
Chatter External User	AC CTI Adapter Layout
Chatter Free User	AC CTI Adapter Layout
Chatter Moderator User	AC CTI Adapter Layout
Contract Manager	AC CTI Adapter Layout
Cross Org Data Proxy User	AC CTI Adapter Layout
Custom: Marketing Profile	AC CTI Adapter Layout
Custom: Sales Profile	AC CTI Adapter Layout
Custom Support Profile	AC CTI Adapter Layout
Force.com - App Subscription User	AC CTI Adapter Layout
Force.com - Free User	AC CTI Adapter Layout

8. Open the **Page Layout to Use** dropdown and select **AC CTI Adapter Layout -- August 2020**.

9. Click **Save** and go back to **Page Layouts**.

10. Click on the dropdown next to the item labelled **AC CTI Adapter Layout** and click **Delete**.

11. Confirm **Yes** in the next dialogue where you will be asked "Are you sure?"

12. If you see a screen titled **Deletion Problems**, find and click **Delete**.



Deletion problems

[Back to Previous Page](#)

The attempted delete was invalid for your session. Please refresh your page and try again.

[Delete](#)

13. You will be asked which layout you want to replace it with. Select **AC CTI Adapter Layout -- August 2020** and click **Replace**.

Page Layout Delete
AC CTI Adapter Layout

In order to delete a Page Layout, you must choose another Page Layout to replace it with.

Page Layout to be deleted AC CTI Adapter Layout
Replace with Page Layout **AC CTI Adapter Layout - August 2020**

Replace **Cancel**

Now we are going to do the same thing for **AC CTI Script Layout**.

1. Open up **AC CTI Script Layout**
2. On the left sidebar, click on **Page Layouts**
3. Click on **Page Layout Assignment**
4. On the next page, click on **Edit Assignments**
5. Click on the grey bar at the top of the table to select all rows.

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Edit Page Layout Assignment
AC CTI Flow

Help for this Page ?

The table below shows the page layout assignments for different profiles. Use SHIFT + click or click and drag to select a range of adjacent cells. Use CTRL + click to select multiple cells that are not adjacent. Then choose a new page layout from the drop-down.

Save Cancel

Page Layout To Use: -- Select Page Layout -- 0 Selected 0 Changed

Profiles

Analytics Cloud Integration User
Analytics Cloud Security User
Chatter External User
Chatter Free User
Chatter Moderator User
Contract Manager
Cross Org Data Proxy User
Custom: Marketing Profile

Page Layout

AC CTI Script Layout
AC CTI Script Layout



Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Field Sets

Object Limits

Record Types

Edit Page Layout Assignment
AC CTI Flow

Help for this Page ?

The table below shows the page layout assignments for different profiles. Use SHIFT + click or click and drag to select a range of adjacent cells. Use CTRL + click to select multiple cells that are not adjacent. Then choose a new page layout from the drop-down.

Save Cancel

Page Layout To Use: -- Select Page Layout -- 26 Selected 0 Changed

Profiles

Analytics Cloud Integration User
Analytics Cloud Security User
Chatter External User
Chatter Free User
Chatter Moderator User
Contract Manager
Cross Org Data Proxy User
Custom: Marketing Profile

Page Layout

AC CTI Script Layout
AC CTI Script Layout

6. Open the **Page Layout to Use** dropdown and select **AC CTI Flow Layout**.

7. Click **Save** and go back to **Page Layouts**.

8. Click on the dropdown next to the item labelled **AC CTI Script Layout** and click **Delete**.

9. Confirm **Yes** in the next dialogue where you will be asked "Are you sure?"

10. If you see a screen titled **Deletion Problems**, find and click **Delete**.

**Deletion problems**[Back to Previous Page](#)

The attempted delete was invalid for your session. Please refresh your page and try again.

[Delete](#)

11. You will be asked which layout you want to replace it with. Select **AC CTI Flow Layout** and click **Replace**.



SETUP

Page Layout Delete

AC CTI Script Layout

In order to delete a Page Layout, you must choose another Page Layout to replace it with.

Page Layout to be deleted	AC CTI Script Layout
Replace with Page Layout	<input type="button" value="AC CTI Flow Layout ▾"/>
<input type="button" value="Replace"/> <input type="button" value="Cancel"/>	

12. Go to your **CTI Adapter**.

13. Click on any of the CTI Flows and scroll down to the section labeled **CTI Flow**. You should see something like this:

Invalid Script

Please note that starting from version 4.6, your scripts will need to be migrated to our new CTI Flows.

You can download your current script below



When you are ready to try out the CTI Flow editor, click Continue.

14. Click **Download** and save your script before clicking **Continue**.

15. Use the CTI Block primitives in the editor to re-create your script as a CTI Flow.

16. Refer to the Sample Flows in the Appendix of this manual.

CTI Adapter Installation Troubleshooting and Common Issues

I upgraded my adapter to v5.10, but I cannot see the CCP Config changes

There is a bug with Salesforce that doesn't update a page layout when you upgrade a package. To fix this, go to Setup and search for **Object Manager**. Once you're on the Object Manager page, search for the **AC CTI Adapter** object and click on it. Then go into **Page Layouts** and click on the layout you are using (Typically **AC CTI Adapter Layout – August 2020**). Then, drag and drop the **Audio Device Settings** and **Page Layout Settings** into the desired spot on the page. Finally, hit save.

The screenshot shows the Salesforce Object Manager interface for the 'AC CTI Adapter' object. The 'Page Layouts' tab is active. On the right, the 'AC CTI Adapter Detail' page is displayed. In the 'AC CTI Adapter Detail' section, the 'Phone Type Settings' field is highlighted with a red box. At the bottom of the page, the 'Page Layout Settings' section is also highlighted with a red box. The overall interface is a standard Salesforce page with various buttons and sections.

Error “refused to run the JavaScript URL because it violates the following Content Security Policy directive...”

This is an allowlisting issue, please review the installation and ensure that both URLs are properly allowlisted.

Error “refused to frame” Visualforce page

s.com/feature/5633521622188032.

BeaconLibrary.js:38

► Object

✖ Refused to frame 'https://[REDACTED]amazonconnect.[REDACTED].visual.force.com/' because an ancestor violates the following Content Security Policy directive: "frame-ancestors 'self'" [REDACTED]

► Object

BeaconLibrary.js:38

⚠ DevTools failed to load SourceMap: Could not load content for https://c.la1-c1.cs-ord.salesforceliveagent.com/content/dev/resources/js/scrt.min.js.map: HTTP

This can happen if the customer has checked "Enable clickjack protection" on Salesforce session settings. The solution is to uncheck that.

The screenshot shows the Salesforce Setup interface with the 'Session Settings' tab selected under 'Session Management'. In the 'Clickjack Protection' section, two checkboxes are highlighted with a red box and arrow: 'Enable clickjack protection for non-Setup Salesforce pages' and 'Enable clickjack protection for customer Visualforce pages with standard headers'. A tooltip for the first checkbox states: 'Protect against clickjack attacks and allow framing on whitelisted external domains'.

What are the Disable X Trigger options in the Custom Settings?

The screenshot shows the 'Edit Toolkit for Amazon Connect' page. Under the 'Toolkit for Amazon Connect Information' section, there is a 'Location' header followed by four 'Disable the CCA Case Trigger' checkboxes, all of which are checked. Below these are three more checkboxes: 'Disable the CCA Contact Trigger', 'Disable the Case Contact CCA Trigger', and 'Disable the Task Trigger', also all checked. At the bottom is a 'Url' input field with a placeholder icon.

These are options we provide that allow you to toggle certain functionality in the adapter.

- CCA Case Trigger - This trigger looks for any ContactChannelAnalytics records that could be related to a updated/inserted Case, and creates a relationship between the two records.
- CCA Contact Trigger - This trigger looks for any ContactChannelAnalytics records that could be related to a updated/inserted Contact, and creates a relationship between the two records.
- Case Contact CCA Trigger - This trigger looks for any Case/Contact records that could be related to an updated/inserted ContactChannelAnalytics record, and creates a relationship between the records.
- Task Trigger - This trigger creates a ContactChannel record for any inserted/updated task that with a `CallObject` field that does not currently have a ContactChannel record created before.

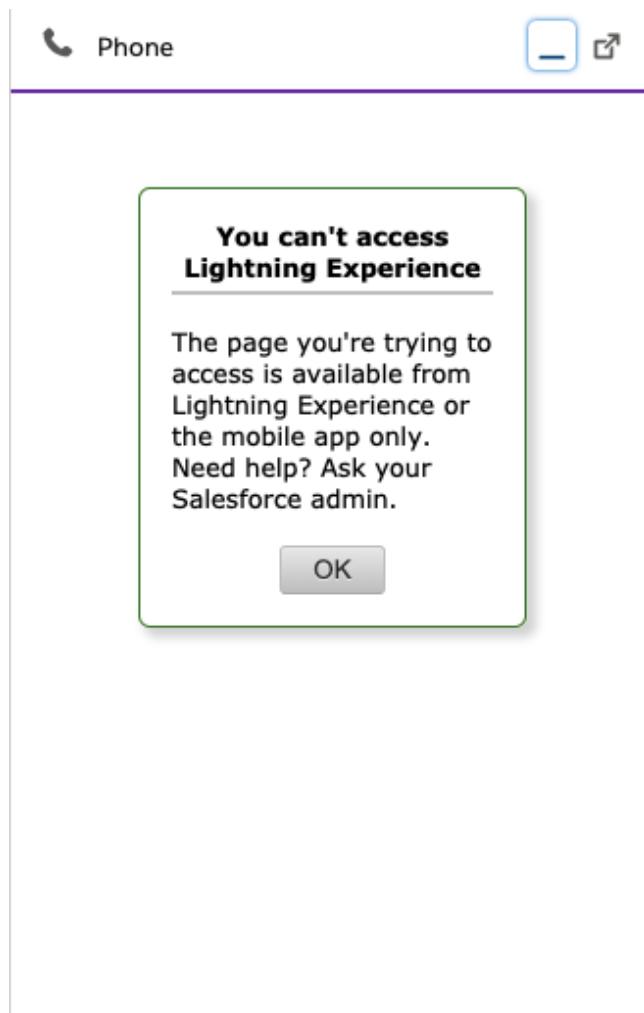
I upgraded my adapter to v5, but I don't see the CTI Flows feature.

See the [Upgrading from an Earlier Version](#) section of the installation guide.

I upgraded my adapter from v3 to v5 and we lost some screenpop functionality.

All screenpop functionality native to v3 now needs to be recreated using CTI Flows. Please review the [CTI Flow Examples](#) for more details, all screenpop functionality from v3 has been recreated.

The CCP doesn't show up in service console and I instead see the following image:



Copy the full url of the lightning adapter visualforce page into the call center.

Certain picklists are missing picklist items.

When upgrading from a version of the package to a higher version of the package in which new picklist items were added to a picklist, those new picklist items won't be installed. This is a [known Salesforce issue](#).

How to remove permissions to Visualforce pages, Apex classes for a desired profile

1. Navigate to **Setup** and search for "Profiles".
2. Select the desired profile.
3. Select either **Visualforce Page Access** or **Apex Class Access**.

The screenshot shows the Salesforce Setup interface. At the top, there's a navigation bar with 'Setup' (selected), 'Home', and 'Object Manager'. A search bar on the left contains the text 'profiles'. On the left sidebar, under the 'Users' section, 'Profiles' is highlighted. In the main content area, there are two sections: 'Apex Class Access' and 'Visualforce Page Access', each with a checkbox labeled 'Permissions to execute [class] classes'.

4. Select **Edit** and remove any desired permissions. All permissions can be removed because permissions are managed through permission sets, not through profiles.

[Edit this page](#)

CTI Adapter Details

The CTI Adapter configuration begins with the adapter details. These fields provide the basic information needed to relate the Adapter to the call center configuration in Salesforce and, ultimately, to the agents and supervisors that will be using the platform.

Details	
CTI Adapter Name	ACLightningAdapter
Amazon Connect Instance	https://sfadAPTERtest.awsapps.com/
Custom Ringtone	
Softphone Popout Enabled	<input checked="" type="checkbox"/>
Medialess	<input type="checkbox"/>
Audio Device Settings	<input type="checkbox"/>
Owner	
Amazon Connect Instance Region	us-east-1
Call Center Definition Name	ACLightningAdapter
Debug Level	Off
Presence Sync Enabled	<input checked="" type="checkbox"/>
Phone Type Settings	<input checked="" type="checkbox"/>
Single SignOn (SSO)	

Update the CTI Adapter Details

1. **CTI Adapter Name:** provide a unique name for this CTI adapter definition
2. **Amazon Connect Instance:** This was configured in a previous section. This is the instance url for your Amazon Connect instance.

- 3. Amazon Connect Instance Region:** This is the code for the region that you have deployed your Amazon Connect instance to. This is required for the Amazon Connect chat APIs to work correctly. If you do not use the chat feature of Amazon Connect, this field is not necessary
- 4. Custom Ringtone:** This allows for overriding the built-in ringtone with any browser-supported audio file accessible by the user.
- 5. Call Center Definition Name:** This was configured in a previous section. This is the internal name of the Call Center configured in Salesforce setup. This value links the CTI Adapter to the Call Center, and ultimately to the agents.
- 6. Softphone Popout Enabled:** Salesforce supports softphone pop out in Console and Lightning Experience modes. When the softphone is popped out, it opens in a new browser window external to the Salesforce UI. This is helpful in use cases where the call controls are regularly needed but the agent also needs full access to the entire console.
- 7. Debug Level:** For future use
- 8. Medialess:** Amazon Connect supports running in VDI environments, however best practice is to send the actual audio stream via a separate CCP. Selecting the medialess option will configure the Salesforce CCP to run in medialess mode, which provides the data that Salesforce needs for screenpop while the audio is streamed to a local CCP.
- 9. Presence Sync Enabled:** This setting allows the adapter to use the presence rules to sync state from Amazon Connect to Salesforce Omni-Channel.
- 10. Audio Device Settings** Turning this setting on allows the Agent to setup a custom audio device for their speaker, microphone and ringer in the adapter (Speaker and Ringer settings not available on Firefox). You may have to add this field to the layout manually. [See troubleshooting](#).
- 11. Phone Type Settings** Turning this setting on allows the Agent to change their Phone Type in the CCP. You may have to add this field to the layout manually. [See troubleshooting](#).

Single Sign On Settings

The Amazon Connect CTI Adapter supports single sign on(SSO) via SAML integration. This allows customers that use a SAML provider for authentication into Amazon Connect. You will need the SSO URL for your provider and the Relay State settings for your Amazon Connect instance.

For general information on configuring SAML for Amazon Connect, please refer to: [Amazon Connect Administrator Guide: Configure SAML for Identity Management in Amazon Connect](#).

If you wish to use **Salesforce** as your identity provider for Single Sign On, please follow the setup instructions in [Appendix B - Configuring Salesforce as Your Identity Provider](#).

For information about configuring specific SAML providers to work with Amazon Connect:

- [AWS Single Sign-On](#)
- [Okta](#)

Once you have your SAML integration working with Amazon Connect, you will need to create the Amazon Connect Single Sign On URL and validate that it works correctly, then configure the Lightning CTI adapter and login the agent.

Note: With the new Amazon Connect instance urls (*.my.connect.aws) you must put the full URL into the **Amazon Connect Instance** field in the AC CTI Adapter record for SSO to work. Ex: using **https://myinstance.my.connect.aws** instead of **my instance**.

Identify the SSO URL components

In order to authenticate with Amazon Connect, you need your IdP login URL from your SAML provider and a relay state URL that will redirect the authenticated user to your Amazon Connect instance.

Your IdP Login URL will resemble the following (Salesforce is shown):

```
https://m*****run-dev-ed.my.salesforce.com/idp/login?app=0sp0N00000Caid
```

The 'RelayState' will be in the following format:

```
https://console.aws.amazon.com/connect/federate/[object Object]?
destination=%2Fconnect%2Fccp
```

Please note that "console.aws.amazon.com" refers to US-East-1 region (N. Virginia). If your Amazon Connect instance is in a different region, please use the region Console URL. For example:

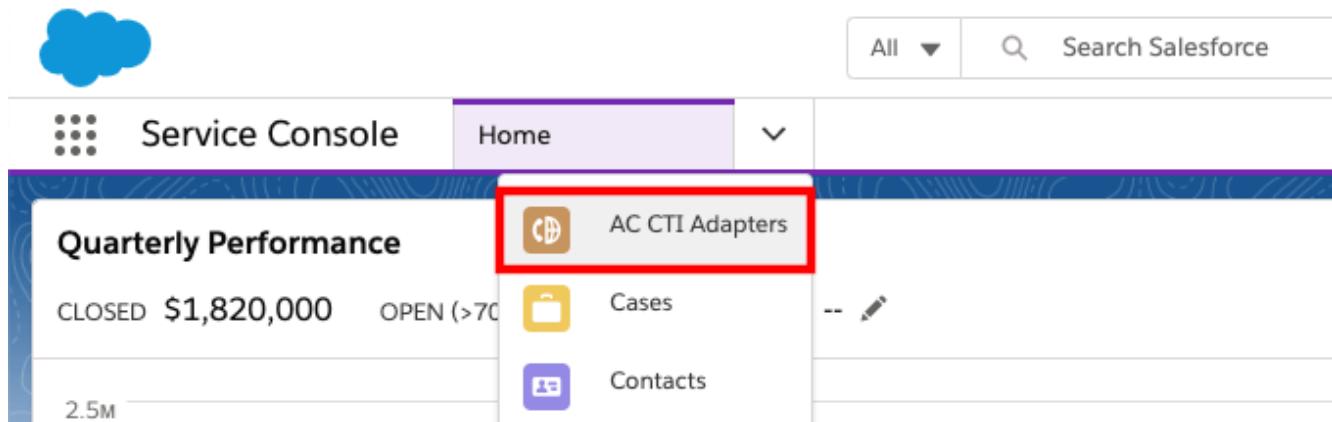
```
https://us-west-2.console.aws.amazon.com/connect/federate/[object Object]?
destination=%2Fconnect%2Fccp
```

Configure the CTI Lightning Adapter in Salesforce

Now we are ready to complete the last step in the configuration process: Adding the SSO settings to the Lightning Adapter. This will configure the adapter to authenticate via SSO and redirect to the Amazon Connect Contact Control Panel once authentication completes.

1. Log in into your Salesforce org and go to the **Service Console**

2. Expand the **navigation menu** by selecting the down arrow and choose **AC CTI Adapters**.



3. Select **ACLightningAdapter**

4. Scroll down to the Single SignOn (SSO) section and choose the pencil icon of either field to edit

▼ Single SignOn (SSO)

SSO Url

SSO Relay State



5. For the SSO Url, paste your IdP login URL up to the first question mark (if one exists). A couple of examples are provided: Salesforce:

`https://m*****run-dev-ed.my.salesforce.com/idp/login?app=0sp0N00000Caid`

Microsoft ADFS:

`https://sts.yourcorp.com/adfs/ls/idpinitiatedsignon.aspx`

6. Paste this portion of the URL into the **SSO Url** field

▼ Single SignOn (SSO)

SSO Url

`https://sample-dev-ed.my.salesforce.com/idp/login`

7. For the SSO Relay State: IF you had a question mark in your login URL, paste everything AFTER the question mark into the SSO Relay state field, then add &RelayState= to the end, and append your relay state URL. For example:

`app=0sp0N00000Caid&RelayState=https://console.aws.amazon.com/connect/federalObject]?destination=%2Fconnect%2Fccp`

If you did not have a Question Mark, then enter &RelayState= into the SSO Relay State field and append your relay statue URL to it. For example:

```
&RelayState=https://console.aws.amazon.com/connect/federate/[object  
Object]?destination=%2Fconnect%2Fccp
```

8. Example of a completed SSO section (Salesforce is shown)

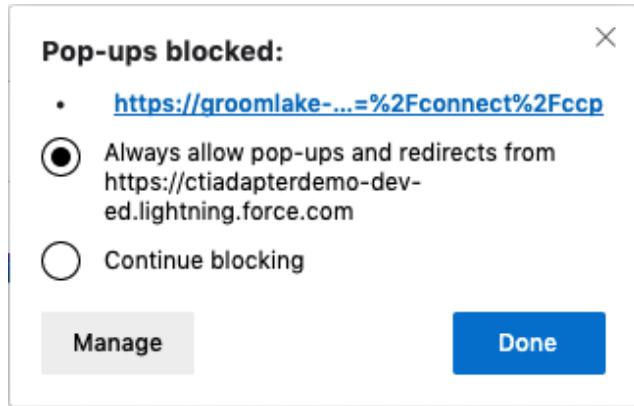
✓ Single SignOn (SSO)

The screenshot shows the 'Single SignOn (SSO)' configuration section in Salesforce. It includes two input fields: 'SSO Url' containing 'https://sample-dev-ed.my.salesforce.com/idp/login' and 'SSO Relay State' containing 'app=0sp6g000000XZyd&RelayState=https://us-west-2.console.aws.amazon.com/connect/federate/YOUR-INSTANCE-ID?
destination=%2Fconnect%2Fccp'. The 'SSO Relay State' field is highlighted with a blue border.

9. Choose **Save**

10. **Refresh** your browser to make the changes take effect

- NOTE:** If you receive a blocked popup warning, select the warning and change the setting to always allow popups from your Salesforce org, then refresh the browser again



- After a few seconds, a new window should pop up for a moment. This window is performing the authentication and setting your session cookie. Once it does this, it will close automatically.



Change status ▾



Initializing...

12. Once the authentication window closes, select the **phone icon** in the console toolbar to open the CCP
Note: You may also receive popups to allow notifications and microphone access. Please accept both.
13. You should now see the authenticated and logged in CCP

The screenshot shows a web browser window with the following details:

- Address Bar:** https://ctiadapterdemo-dev-ed.i...
- Tab Bar:** AdapterTest, Burner Accounts -...
- Service Console Header:** Service Console, AC CTI Adapters
- Recently Viewed Section:** Shows 1 item updated 4 minutes ago, with a search bar below it.
- Main Content Area:** Displays a welcome message "Welcome Jason" and two blue speech bubble icons representing quick connects.
- Bottom Navigation:** Buttons for "Amazon Connect" (selected), "History", and "Number pad".

14. SSO Configuration is complete

Edit this page

CTI Attributes

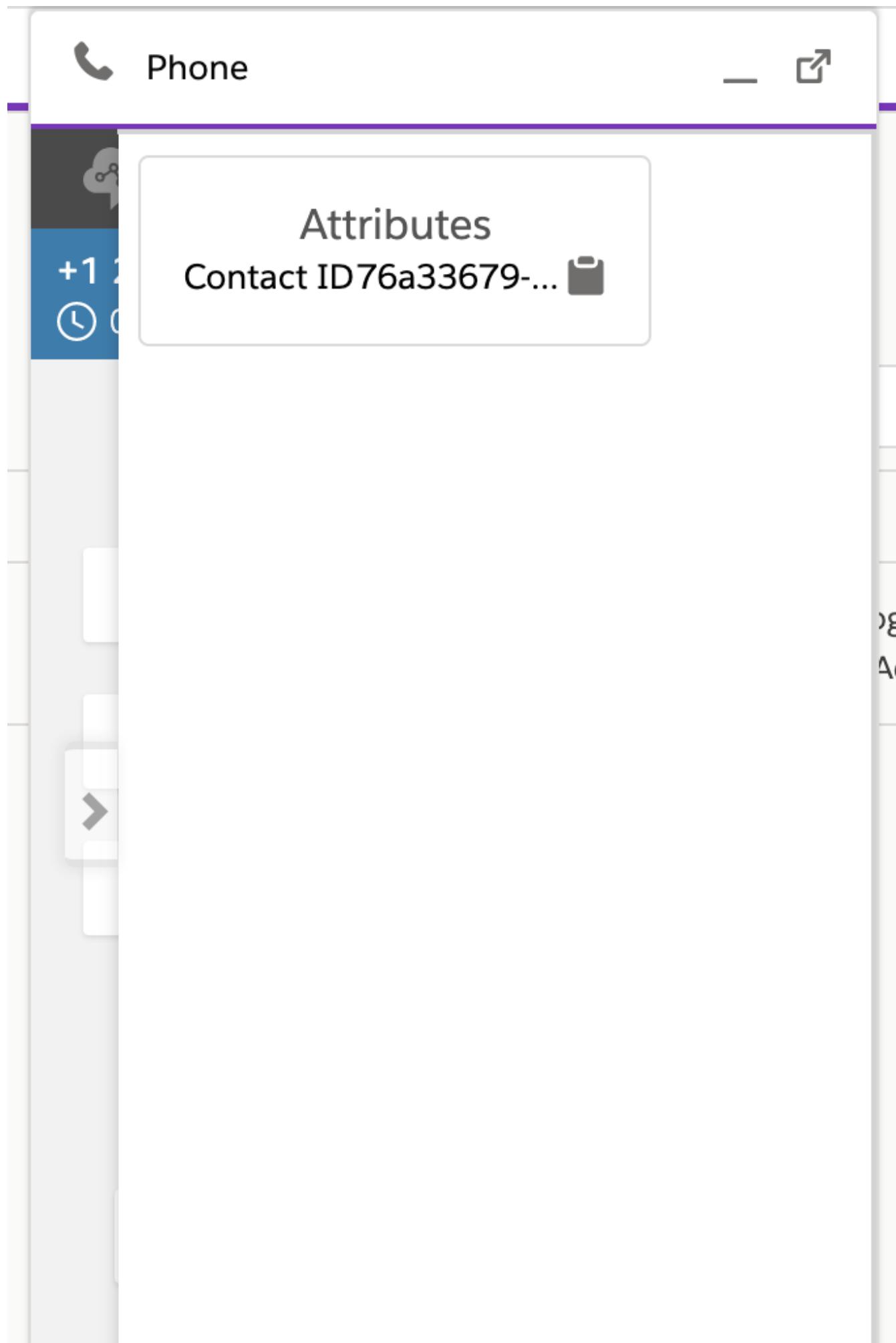
CTI Attributes provide the ability to reference and display contact attribute data within the Amazon Connect Contact Control Panel (CCP). This allows for easy access to data or URLs that may be necessary for agents to perform tasks external to Salesforce. Adding attributes does not import data directly into Salesforce. Instead, it is simply available in the CCP for the life of the contact.

Attribute Properties

When configuring CTI attributes, you will need to complete the configuration with the following information:

- **CTI Attribute Name:** the user-friendly name that will identify this attribute configuration. This is not the name or key of the attribute itself.
- **Label:** will be displayed in the CCP as the label for the attribute value.
- **Display:** indicates how this attribute should be displayed. Options are:
 - --None--: this attribute will not be displayed, however it will be available for use. Typically, this is used to define attributes that will be used in URLs.
 - Key-Value: the attribute label and value will both be displayed as a key-value pair
 - Key: only the label is displayed. This can be used to create sections in the attribute list. For example, you could have an "Address" label followed by individual attributes for street, city, state, country, postal code, etc
 - Value: only the value is displayed. This can be used when displaying several values under one section or when displaying a URL that needs no label.
- **Type:** indicates if this is a text or URL attribute
- **Style:** allows you to specify a CSS style rule for the display of this attribute. The style will apply to both the label and the value.
- **Format:** the format allows you to define which contact attributes will be used in the value of this CTI attribute. Contact attributes are referenced by their key name enclosed in double curly braces. For example, an Amazon Connect contact attribute of accountId would be referenced as `accountId`.
- **Active (checkbox):** indicates if this CTI attribute is active
- **Default Value:** value to be displayed if the contact attribute referenced is not found

Once you set the CTI attributes, you access them by choosing the appropriate icon during a connected contact

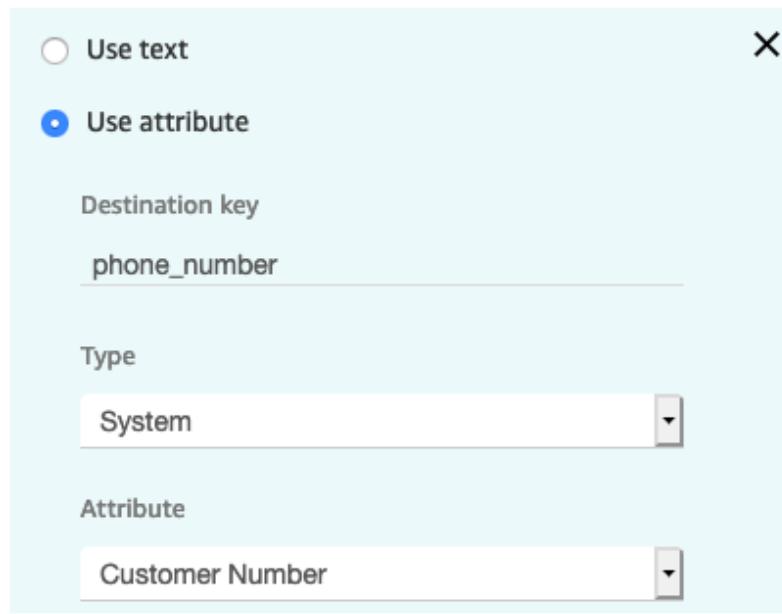


CTI Attributes Example Walkthrough

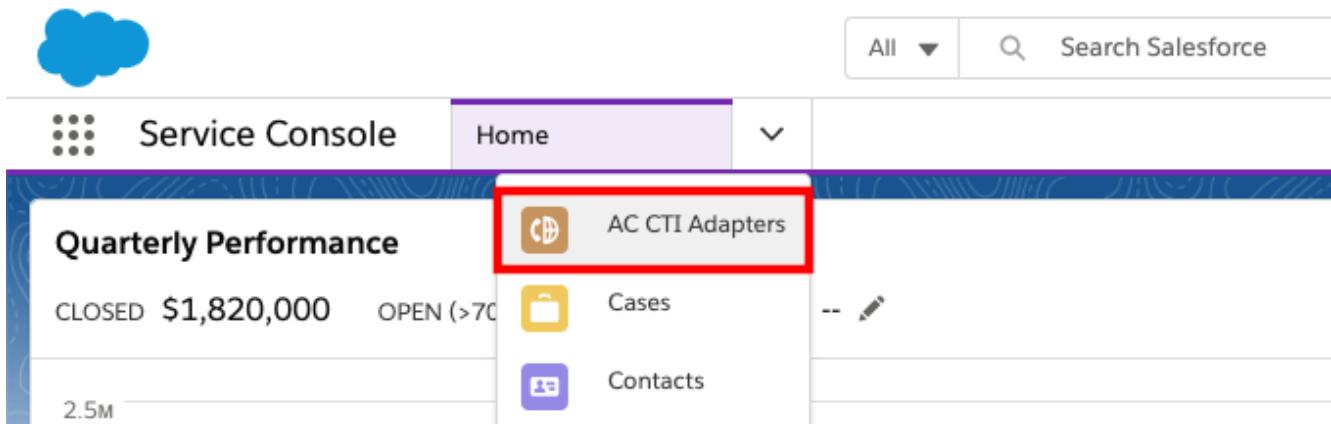
Since there are endless use cases for CTI attributes, this guide will walk through a couple examples that show you how both text and hyperlink based attributes are configured, presented, and used. These examples are not intended to remain in your configuration and are instead designed to provide you with the experience of configuring a functional attribute.

Adding a Text-based CTI Attribute

In this example, we will walk through creating a new CTI Attribute based on a contact attribute named "phone_number" and add it to the CCP. In our scenario, the contact flow has set this attribute using input from the customer to indicate their phone number of record. In order for this example to work, your contact flow must also set a contact attribute named "phone_number"



1. Log in into your Salesforce org and go to the **Service Console**
2. Expand the **navigation menu** by selecting the down arrow and choose **AC CTI Adapters**.



3. Select **ACLightningAdapter**

4. Scroll down to the **Attributes** section and select New

Attributes (0)
0 items · Sorted by CTI Attribute Name · Updated a few seconds ago

New

5. Provide a **CTI Attribute Name** value, for example: customer_phone

6. Provide the **Label** name, for example: Callback Phone

7. Select the **Display** option, in this case: Key-Value

8. Select Text as the **Type**

9. For **Style**, enter the following: color: red

10. In the **Format** field, enter `phone_number` to reference the incoming contact attribute

11. Set **Default Value** to unk

12. Choose Save

CTI Adapter

ACLightningAdapter

* CTI Attribute Name

customer_phone

* Label

Callback Phone

* Display

Key-Value

* Type

Text

Style

color: red

* Format

{phone_number}

Active



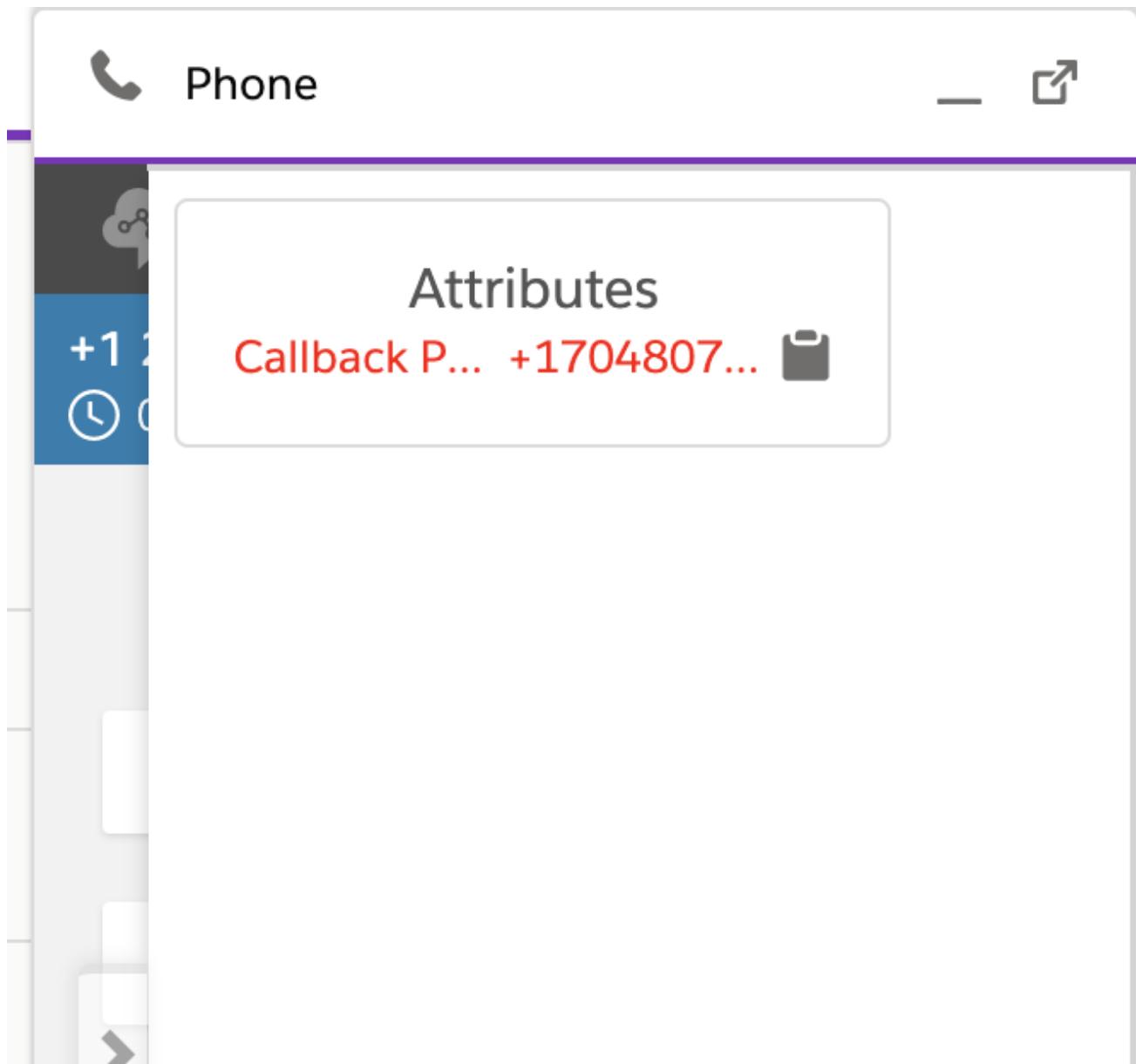
Default Value

unk

13. Refresh your browser

14. Place a new call into your Amazon Connect instance and accept the call as an agent

15. Once the call is connected, select the text attribute icon to expand the CTI Attributes



16. Note the Style formatting. Also note that you can quickly copy the content of the attribute by selecting the clipboard icon.

17. Disconnect the contact.

Adding a Hyperlink-based CTI Attribute

In this example, we will walk through creating a new hyperlink CTI Attribute that incorporates a contact attribute named "postal_code" and add it to the CCP. In our scenario, the contact flow has set this attribute using a data query into Salesforce. In order for this example to work, your contact flow must also set a contact attribute named "postal_code"

Use text

Use attribute

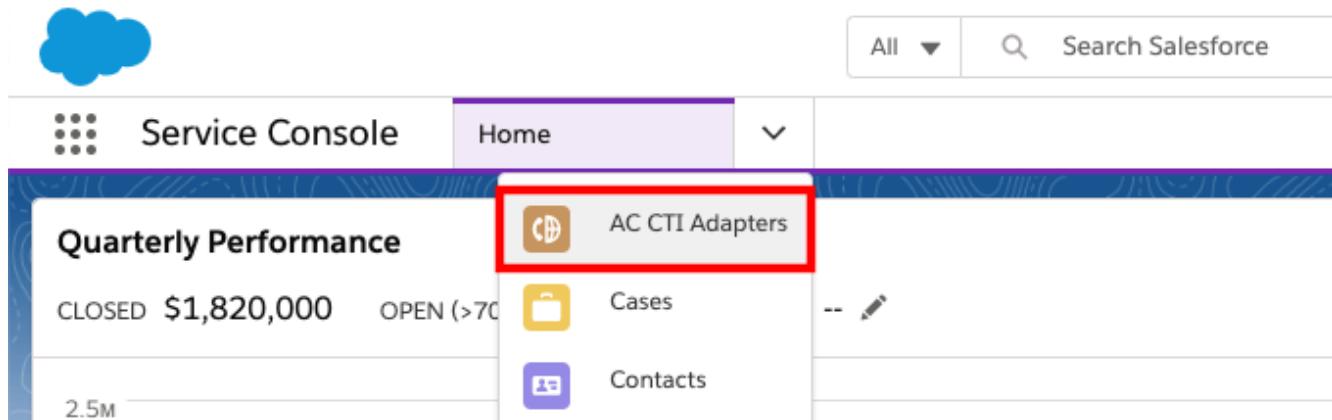
Destination key
postal_code

Type
External

Attribute
postCode

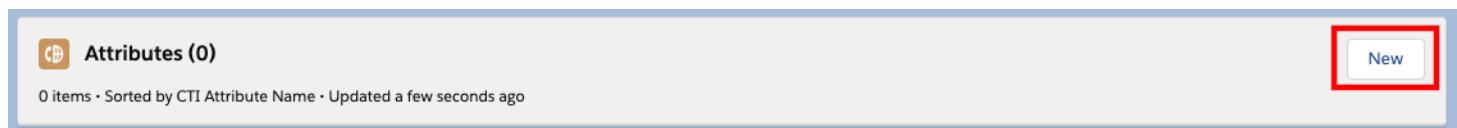
1. Log in into your Salesforce org and go to the **Service Console**

2. Expand the **navigation menu** by selecting the down arrow and choose **AC CTI Adapters**.



3. Select **ACLightningAdapter**

4. Scroll down to the **Attributes** section and select New



5. Provide a **CTI Attribute Name** value, for example: postal_code

6. Provide the **Label** name, for example: MapIt

7. Select the **Display** option, in this case: Key-Value

8. Select Hyperlink as the **Type**

9. Leave **Style** blank

10. In the **Format** field, enter

[https://www.google.com/maps/search/\[object Object\]](https://www.google.com/maps/search/[object Object])

to append the incoming contact attribute to the URL

11. Set **Default Value** to unk

12. Choose Save

Cross-origin resource sharing (CORS)

The CORS configuration, written in JSON, defines a way for client web applications that are loaded in one domain to interact with resources in a different domain. [Learn more](#)

[Edit](#) [Copy](#)

```
[  
  {  
    "AllowedHeaders": [  
      "Access-Control-Allow-Origin"  
    ],  
    "AllowedMethods": [  
      "GET"  
    ],  
    "AllowedOrigins": [  
      "https://[REDACTED].visualforce.com",  
      "https://[REDACTED].lightning.force.com"  
    ],  
    "ExposeHeaders": []  
  }  
]
```

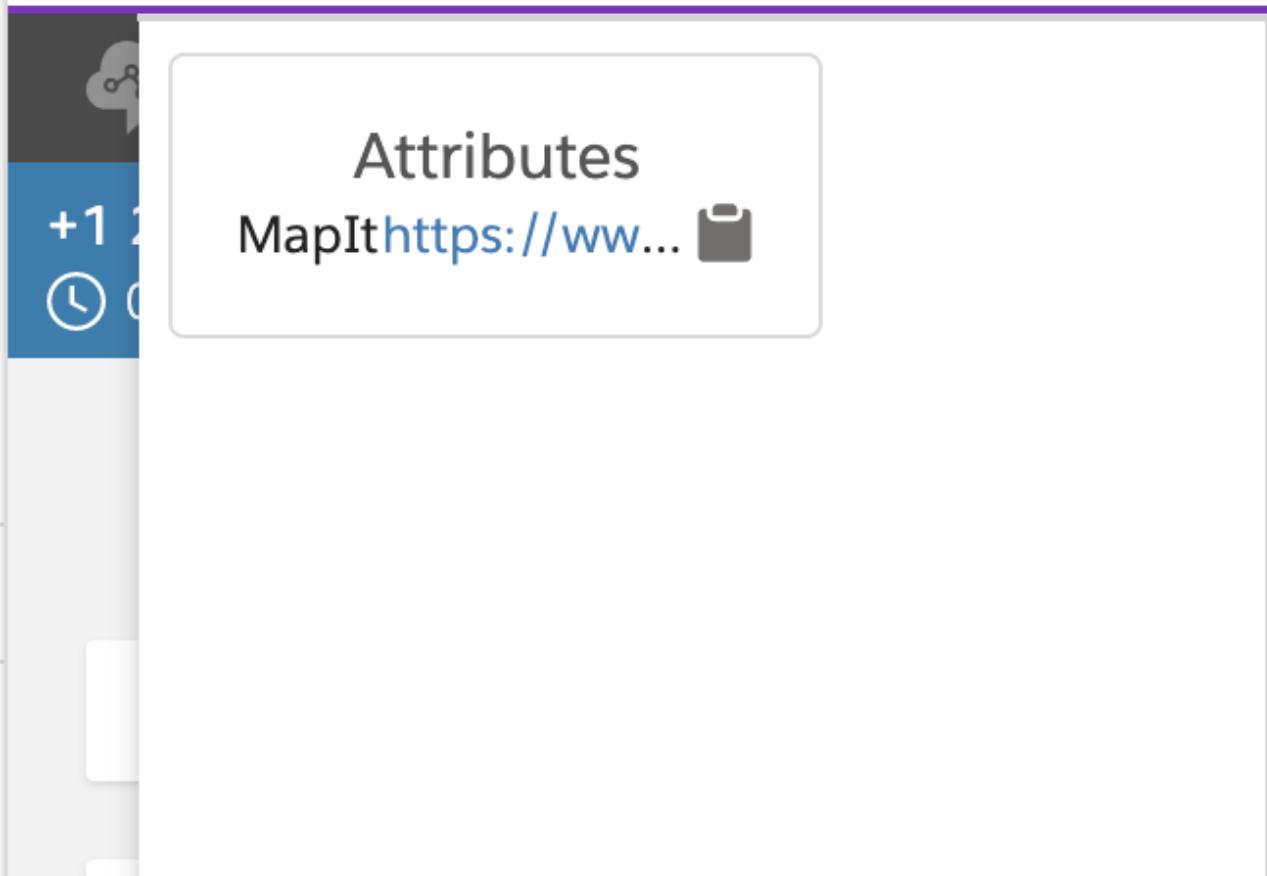
13. Refresh your browser

14. Place a new call into your Amazon Connect instance and accept the call as an agent

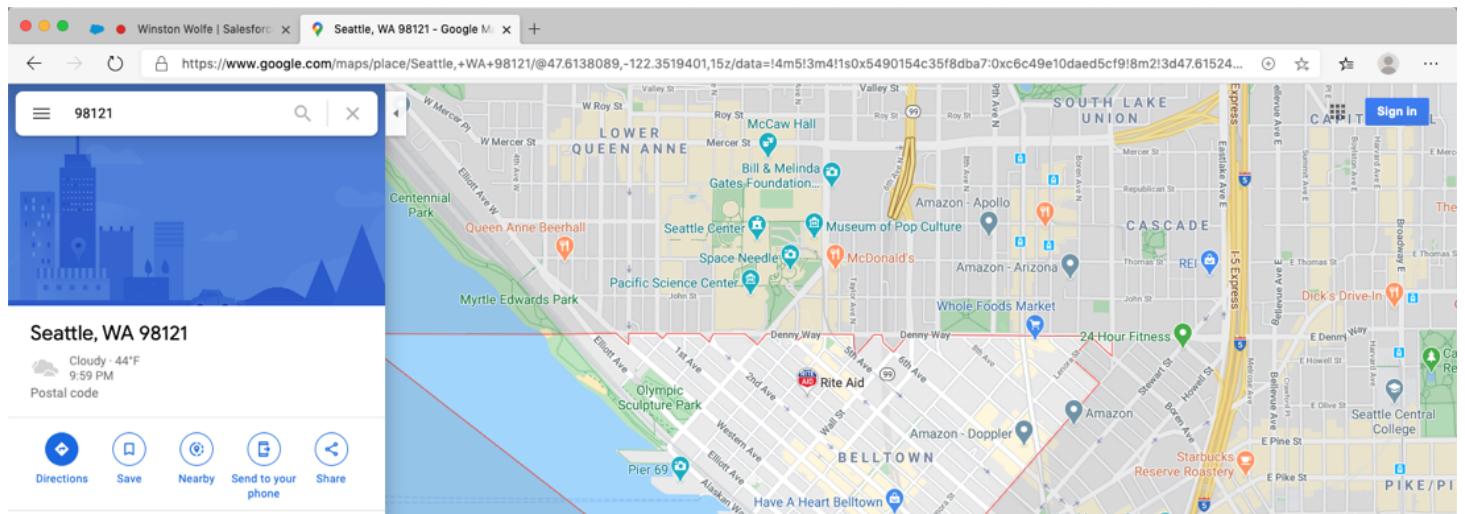
15. Once the call is connected, select the hyperlink attribute icon to expand the CTI Attributes



Phone



16. Select the URL and observe the page load



17. Disconnect the contact.

CTI Attribute Additional Features

Enabling CTI Attribute Additional Features

The additional CTI Attribute features allow you to further customize CTI Attributes.

1. In Service Console, navigate to your CTI Adapter

2. Scroll down to the features section of your AC CTI Adapter and select **new**

Attributes Scripts Presence Sync Rules **Features**

Features (0)

New

3. Set the AC Feature Name to **FEATURE_CTI_ATTRIBUTES**

4. Fill the value text box to contain the following settings:

- ShowAttributesIfEmpty** (Boolean, default true): show attributes text box when contact has no attributes
- ShowAllAttributes** (Boolean, default false): show all attributes, including attributes with no values

* AC Feature Name

FEATURE_CTI_ATTRIBUTES

Value

```
ShowAttributesIfEmpty: true  
ShowAllAttributes: true
```

Active



CTI Adapter

ACLightningAdapter

5. Select Save

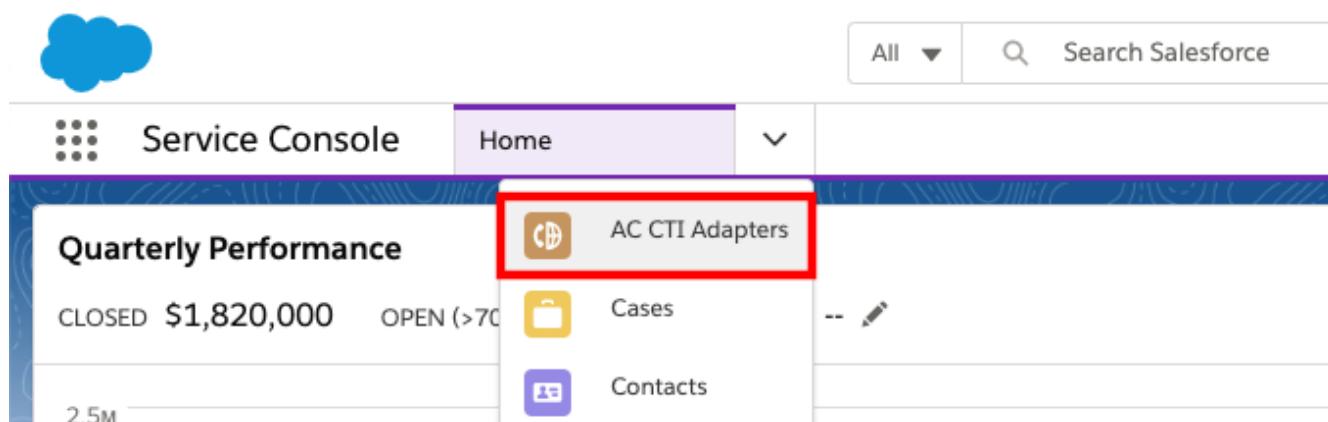
 [Edit this page](#)

CTI Flow

The CTI Adapter provides a mechanism to customize the behavior of the adapter based on your business needs without needing to edit the underlying Visualforce pages, which could negatively impact overall adapter function. This is accomplished through CTI Flows.

A CTI Flow consists of "actions" that represent an API call to parts of Salesforce or Amazon Connect API. Like a JavaScript function, each action can take inputs and provide outputs, or return values, that you can use from other actions.

To create a new CTI Flow, log in into your Salesforce org and go to the **Service Console**. Expand the **navigation menu** by selecting the down arrow and choose **AC CTI Adapters**.



Select **ACLightningAdapter**. Scroll down to the **CTI Flows** section and select New to create a new CTI Script.



Provide a user-friendly name in the **CTI Flow Name** field. And click **Save**.

New CTI Script

Information

CTI Script Name

* CTI Adapter



ACLightningAdapter



Active



Debugger Breakpoint



* Source

* Event



Description

Script to set agent to Offline when first logging in.

This will take you to a form where you can fill in name and adapter of the CTI Flow. There are a couple of fields that you may be unfamiliar with: **Source** and **Event**.

Let's look at **Source** field first.

* Source

Amazon Connect Voice Contact



--None--

Initialization

Amazon Connect Agent

✓ Amazon Connect Voice Contact

Amazon Connect Queue Callback Contact

Amazon Connect Chat Contact

Salesforce Agent

You can think of Source as the "origin" of the CTI Flow. There are currently 7 sources: Initialization, an Agent on Connect, Voice Contact on Connect, Queue Callback Contact on Connect, Chat on Connect, Salesforce Agent or Salesforce UI.

Each source comes with a set of events that you can hook into, i.e. your CTI Flow will be executed when one of these events fire. Typically, you will have only one flow for a combination of a source and an event. (You can find out more about sources and events in [Appendix C - CTI Flow Sources and Events](#).)

For the purposes of this example, we selected **Amazon Connect Voice Contact** source and **onConnecting** event. Now click Save and on the next page scroll down till you find the **CTI Flow** section.

Details

▼ Information

CTI Flow Name

Create Screenpop

Source

Amazon Connect Voice Contact

Description

Created By



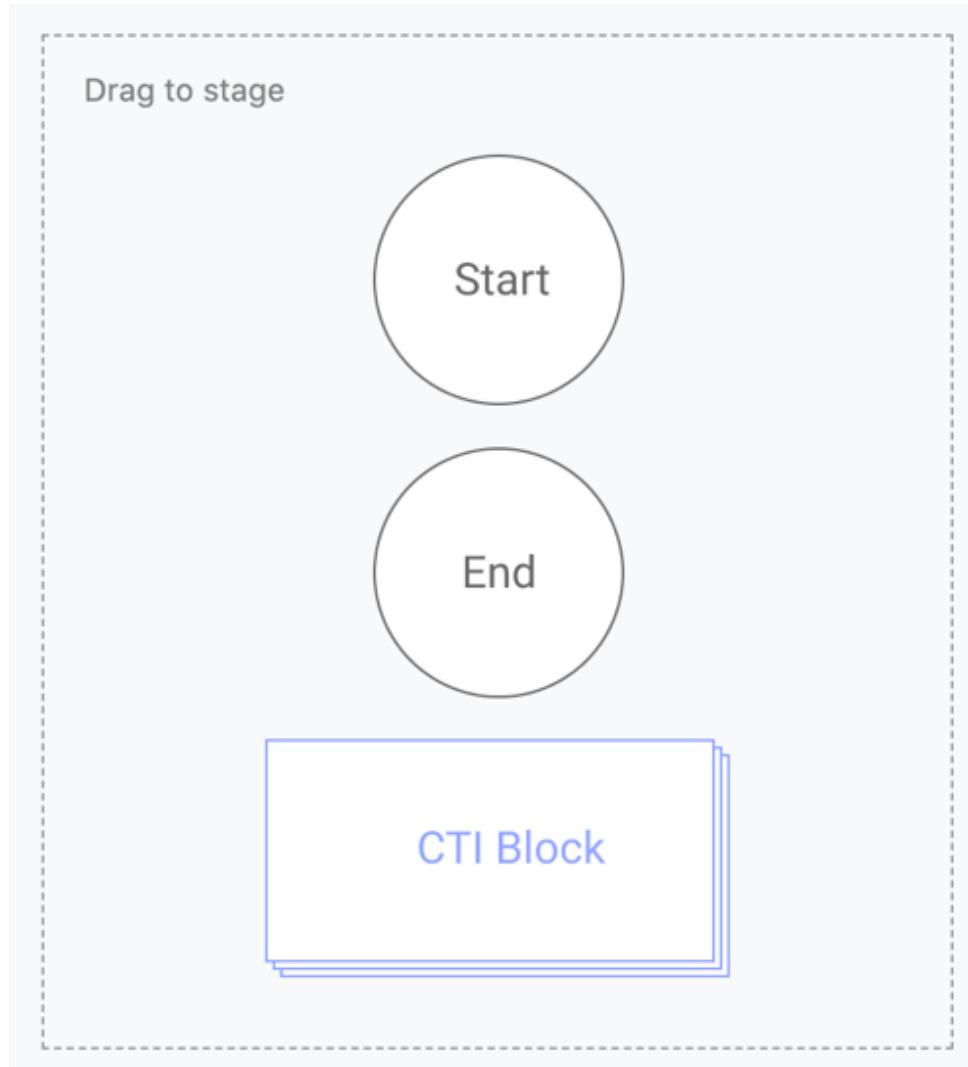
Amazon Connect, 7/23/2020 9:10 AM

▼ CTI Flow

Main Menu

Save

Let's build a CTI Flow that opens a screenpop in Salesforce when a voice call comes.



You can start using by dragging the item called **CTI Block** from the sidebar in the Main Menu over the stage, which is marked by a grid pattern.

When you drop the block, you will see a modal titled **Explorer**. This modal contains a list of actions you can choose from.

Explorer

The screenshot shows the 'Search' sidebar on the left with a search bar containing 'phone'. Below it are 'Categories' and 'Tags' filters. A message indicates 'Showing 13 actions'. On the right, there are four search results:

- Format Phone Number**: Formats a phone number for a country code. What it calls: ac.Utils.Common.formatPhoneNumber(...). Action button: Select.
- Format Phone Number (E164)**: Formats a phone number for a country code in E164 format. What it calls: ac.Utils.Common.formatPhoneNumberE164(...). Action button: Select.
- Get Softphone Layout**: The query to get softphone layout. What it calls: ac.Utils.Salesforce.getSoftphoneLayout(). Action button: Select.
- Show Softphone Panel**: The command to show softphone panel. What it calls: ac.Utils.Salesforce.showSoftphonePanel(). Action button: Select.

In the **Search** field, search for **Phone** and Select the action called **Get Customer Phone Number** from the results on the right.

The screenshot shows the details for the 'Get Customer Phone Number' action. It includes:

- Change type ▾**
- Get Customer Phone Number** (Title)
- ID: uid-0**
- Remove** and **About this action** buttons.
- Return Values** section:
 - This action has a return value. It returns the following fields. You may use these fields in the input fields of connected actions.
 - phone**: Phone number of the caller.
 - country**: Country of the phone number.

To the right, a blue-bordered box labeled 'Get Customer Phone Number' is being dragged over a grid stage. A red circle is at the top-left corner and a green circle is at the bottom-right corner of the box.

You should now see a block on the stage for the action you selected, and the sidebar will display some information about this action, including its return value.

(Note: If you'd like to change the label of the action, doubleclick on it. This will open a text editor. Make your changes and when you're finished click outside the node to save your label.)

Some actions can be configured using input fields to provide arguments to function calls, as well. This action does not have any input fields, and returns two values ---- **phone** and **country**.

Now let's drag another CTI Block over the stage and find an action called **Search and Screenpop**.

Change type ▾

Search And Screenpop

ID: uid-9

 Remove

 About this action

Arguments

searchParams 

Enter a value

queryParams 

Enter a value

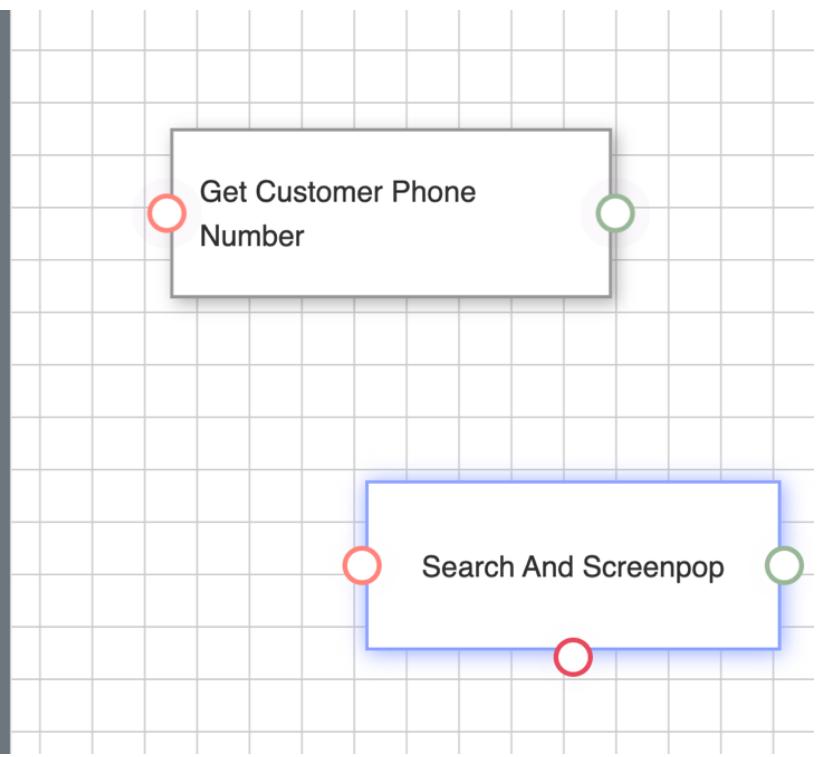
defaultFieldValues 

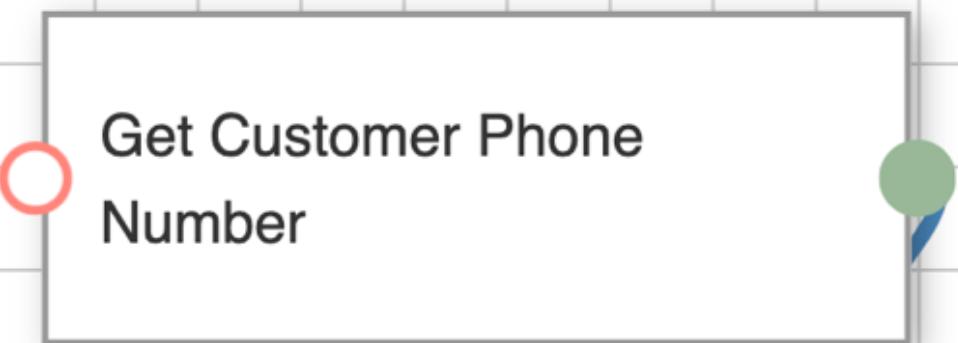
Add a field

deferred 

Connect these blocks by clicking the green socket (green means "done") on **Get Customer Phone Number**, which will display a blue line that tracks your mouse cursor around the stage.

Now, click on the pink socket, i.e. the **input** socket, which is to the left of the **Search and Screenpop** block. If the connection is successful, the sockets will turn into a solid color and the blue line will connect them. (There are some restrictions on which sockets you can connect together. For example, you cannot connect output of an action to its own input socket or connect two inputs.) If you are not happy with this connection, you can hover over it and double click to remove.





Now we'd like to get the phone number of the customer and use it in **Search and Screenpop**. Here is a tip: if two actions are connected, you can use the return values of the first action in the input fields of the next action. (You can even use the return values of actions connected to the last action, and the ones connected to that, and so on.)

This action has only two options, and we want to use the one called "phone" for this field.

Change type ▾

Search And Screenpop

ID: uid-2

Remove

About this action

Arguments

searchParams

GET CUSTOMER PHONE NUMBER (UID-0)

phone

country

Add a field

deferred

callType

Search And Screenpop

ID: uid-9

Remove

About this action

Arguments

searchParams

ValueOf

queryParams

Add New Value

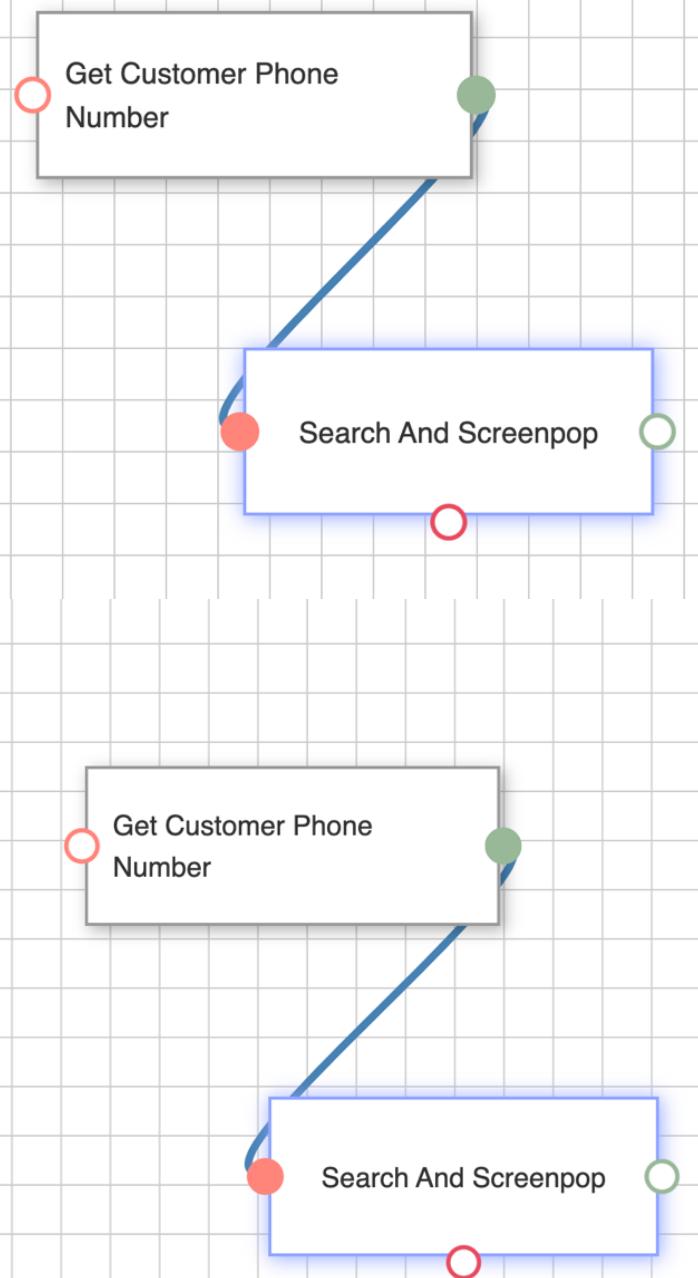
Add a field

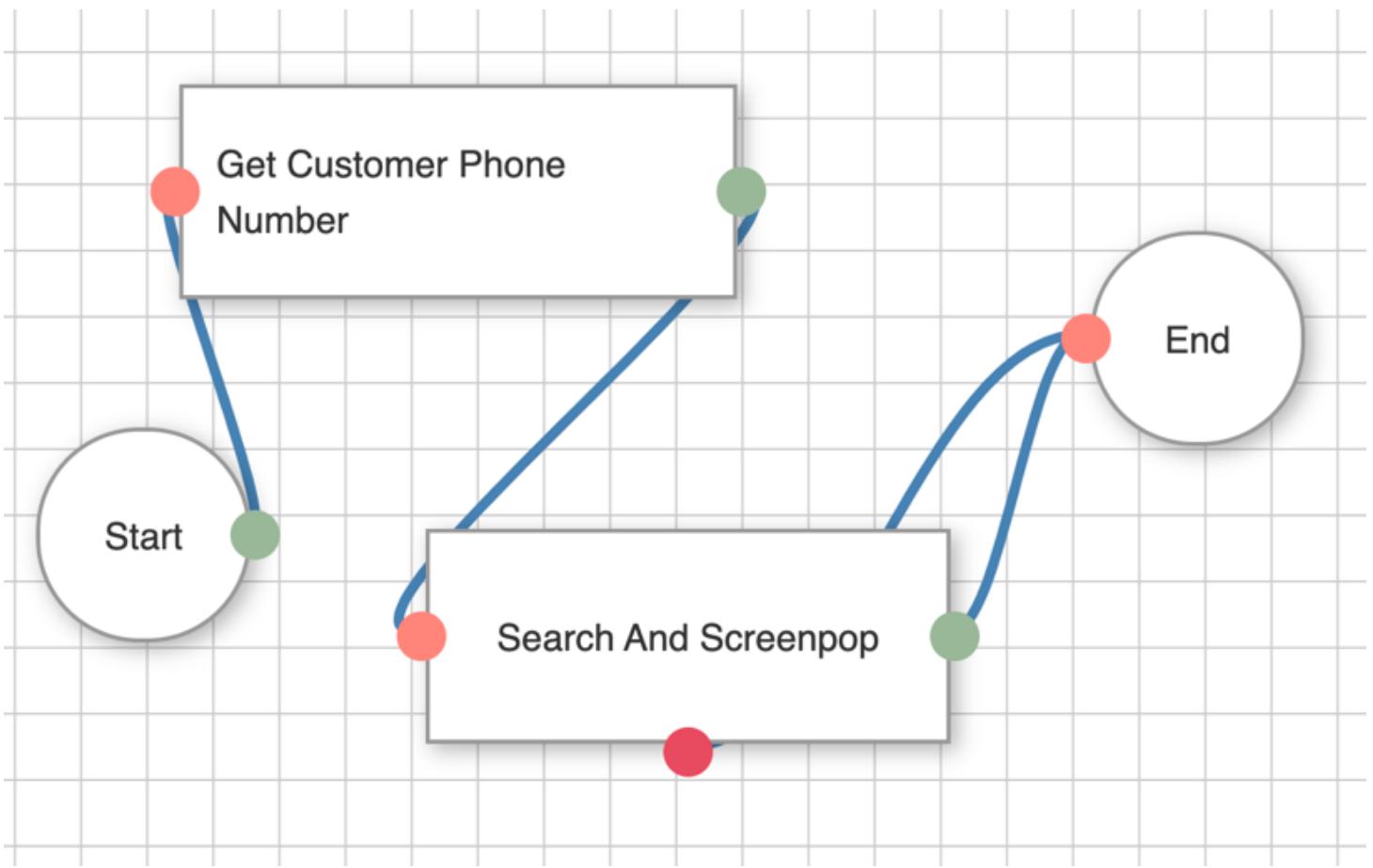
deferred

callType

If you want to enter a custom input value, you can type that, and select **Add New Value** from the dropdown.

And make sure to set **callType** to "inbound." Finally, add the **Start** and **End** nodes and connect everything together.





When you're finished, click **Save** in the sidebar. That's it. You created your first CTI Flow.

To test your flow, go to your **Service Console**, and make a call from a number that is in the profile of a Contact. As the call is displayed in your CCP dashboard, Salesforce will pop open the contact of the caller in a separate tab.

 [Edit this page](#)

Presence Sync Rules

The CTI Adapter supports bidirectional synchronization of agent state between Amazon Connect and Salesforce Omnichannel. This allows you to tightly control agent availability for different contact/media types dependent on current agent state. This section of the guide assumes that you have Omnichannel configured appropriately. If you do not and wish to test this function, please refer to the section [Configure Salesforce Omnichannel for Testing](#).

NOTE: In order for Presence Sync to work, the CTI Adapter must be configured to allow it. See [CTI Adapter Details](#) for more information.

Presence Sync Rules are evaluated based on specific events. The available events are:

- **Connect Agent State Change:** The Connect agent's state has changed.
- **Salesforce Agent State Change:** The Salesforce agent's state has changed.

- **Salesforce Agent Logout:** The Salesforce agent has logged out.
- **Salesforce Work Accepted:** The Salesforce agent has accepted work.
- **Salesforce Workload Changed:** The Salesforce agent's workload has changed.

Once the event is triggered, the CTI adapter will evaluate the provided criteria. The criteria is established by comparing Operand A, using standard comparator options, against Operand B. Possible options for Operand A and B are:

- **Connect Agent New State:** The Connect agent's new state value
- **Connect Agent Old State:** The Connect agent's old (previous) state value
- **Salesforce Agent New State:** The Salesforce agent's new state value
- **Salesforce Service Channel:** The service channel upon which the Salesforce agent has accepted work
- **Salesforce Previous Workload:** The Salesforce agent's previous workload
- **Salesforce Previous Workload Pct:** The Salesforce agent's previous workload expressed as a percent of configured capacity
- **Salesforce New Workload:** The Salesforce agent's new workload
- **Salesforce New Workload Pct:** The Salesforce agent's new workload expressed as a percent of configured capacity
- **Salesforce Configured Capacity:** The Salesforce agent's configured capacity
- **Static Value:** The user may provide a value. For example, a custom agent state name or other alphanumeric value. When Static Value is selected a "Value" field becomes visible to accept the users static value input.

Available comparators are:

- **Equal to:** Are Operand A and Operand B equal
- **Not equal to:** Are Operand A and Operand B not equal
- **Greater than:** Is Operand A greater than Operand B
- **Greater than or equal to:** Is Operand A greater than or equal to Operand B
- **Less than:** Is Operand A less than Operand B

- **Less than or equal to:** Is Operand A less than or equal to Operand B

Configuring Statuses

Presence Sync Rules require statuses in both Amazon Connect and Salesforce. In this example, we will add two additional statuses to each side of the configuration and prepare rules that sync both clients to the same state regardless of which agent sets the status. Essentially, you will configure the status sync similar to the following example:

When a sets status to b	Set x to y
Amazon Connect sets status to Available	Omnichannel to Available
Omnichannel sets status to Available	Amazon Connect to Available
Amazon Connect sets status to Working -- Phone	Omnichannel to Working -- Phone
Omnichannel sets status to Working -- Media	Amazon Connect to Working - Media

Amazon Connect System Statuses

The following Amazon Connect CCP statuses are system statuses that can be used in presence sync. Please note however that these statuses are restricted and you cannot set the Amazon Connect status to the below.

- Busy - agent is in a call
- Pending - agent is receiving a request for a queue callback
- PendingBusy - agent is receiving call
- CallingCustomer - agent is calling customer
- AfterCallWork - agent is in the after call work screen

Create Presence Statuses in Amazon Connect

Agents are responsible for setting their status in the Contact Control Panel (CCP). Typically, the only time an agent's status changes is when they manually change it in the CCP however Presence Sync Rules can automate the process when conditions are met.

Amazon Connect provides two default status values:

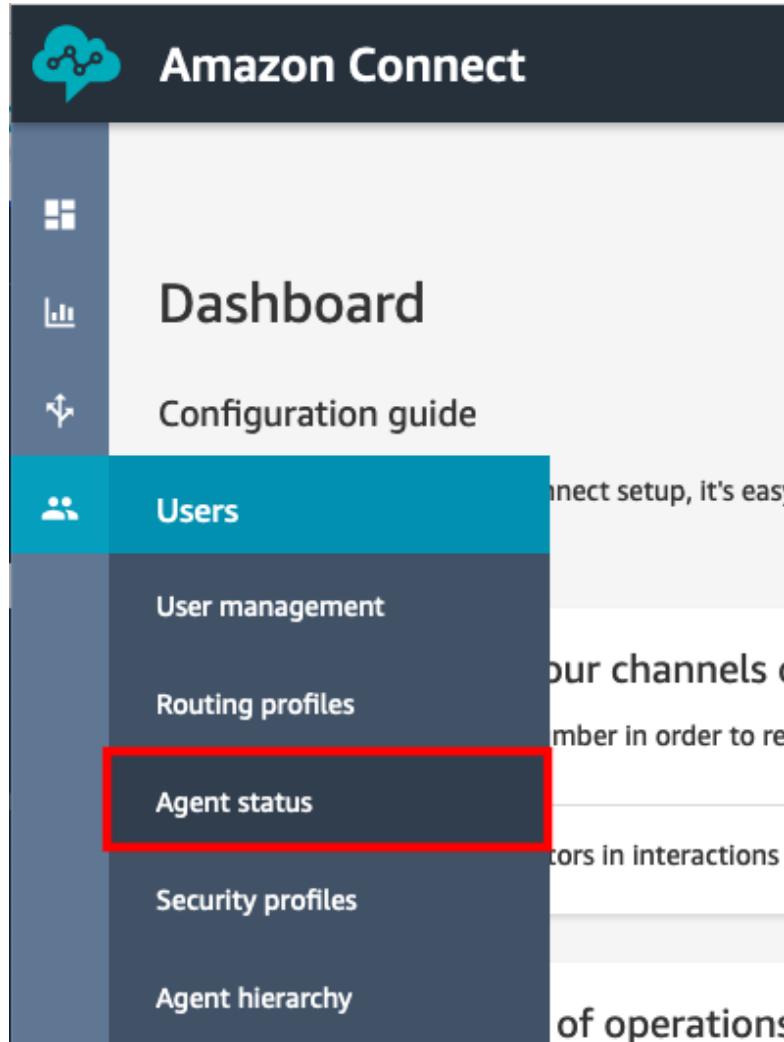
- Available
- Offline

You can change the name of these values, and you can add new ones. For example, you might add a status for Lunch, and another for Training. These and the default status values will be used for reporting, metrics, and resource management.

Note: When you add a new status, it will always be **Custom**, not routable.

Create an Amazon Connect status

1. Login to your Amazon Connect instance as an Administrator
2. From the left navigation, choose **Users**, then select **Agent status**



3. Select **Add new agent status**
4. Provide a Status name and Description. Leave the Enabled checkbox selected.

Status name	Description	Type	Enabled for use in CCP
Lunch	Lunch	Custom	<input checked="" type="checkbox"/>

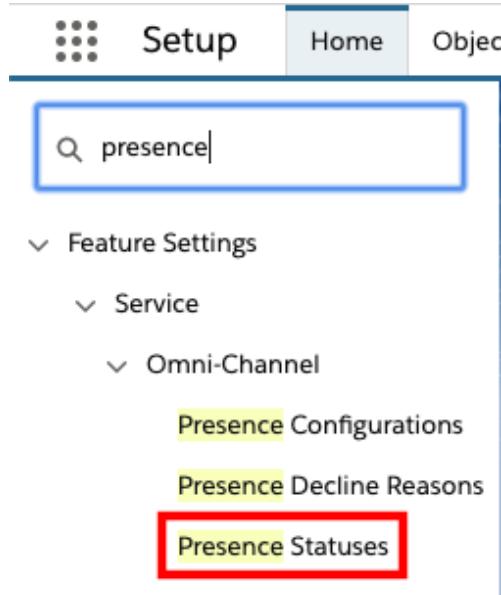
5. Select Save. Repeat as desired for the remaining statuses that you wish to add.

Create Presence Statuses in Salesforce

You will need to configure presence statuses to reflect the different presence states that you wish your Omni-Channel agents to enter. These do not need to match agent statuses in Amazon Connect exactly, but it does make it easier to track what you are doing.

Create a Salesforce presence status

1. Log in into your Salesforce org and go to **Setup**
2. In the **Quick Find** field, enter presence and choose **Presence Statuses** from the results



3. In the Presence Statuses page, choose New
4. Provide a status name, for example Lunch
5. Set the Status options appropriately, for example, Busy
 - a. For Online statuses, you will need to provide a channel. Please reference the [Omni-Channel documentation](#) for details
6. Choose Save

Presence Statuses

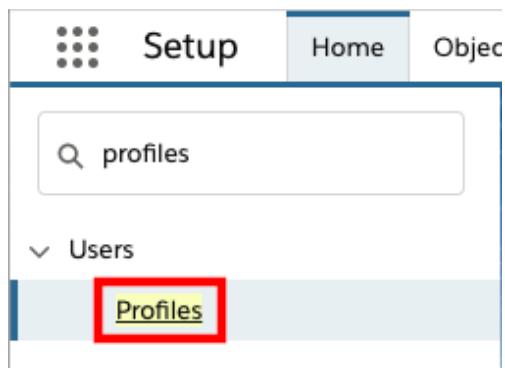
Let agents indicate when they're online and available to receive work items from a specific service channel, or whether they're away or offline.

The screenshot shows a configuration page for a presence status named "Lunch". Under "Basic Information", the "Status Name" is "Lunch" and the "Developer Name" is also "Lunch". In the "Status Options" section, there is a note: "Choose whether agents are online or busy when they use this status. Online statuses let agents receive new work items. Busy statuses make them unavailable." Below this, two radio buttons are shown: "Online" (unchecked) and "Busy" (checked). At the bottom right are "Save" and "Cancel" buttons.

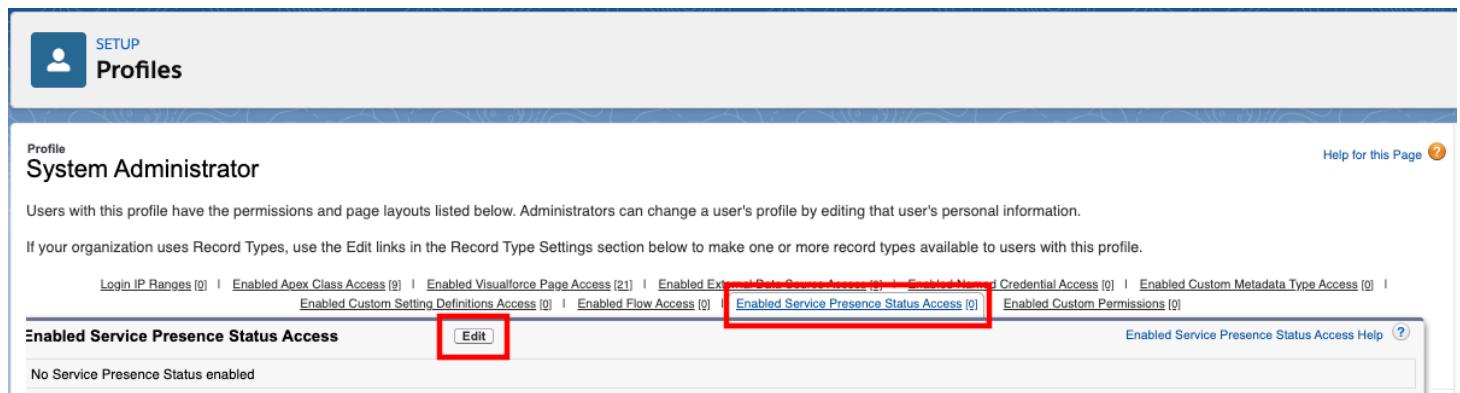
7. Repeat as necessary for all desired statuses

Configure Enabled Service Presences Status Access in Salesforce

1. Log in into your Salesforce org and go to **Setup**
2. In the **Quick Find** field, enter profiles and choose **Profiles** from the results

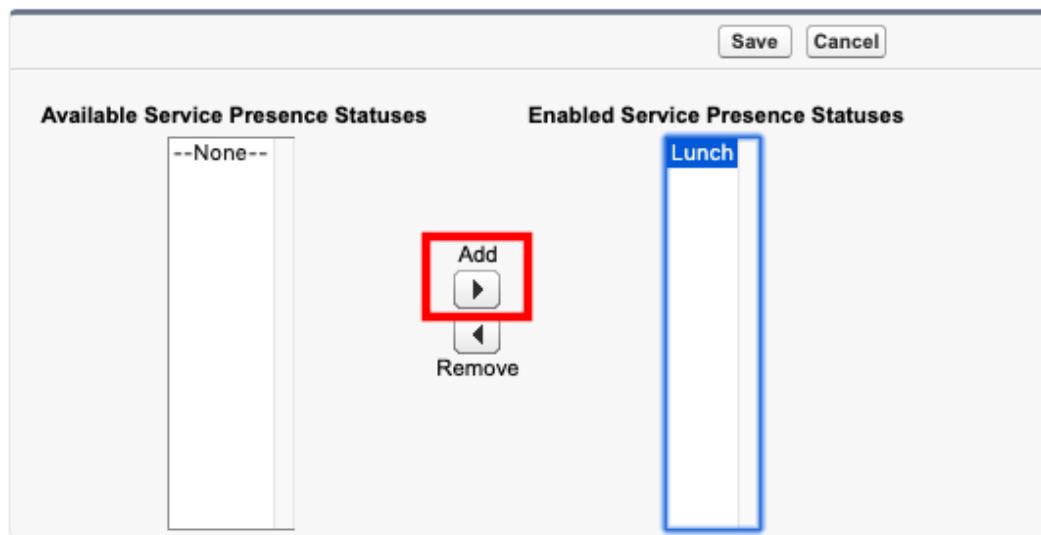


3. Select the profile assigned to your users
4. Hover over the Enabled Service Presence Status link and choose Edit



5. Select the available status from the left, then choose the Add button to add it to the Enabled Service Presence Statuses field

Enable Service Presence Status Access



6. Select Save
7. Repeat as necessary for other statuses or profiles.

Configure Presence Sync Rules

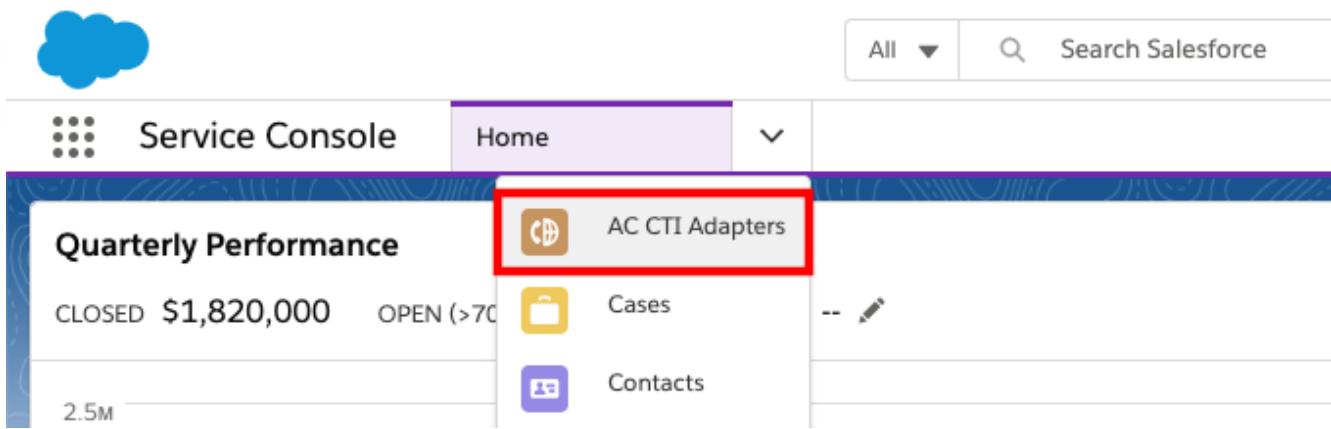
The CTI Adapter provides a rules-based presence status synchronization system allowing for flexibility in mapping agent states between Amazon Connect and Salesforce Omni-Channel.

Presence synchronization actions may be configured based upon manual agent state changes (agent goes on break), system agent state changes (answering a call), omnichannel agent work (agent accepts an email), and omnichannel workload changes (agent completes an email) as examples.

As the scope of presence sync rules can vary wildly, this example will show you how to change state based on Amazon Connect agent state change and Salesforce agent state change.

Create a Presence Sync Rule

1. Log in into your Salesforce org and go to the **Service Console**
2. Expand the **navigation menu** by selecting the down arrow and choose **AC CTI Adapters**.



3. Select **ACLightningAdapter**

4. Scroll down to the **Presence Sync Rules** section

5. Select **New** to create a new presence sync rule

6. Provide a **Presence Sync Rule Name** to identify the use case of this rule. For example: Connect agent switches to Lunch

Provide a user friendly name for this presence sync rule and specify if this rule is currently active.

* Presence Sync Rule Name
Connect agent switches to Lunch

Active

7. Select **Next**

8. For Source, select **Connect Agent State Change**, and select **Next**

9. For Operand A, choose **Connect Agent New State**

10. Set the Comparator to **Equal to**

11. Set Operand B to **Static Value**

12. For Operand B Value, enter **Lunch** (Or whatever state you have created in Amazon Connect)**

Configure the criteria that is evaluated to determine if the rule's action should be applied.

If the expressions configured here evaluates to 'true", the rule's action is applied. If the expression configured here evaluates to 'false', the rule's action is not applied.

* Operand A
Connect Agent New State

* Comparator
Equal to

* Operand B
Static Value

* Operand B Value
Lunch

13. Select **Next**

14. For Destination, choose **Salesforce Agent State**

15. Set the Value to **Lunch** (Or whatever state you have configured in Salesforce) **NOTE:** the static value for Salesforce Omni-Channel status is the Developer Name, not the Status Name

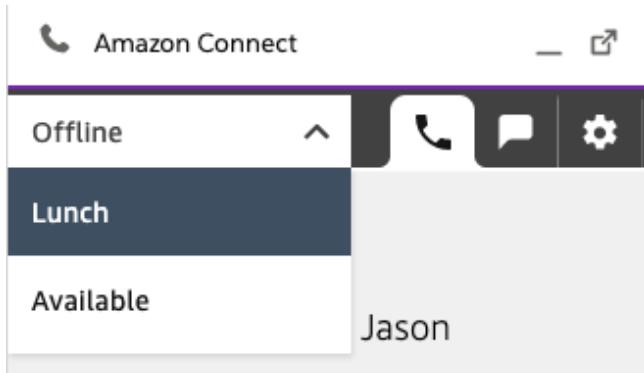
16. Select **Save**.

17. Refresh your browser

18. In the bottom left corner of the Service Console, select the CTI Softphone icon



19. Set your Amazon Connect agent status to Lunch



20. Observe that the Omni-Channel status switches to Lunch

The screenshot shows the top navigation bar of the CTI Adapter. It includes the 'Omni-Channel' tab, a status indicator for 'Lunch' (orange dot), a message 'You have no active requests.' with a close button, and links for 'New (0)' and 'My work (0)'. A blue underline is under the 'New (0)' link.

21. Repeat this process as desired to configure your presence sync rules.

[Edit this page](#)

Localization

Prerequisites

CTI Adapter will use Translation Workbench to maintain translated values for metadata and data labels in your Salesforce org. In order for that to work, you need to enable Translation Workbench in your org.

1. From Setup, in the Quick Find box, enter Translation Language Settings, and then select Translation Language Settings.
2. On the welcome page, click Enable.

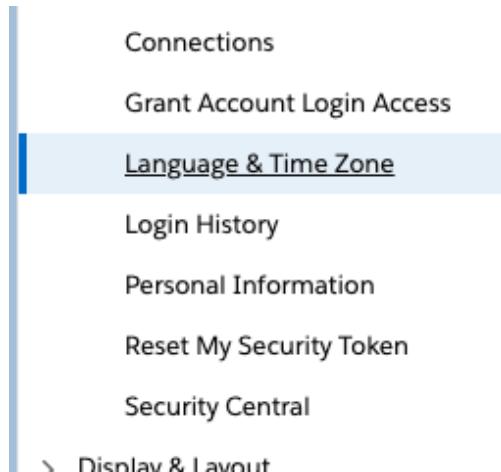
Setting your preferred language

Starting from v5.6, Amazon Connect Salesforce CTI adapter is localized in nine new languages: Spanish, French, Brazilian Portuguese, Korean, Italian, German, (Simplified/Traditional) Chinese, and Japanese.

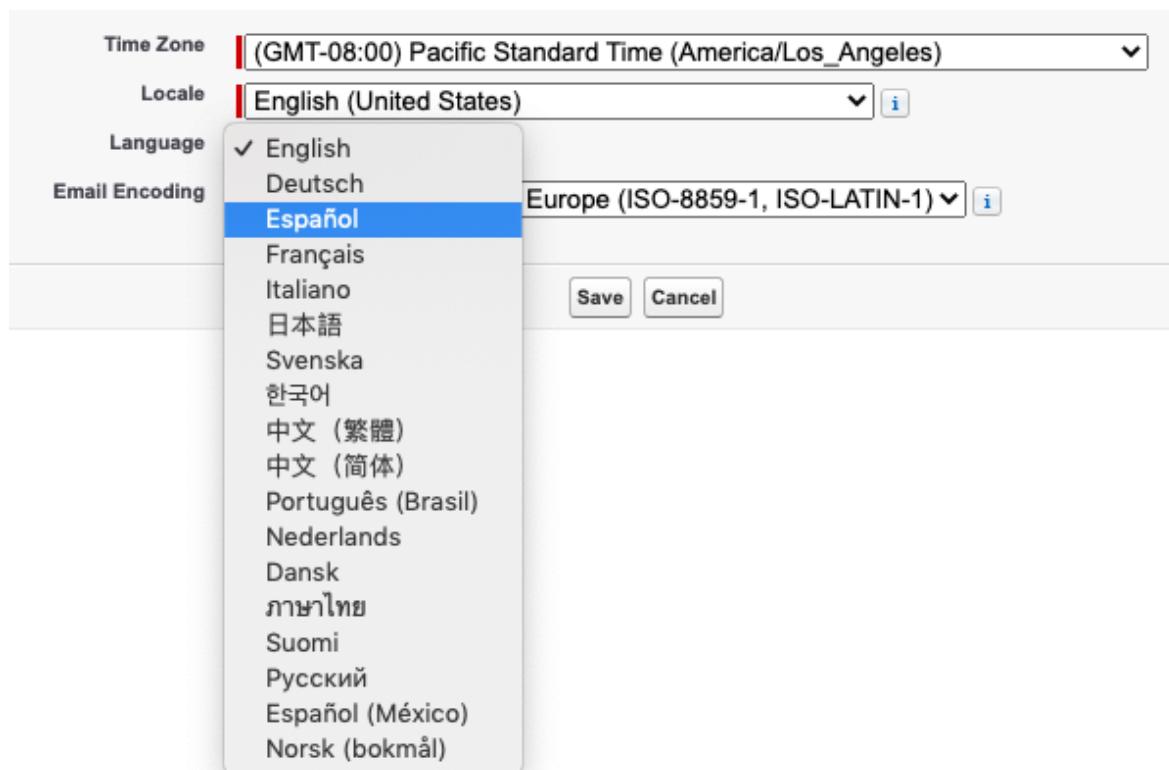
Change the language by selecting the username in the top right corner, then click on "My Settings".

The screenshot shows the user profile settings menu. At the top, there are icons for star, plus, question mark, gear, and bell, followed by a user icon. Below this is a dropdown menu with a blue profile picture, the text 'cticanarycell-1sydprod-dev-ed.my.salesfor...', and links for 'Settings' and 'Log Out'. A blue arrow points from the text 'My Settings' in the previous step to the 'Settings' link in the menu. At the bottom, there is a 'Quick Find' search bar and a 'USERNAMES' section.

On the setting page on the left panel go to "Personal" and then select "Language & Time Zone".



You can then select your preferred language. Note that CTI adapter only have nine languages built within the package.



Click save and the page will reload. That's it. You can check in other pages to see if it actually applies your change. For example here is a screenshot of CTI Flow Editor in Spanish.

Explorer

**Buscar**

Buscar por nombre

**Categorías**

Filtrar por categoría

**Etiquetas**

Filtrar por etiqueta



Mostrar 100 acciones

Guardar búsqueda**If-else**

Cambie el flujo del script en función del valor de los campos que obtenga o almacene. Se trata de una utilidad "if-else" sencilla para el flujo.

Parámetros >**Qué llama:**

```
ac.Utils.Common.decision(..  
.)
```

Seleccionar**CoreCast**

Cast an input value to a Javascript type, such as Number or String.

Parámetros >**Seleccionar****Solicitud HTTP****Obtener la propiedad**

Click on Phone pannel on the bottom to see if CCP has been localized. If not right click on CCP and reload.

The screenshot shows a mobile browser's context menu open. At the top are standard options: Back, Forward, and Reload, with Reload highlighted in blue. Below these are Save As..., Print..., and Cast.... Further down is an option to Send to DESKTOP-H7MR6HB. The menu then branches into two sections: one for connectivity (Amazon Enterprise Access, Autofill) and one for page inspection (View Page Source, View Frame Source, Reload Frame, Inspect). At the bottom of the menu is a Speech option. Along the bottom of the screen, there are several navigation icons: Phone, History, Notes, Macros, and Omnicom.

Additional Notes

Please note that not all fields can be localized to different languages due to a couple reasons. Here are places that cannot be localized:

- Dashboard. Salesforce dashboards do not support localization.
- Flexipages. This means the page with tabs that you can find in AC CTI Adapter page in lightning.

The screenshot shows a navigation bar with four tabs: Attributes, CTI Flows, Presence Sync Rules, and Features. The Attributes tab is underlined, indicating it is active. Below the tabs, there is a section titled "Attributes (0)" with a small icon of a database table.

- Reports. This is a missing functionality in Salesforce.

[Edit this page](#)

Set Agent Status on Session End

This feature automatically sets the status of the agent to "Offline" --- or to any status you choose --- when the agent closes all his Salesforce tabs. **Disclaimer:** This feature will popup a window to perform the logout functionality. This window must stay open for the feature to work, but it does not have to be visible (i.e. can be put in the background).

You can configure this feature by heading to the feature panel on your CTI Adapter and clicking new.

The screenshot shows a navigation bar with four tabs: Attributes, CTI Flows, Presence Sync Rules, and Features. The Features tab is underlined, indicating it is active. Below the tabs, there is a section titled "Features (0)" with a small icon of a database table. A red arrow points from the text above to the "New" button in the bottom right corner of the features section.

Then for "AC Feature Name", enter: `SetAgentStatusOnSessionEnd`

New AC Feature

Information

* AC Feature Name

SetAgentStatusOnSessionEnd

Value

Active



* CTI Adapter



ACLightningAdapter



You can optionally specify which status the agents should be changed to when they end the session. By default, this is "Offline," but you can configure it using the **Status** setting of the feature.

* AC Feature Name

SetAgentStatusOnSessionEnd

Value

Status:Away

When turned on, the feature will apply to all agents. If you'd rather have it apply to a small subset, you can configure **IfProfileNameIncludes** setting.

* AC Feature Name



SetAgentStatusOnSessionEnd



Value

Status:Away

IfProfileNameIncludes:On-Call

Now only the agents that have "On-Call" in their Connect routing profile name will be shown as "Offline" when they end their session. This setting can accept multiple, comma-separated profile names, as well.

If you would also like to control this feature based on the current state of the agent, you can add the `IfCurrentAgentState` tag to the feature, and assign a comma separated list of statuses that you would like the feature to execute on.

* AC Feature Name

SetAgentStatusOnSessionEnd

Value

Status:Offline
SessionEndTimer:20
IfCurrentAgentState:Available, At Lunch

From this example, only agents who have a current status of "Available" or "At Lunch" will be moved to a state of "Offline" when they end their session.

The example above also utilizes the `SessionEndTimer` feature as well. This delays the state change for the desired amount of time (default of 5 seconds). In the example above it sets the delay to 20 seconds. This feature is useful to account for agent's with slow internet refreshing their page - with 5 seconds, it may change the state of the agent before the refresh loads all of the assets again, while 20 seconds could be enough time for the assets to load, and stop the state change.

You can also have the Status be set to `Logout`, which will append the functionality of the logout feature mentioned [here](#) - logging the agent out of the CCP upon session ending. It will not log the user out if a call is ongoing.

When your agents log back in, they will be shown as "Available" by default. If you'd like to control which status to set your agents, you can configure it with `InitialAgentState` setting.

Note that this feature does not work with Salesforce Pop-Out utilities. This means that it won't be working if CCP is popped out from utility bar. This is because the pop-out window is a different window managed

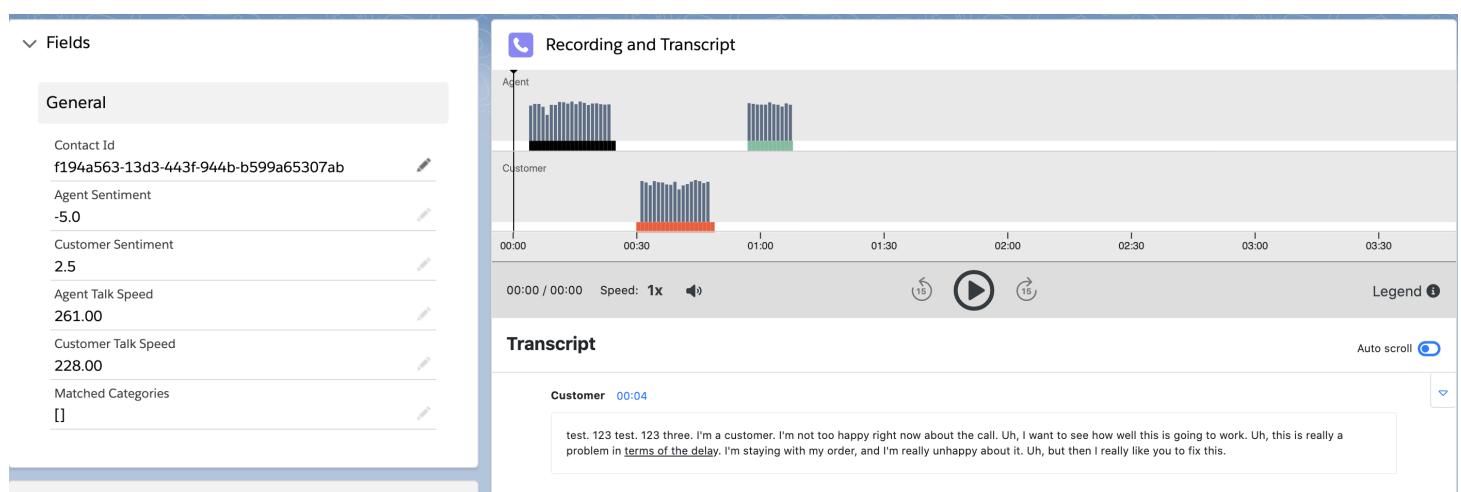
by Salesforce and we are not able to track any session on that window.

 [Edit this page](#)

Contact Lens

CTI Adapter now gives you access to your post-call Contact Lens data on your Salesforce instance. To configure this feature, you must have installed and configured the AWS Serverless application.

Three or four minutes after the call, a new Contact Channel Analytics record is created with the recording url with only the call recording. In another three minutes, this record is updated with Contact Lens recording, transcript and other metadata.



The new record is also associated automatically with a Case and Contact through their Amazon Connect contact id. This means that you will be able to configure your case record page with a related list that lists all the calls related to a case.

Prerequisites

In order to set up Contact Lens you must first follow the steps detailed in the below sections:

1. [Set up ExecuteAwsService Named Credential](#)
2. [Set up Contact Channel Analytics](#)

Configuring Related Transcripts List for Case Object

1. Go to the "Setup" section.
2. Search for "Object Manager" in Quick Find.
3. Go into "AC Contact Channel Analytics" object.

4. Click on "Fields & Relationships"

5. Select the "Case" field.

6. Click on "Set Field-Level Security" button.

7. In the "Field-Level Security for Profile" panel, select "Visible" for all the profiles where this field should appear.

8. Click "Save"

9. Click "View Field Accessibility" button.

10. Select "Case" field from "Field accessibility for Field" dropdown.

11. Select the profile for which you want to enable this field.

12. Mark "Field-Level Security" of the field as "Visible" and save.

13. Go to a Case record page.

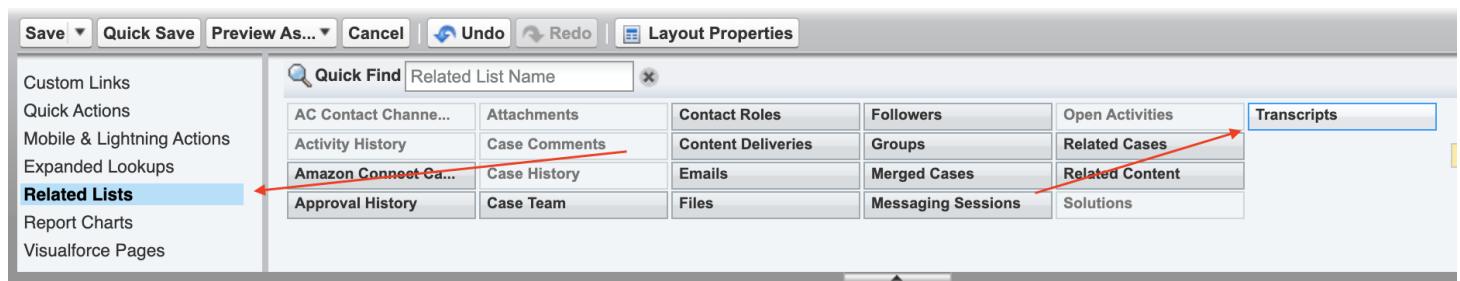
14. Click on "Edit Page" under the gear button on upper right corner of the page.

15. Select "Related List - Single" from left sidebar, and drop it into "Related" section.

16. Click on the item you just dropped to focus on it.

17. In the right sidebar, select "Case Layout (previewed)"

18. Click on "Related Lists" and find "Transcripts" field in the panel.



19. Drag "Transcripts" into the "Related Lists" section on the body of the page.

20. Click "Save" and return to the page editor.

21. Focus on the item you dropped in step 15 again.

22. In the right sidebar, under the "Related List" dropdown, find and select "Transcripts" field.

23. Click "Save" to save the page layout.

24. Click "Activation..."

25. Go into "App Default." Click on "Assign as App Default."

ORG DEFAULT

APP DEFAULT

APP, RECORD TYPE, AND PROFILE

Set this page as the default for Case records for specific Lightning apps. An app default page displays for all specific app, record type, and profile assignments are made.

Assign as App Default

26. Select the apps you'd like the related list to appear. Click "Next" twice, and then finally click "Save."

Now your related transcripts should appear on the Case record page.

Whenever you update the Amazon Connect contact id of this case, the related list will be updated to associate the transcripts associated with your contact.

Follow the same steps above for Contact.

Setting up the Audio Recording Streaming

In order to stream Audio in Contact Lens, you must first set up the Audio Recording Streaming feature. It is recommended to use the Guided Setup feature to set up audio recording streaming.

Guided Setup

Provision Amazon Connect Instance?

This setting will provision an Amazon Connect instance in your AWS account. You cannot provision an instance the same time you configure the Adapter or the Lambdas.

Set up Amazon Connect Salesforce CTI Adapter?

This setting will configure the Salesforce CTI Adapter in your Salesforce instance.

Set up Amazon Connect Salesforce Lambdas?

This setting will help you set up the Amazon Connect Salesforce Lambdas in your AWS account.

Set up Audio Recording for Contact Lens?

This setting will help you set up the Audio Recording for Contact Lens



Next

If you do not wish to use the Guided Setup feature, then see below steps for manual setup steps:

AWS Side Setup

1. See [these steps](#). Follow the sections *Creating key pairs for your signers*, and *Adding a signer to a distribution*. Make sure to record the **public key ID**.
2. Copy and paste the contents of the private key .pem file into a text editor. Replace every newline character with a space, and then delete the last character. This is most easily done using a "find and

"replace" feature in your text editor. The resulting string of text should resemble the following:

```
-----BEGIN RSA PRIVATE KEY----- (64 character string) (64 character string)  
(64 character string) (64 character string) (64 character string) (64 character  
string) (64 character string) (64 character string) (64 character string) (64 character  
string) (64 character string) (64 character string) (64 character string) (64 character  
string) (64 character string) (64 character string) (64 character string) (64 character  
string) (64 character string) (64 character string) (64 character string) (64 character  
string) (64 character string) (under 64 character string) -----END RSA  
PRIVATE KEY-----
```

3. Navigate to the "Secrets Manager" service. Select the **SalesforceCredentials**.
4. Under the "Secret value" tab, select "Retrieve secret value" and then "Edit".
5. For the **CloudFrontPrivateKey** field, copy and paste the modified contents of the private key .pem file. For the **CloudFrontAccessKeyId** field, copy and paste the **Access Key Id** you recorded above. Your Secrets Manager Secret should look like the following:

AWS Secrets Manager > Secrets > SalesforceCredentials

SalesforceCredentials

Secret details

Encryption key
aws/secretsmanager

Secret name
SalesforceCredentials

Secret ARN
[REDACTED]

Secret description
-

Tags

Secret value Info
Retrieve and view the secret value.

Secret key/value **Plaintext**

```
{  
  "CloudFrontPrivateKey": "-----BEGIN RSA PRIVATE KEY-----  
[REDACTED]  
-----END RSA PRIVATE KEY-----",  
  "CloudFrontAccessKeyId": [REDACTED],  
}
```

Please note that your secret may also be formatted stored as a "Secret key/value" secret rather than a "Plaintext" secret; both secret types are valid.

6. Navigate to your Salesforce instance. Navigate to setup, then search for "Visualforce pages."

7. Select the **AC_RecordingViewer** visualforce page, and select "preview." Copy the url of the opened page up until **.com**. Make sure not to include any characters after **.com**.
8. Navigate back to aws, to the s3 bucket where your audio recording files are stored. This s3 bucket should be the same bucket as the **ConnectRecordingS3BucketName** parameter to the serverless application.
9. In the bucket details, select the **Permissions** tab and then the **CORS configuration** tab and paste the following. Replace the AllowedOrigin with the url copied in step 9. Additionally, add in the **...lightning.force.com** url to your instance to the configuration.

```
[
{
  "AllowedHeaders": ["Access-Control-Allow-Origin"],
  "AllowedMethods": ["GET"],
  "AllowedOrigins": ["'{url copied in step 9}'",
    "https://'{instanceName}'.lightning.force.com/"],
  "ExposeHeaders": []
}
]
```

Cross-origin resource sharing (CORS)

The CORS configuration, written in JSON, defines a way for client web applications that are loaded in one domain to interact with resources in a different domain. [Learn more](#)

```
[{
  {
    "AllowedHeaders": [
      "Access-Control-Allow-Origin"
    ],
    "AllowedMethods": [
      "GET"
    ],
    "AllowedOrigins": [
      "https://[REDACTED]--amazonconnect.visualforce.com"
    ],
    "ExposeHeaders": []
  }
}]
```

Copy

10. Select Save

11. Navigate to the "Lambda" aws service. Search for term "sfgenerate" and copy down the full name of the sfGenerateAudioRecordingStreaming lambda. This will be used in the next section.

The screenshot shows the AWS Lambda Functions page. At the top, there is a breadcrumb navigation: Lambda > Functions. Below the navigation, a search bar contains the text "sfgenerate" with a magnifying glass icon and a clear button. To the right of the search bar, it says "1 match". Below the search bar are two buttons: "Clear filters" and "Function name". A table lists one function: "sfGenerateAudioRecordingStreaming". The function name is highlighted with a red rectangle. The rest of the function details are also partially obscured by a red rectangle.

12. Navigate back to the "Lambda" aws service main page and navigate to the **us-east-1 region**. Select **create function**.

The screenshot shows the AWS Lambda main page. On the left, there is a sidebar with "AWS Lambda" selected and "Updated console (preview)" status. Below the sidebar are links for "Learn more" and "Dashboard". The main content area has a breadcrumb navigation: Lambda > Functions. It displays a table titled "Functions (30)". In the top right corner of the main area, there is a "Create function" button, which is highlighted with a red rectangle. Other buttons in the top right include "Actions" and a search bar.

13. Enter a function name, like **sfSig4RequestToS3**.

14. Select **change default execution role**, and **use an existing role**. Search for and select **sfSig4RequestToS3Role**.

Function name

Enter a name that describes the purpose of your function.

Use only letters, numbers, hyphens, or underscores with no spaces.

Runtime [Info](#)

Choose the language to use to write your function.

**Permissions** [Info](#)

By default, Lambda will create an execution role with permissions to upload logs to Amazon CloudWatch Logs. You can customize this default role later when adding triggers.

▼ Change default execution role**Execution role**

Choose a role that defines the permissions of your function. To create a custom role, go to the [IAM console](#).

- Create a new role with basic Lambda permissions
- Use an existing role
- Create a new role from AWS policy templates

Existing role

Choose an existing role that you've created to be used with this Lambda function. The role must have permission to upload logs to Amazon CloudWatch Logs.

15. Select **create function**. On the next screen, copy and paste the contents from [this file](#) into the function body, and then select **Deploy**.

16. Select the actions dropdown, and then select **Deploy to Lambda@Edge**.

17. Select the Cloudfront Distribution that was created by the Salesfore Lambdas serverless application, then check off the "I acknowledge..." check box, then select deploy.

Deploy to Lambda@Edge

X

Configure CloudFront trigger

Distribution

The CloudFront distribution that will send events to your Lambda function.

 arn:aws:cloudfront::081220768822:distribution/E2QLTUNXSSI70W X

Cache behavior

Choose the cache behavior you would like this Lambda function to be associated with.

 * ▼

CloudFront event

Choose one CloudFront event to listen for.

 Origin request ▼

Include body

Select "Include body" if you want to read the request body for viewer request or origin request events.

[Learn more.](#)

Confirm deploy to Lambda@Edge

- I acknowledge that on deploy a new version of this function will be published with the above trigger and replicated across all available AWS regions.

Lambda will add the necessary permissions for Amazon CloudFront to invoke your Lambda function from this trigger.

[Learn more](#) about the Lambda permissions model.

Cancel

Deploy

Common Audio Streaming Setup Issues

1. Verify that the Secrets Manager secret contains both the `CloudFrontPrivateKey` and `CloudFrontAccessKeyId` items.
2. Verify that your Cloudfront distribution's behavior is set to use `Trusted Key Groups`, and that the correct Key Group is selected.

Restrict Viewer Access Yes
(Use Signed URLs or Signed Cookies) No



Trusted Key Groups or Trusted Signer Trusted Key Groups
 Trusted Signer



Trusted Key Groups

No key groups available

Add

Create a new key group



Trusted Key Group Name

keyGroup1



3. Verify that your Cloudfront distribution's behavior contains the sfSig4RequestToS3 edge lambda

The screenshot shows the AWS Lambda Edge Function Associations interface. At the top, there are four dropdown menus: 'Edge Function' set to 'Lambda@Edge', 'CloudFront Event' set to 'Origin Request', 'Function ARN/Name' containing 'arn:aws:lambda:us-east-1:...', and 'Include Body' with a checked checkbox. Below these is a large text area titled 'Cross-origin resource sharing (CORS)' containing a JSON configuration snippet. A 'Copy' button is located in the top right corner of this area.

```
[  
  {  
    "AllowedHeaders": [  
      "Access-Control-Allow-Origin"  
    ],  
    "AllowedMethods": [  
      "GET"  
    ],  
    "AllowedOrigins": [  
      "https://[REDACTED].amazonconnect.visualforce.com"  
    ],  
    "ExposeHeaders": []  
  }  
]
```

4. Verify that your S3 bucket CORS configuration is correct

This is a continuation of the previous screenshot, showing the same JSON CORS configuration in the 'CORS' section of the AWS Lambda Edge interface. The configuration allows GET requests from the specified origin with the 'Access-Control-Allow-Origin' header.

5. Verify that your named credentials are correctly set up

6. Verify that your user is added to the AC_CallRecording permission set

[Edit this page](#)

CTI Actions

Customers can now extend their Contact Control Panel (CCP) with customizable buttons called CTI Actions. These buttons can be configured in Salesforce and used to simplify common agent actions. For example, you can add a button that transfers calls to a manager, start and stop recordings, automate case creation, or start a customer refund process. CTI Actions are configured in the CTI Adapter's Actions Admin panel to execute [CTI Flows](#) which are process blocks that enable you to easily design agent workflows within our Salesforce integration.

You can configure a CTI Action in the CCP Element Editor page.



CCP Element Editor

Actions

Step 1: Name and Flow

Step 2: Payload (optional)

Step 3: Additional Data (optional)

Save Quick Save **Delete** Cancel

This section asks you for some required information about your action. It is the only required section you need to fill to create an action.

Action Name
Leave Voicemail

The name agents will see.

CTI Flow
Leave a Voicemail

In this field, you will see all CTI Flows in this account whose source field is [CCP Overlay](#).

Order
0

Position of the action in the overlay.

Make sure that you have created a CTI Flow and it uses the source "CTI Action." Only these CTI Flows will be displayed in the dropdown field.

You can optionally specify a payload to pass to the CTI Flow. This allows your agents to enter additional data about the customer or information about the call to pass into the CTI Flow. The CCP Element Editor gives you the ability to add input fields into your form.

Actions

Step 1: Name and Flow	Save Quick Save Delete Cancel
Step 2: Payload (optional)	In this section, you will build a form that will be displayed to the agents prior to triggering the CTI Flow. The form data will be passed as a payload to the executed flow.
Step 3: Additional Data (optional)	Overview Form fields New field +

This section collects some basic information about the form, such as title and instructions. Both fields are optional.

(optional)

Title
Enter a short title for the form.

(optional)

Instructions
Enter a few lines about how to fill out this form.

Form fields ▶

Actions

Step 1: Name and Flow	Save Quick Save Delete Cancel
Step 2: Payload (optional)	In this section, you will build a form that will be displayed to the agents prior to triggering the CTI Flow. The form data will be passed as a payload to the executed flow.
Step 3: Additional Data (optional)	Overview Form fields New field +

Field Name
This is the name of the field in your payload. It should be a camelCased word.

Label
The label is a human readable text shown to the agent next to the input field.

Field Type Text **Order** 0
You have the option to select a text input or a dropdown.

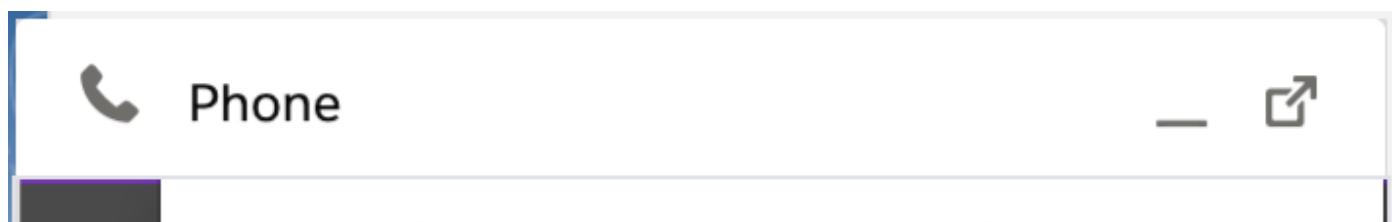
Field Required

Cancel **Finish**

◀ Overview

CCP Overlay

The **Actions** panel in the CCP overlay drawer displays the CTI Action buttons where your agents have easy access to them as they are interacting with customers.



Attributes	Actions
Send Customer Giftcard	▶
Activate Customer Account	<button>Execute</button>
Transfer to Manager	<button>Execute</button>
Give customer refund	<button>Execute</button>
Open a Case	<button>Execute</button>
▶ Find Cases for Customer	<button>Execute</button>
Create Task and Contact and Screenpop	<button>Execute</button>
VIP	<button>Execute</button>
Transfer to Manager	<button>Execute</button>
Transfer to Peer	<button>Execute</button>

If a CTI Action requires additional input by the agent, its name will be followed by an arrow and when the agent clicks on this button, it will open the configured form. Otherwise, it will be shown with an "Execute" button next to its name.



Phone



Attributes

Actions



Go back

Customer Gift Card

Please fill in these details about the user.

First name*

John



Last name*

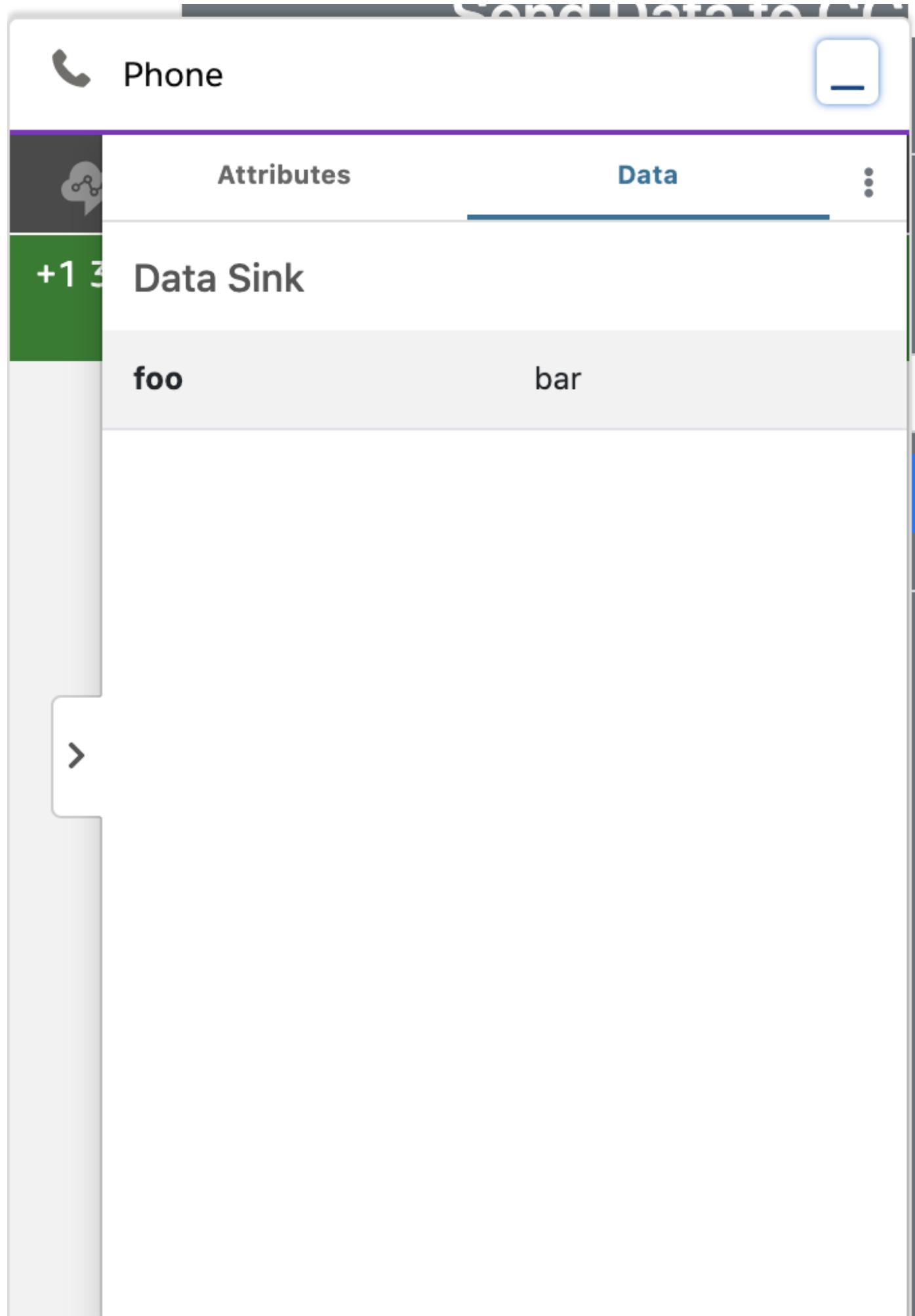
Doe

Telephone

Submit

Receiving Data from CTI Flows

In addition to agents sending data to the CTI Flow, they can also receive data from a CTI Flow.. When a CTI Flow sends some information to the CCP overlay, it will be displayed in the Data panel.



Here is how you would configure your CTI Flow to send data back to the CCP overlay.

Send Data to CCP Overlay

ID: uid-9 ⓘ

Arguments

value ⓘ optional

foo

bar



Add a field

Upgrading from an earlier version

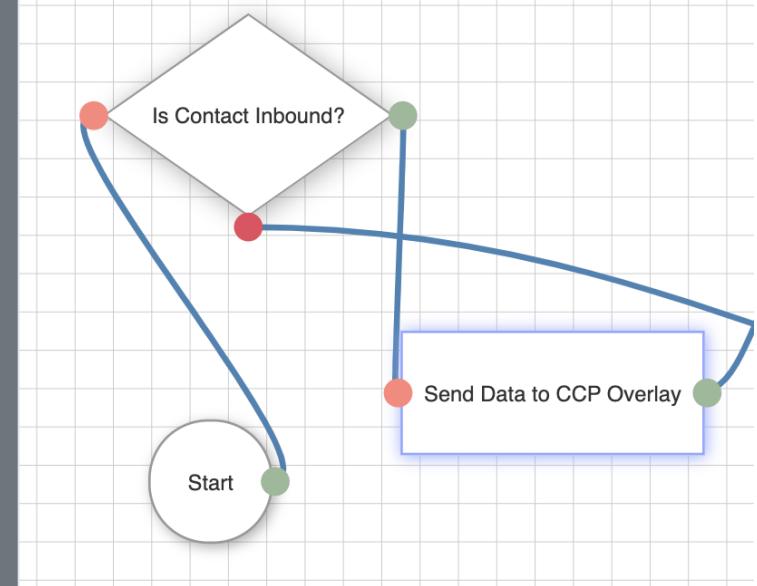
If you are upgrading the Salesforce package from an earlier version of CTI Adapter, there are a few additional steps to follow:

1. Go to Setup
2. In "Quick Find," search for "Picklist Value Sets" and click on the result.
3. Select "AC_CtiScriptSource" on "Picklist Value Sets" page.
4. Scroll down to "Values" section
5. Click "New" to add a new value.
6. In the textarea, enter "ctiAction" and save
7. Scroll down to the new field you added, "ctiAction," and click "Edit."
8. Update the label to "CTI Action" and save.

Edit this page

Recording Controls

Recording Controls panel in the CCP Overlay allows your agents to control the recording behavior of the call.



Phone



Attributes

Recording Controls



Start recording

Pause recording



This panel integrates to Amazon Connect [call recording API](#). To use it, make sure to add [Set recording behavior block](#) in your Contact Flow. The controls will be activated during a call.

This can be useful when you don't want to record every call, and give the agent the ability to pause and resume a recording.

Note that once a recording is stopped, it cannot be restarted. After starting a recording, you should use pause/resume button to control it.

This panel is disabled by default. You can enable it by adding `FEATURE_RECORDING_PANEL` feature flag to your CTI Adapter, with the setting `Enabled:true`.

Setup

First, create an IAM user and give it the managed policy `AmazonConnect_FullAccess`.

The screenshot shows the AWS IAM Permissions Policies page. At the top, there are tabs for **Permissions**, **Groups**, **Tags**, and **Security credentials**. The **Permissions** tab is selected. Below the tabs, a section titled **▼ Permissions policies (1 policy applied)** is shown. A blue button labeled **Add permissions** is visible. Under the policy list, there is a section titled **Attached directly** containing one policy: **AmazonConnect_FullAccess**, which is highlighted with a blue background. The policy name is preceded by an orange icon.

Copy the access key and secret of this user (from the "Security credentials" tab.) Next, go to your Salesforce instance Setup section. Search for Named Credentials in the left sidebar, and create a new credential named `AmazonConnectAPI`. (The name and the label should be identical.)

Named Credential Edit: AmazonConnectAPI

Specify the callout endpoint's URL and the authentication settings that are required for

The screenshot shows the 'Named Credential Edit' interface. At the top right are 'Save' and 'Cancel' buttons. Below them are three fields: 'Label' (AmazonConnectAPI), 'Name' (AmazonConnectAPI), and 'URL' (https://connect.us-east-1.amazonaws.com). A section titled 'Authentication' is expanded, showing fields for 'Certificate' (empty), 'Identity Type' (Named Principal), 'Authentication Protocol' (AWS Signature Version 4), 'AWS Access Key ID' (AKIAUYVLTXECVPVW5), 'AWS Secret Access Key' (redacted), 'AWS Region' (us-east-1), and 'AWS Service' (connect).

Fill in https://connect.us-east-1.amazonaws.com as the url. For Identity Type, select "Named Principal" and for "Authentication Protocol" select "AWS Signature Version 4." Then fill in the "AWS Access Key Id" and "AWS Access Secret" fields with your IAM user credentials. And for AWS Region, use the region of your Connect instance. And for the AWS Service, fill in connect.

Synchronizing Recording State with Contact Attributes

The Connect API does not provide a way for us to check that the recording has already been started when a call is answered. This may result in the UI panel falling out of sync with the actual state of the contact. If

you have configured your contacts to be recorded automatically, using the Contact Flow, you must take care to add a contact attribute to indicate that:

Attribute Name: RECORDING_STARTED Attribute Value: true

If you have configured this attribute, then the recording controls will be in sync with the recording state.

 [Edit this page](#)

Voicemail Drops

You can find the complete documentation for this feature [in this pdf](#).

 [Edit this page](#)

Chat Widget Integration

SalesForce Experience Cloud allows you to setup a website for your customers easily, with the included template, you can setup a help center, or a customer service website with just a few clicks. Amazon Connect CTI Adapter now provides you a chat-widget component, and you can use it in the Experience Cloud Builder App to add the Amazon Connect Chat Widget to any page you want.

The screenshot below shows an example of having the chat widget added to a help center website. Please note that this feature does not support **Build Your Own(LWR)** and **Salesforce Tabs + Visualforce** template.

CAPRICORN
Coffee

What can we help you with?

Search the help center...

Account Support

FAQ

Return Policy

Shipping Fees

How can we help?

Customer has joined the chat

Timing has joined the chat

Customer Sent at 9:40 AM
Hello, I need help with my order shipment.

Timing 9:40 AM
What is your order number?

Type a message

End chat

powered by **salesforce**

To start using this feature, you can either follow the steps below to setup an Experience Cloud Site for testing purpose, or you can skip to the next section if you are already familiar with SalesForce Experience Cloud. ****Setup experience cloud site:****

- Go to Setup
 - Search for Digital Experience
 - Enable Digital Experience

 **SETUP**
Settings

Experiences

Build pixel-perfect websites, portals, communities, and forums with Experience Cloud. [Learn More](#)

To get started with digital experiences, you must first enable it and select a domain. If enhanced domains are enabled, your org's My Domain name is the subdomain for any site you create.

Enable Digital Experiences

After you enable digital experiences in your org, you must still create, configure, customize, and then activate a site before it's live and available to users.

Enable Digital Experiences

Select a domain name

Important: The domain name is used in all of your digital experiences and can't be changed after you save it.

Sample Domain Name
MyCompany.na162.force.com

Sample Experience URLs

→ MyCompany.na162.force.com/customers
→ MyCompany.na162.force.com/developers
→ MyCompany.na162.force.com/partners

Domain Name -developer-edition.na162.force.com

- Create a new Site by clicking New button

Project Manager ▾

Digital Experiences

Success! You can now create new Experience Cloud sites.

The list shows Experience Cloud sites in your org. Clicking on the URL takes you directly to the site. If you're not a member, the URL isn't linked.

Maximum number of sites (including active, inactive, and preview): 100

All Sites	New
No Sites	

- Choose Help center template to create a new site

[← Back to Setup](#) [Help & Training](#)

Choose the Experience You Love

BROWSE BY:

All Sales Service Commerce Installed

Build Your Own (LWR)
by Salesforce

Unparalleled Performance • Standards-Based Customization •
Develop blazing fast digital experiences, such as websites, microsites, and portals, using the Lightning...

B2C Commerce
by Salesforce

Live search • Product filtering • Einstein Product Recommendations •
Create a responsive ecommerce store that provides easy customization of store layout and template, configure...

Help Center
by Salesforce

Self-Service • Curated Knowledge • Case Deflection • Guest Case Creation
Give your customers the answers they're looking for. Customers can search for and read articles and contact...

Customer Account Portal
by Salesforce

Customer Service
by Salesforce

Build Your Own
by Salesforce

- Go to Builder of the new site

The screenshot shows the 'My Workspaces' section of the Experience Cloud Site Builder. It displays seven workspace cards:

- Builder**: Build, brand, and customize your site's pages.
- Moderation**: Monitor posts and comments, create rules.
- Content Management**: Organize, manage, and build collections for your Experience Cloud site.
- Gamification**: Keep your members engaged with recognition badges.
- Dashboards**: Examine the health of your site with reports and dashboards and engage with members.
- Administration**: Configure settings and properties for your experience.
- Guided Setup**: Configure features and integrations with step-by-step instructions.

- This will be the place to setup chat widget feature in the following sections. You can get yourself familiar with this Builder before moving to the next section.

Setup chat widget for your experience cloud sites.

- Option 1: Setting up using out-of-box VisualForce page. Choose this if you need the chat widget only on one specific page.
- Option 2: Setting up using Lightning Component based on VisualForce page. Choose this if you need the chat widget only on one specific page but you don't have the license for the VisualForce page component in the experience cloud builder. It is a workaround for Option1.
- Option 3: Setting up using custom header. Choose this if you want the chat widget exists across all pages.

Option 1: Setting up using VisualForce page.

- Follow instructions [here](#) to setup your Chat Widget and copy the script to a text editor.
- Go to Service Console
- Go to AC CTI Adapter. If the CTI Adapter Owner is [Amazon Connect – Universal Package](#), please update it to yourself or any other real user.
- Go to Features tab
- Click New to create a new Feature

- In the Name field, put FEATURE_CHAT_WIDGET
- In the Value field, input the following key value pairs based on your chat widget script. If you didn't enable the security feature of chat widget, you don't need to add the key value pair for authEndpoint

Example ChatWidget key value pairs input

```
{
  "cloudfrontId": "dg9yx063wiht",
  "widgetId": "5338d219-92c7-427e-8b10-26a8f4dfb3d1",
  "openChatColor": "white",
  "openChatBackgroundColor": "#826359",
  "closeChatColor": "white",
  "closeChatBackgroundColor": "#940eb9",
  "snippetId": "QVFJREFIaUpTVGJkNWhNc0Q1WHpHYnFQTkJyYXN0.....",
  "authEndpoint": "https://www.yourdomain.com/yourAuthEndpoint"
}
```

The input above is for the following example ChatWidget Script

```
<script type="text/javascript">
(function(w, d, x, id){
  s=d.createElement('script');
  s.src='https://dg9yx063wiht.cloudfront.net/amazon-connect-chat-interface-client.js';
  s.async=1;           cloudfrontId
  s.id=id;
  d.getElementsByTagName('head')[0].appendChild(s);
  w[x] = w[x] || function() { (w[x].ac = w[x].ac || []).push(arguments) };           widgetId
})(window, document, 'amazon_connect', '5338d219-92c7-427e-8b10-26a8f4dfb3d1');
amazon_connect('styles', { openChat: { color: 'white', backgroundColor: '#826359' },
closeChat: { color: 'white', backgroundColor: '#940eb9' } });
amazon_connect('snippetId', 'QVFJREFIaU...');           snippetId
</script>
```

script:

```
<script type="text/javascript">
  (function(w, d, x, id){
    s=d.createElement('script');
    s.src='https://dg9yx063wiht.cloudfront.net/amazon-connect-chat-
interface-client.js';
    s.async=1;
    s.id=id;
    d.getElementsByTagName('head')[0].appendChild(s);
    w[x] = w[x] || function() { (w[x].ac = w[x].ac || []).push(arguments) };
  })(window, document, 'amazon_connect', '5338d219-92c7-427e-8b10-
```

```

26a8f4dfb3d1');
    amazon_connect('styles', { openChat: { color: 'white', backgroundColor: '#826359' }, closeChat: { color: 'white', backgroundColor: '#940eb9' } });
    amazon_connect('snippetId',
'QVFJREFIaUpTVGJkNWhNc0Q1WHpHYnFQTkJyYXN0.....=');
</script>

```

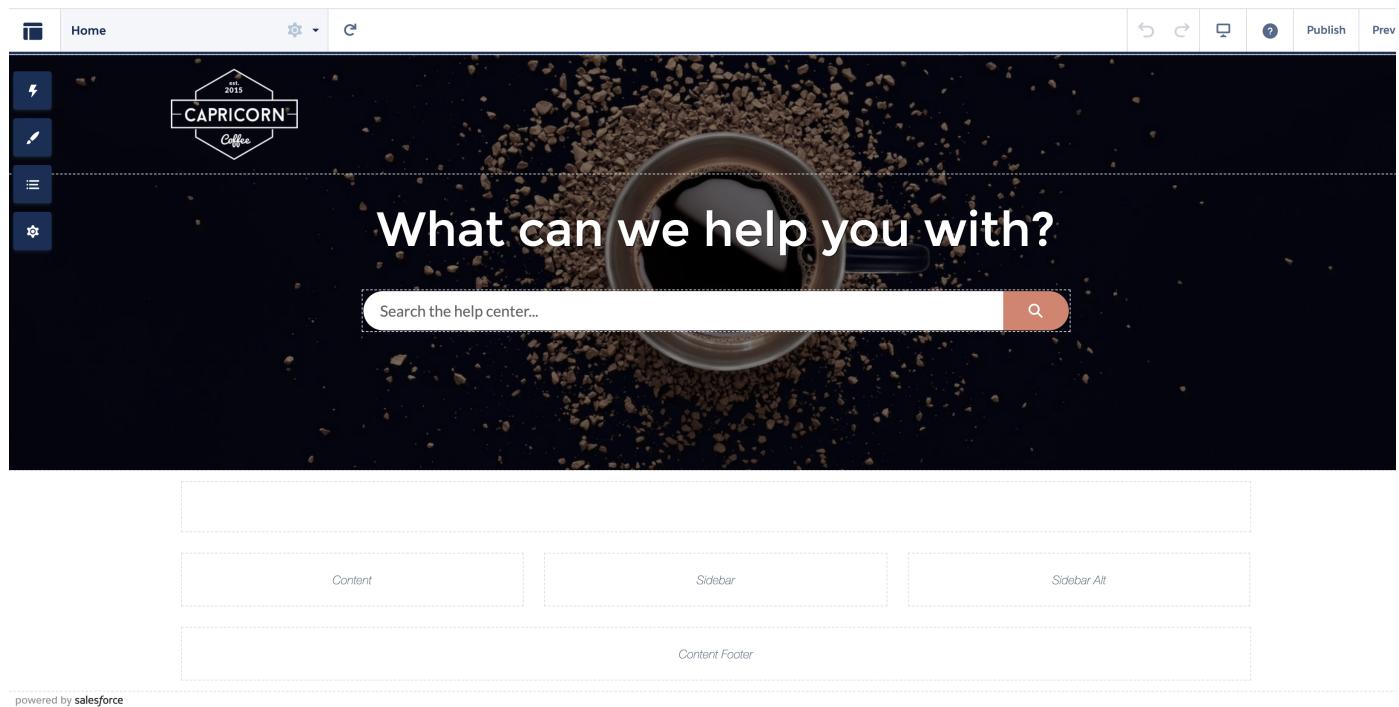
Example Call back function for JWT

```

amazon_connect('authenticate', function(callback) {
  window.fetch('https://www.yourdomain.com/yourAuthEndpoint').then(res => {
    res.json().then(data => {
      callback(data.data);
    });
  });
});

```

- Click Save
- Go to Setup
- Go to VisualForce page
- Select AC_ChatWidget
- Click Preview
- You should see a chat icon on the right bottom corner. If not, check browser console for error messages
- Copy the AC_ChatWidget visualforce page URL.
- Go to your Experience Cloud Builder



- Open Components

IT

Home

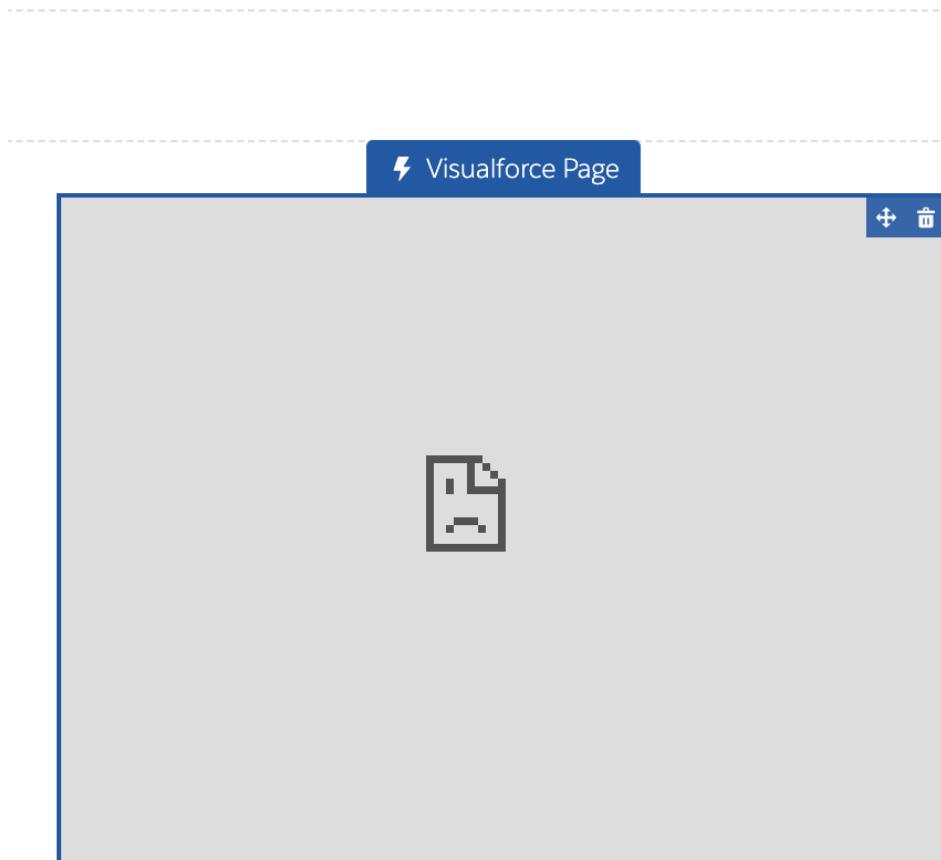
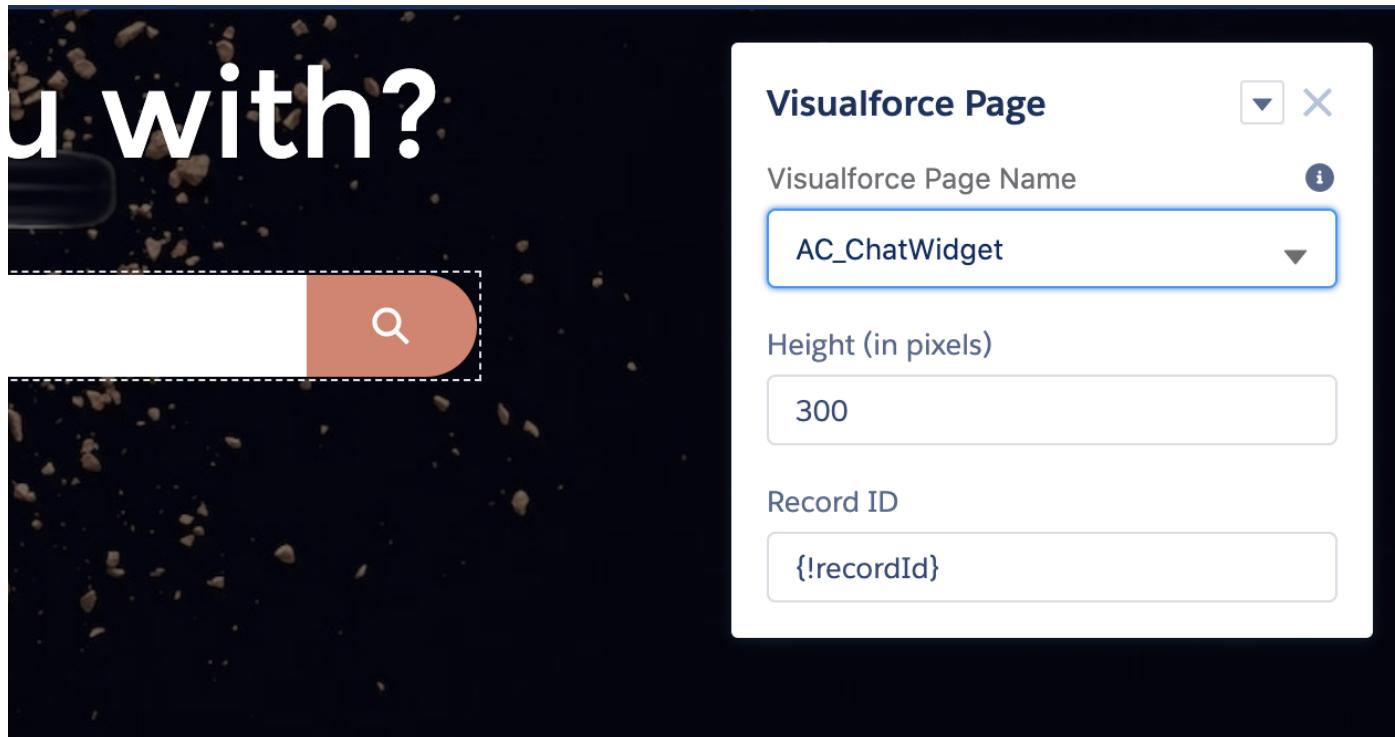
Components

Search...

CONTENT (12)

- CMS Collection
- CMS Connect (HTML)
- CMS Connect (JSON)
- CMS Single Item
- Headline
- HTML Editor
- Language Selector
- Recommendations Carousel
- Rich Content Editor
- Tabs
- Tile Menu
- Visualforce Page

- Drag and drop Visualforce Page to your page. If you didn't enable chat widget security, you need to change the Visualforce Page Name to AC_ChatWidget. If you enabled security for ChatWidget, change it to AC_ChatWidgetWithJWT



- Go to Settings→General→Guest User Profile and click in to the Guest User Profile

Guest User Profile

Configure access for guest or unauthenticated users. [Learn More](#)
[dev3test Profile](#)

- Inside Guest user profile, go to Enabled Visualforce Page Access
- Add amazonconnect.AC_ChatWidget(or AC_ChatWidgetWithJWT if you have enabled security for chat widget)

Enable Visualforce Page Access

Select the Visualforce pages that you want to make accessible at this Salesforce site.

The screenshot shows a configuration interface for enabling Visualforce pages. At the top right are 'Save' and 'Cancel' buttons. Below them are two main sections: 'Available Visualforce Pages' and 'Enabled Visualforce Pages'. The 'Available' section contains a long list of page names, many of which begin with 'amazonconnect.AC_'. The 'Enabled' section contains a similar list, also with many entries starting with 'amazonconnect.AC_'. The 'amazonconnect.AC_ChatWidget' page is specifically highlighted with a blue border around its entry in the 'Enabled' list, indicating it has been selected. Between the two sections are 'Add' and 'Remove' buttons with arrows.

Available Visualforce Pages	Enabled Visualforce Pages
amazonconnect.ACSCFCCP_ObjectType	CommunitiesLogin
amazonconnect.ACSCFCCP_PostCallUpdateTask	CommunitiesSelfReg
amazonconnect.AC_AgentStatusSessionEnd	CommunitiesSelfRegConfirm
amazonconnect.AC_CCPElementEditor	CommunitiesTemplate
amazonconnect.AC_CallRecordingTask	Exception
amazonconnect.AC_ClassicAdapter	FileNotFoundException
amazonconnect.AC_ClassicScriptIncludes	ForgotPassword
amazonconnect.AC_ConsoleAdapter	ForgotPasswordConfirm
amazonconnect.AC_ConsoleScriptIncludes	InMaintenance
amazonconnect.AC_CtiFlowEditor	SiteLogin
amazonconnect.AC_CtiScriptEditor	SiteRegister
amazonconnect.AC_HelperIncludes	SiteRegisterConfirm
amazonconnect.AC_HelperIncludesCcpV1	UnderConstruction
amazonconnect.AC_HelperIncludesCcnV2	amazonconnect.AC_ChatWidget

- Click Save

- Go to Enable Apex Class Access and add amazonconnect.AC_ChatWidgetController

Enable Apex Class Access

Select the Visualforce pages that you want to make accessible at this Salesforce site.

Available Apex Classes

- amazonconnect.AC_CTCF_PostComputeTaskController
- amazonconnect.AC_AmazonConnectAPI
- amazonconnect.AC_CCAContactLens
- amazonconnect.AC_CCPElementEditorController
- amazonconnect.AC_CCPOverlayController
- amazonconnect.AC_CTIFlowController
- amazonconnect.AC_CaseCCATriggerBatch
- amazonconnect.AC_ContactCCATriggerBatch
- amazonconnect.AC_ContactChannelController
- amazonconnect.AC_ContactChannelWrapper
- amazonconnect.AC_CtiScriptExtension
- amazonconnect.AC_PhoneCallController
- amazonconnect.AC_PhoneCallWrapper
- amazonconnect.AC_PostInstallHandler
- amazonconnect.AC_QueueMetricsController

Enabled Apex Classes

- amazonconnect.AC_ChatWidgetController

Add Remove

Save Cancel

- Click Publish button on the top right to publish the website

Home

General

View and edit the main properties of your site.

Site Details

Template

Help Center

Public Access

Public can access the site

Publish

- Copy the published website URL in Settings→Published Status
- Go back to Amazon Connect Chat Widget website, add following url to the allow-list Domains:
 - The AC_ChatWidget visualforce page URL, remove everything after .com
 - The published website URL to chat widget allow-list origin, remove everything after .com
- Go to Setup→Sharing Settings. Search for AC CTI Adapter Sharing Rules. Create a new Rule for Guest user so that they have the object access. Make sure in Step2 the Rule Type is Guest user access, the Steps 3 you put a proper criteria, for testing purpose you can put CTI Adapter Name not equal to 1. In Step 4 Share with the Guest user profile of the community website you are working on, and change

the Access level to Read Only

SETUP

Sharing Settings

Setup Help for this Page ?

AC CTI Adapter Sharing Rule

Use sharing rules to make automatic exceptions to your organization-wide sharing settings for defined sets of users.

Note: "Roles and subordinates" includes all users in a role, and the roles below that role. This includes portal roles that may give access to users outside the organization.

You can use sharing rules only to grant wider access to data, not to restrict access.

Step 1: Rule Name |= Required Information

Label	<input type="text" value="test"/>
Rule Name	<input type="text" value="test"/> <small>i</small>
Description	<input type="text"/>

Step 2: Select your rule type

Rule Type Based on record owner Based on criteria Guest user access, based on criteria

Step 3: Select which records to be shared

This sharing rule grants access to guest users without login credentials. By modifying the default settings in accordance with these criteria, you're allowing immediate and unlimited access to all records matching these criteria to anyone accessing the site, even without logging in. To secure your site and its data from guest users, consider all the use cases and implications, and implement security controls that you think are appropriate for the sensitivity of your data. Salesforce isn't responsible for any exposure of your data to guest users related to this change from default settings.

Criteria	Field	Operator	Value	
	--None--	--None--		AND
	--None--	--None--		AND
	--None--	--None--		AND
	--None--	--None--		AND
	--None--	--None--		

[Add Filter Logic...](#)

Additional Options Include records owned by high-volume users i

Step 4: Select the users to share with

Share with

Step 5: Select the level of access for the users

Access Level

Verify the change: Open your published website in a incognito window, you should be able to use chat widget to chat as a customer and chat to your agent without login Note: If you want to setup chat widget for authorized user group only, you could change the settings to the guest profile to the authorized user profile.

Option 2: Setting up using out-of-box Lightning Component.

- Follow instructions [here](#) to setup your Chat Widget and copy the script to a text editor.
- Go to Service Console
- Go to AC CTI Adapter. If the CTI Adapter Owner is [Amazon Connect – Universal Package](#), please update it to yourself or any other real user.

- Go to Features tab
- Click New to create a new Feature
- In the Name field, put FEATURE_CHAT_WIDGET
- In the Value field, input the following key value pairs based on your chat widget script. If you didn't enable the security feature of chat widget, you don't need to add the key value pair for authEndpoint

Example ChatWidget key value pairs input

```
{
  "cloudfrontId": "dg9yx063wiiht",
  "widgetId": "5338d219-92c7-427e-8b10-26a8f4dfb3d1",
  "openChatColor": "white",
  "openChatBackgroundColor": "#826359",
  "closeChatColor": "white",
  "closeChatBackgroundColor": "#940eb9",
  "snippetId": "QVFJREFIaUpTVGJkNWhNc0Q1WHpHYnFQTkJyYXN0.....=",
  "authEndpoint": "https://www.yourdomain.com/yourAuthEndpoint"
}
```

The input above is for the following example ChatWidget Script

```
<script type="text/javascript">
(function(w, d, x, id){
  s=d.createElement('script');
  s.src='https://dg9yx063wiiht.cloudfront.net/amazon-connect-chat-interface-client.js';
  s.async=1;           cloudfrontId
  s.id=id;
  d.getElementsByTagName('head')[0].appendChild(s);
  w[x] = w[x] || function() { (w[x].ac = w[x].ac || []).push(arguments) };      widgetId
})(window, document, 'amazon_connect', '5338d219-92c7-427e-8b10-26a8f4dfb3d1');
amazon_connect('styles', { openChat: { color: 'white', backgroundColor: '#826359' },
  closeChat: { color: 'white', backgroundColor: '#940eb9' } });
amazon_connect('snippetId', 'QVFJREFIaU...');           snippetId
</script>
```

script:

```
<script type="text/javascript">
  (function(w, d, x, id){
    s=d.createElement('script');
    s.src='https://dg9yx063wiiht.cloudfront.net/amazon-connect-chat-
interface-client.js';
    s.async=1;
    s.id=id;
    d.getElementsByTagName('head')[0].appendChild(s);
```

```
w[x] = w[x] || function() { (w[x].ac = w[x].ac || []).push(arguments) };
})(window, document, 'amazon_connect', '5338d219-92c7-427e-8b10-
26a8f4dfb3d1');
amazon_connect('styles', { openChat: { color: 'white', backgroundColor:
'#826359' }, closeChat: { color: 'white', backgroundColor: '#940eb9' } });
amazon_connect('snippetId',
'QVFJREFIaUpTVGJkNWhNc0Q1WHpHYnFQTkJyYXN0.....=');
</script>
```

Example Call back function for JWT

```
amazon_connect('authenticate', function(callback) {
  window.fetch('https://www.yourdomain.com/yourAuthEndpoint').then(res => {
    res.json().then(data => {
      callback(data.data);
    });
  });
});
```

- Click Save
- Go to Setup
- Go to VisualForce page
- Select AC_ChatWidget
- Click Preview
- You should see a chat icon on the right bottom corner. If not, check browser console for error messages
- Copy the AC_ChatWidget visualforce page URL.

- Go to your Experience Cloud Builder

The screenshot shows the Experience Cloud Builder interface. At the top, there's a header with icons for Home, Publish, and Prev. Below the header is a dark-themed landing page featuring a cup of coffee on a bed of coffee beans. A logo in the top left corner reads "CAPRICORN" with "2015" above it and "Coffee" below it. A search bar with the placeholder "Search the help center..." and a magnifying glass icon is centered. The main content area has a dashed grid overlay. The first row contains three empty boxes labeled "Content", "Sidebar", and "Sidebar Alt". The second row contains one empty box labeled "Content Footer". At the bottom left, there's a small note "powered by salesforce".

- Open Components

The screenshot shows the Home screen of a Content Editor interface. On the left, there is a vertical sidebar with four icons: a lightning bolt (top), a pen (second), a list (third), and a gear (bottom). The main area is titled "Components". At the top right of this area is a search bar with a magnifying glass icon and the placeholder text "Search...". In the top right corner of the main area, there is a blue "X" button. Below the search bar, a section titled "CONTENT (12)" is expanded, showing a list of components with their corresponding icons:

- CMS Collection
- CMS Connect (HTML)
- CMS Connect (JSON)
- CMS Single Item
- Headline
- HTML Editor
- Language Selector
- Recommendations Carousel
- Rich Content Editor
- Tabs
- Tile Menu
- Visualforce Page

- Drag and drop iFrame Component to your page



Components



Search...



Record Detail



Related Record List

SALES (1)



Campaign Marketplace

SUPPORT (6)



Case Deflection



Channel Menu



Contact Request Button & F...



Contact Support Button



Contact Support Form



Embedded Service Appoint...

TOPICS (3)



Featured Topics



Topic Catalog



Trending Topics

▼ CUSTOM COMPONENTS (1)



Some components in this section are blocked due to the site's security level setting. [More Details](#)



iFrame Component

[Get more on the AppExchange](#)

- Change Chat Widget URL to <your-website-domain>/apex/amazonconnect__AC_ChatWidget if you did not enable the security for the chat widget. If you have enabled security, change it to <your-website-domain>/apex/amazonconnect__AC_ChatWidgetWithJWT
 - You will have the website domain once it is published. The URL is in Settings→General→Published Status, and the part from https to .com is your website domain. If you haven't published it yet, you can update it once it is published and re-publish the website.
 - If you have site name, you need to append /<site-name> after your domain name. For example if the published website is demo-developer-edition.na111.force.com/testing/s/, your Chat Widget URL should be:
 - If security disabled --> demo-developer-edition.na111.force.com/testing/amazonconnect__AC_ChatWidget
 - If security enabled --> demo-developer-edition.na111.force.com/testing/amazonconnect__AC_ChatWidgetWithJWT
- Go to Settings→General→Guest User Profile and click in to the Guest User Profile

Guest User Profile

Configure access for guest or unauthenticated users. [Learn More](#)
[dev3test Profile](#)

- Inside Guest user profile, go to Enabled Visualforce Page Access

- Add amazonconnect.AC_ChatWidget(or AC_ChatWidgetWithJWT if you have enabled security for chat widget)

Enable Visualforce Page Access

Select the Visualforce pages that you want to make accessible at this Salesforce site.

Available Visualforce Pages		Enabled Visualforce Pages	
<code>amazonconnect.ACSFCCP_ObjectType</code>	<code>amazonconnect.AC_AgentStatusSessionEnd</code>	<code>CommunitiesLogin</code>	<code>CommunitiesSelfReg</code>
<code>amazonconnect.ACSFCCP_PostCallUpdateTask</code>	<code>amazonconnect.AC_CCPElementEditor</code>	<code>CommunitiesSelfRegConfirm</code>	<code>CommunitiesTemplate</code>
<code>amazonconnect.AC_CallRecordingTask</code>	<code>amazonconnect.AC_ClassicAdapter</code>	<code>Exception</code>	<code>FileNotFoundException</code>
<code>amazonconnect.AC_ClassicScriptIncludes</code>	<code>amazonconnect.AC_ConsoleAdapter</code>	<code>ForgotPassword</code>	<code>ForgotPasswordConfirm</code>
<code>amazonconnect.AC_ConsoleScriptIncludes</code>	<code>amazonconnect.AC_CtiFlowEditor</code>	<code>InMaintenance</code>	<code>SiteLogin</code>
<code>amazonconnect.AC_CtiScriptEditor</code>	<code>amazonconnect.AC_HelperIncludes</code>	<code>SiteRegister</code>	<code>SiteRegisterConfirm</code>
<code>amazonconnect.AC_HelperIncludesCcpV1</code>	<code>amazonconnect.AC_HelperIncludesCcpV2</code>	<code>UnderConstruction</code>	<code>amazonconnect.AC_ChatWidget</code>

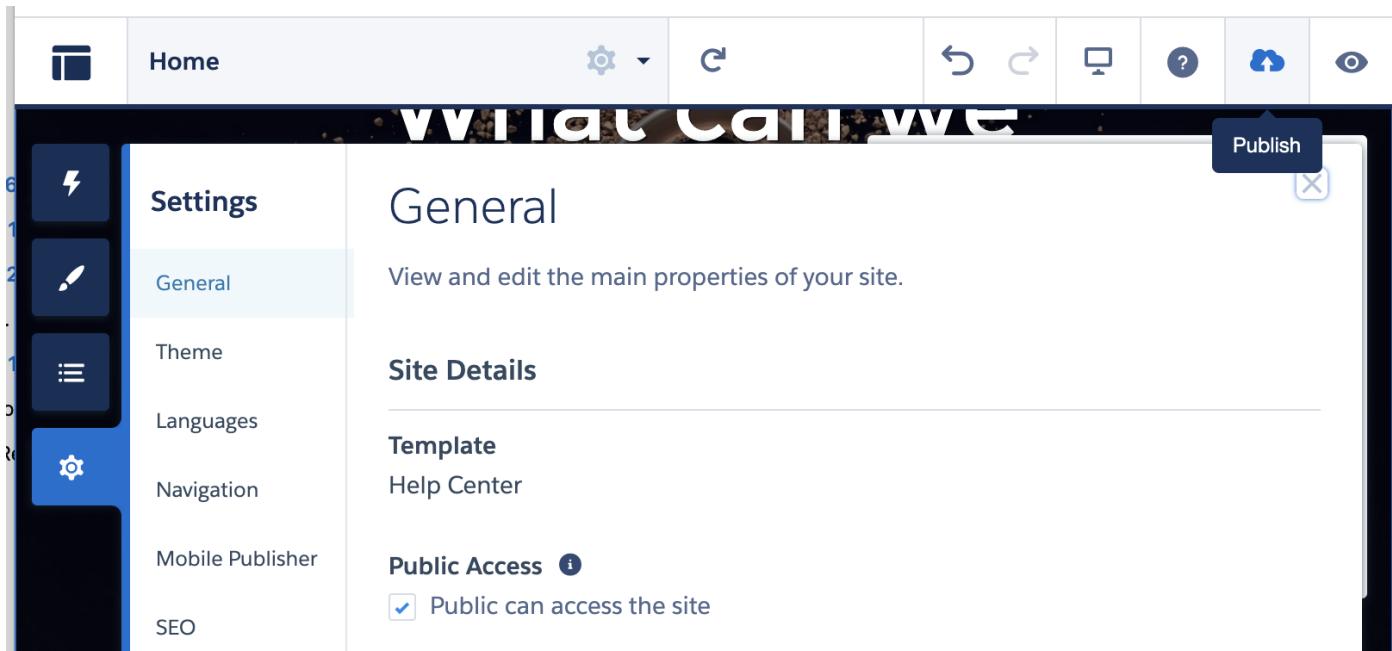
- Click Save
- Go to Enable Apex Class Access and add `amazonconnect.AC_ChatWidgetController`

Enable Apex Class Access

Select the Visualforce pages that you want to make accessible at this Salesforce site.

Available Apex Classes		Enabled Apex Classes	
<code>amazonconnect.ACSTFCF_PostCallUpdateTaskController</code>	<code>amazonconnect.AC_AmazonConnectAPI</code>	<code>amazonconnect.AC_ChatWidgetController</code>	
<code>amazonconnect.AC_CCAContactLens</code>	<code>amazonconnect.AC_CCPElementEditorController</code>		
<code>amazonconnect.AC_CCOVERLAYController</code>	<code>amazonconnect.AC_CTIFlowController</code>		
<code>amazonconnect.AC_CaseCCATriggerBatch</code>	<code>amazonconnect.AC_ContactCCATriggerBatch</code>		
<code>amazonconnect.AC_ContactChannelController</code>	<code>amazonconnect.AC_ContactChannelWrapper</code>		
<code>amazonconnect.AC_ContactChannelExtension</code>	<code>amazonconnect.AC_CtiScriptExtension</code>		
<code>amazonconnect.AC_PhoneCallController</code>	<code>amazonconnect.AC_PhoneCallWrapper</code>		
<code>amazonconnect.AC_PostInstallHandler</code>	<code>amazonconnect.AC_QueueMetricsController</code>		

- Click Publish button on the top right to publish the website



- Copy the published website URL in Settings→Published Status
- Go back to Amazon Connect Chat Widget website, add following url to the allow-list Domains:
 - * The AC_ChatWidget visualforce page URL, remove everything after .com
 - * The published website URL to chat widget allow-list origin, remove everything after .com

Verify the change: Open your published website in a incognito window, you should be able to use chat widget to chat as a customer and chat to your agent without login

[Edit this page](#)

Accessing the Salesforce API from Amazon Connect Contact Flows Using AWS Lambda

The most commonly used feature of the AWS Serverless Application Repository for Salesforce is accessing/updating Salesforce data using the `sflnvokeAPI` Lambda function. This function allows an Amazon Connect contact flow to perform the following operations against your Salesforce org:

- **Lookup:** queries Salesforce for objects based on the parameters passed to it
- **Create:** creates a Salesforce object based on the parameters passed to it
- **Update:** updates a Salesforce object based on the parameters passed to it

- **Phone Lookup:** uses Salesforce Object Search Language (SOLS) to construct text-based search queries against the search index, which gives significant performance improvement when searching phone number fields.
- **Delete:** deletes a Salesforce object based on the parameters passed to it
- **Query:** executes a Salesforce Object Query Language (SOQL) query on the Salesforce instance. Can return multiple entries.
- **QueryOne:** executes a Salesforce Object Query Language (SOQL) query on the Salesforce instance. Returns result only when one entry is returned from the query.
- **CreateChatterPost:** creates a chatter post.
- **CreateChatterComment:** creates a chatter comment.
- **Search:** performs a search against the Salesforce instance, returning all results.
- **SearchOne:** performs a search against the Salesforce instance, returning at most one result.

NOTE: naming of the Lambda function will vary based on template data, but sfInvokeAPI will always be a part of the name.

When you invoke this Lambda function from your contact flows, you will need to pass along parameters that inform the function as to which Salesforce operation you wish to execute, as well as pass along any required parameters. Depending on your use case, this can require reference to the [Salesforce REST API](#) or the [Salesforce Connect REST API](#) documentation. The core parameters are:

- **sf_operation:** specifies which operation to run. Options are lookup, create, update, phoneLookup, query, queryOne, createChatterPost, createChatterComment
- **sf_object:** defines what type of object you are referencing. Examples include Case, Contact, Task, etc.
- **sf_fields:** the fields you want to receive back from Salesforce when an operation completes successfully
- **sf_id:** the unique identifier for a Salesforce object. Typically used in update operations
- **sf_phone:** contains the phone number used to search when performing a phone lookup

Salesforce Lookup

This operation is invoked by setting **sf_operation** to **lookup**. In this case, the Lambda function queries Salesforce for objects based on the parameters passed to it. For lookup, the following parameters are

required:

- sf_object
- sf_fields

Any additional parameters passed will be evaluated as conditional arguments for the lookup.

Note that this operation only returns the first item of the query results. If you want to have all results returned from Salesforce, set **sf_operation** to **lookup_all**.

In the contact flow example below, we are looking for a specific case based on customer input.

The screenshot shows the configuration of an AWS Lambda function. The main configuration panel has the title "Invoke AWS Lambda function". It contains a description: "Makes a call to AWS Lambda, and optionally returns key / value pairs." Below this is a section for "Function input parameters". Inside this section, there are three nested parameter definitions:

- CaseNumber**: A parameter with "Destination key" set to "CaseNumber" and "Type" set to "Lex slots".
- sf_operation**: A parameter with "Destination key" set to "sf_operation" and "Value" set to "lookup".
- sf_fields**: A parameter with "Destination key" set to "sf_fields" and "Value" set to "Id".

This operation returns a response of:

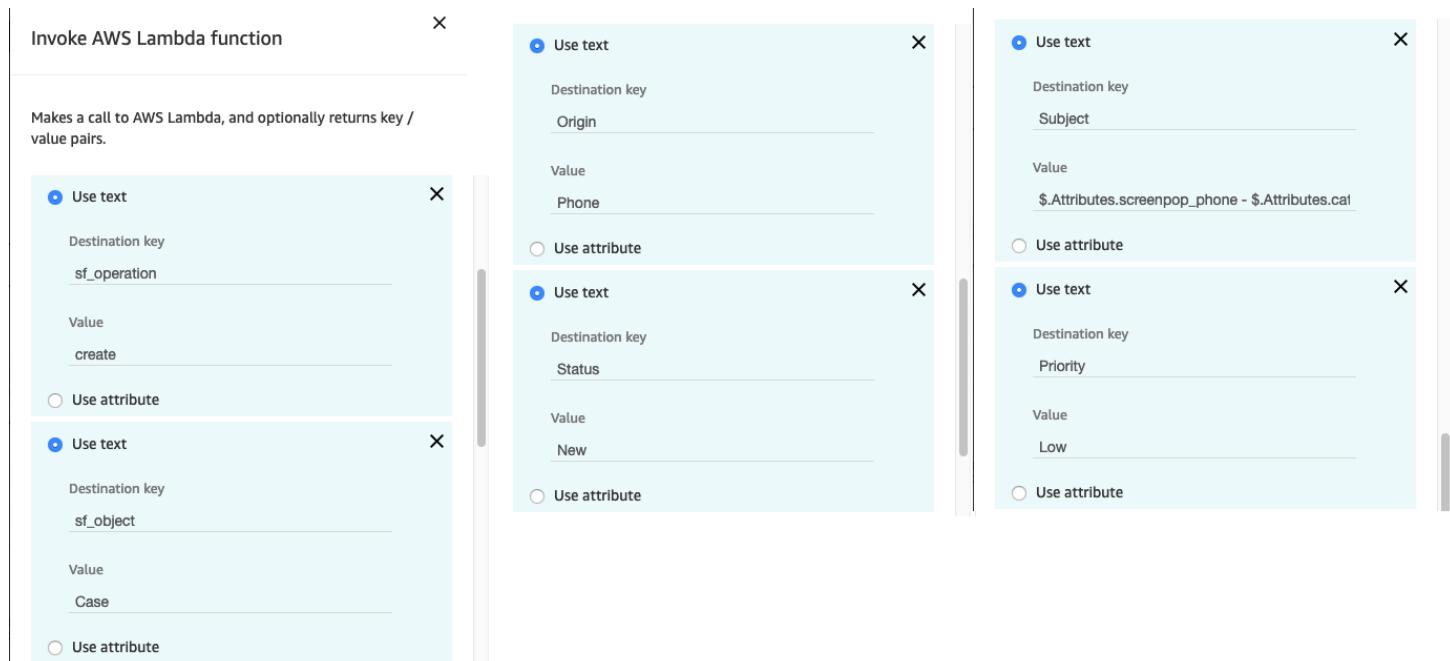
```
{  
  "Id": "5006g00000AaIs7AAF",  
  "sf_count": 1  
}
```

Salesforce Create

This operation is invoked by setting **sf_operation** to **create**. In this case, the Lambda function creates a Salesforce object based on the parameters passed to it. For create, the following parameters are required:

- **sf_object**
- Specify additional parameters for the Salesforce object to be created. Please be sure to include all parameters required to create the Salesforce object.

In the contact flow example below, we creating a new case based on customer input.



This operation returns a response of:

```
{  
  "Id": "5006g00000BLqurAAD"  
}
```

Salesforce Update

This operation is invoked by setting **sf_operation** to **update**. In this case, the Lambda function updates a Salesforce object based on the parameters passed to it. For update, the following parameters are required:

- **sf_object**
- **sf_id**
- Specify additional parameters for the Salesforce object to be created. Please be sure to include all parameters required to create the Salesforce object.

In the contact flow example below, we are updating a specific case.

The screenshot shows two configuration panels for an AWS Lambda function. The left panel, titled 'Invoke AWS Lambda function', contains the following details:

- Description: Makes a call to AWS Lambda, and optionally returns key / value pairs.
- Function ARN: 752362:function:aws-serverless-repository-AmazonConnec
- Function input parameters:
 - sf_operation: sf_object
 - Value: update

The right panel shows the configuration for the 'sf_object' parameter:

- Destination key: sf_object
- Value: Case
- Type: External

The configuration for the 'sf_id' parameter is also shown:

- Destination key: sf_id
- Type: External
- Attribute: Id

This operation returns a response of:

```
{  
  "Status": "204"  
}
```

The "204" status indicates a success.

Salesforce Phone Lookup

This operation is invoked by setting **sf_operation** to **phoneLookup**. In this case, the Lambda function uses Salesforce Object Search Language (SOLS) to construct text-based search queries. For phoneLookup, the following parameters are required:

- sf_phone
- sf_fields

In the contact flow example below, we look for a customer by phone number.

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

[awsless-repository-AmazonConnec-sflnvokeAPI-2R3T34AMG](#)

Function input parameters

Use text

Destination key

`sf_operation`

Value

`phoneLookup`

Use text

Destination key

`sf_fields`

Value

`Id, Name`

Use attribute

Destination key

`sf_phone`

Type

System

Attribute

Customer Number

This operation returns a response of:

```
{  
  "Id": "5006g00000BLqurAAD",  
  "sf_count": "1",  
  "Name": "Jim Smith"  
}
```

Salesforce Delete

This operation is invoked by setting **sf_operation** to **delete**. In this case, the Lambda function deletes a Salesforce object based on the parameters passed to it. For delete, the following parameters are required:

- `sf_object`
- `sf_id`

In the contact flow example below, we deleting an existing case based on customer input.

Use text

X

Destination key

sf_object

Value

Case

Use attribute

Use text

X

Destination key

sf_id

Value

5004T000004gsR1QAI

Use attribute

[Add another parameter](#)

Invoke AWS Lambda function X

Makes a call to AWS Lambda and optionally returns key/value pairs, which can be used to set contact attributes. [Learn more](#)

Function ARN

Select a function

serverlessrepo-AmazonConnectSalesforce-sfInvokeAPI- ▾

Use attributes

Function input parameters

Use text

X

Destination key

sf_operation

Value

delete

Use attribute

This operation returns a response of:

```
{  
  "Response": "None"  
}
```

Salesforce query

This operation is invoked by setting **sf_operation** to **query**. In this case, the Lambda function uses Salesforce Object Query Language (SOQL) to conduct a query against the Salesforce instance. For query, the following parameter is required:

- query

Any additional parameters will replace text values in the original query so that queries can be dynamic based on values stored within the contact flow. For example, the parameter set:

- query: "select field from object"
- field: "Id"
- object: "Task"

Will result in the query: "select Id from Task".

In the contact flow example below, we look for a customer by phone number.

Function input parameters

Use text X

Destination key

sf_operation

Value

query

Use attribute

Use text X

Destination key

query

Value

select Id from Contact where Phone LIKE '%numl

Use attribute

(full text of the value is "select Id from Contact where Phone LIKE '%number%'")



Use text

Use attribute

Destination key

number

Type

System



Attribute

Customer Number



This operation returns a response of:

```
{  
  "sf_records": [  
    { "Id": "00303000001RZfIAAW" }  
  ],  
  "sf_count": 1  
}
```

Salesforce queryOne

This operation is invoked by setting **sf_operation** to **queryOne** (case sensitive). In this case, the Lambda function uses Salesforce Object Query Language (SOQL) to conduct a query against the Salesforce instance, returning a result only when one record is returned from the query. For query, the following parameter is required:

- query

Any additional parameters will replace text values in the original query so that queries can be dynamic based on values stored within the contact flow. For example, the parameter set:

- query: "select field from object"

- field: "Id"

- object: "Task"

Will result in the query: "select Id from Task".

In the contact flow example below, we look for a customer by phone number.

Use text X

Destination key

sf_operation

Value

queryone

Use attribute

Use text X

Destination key

query

Value

select Id from Contact where Phone LIKE '%numl

Use attribute

(full text of the value is "select Id from Contact where Phone LIKE '%number%'")



Use text

Use attribute

Destination key

number

Type

System



Attribute

Customer Number



This operation returns a response of:

```
{  
  "Id": "00303000001RZfIAAW",  
  "sf_count": 1  
}
```

Salesforce createChatterPost

This operation is invoked by setting **sf_operation** to **createChatterPost** (case sensitive). In this case, the Lambda function uses the Salesforce Connect REST API to create a chatter post (see [here](#)). For createChatterPost, the following parameters are required:

- sf_feedElementType
- sf_subjectId
- sf_messageType
- sf_message

The following parameter is optional:

- sf_mention

(refer to the api reference for value types)

Any additional parameters will replace text values in the sf_message so that messages can be dynamic based on values stored within the contact flow. For example, the parameter set:

- sf_message: "Please help me with case `caseId`"
- casId: 1234

Will result in the message: "Please help me with case 1234".

In the contact flow example below, we leave a chatter post on a contact.

Use text



Destination key

sf_operation

Value

createChatterPost

Use attribute

Use text



Destination key

sf_feedElementType

Value

FeedItem

Use attribute

Use text

X

Destination key

sf_subjectId

Value

00303000001RZflAAW

Use attribute

Use text

X

Destination key

sf_messageType

Value

Text

Use attribute

Use text



Destination key

sf_message

Value

I had a problem during the call. My contact id is {}

Use attribute

(full text of the value is "I had a problem during the call. My contact id is `contactId` .")

Use text



Use attribute

Destination key

contactId

Type

System



Attribute

Contact id



The operation returns a response of:

{

```
"Id": "0D503000000ILY5CA0"
```

```
}
```

See the chatter post appear attached to the Subject:

Activity

Chatter

Post

Poll

Question

Share an update...

Share



Search this feed...



apiuser

1m ago



I had a problem during the call. My contact id is 31b41a0b-75a8-449d-adb8-3f5f247a73d6.

Like

Comment



Write a comment...

This operation is invoked by setting **sf_operation** to **createChatterComment** (case sensitive). In this case, the Lambda function uses the Salesforce Connect REST to create a chatter comment (see [here](#)). For **createChatterComment**, the following parameters are required:

- sf_feedElementId
- sf_commentType
- sf_commentMessage

(refer to the api reference for value types)

Any additional parameters will replace text values in the sf_commentMessage so that messages can be dynamic based on values stored within the contact flow. For example, the parameter set:

- sf_commentMessage: "Please help me with case **caseId**"
- casId: 1234

In the contact flow example below, we leave a comment on a chatter post.

Use text



Destination key

sf_operation

Value

createChatterComment

Use attribute

Use text



Destination key

sf_feedElementId

Value

0D503000000ILY5CAO

Use attribute

Use text

Destination key

sf_commentType

Value

Text

 Use attribute Use text

Destination key

sf_message

Value

This concern has been addressed.

 Use attribute

The operation returns a response of:

```
{  
    "Id": "0D70300000ChhNCAS"  
}
```

See the chatter post appear attached to the Subject:



apiuser

8m ago



I had a problem during the call. My contact id is dda99fbf-6186-4125-ba59-c461d620fdbd.

1 comment · Seen by 1

Like

Comment



apiuser



a few seconds ago

This concern has been addressed.

Like



Write a comment...

Salesforce search

This operation is invoked by setting **sf_operation** to **search** (case sensitive). In this case, the Lambda function uses the Salesforce REST to perform a parameterized search (see [here](#)). For search, the following parameters are required:

- q
- sf_fields
- sf_object

The following parameters are optional:

- where
- overallLimit

(refer to the api reference for value types)

See the below example:

Use text X

Destination key

sf_operation

Value

search

Use attribute

Use text X

Destination key

q

Value

test

Use attribute

Use text



Destination key

sf_object

Value

Case

Use attribute

Use text



Destination key

sf_fields

Value

Subject, Status

Use attribute

Use text

Destination key

overallLimit

Value

3

 Use attribute Use text

Destination key

where

Value

Status like 'New'

 Use attribute

The operation returns a response of:

```
{  
  "sf_records": [  
    {  
      "Id": "50001000001B9e6AAG",  
      "Subject": "test subject",  
      "Status": "New"  
    },  
    {  
      "Id": "50001000001B9eWAAAS",  
      "Subject": "test subject",  
      "Status": "New"  
    }  
  ]  
}
```

```
        "Status": "New"
    },
{
    "Id": "50001000001BDgiAAG",
    "Subject": "test subject",
    "Status": "New"
}
],
"sf_count": 3
}
```

Salesforce searchOne

This operation is invoked by setting **sf_operation** to **searchOne** (case sensitive). In this case, the Lambda function uses the Salesforce REST to perform a parameterized search (see [here](#)). For search, the following parameters are required:

- q
- sf_fields
- sf_object

The following parameter is optional:

- where

(refer to the api reference for value types)

See the below example:

Use text



Destination key

sf_operation

Value

searchOne

Use attribute

Use text



Destination key

q

Value

test subject unique

Use attribute

Use text



Destination key

sf_object

Value

Case

Use attribute

Use text



Destination key

sf_fields

Value

Subject, Status

Use attribute

Use text



Destination key

overallLimit

Value

3

Use attribute

Use text



Destination key

where

Value

Status like 'New'

Use attribute

The operation returns a response of:

```
{  
  "Id": "50001000001BIn6AAG",  
  "Subject": "test subject unique",  
  "Status": "New",  
  "sf_count": 1  
}
```

Amazon Connect Historical Metrics in Salesforce

Amazon Connect can generate a number of historical metric reports to monitor efficiency and utilization, agent performance, and other information about your contact center. Amazon Connect provides you the ability to schedule execution and export of reports, in comma separated value (CSV) format, to the S3 bucket of your choice. This enables broad compatibility across many analytics and WFM tools.

With the AWS Serverless Repository for Salesforce, you can configure the automatic import of reporting data from Amazon Connect into Salesforce. Two different historical reports are available to transport Agent and Queue interval data from Amazon Connect to Salesforce. Once these have been configured and scheduled, you will begin to see data available in the reports that have been included with the CTI Adapter.

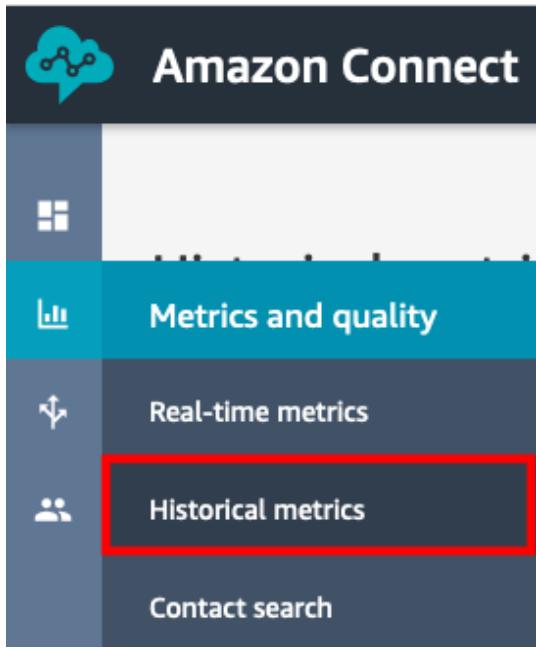
Configuring the AWS Services

When you configure schedule reports to run in Amazon Connect, they are saved to your reporting Amazon S3 bucket upon execution. As a part of the schedule configuration, you can determine the frequency with which data is exported. The standard configuration is for execution every 30 minutes; however you can increase the interval time to suit your requirements.

Once you have the reports configured and scheduled, you will then need to activate the trigger for the reports bucket that will invoke an AWS Lambda function included in the AWS Serverless Repository for Salesforce. This function will process the report and import the data to Salesforce.

Configuring the Historical Reports in Amazon Connect

1. Login to your Amazon Connect instance as an Administrator
2. From the left navigation, choose **Metrics and Quality** then select **Historical metrics**



3. On the **Historical metrics** page, select Contact metrics

Historical metrics

Select the type of report and metrics you would like to view.

Queues	Contact metrics	
Agents	Agent performance	
Phone numbers	Contact metrics	

4. Once the **Historical metrics: Queues** report loads, select the cog in the upper right to edit the report
5. On the **Interval & Time** range tab, set the parameters as follows:
 - a. Interval: 30 minutes
 - b. Time Zone: UTC
 - c. Time Range: Last 24 Hours
6. Leave the **Groupings** and **Filters** tabs set to their defaults
7. Select the **Metrics** Tab.
8. Select ALL selectable options EXCEPT:
 - a. Callback contacts handled

- b. API contact handled
- c. Callback Contacts
- d. API Contacts
- e. Contacts answered in 25 seconds
- f. Contacts transferred out internal
- g. Contacts transferred out external

9. Select **Apply**

- 10. Once the report saves, select the dropdown menu next to the Save button and choose Schedule
- 11. Set the name as **sfIntervalQueue** and choose **Continue**
- 12. On the **Note** screen, choose **Continue**
- 13. On the **Recurrence** tab in the Schedule Report setup, set the options as:
 - a. Generate this report: Hourly
 - b. Every: 0.5 hour(s)
 - c. Starting at: 1AM
 - d. For the Previous: 0.5 hour(s)

Schedule Report

sfIntervalQueue

Recurrence

Delivery Options

Generate this report

Hourly ▾ every 0.5 ▾ hour(s)

Starting at Time zone

1 AM ▾ UTC

For the previous

0.5 ▾ hour(s)

Create

Cancel

14. Select the **Delivery Options** tab

15. In the Prefix field, enter **SFDC/Queue**

Schedule Report

sfIntervalQueue

Recurrence

Delivery Options

Default location

connect-[REDACTED]/connect/sfctifinal022020/Reports

Prefix

SFDC/Queue

File name

connect-[REDACTED]/connect/sfctifinal022020/Reports/SFDC/Queue/sfIntervalQueue-YYYY-MM-DDThh:mm:ssZ.csv

16. Note the File name. The file name contains the bucket, path, and filename that will be used when executing the report. You will use the **bucket name** and **path** in later steps.

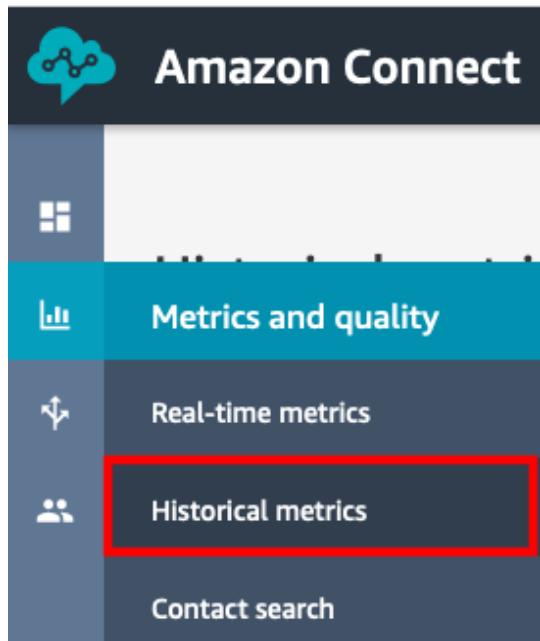
Schedule Report

sfIntervalQueue

Recurrence	Delivery Options
Default location connect-b0e7681ccc4d/connect/sfctifinal022020/Reports	
Prefix SFDC/Queue	
File name connect-[REDACTED]/connect/sfctifinal022020/Reports/SFDC/Queue/sfIntervalQueue-YYYY-MM-DDThh:mm:ssZ.csv	

17. Choose **Create**

18. Once the report is created, from the left navigation, choose **Metrics and Quality** then select **Historical metrics**



19. On the **Historical metrics** page, select **Agent performance

Historical metrics

Select the type of report and metrics you would like to view.

The screenshot shows a user interface for selecting historical metrics. There are three main categories: 'Queues' (selected), 'Agents' (highlighted with a red box), and 'Phone numbers'. Each category has a sub-section for 'Contact metrics' and a downward arrow icon.

Category	Metric	Action
Queues	Contact metrics	
Agents	Agent performance	Selected
Phone numbers	Contact metrics	

20. Once the **Historical metrics: Agents** report loads, select the cog in the upper right to edit the report

21. On the **Interval & Time** range tab, set the parameters as follows:

- a. Interval: 30 minutes
- b. Time Zone: UTC
- c. Time Range: Last 24 Hours

22. Leave the **Groupings** and **Filters** tabs set to their defaults

23. Select the **Metrics** Tab.

24. Select ONLY the following metrics (deselect any others):

- After contact work time
- Agent on contact time
- Agent idle time
- Non-Productive Time
- Average after contact work time
- Average handle time
- Average customer hold time
- Average agent interaction and customer hold time
- Average agent interaction time
- Contacts agent hung up first

- Contacts consulted
- Contacts handled
- Contacts handled incoming
- Contacts handled outbound
- Contacts put on hold
- Contacts hold disconnect
- Contacts transferred out
- Contacts transferred out internal
- Contacts transferred out external
- Error status time
- Agent answer rate
- Agent non-response
- Occupancy
- Online time
- Agent interaction and hold time
- Agent interaction time
- Average outbound agent interaction time
- Average outbound after contact work time

25. Select **Apply**

26. Once the report saves, select the dropdown menu next to the Save button and choose Schedule

27. Set the name as **sfIntervalAgent** and choose **Continue**

28. On the **Note** screen, choose **Continue**

29. On the **Recurrence** tab in the Schedule Report setup, set the options as:

- a. Generate this report: Hourly

- b. Every: 0.5 hour(s)
- c. Starting at: 1AM
- d. For the Previous: 0.5 hour(s)

Schedule Report

sflIntervalAgent

Recurrence **Delivery Options**

Generate this report

Hourly every 0.5 hour(s)

Starting at Time zone
1 AM UTC

For the previous
0.5 hour(s)

30. Select the **Delivery Options** tab

31. In the Prefix field, enter **SFDC/Agent**

sflIntervalAgent

Recurrence **Delivery Options**

Default location
connect-[REDACTED]connect/sfctifinal022020/Reports

Prefix

File name
connect-[REDACTED]/connect/sfctifinal022020/Reports/SFDC/Agent/sflIntervalAgent-YYYY-MM-DDThh:mm:ssZ.csv

32. Note the File name. The file name contains the bucket, path, and filename that will be used when executing the report. You will use the **bucket name** and **path** in later steps.

File name
connect-[REDACTED].connect/sfctifinal022020/Reports/SFDC/Agent,sfintervalAgent-YYYY-MM-DDThh:mm:ssZ.csv

33. Choose **Create**

Once you have created the two reports and set their schedule, the next thing you will need to do is to configure a trigger that executes a Lambda function when the report is generated and stored in S3.

Creating the AWS Lambda Trigger for the Queue Data

1. In a new browser tab, login to the [AWS console](#)
2. Open the [AWS Lambda Console](#)
3. In the Add filter field of the AWS Lambda console, enter sfIntervalQueue and press enter to filter the list of functions
4. Select the Lambda function that includes sfIntervalQueue in the name
5. Expand the Designer section
6. Select Add trigger

The screenshot shows the AWS Lambda Designer interface. At the top, there are three tabs: Configuration (highlighted in orange), Permissions, and Monitoring. Below the tabs, a section titled "Designer" is expanded, indicated by a downward arrow icon. A link "Go back to application serverlessrepo-AmazonConnectSalesforceLambda" is visible. On the left side, there is a button labeled "+ Add trigger" enclosed in a red rectangular box. On the right side, there is a Lambda function card with an orange icon and the text "serverlessrepo-AmazonConnectSalesforceLambda-3ZN". Below the function card, there is a "Layers" section with a stack icon.

7. In Trigger configuration, select S3 from the dropdown list

Add trigger

Trigger configuration

Select a trigger



DynamoDB

aws database nosql



Kinesis

analytics aws streaming



S3

aws storage



SNS

aws messaging notifications pub-sub push

S3



SQS

aws queue

8. Referring to the notes from the report configuration earlier, select the appropriate bucket

9. Change the Event type to PUT

10. Referring to the notes from the report configuration earlier, set the Prefix to the path value for your report

11. Set the Suffix to .csv

12. The trigger configuration should now be similar to the following:

Add trigger

Trigger configuration



S3

aws storage



Bucket

Please select the S3 bucket that serves as the event source. The bucket must be in the same region as the function.

connect-[REDACTED]



Event type

Select the events that you want to have trigger the Lambda function. You can optionally set up a prefix or suffix for an event. However, for each bucket, individual events cannot have multiple configurations with overlapping prefixes or suffixes that could match the same object key.

PUT



Prefix - optional

Enter a single optional prefix to limit the notifications to objects with keys that start with matching characters.

connect/sfctifinal022020/Reports/SFDC/Queue/

Suffix - optional

Enter a single optional suffix to limit the notifications to objects with keys that end with matching characters.

.CSV

Lambda will add the necessary permissions for Amazon S3 to invoke your Lambda function from this trigger. [Learn more](#) about the Lambda permissions model.

Enable trigger

Enable the trigger now, or create it in a disabled state for testing (recommended).

[Cancel](#)[Add](#)

13. Select **Add**

14. If everything has been configured correctly, you should receive a success message.

Creating the AWS Lambda Trigger for the Agent Data

1. In a new browser tab, login to the [AWS console](#)
2. Open the [AWS Lambda Console](#)
3. In the Add filter field of the AWS Lambda console, enter sfIntervalAgent and press enter to filter the list of functions
4. Select the Lambda function that includes sfIntervalAgent in the name
5. Expand the Designer section

6. Select Add trigger

The screenshot shows the AWS Lambda Designer interface. At the top, there are three tabs: Configuration (highlighted in orange), Permissions, and Monitoring. Below the tabs, a section titled "Designer" is expanded. A blue link "Go back to application serverlessrepo-AmazonConnectSalesforceLambda" is visible. On the right side, there is a Lambda function icon with the name "serverlessrepo-AmazonConnectSalesforceLambda" and a "Layers" section below it. In the bottom-left corner, there is a button labeled "+ Add trigger" which is highlighted with a red rectangular box.

7. In Trigger configuration, select S3 from the dropdown list

The screenshot shows the "Add trigger" configuration screen. At the top, there is a header "Trigger configuration". Below it, a search bar contains the placeholder text "Select a trigger". A search icon is located to the left of the search bar. A list of triggers is displayed, with the "S3" option highlighted with a red rectangular box. The "S3" trigger entry includes the AWS logo, the name "S3", the category "aws storage", and a small "S3" badge to its right. Other triggers listed include "DynamoDB", "Kinesis", "SNS", and "SQS".

8. Referring to the notes from the report configuration earlier, select the appropriate bucket

9. Change the Event type to PUT

10. Referring to the notes from the report configuration earlier, set the Prefix to the path value for your report

11. Set the Suffix to .csv

12. The trigger configuration should now be similar to the following:

Add trigger

Trigger configuration

 S3
aws storage

Bucket
Please select the S3 bucket that serves as the event source. The bucket must be in the same region as the function.
connect-[REDACTED]

Event type
Select the events that you want to have trigger the Lambda function. You can optionally set up a prefix or suffix for an event. However, for each bucket, individual events cannot have multiple configurations with overlapping prefixes or suffixes that could match the same object key.
PUT

Prefix - optional
Enter a single optional prefix to limit the notifications to objects with keys that start with matching characters.
connect/sfctifinal022020/Reports/SFDC/Agent/

Suffix - optional
Enter a single optional suffix to limit the notifications to objects with keys that end with matching characters.
.CSV

Lambda will add the necessary permissions for Amazon S3 to invoke your Lambda function from this trigger. [Learn more](#) about the Lambda permissions model.

Enable trigger
Enable the trigger now, or create it in a disabled state for testing (recommended).

13. Select **Add**

14. If everything has been configured correctly, you should receive a success message.

Verifying the Data Import in Salesforce

Once you have configured the reports and added the triggers, you should start to see data in Salesforce after ~30 minutes. The Amazon Connect CTI Adapter comes with a predefined set of reports. These

reports can be customized and additional reports can be created by leveraging the imported data.

Viewing Amazon Connect Reports in Salesforce

1. Log in into your Salesforce org and go to the **Service Console**
2. Expand the **navigation menu** by selecting the down arrow and choose **Reports**
3. In the left Navigation, select **All Folders**
4. Select the **Amazon Connect Reports** folder

The screenshot shows the Service Console interface. At the top, there's a navigation bar with icons for Home, Service Catalog, and Service Console, followed by a dropdown menu labeled "Reports". Below this is a sidebar titled "Reports" with a section for "All Folders". Under "All Folders", it says "1 item". A table lists the report folder: "RECENT" with "Amazon Connect Reports" selected, indicated by a red box around the row. Other categories like "Created by Me" are also listed.

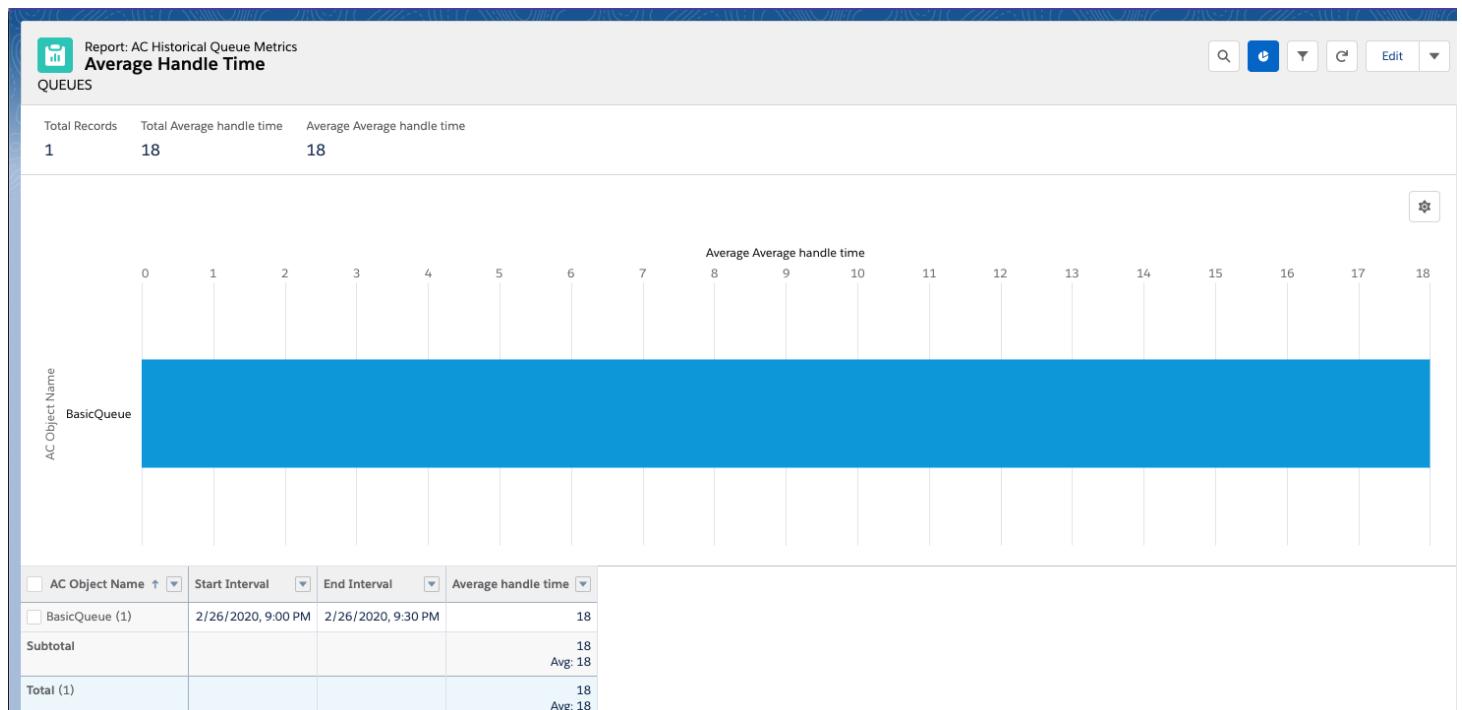
REPORTS	Name
Recent	Amazon Connect Reports
Created by Me	

5. In the list of reports, choose Average Handle Time queue report

The screenshot shows the "All Folders > Amazon Connect Reports" view. The sidebar on the left shows categories like "Recent", "Created by Me", "Private Reports", "Public Reports", and "All Reports". The main area displays a table of reports under the "Amazon Connect Reports" folder. The table has columns for "Name", "Description", and "Folder". One row for "Average Handle Time" is highlighted with a red box. The table rows are as follows:

REPORTS	Name	Description	Folder
Recent	Average Queue Abandon Time	QUEUES	Amazon Connect Reports
Created by Me	Average Occupancy Today		Amazon Connect Reports
Private Reports	Average Handle Time	QUEUES	Amazon Connect Reports
Public Reports	Average Handle Time Today		Amazon Connect Reports
All Reports	Agent Performance (Current User)		Amazon Connect Reports

6. Once the report loads, you should see data (provided calls have queued in this Amazon Connect instance today)



[Edit this page](#)

Amazon Connect Real-Time Metrics in Salesforce

The CTI adapter includes real-time reporting tools which provide visibility into critical data which help improve the utilization of your agents and allows insight into overall queue performance. Once you have deployed the AWS Serverless Application Repository for Salesforce your Amazon Connect instance will push real-time metric data to Salesforce every 15 seconds. This data can be viewed from two tools that were included with the CTI Adapter installation.

The first view, AC Queue Metrics queue provides details about current queue staffing and the distribution of contacts by queue. The second view, AC Real Time Queue Metrics, allows you to select a specific queue and view the real-time metrics for that queue.

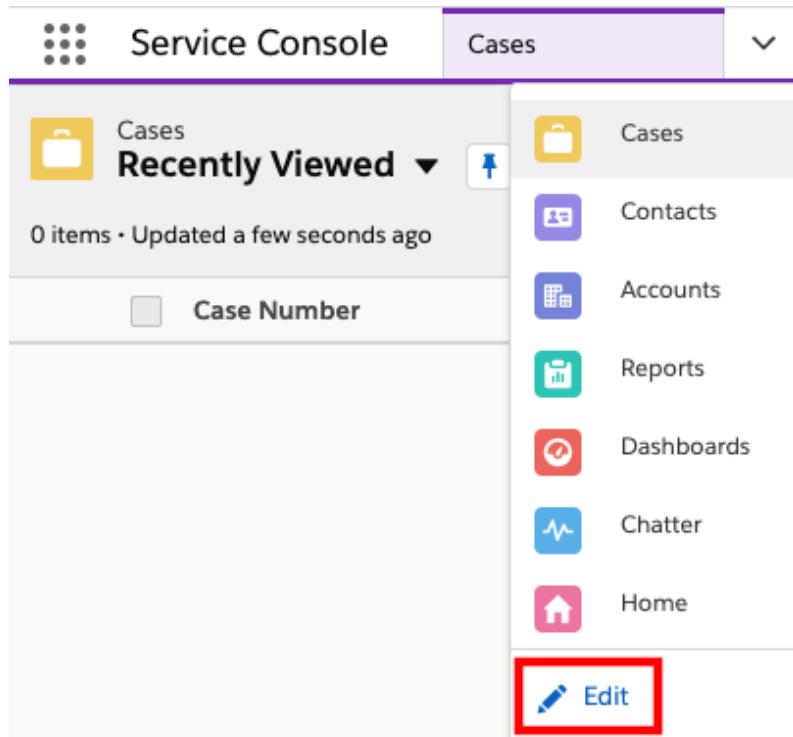
Deployment and Configuration

Once you have deployed the AWS Serverless Application Repository for Salesforce and provided the appropriate credentials, there is no further configuration required to make the data flow work. The only remaining task is to add the real-time views to your Salesforce console.

Adding Real-Time Reports to the Service Console

1. Log in into your Salesforce org and go to the **Service Console**

2. Expand the **navigation menu** by selecting the down arrow and choose **Edit**.



3. On the Edit Service Console App Navigation Items page, select **Add More Items**

The screenshot shows the 'Edit Service Console App Navigation Items' page. The title is 'Edit Service Console App Navigation Items'. Below it, a sub-instruction says 'Personalize your nav bar for this app. Reorder items, and rename or remove items you've added.' with a 'Learn More' link. On the left, there's a section titled 'NAVIGATION ITEMS (7)' listing various items. On the right, there's a button labeled 'Add More Items' which is highlighted with a red box.

4. Select the + next to **AC Queue Metrics** and **AC Real Time Queue Metrics**

5. Select **Add 2 Nav Items**

6. Change the order of your Navigation Items if desired, then choose **Save**

Edit Service Console App Navigation Items

Personalize your nav bar for this app. Reorder items, and rename or remove items you've added.

[Learn More](#) i

i 2 items added to your list. Save your updates.

NAVIGATION ITEMS (10)

[Add More Items](#)

≡  AC CTI Adapters X

≡  Cases

≡  Contacts

≡  Accounts

≡  Reports

≡  Dashboards

≡  Chatter

≡  Home

≡  AC Queue Metrics X

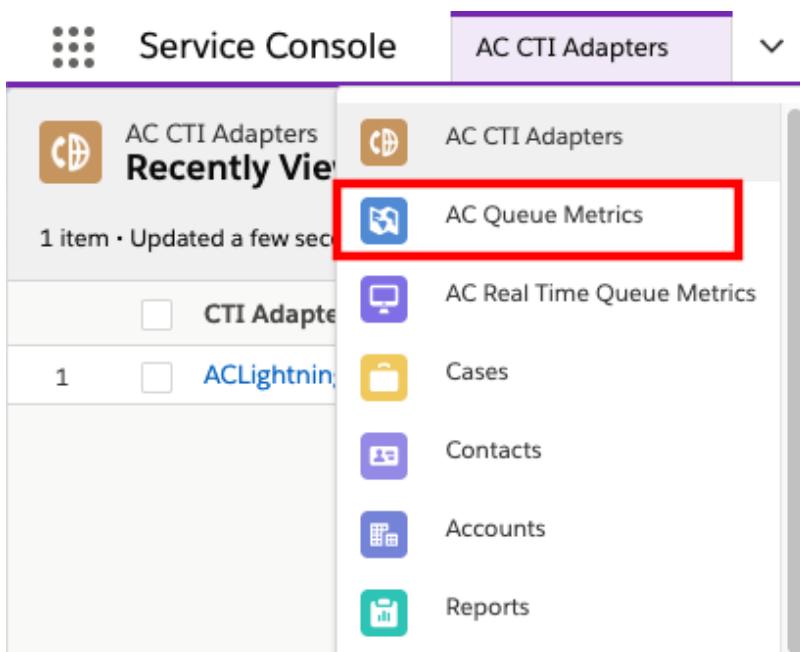
≡  AC Real Time Queue Metrics X

[Reset Navigation to Default](#) i

[Cancel](#)

[Save](#)

- Once the save completes, expand the **navigation menu** by selecting the down arrow and choose **AC Queue Metrics**



8. The AC Queue Metrics view will display and any relevant data will update every 15 seconds.

Queue Name	Agents Available	Agents Error	Agents Non Productive	Agents Online	Agents Staffed	Agents After Contact Work	Contacts In Queue	Contacts Scheduled	Oldest Contact Age
BasicQueue	1	1	0	2	2	0	0	0	0

9. Scroll down to view the **AC Contact Metrics Dashboard

AC Object Name	Sum of Contacts Incoming
BasicQueue	4

AC Object Name	Sum of Contacts queued
BasicQueue	4

AC Object Name	Sum of Contacts handled incoming
BasicQueue	4 (100% of 4)

AC Object Name	Sum of Contacts abandoned
BasicQueue	0

AC Object Name	Sum of Average queue abandon time
BasicQueue	0

AC Object Name	Sum of Average handle time
BasicQueue	18

AC Object Name	Sum of Contact handle time
BasicQueue	75

AC Object Name	Average Service level 120 seconds
BasicQueue	100%

10. Expand the **navigation menu** by selecting the down arrow and choose **AC Real Time Queue Metrics

- AC Queue Metrics
- AC CTI Adapters
- AC Queue Metrics
- AC Real Time Queue Metrics**
- Cases
- Contacts
- Accounts
- Reports

11. Change the List View to **ALL**

AC Real Time Queue Metrics

All

1 item • LIST VIEWS

✓ All

1 Recently Viewed (Pinned list)

12. Select a queue to view the detailed real-time statistics for that specific queue

Service Console AC Real Time Queue Met... BasicQueue

AC Real Time Queue Metric
BasicQueue

Related	Details
Queue Name	BasicQueue
Queue ARN	
Agents After Contact Work	0
Agents Available	0
Agents Error	1
Agents Non Productive	0
Agents OnCall	0
Agents Online	1
Queue Id	3caa8bb5-9426-4b58-8bae-f405b6360cbe
Created By	apiuser, 2/24/2020, 4:51 PM
Owner	apiuser
Agents Staffed	1
Contacts In Queue	0
Contacts Scheduled	0
Oldest Contact Age	0
Last Modified By	apiuser, 2/26/2020, 9:38 PM

Edit this page

Contact Channel Analytics

In addition to the CTI adapter's native ability to provide direct playback links to call recordings in Amazon Connect, the AWS Serverless Application Repository for Salesforce includes several functions that allow you to process recordings, perform quality analytics functions, and bring data into Salesforce.

This processing is done post-call, using the Contact Trace Record (CTR) as the initiation path. The following quality analytics options are available:

- **Call Recording Streaming:** streams the actual audio file into Salesforce. This option is not mandatory for the others to function.
- **Recording Transcript:** you can choose to have your call recordings transcribed to text and presented in a visual format that resembles a chat conversation. This allows for quick scanning of a call to identify key segments of conversation. This option is required if you wish to include the next level of analysis
- **AI-Driven Contact Analysis:** once the recordings have been transcribed to text, you can also indicate that you wish to do further analysis of the conversation using [Amazon Comprehend](#). Available options are:
 - **Sentiment Analysis:** returns the overall sentiment of the conversation (Positive, Negative, Neutral, or Mixed).
 - **Keyphrase Extraction:** returns the key phrases or talking points and a confidence score to support that this is a key phrase.
 - **Language Detection:** returns the dominant language with a confidence score to support that a language is dominant
 - **Custom Entities:** allows you to customize the AI to identify terms that are specific to your domain
 - **Syntax Analysis:** analyze the transcript using tokenization and Parts of Speech (PoS), and identify word boundaries and labels like nouns and adjectives within the text.

Call Recording Streaming

You can stream Call Recordings in your Salesforce Org. This allows for easy access to the recordings from within Salesforce and can be used in conjunction with the other contact channel analytics features to provide a complete view of the customer interaction.

The import of call recordings is not required to activate the other contact channel analytics features.

Once enabled during the AWS Serverless Application Repository for Salesforce, recording import is activated on a call by call basis by adding a specific contact attribute. This attribute is used during Contact Trace Record processing to trigger the call import.

NOTE: After Call Work time is a part of the Contact Trace Record. As such, CTRs are not generated until the agent leaves the after call work state. If you are not seeing a recording import, please make sure the agent has completed the call and left the after call work state.

Cloudformation Template

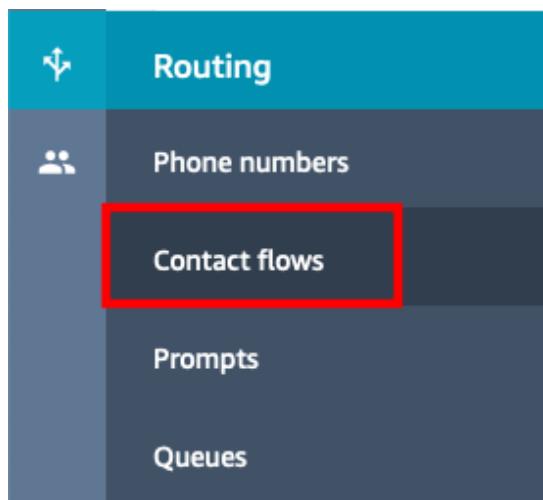
To make sure that the AWS resources are set up, make sure that the *PostcallRecordingImportEnabled* parameter is set to true in your Cloudformation stack:

The screenshot shows the AWS CloudFormation console with the 'Parameters' tab selected. A list of parameters is displayed, and the 'PostcallRecordingImportEnabled' parameter is highlighted with a red box. The 'Value' column for this parameter shows the value 'true'. Other parameters listed include AmazonConnectInstanceId, AmazonConnectQueueMaxRecords, AmazonConnectQueueMetricsMaxRecords, CTREventSourceMappingMaximumRetryAttempts, CTRKinesisARN, ConnectRecordingS3BucketName, ConnectReportingS3BucketName, HistoricalReportingImportEnabled, LambdaLoggingLevel, PostcallCTRImportEnabled, and PostcallRecordingImportEnabled.

Note: If you are expecting more than 1000 concurrent calls, you may have to increase the timeout for the `sfnCTRTrigger` lambda.

Enabling call recording streaming

1. Login to your Amazon Connect instance as an Administrator
2. From the left navigation, choose **Routing** then select **Contact flows**



3. Open the contact flow that you want to use to enable call recording import. This contact flow must have Amazon Connect's native recording turned on.
4. In your contact flow, before you transfer to queue, add a new **Set contact attributes** block
5. Configure the block to set a contact attribute as follows:

a. **Destination key:** postcallRecordingImportEnabled

b. **Value:** true

Attribute to save

The screenshot shows a configuration dialog for saving contact attributes. It has two main sections: 'Use text' (selected) and 'Use attribute'. Under 'Use text', there are fields for 'Destination key' containing 'postcallRecordingImportEnabled' and 'Value' containing 'true'. A close button 'X' is located in the top right corner of the dialog.

Use text X

Destination key
postcallRecordingImportEnabled

Value
true

Use attribute

6. **Save** the Set contact attributes block. Make sure it is appropriately connected to your contact flow, and **Publish** the flow.

7. Wait approximately 2 minutes to give the contact flow time to publish.

8. Place a call, connect to your agent, speak for a few moments to test the audio, then end the call. Make sure the agent exits after call work

9. After a minute or so, the recording should import.

Adding users to the AC_CallRecording permission set

This step is only necessary for non admin user accounts.

1. In the setup search box, search for "Permission sets". Select the "AC_CallRecording" permission set. Select "Manage Assignments".



Setup

Home

Object Manager ▾

 Perm

Users

Permission Set Groups

Permission Sets

Custom Code

Custom Permissions

Didn't find what you're looking for?
Try using Global Search.

SETUP Permission Sets

Permission Set AC_CallRecording

 Find Settings... | Clone Delete Edit Properties Manage Assignments

Permission Set Overview

Description

License

Session Activation Required Last Modified By Bomi Lee, 10/12/2020, 5:07 PM

Apps

Assigned Apps

Settings that specify which apps are visible in the app menu

Assigned Connected Apps

Settings that specify which connected apps are visible in the app menu

2. Select "Add Assignments". Add the users that should have access to the audio recordings and select "assign".

SETUP Permission Sets

Assign Users All Users

View: All Users Edit Create New View

Action	Full Name	Alias	Username	Assign	Cancel
<input type="checkbox"/> Edit					
<input checked="" type="checkbox"/> Edit Login					
<input checked="" type="checkbox"/> Edit Login					
<input checked="" type="checkbox"/> Edit Login					
<input type="checkbox"/> Edit Login					
<input type="checkbox"/> Edit Login					
<input type="checkbox"/> Edit Login					
<input type="checkbox"/> Edit Login					
<input type="checkbox"/> Edit Login					

Adding Contact Channel Analytics to the Service Console

1. Log in into your Salesforce org and go to the **Service Console**
2. Expand the **navigation menu** by selecting the down arrow and choose **Edit**.



The screenshot shows the Service Console interface. At the top, there's a navigation bar with a grid icon, the text "Service Console", and a dropdown menu labeled "Cases". Below this is a sidebar titled "Recently Viewed" which says "0 items · Updated a few seconds ago". A checkbox labeled "Case Number" is also present. To the right is a vertical list of navigation items: Cases, Contacts, Accounts, Reports, Dashboards, Chatter, Home, and Edit. The "Edit" button is highlighted with a red rectangular box.

3. On the Edit Service Console App Navigation Items page, select **Add More Items**

Edit Service Console App Navigation Items

Personalize your nav bar for this app. Reorder items, and rename or remove items you've added.

[Learn More](#) i

NAVIGATION ITEMS (7)

[Add More Items](#)

4. Select the + next to **AC Contact Channel Analytics**

5. Select **Add 1 Nav Item**

6. Change the order of your Navigation Items if desired, then choose **Save**

Edit Service Console App Navigation Items

Personalize your nav bar for this app. Reorder items, and rename or remove items you've added.

[Learn More](#) i

i 1 item added to your list. Save your updates.

NAVIGATION ITEMS (11)

[Add More Items](#)

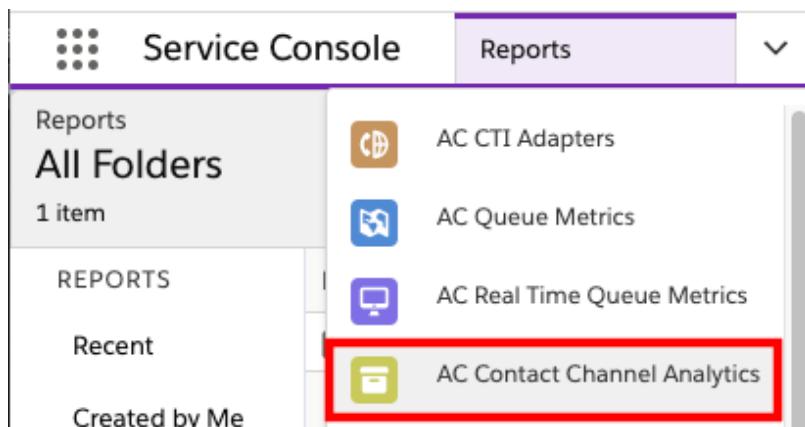
<small>≡</small>	 AC CTI Adapters	<small>X</small>
<small>≡</small>	 AC Queue Metrics	<small>X</small>
<small>≡</small>	 AC Real Time Queue Metrics	<small>X</small>
<small>≡</small>	 Cases	
<small>≡</small>	 Contacts	
<small>≡</small>	 Accounts	
<small>≡</small>	 Reports	
<small>≡</small>	 Dashboards	
<small>≡</small>	 Chatter	
<small>≡</small>	 Home	
<small>≡</small>	 AC Contact Channel Analytics	<small>X</small>

[Reset Navigation to Default](#) i

[Cancel](#)

[Save](#)

7. Once the save completes, expand the **navigation menu** by selecting the down arrow and choose **AC Contact Channel Analytics**



The screenshot shows the Service Console navigation menu. At the top, there's a purple bar with the text "Service Console" and "Reports". Below this is a sidebar with sections for "All Folders" (containing "Reports" and "1 item"), "REPORTS", "Recent", and "Created by Me". To the right of the sidebar, a list of items is displayed: "AC CTI Adapters", "AC Queue Metrics", "AC Real Time Queue Metrics", and "AC Contact Channel Analytics". The "AC Contact Channel Analytics" item is highlighted with a red rectangular box.

8. Change the list view from Recently Viewed to **All**

The screenshot shows the AC Contact Channel Analytics interface. At the top, there's a green icon with a white 'f' and the text 'AC Contact Channel Analytics'. Below it is a dropdown menu labeled 'Recently Viewed ▾' with a blue arrow icon. Underneath, a list view shows '0 items' and a 'LIST VIEWS' section. A red box highlights the 'All' button in this section. Below it, a checked checkbox next to 'Recently Viewed (Pinned list)' is shown.

9. Once the view refreshes, you should see your record(s)

The screenshot shows the AC Contact Channel Analytics interface after refreshing. It displays a single item in a list view. The header says '1 item · Sorted by Contact Channel Analytics Name · Filtered by all ac contact channel analytics · Updated a few seconds ago'. The list contains one record: '1' followed by a checkbox and the name 'CCA 000001'.

10. Select the recording to open it

11. In the Notes & Attachments section, you will see the recording file attached.

The screenshot shows the 'Notes & Attachments (1)' section. It includes a 'Upload Files' button. Below it, a file named 'CallRecording.wav' is listed with the date 'Feb 27, 2020 · Attachment'. At the bottom, there's a 'View All' link.

12. NOTE: The recording playback, waveform, and transcript views are only active when you also choose to activate recording transcripts.

Recording Transcripts

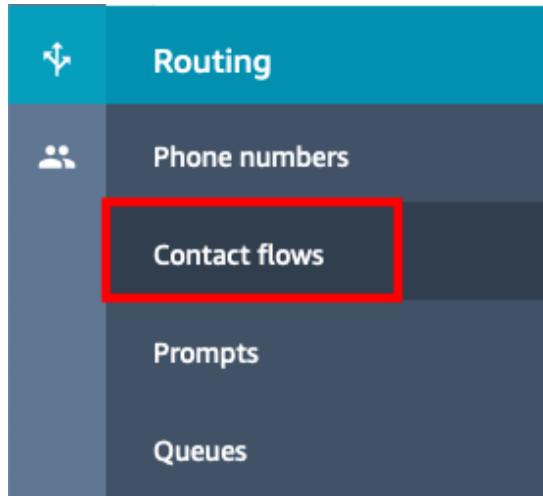
Enabling the Recording Transcripts activates a process to run your contact recordings through Amazon Transcribe which uses a deep learning process to convert text to speech accurately and quickly. In addition, this process also creates a visual waveform of the recording, enables the in-app recording playback, and provides a visual representation of the conversation.

Once enabled during the AWS Serverless Application Repository for Salesforce, recording transcription is activated on a call by call basis by adding a specific contact attribute. This attribute is used during Contact Trace Record processing to trigger the transcription.

Make sure the Salesforce user accessing recording transcription are added to the AC_CallRecording permission set, as described in the previous section.

Enabling recording transcription

1. Login to your Amazon Connect instance as an Administrator
2. From the left navigation, choose **Routing** then select **Contact flows**



3. Open the contact flow that you want to use to enable call transcription. This contact flow must have Amazon Connect's native recording turned on, since the transcription is dependent on it.
4. In your contact flow, before you transfer to queue, add a new **Set contact attributes** block
5. Configure the block to set two contact attributes as follows:
 - i. Attribute 1: enables the transcription process
 - a. **Destination key:** postcallTranscribeEnabled
 - b. **Value:** true
 - ii. Attribute 2: specifies the transcription language
 - a. **Destination key:** postcallTranscribeLanguage
 - b. **Value:** en-US (See [Amazon Transcribe API Reference](#) for valid language codes)

The screenshot shows two stacked configuration panels for a 'Set contact attributes' block. The top panel is titled 'Use text' and contains fields for 'Destination key' (postcallTranscribeEnabled) and 'Value' (true). The bottom panel is also titled 'Use text' and contains fields for 'Destination key' (postcallTranscribeLanguage) and 'Value' (en-US). Both panels have an 'X' icon in the top right corner.

Destination key
postcallTranscribeEnabled

Value
true

Destination key
postcallTranscribeLanguage

Value
en-US

6. **Save** the Set contact attributes block. Make sure it is appropriately connected to your contact flow, and **Publish** the flow.
7. Wait approximately 2 minutes to give the contact flow time to publish.
8. Place a call, connect to your agent, speak for a few moments from both the agent and the customer side to generate a good transcript, then end the call. Make sure the agent exits after call work
9. The transcription will take at least as long as the call did. Wait an appropriate amount of time for the transcription to be available.

Accessing transcriptions

1. Log in into your Salesforce org and go to the **Service Console**
2. Expand the **navigation menu** by selecting the down arrow and choose AC Contact Channel Analytics. If you have not previously added AC Contact Channel Analytics to the navigation menu, complete the steps found in [Adding Contact Channel Analytics to the Service Console](#).

Quarterly Performance

CLOSED \$0 OPEN 0

500k
400k
300k

Home
Omni Supervisor
Reports
AC CTI Adapters
AC Contact Channel Analytics
AC Contact Trace Records

3. Change the list view from Recently Viewed to **All**

AC Contact Channel Analytics

Recently Viewed ▾

0 items LIST VIEWS

All

Recently Viewed (Pinned list)

4. Once the view refreshes, you should see your record(s)

AC Contact Channel Analytics

Recently Viewed ▾

3 items • Updated a few seconds ago

	<input type="checkbox"/> Contact Channel Analytics Name	>Contact Id
1	<input type="checkbox"/> CCA 000002	6df455ce-8e7e-4ee8-806d-b5dff9758d66
2	<input type="checkbox"/> CCA 000001	c3a70eeb-4a9e-4605-8871-4bd0d58c9b51
3	<input type="checkbox"/> CCA 000000	a14b0510-2db7-441c-aac2-55018eb4cbde

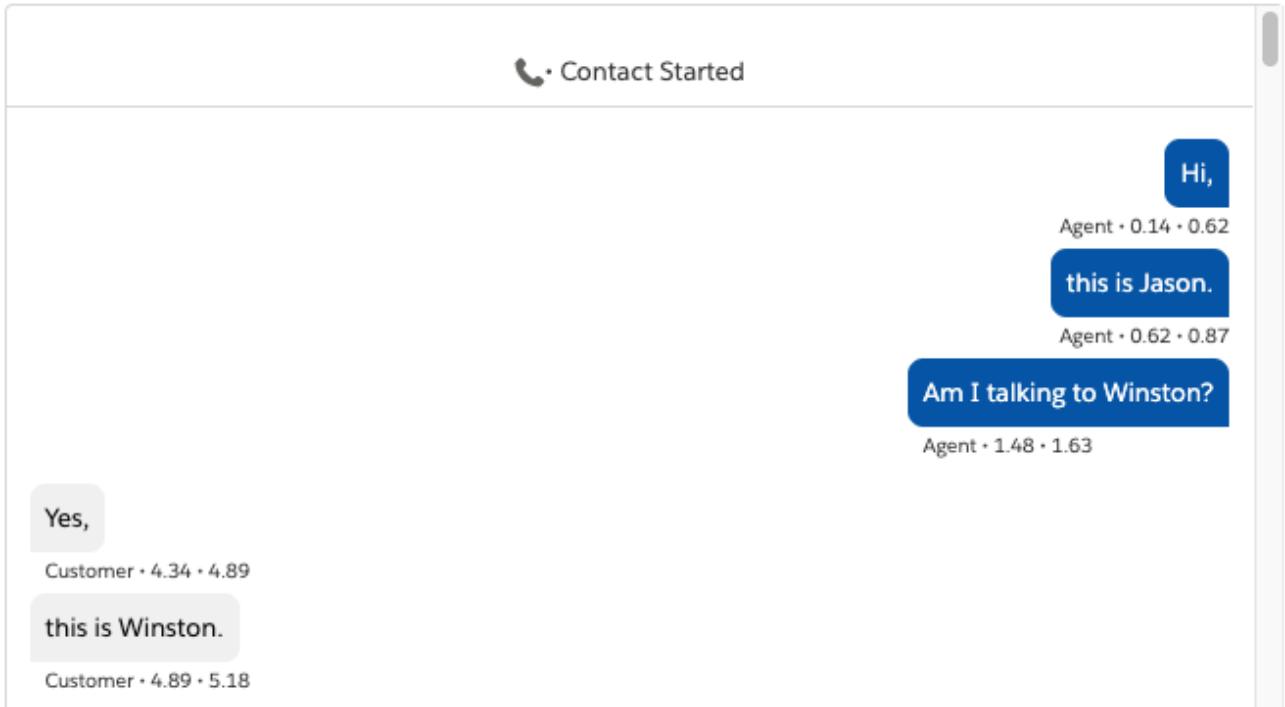
5. Select a record to view the details.

6. Once the record opens, note the recording waveform, playback controls, and the visual version of the transcription

Recording



Transcript



7. Also note that the transcriptions for each side of the conversation are also included as attachments.

AI Driven Contact Analysis

Enabling the AI Driven Contact Analysis function allows you to process the transcribed text using [Amazon Comprehend](#). Amazon Comprehend is a natural language processing service that uses machine learning to find insights and relationships in text.

Once enabled during the AWS Serverless Application Repository for Salesforce, contact analysis is activated on a call by call basis by adding a specific contact attribute. This attribute is used during Contact Trace Record processing to trigger the Amazon Comprehend task.

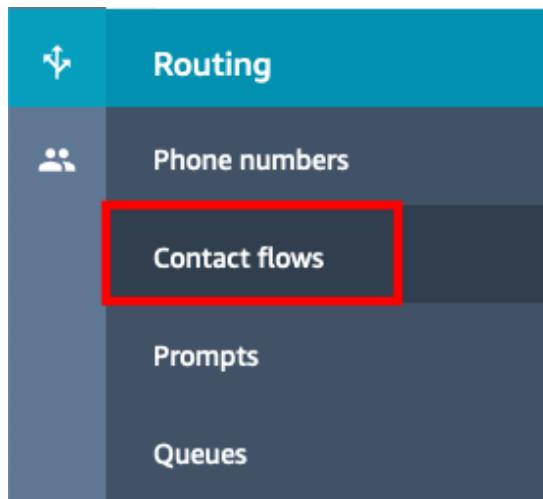
There are five functions available with the integration. Each function is triggered by a code. You can use one code in your contact attribute, or string multiple together as a comma separated list. The available codes and their functions are:

- **snt = Sentiment Analysis**
- **kw = Keyphrase Extraction**

- **dl = Language Detection**
- **ne = Custom Entities**
- **syn = Syntax Analysis**

Enabling AI Driven Contact Analysis

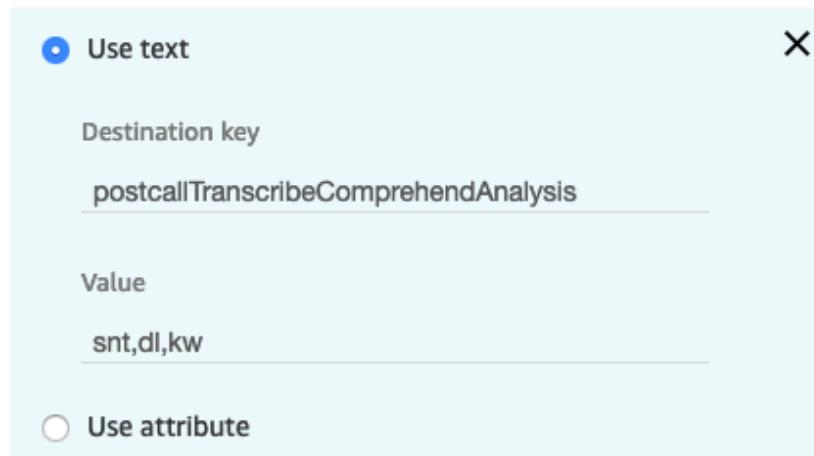
1. Login to your Amazon Connect instance as an Administrator
2. From the left navigation, choose **Routing** then select **Contact flows**



3. Open the contact flow that you want to use to enable AI Driven Contact Analytics. This contact flow must have Amazon Connect's native recording turned on, and transcription enabled as these are both prerequisites for the analytics function.
4. In your contact flow, before you transfer to queue, add a new **Set contact attributes** block
5. Configure the block to set a contact attribute as follows:
 - a. **Destination key:** postcallTranscribeComprehendAnalysis
 - b. **Value:** snt,dl,kw,syn

– In this example, we are performing sentiment analysis, language detection, and keyphrase extraction

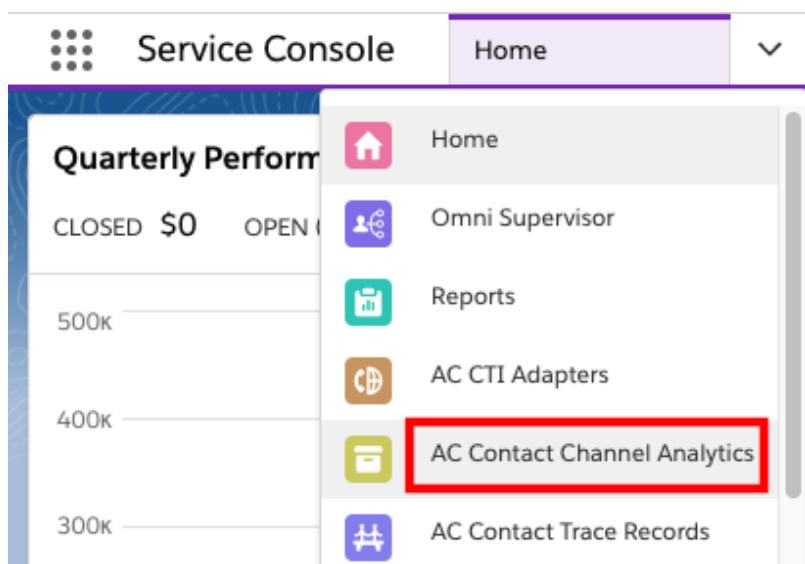
Attribute to save



6. **Save** the Set contact attributes block. Make sure it is appropriately connected to your contact flow, and **Publish** the flow.
7. Wait approximately 2 minutes to give the contact flow time to publish.
8. Place a call, connect to your agent, speak for a few moments from both the agent and the customer side to generate a good transcript, then end the call. Make sure the agent exits after call work
9. The contact analysis runs after the transcription, which will take at least as long as the call did. Wait an appropriate amount of time for the analysis to be available.

Accessing the AI Driven Contact Analysis

1. Log in into your Salesforce org and go to the **Service Console**
2. Expand the **navigation menu** by selecting the down arrow and choose AC Contact Channel Analytics. If you have not previously added AC Contact Channel Analytics to the navigation menu, complete the steps found in [Adding Contact Channel Analytics to the Service Console](#).



3. Change the list view from Recently Viewed to **All**



0 items

LIST VIEWS

All

✓ Recently Viewed (Pinned list)

4. Once the view refreshes, you should see your record(s)



3 items • Updated a few seconds ago



Contact Channel Analytics Name



Contact Id

1	<input type="checkbox"/> CCA 000002	6df455ce-8e7e-4ee8-806d-b5dff9758d66
2	<input type="checkbox"/> CCA 000001	c3a70eeb-4a9e-4605-8871-4bd0d58c9b51
3	<input type="checkbox"/> CCA 000000	a14b0510-2db7-441c-aac2-55018eb4cbde

5. Select a record to view the details.

6. Once the record opens, note the Keywords, Sentiment, and Dominant Language

Contact Channel Analytics Name	Owner
CCA 000003	 apiuser 
Contact Id	
1dcf1bd2-4aeb-4c75-ad19-85d538035584	
Keywords	
a problem, my account number, the first place, my account number, 1234 1285, time, your competitors	
Named Entities	
Sentiment	
NEGATIVE, 0.9559353590011597	
Dominant Language	
en	
Channel	
Created By	Last Modified By
 apiuser , 2/27/2020, 1:13 PM	 apiuser , 2/27/2020, 1:15 PM

 [Edit this page](#)

Contact Trace Record Import

In Amazon Connect, data about contacts is captured in contact trace records (CTR). This data can include the amount of time a contact spends in each state: customer on hold, customer in queue, agent interaction time. The basis for most historical and real-time metrics in Amazon Connect is the data in the CTR. When you create metrics reports, the values displayed for **most** (not all) metrics in the report are calculated using the data in the CTRs.

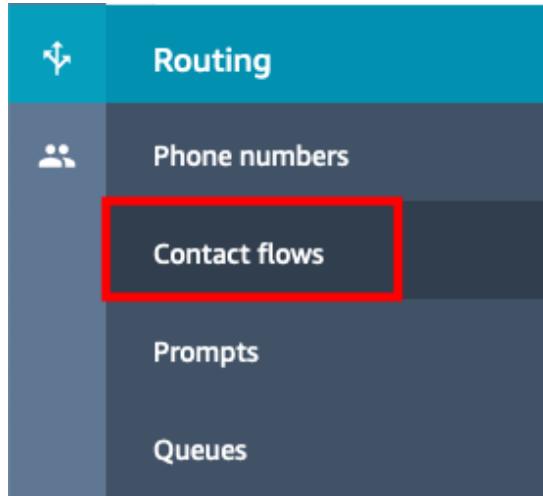
CTRs are available within your Amazon Connect instance for 24 months from the time when the associated contact was initiated. You can also stream CTRs to Amazon Kinesis to retain the data longer, and perform advanced analysis on it. Additionally, with the AWS Serverless Application Repository for Salesforce, you can import Contact Trace Records into your Salesforce org.

Contact Trace Record Import

Once enabled during the AWS Serverless Application Repository for Salesforce, CTR import is activated on a call by call basis by adding a specific contact attribute. This attribute is used during Contact Trace Record processing to trigger the import task.

Enabling Contact Trace Record Import

1. Login to your Amazon Connect instance as an Administrator
2. From the left navigation, choose **Routing** then select **Contact flows**



3. Open the contact flow that you want to use to enable call recording import.
4. In your contact flow, before you transfer to queue, add a new **Set contact attributes** block
5. Configure the block to set a contact attribute as follows:
 - a. **Destination key:** postcallCTRImportEnabled
 - b. **Value:** true

Attribute to save

The dialog shows the configuration for a 'Set contact attributes' block. The 'Use text' tab is selected. The 'Destination key' field contains 'postcallCTRImportEnabled'. The 'Value' field contains 'true'.

<input checked="" type="radio"/> Use text	<input type="button" value="X"/>
Destination key	
postcallCTRImportEnabled	
Value	
true	
<input type="radio"/> Use attribute	

6. **Save** the Set contact attributes block. Make sure it is appropriately connected to your contact flow, and **Publish** the flow.

7. Wait approximately 2 minutes to give the contact flow time to publish.

8. Place a call, connect to your agent, speak for a few moments, then end the call. Make sure the agent exits after call work

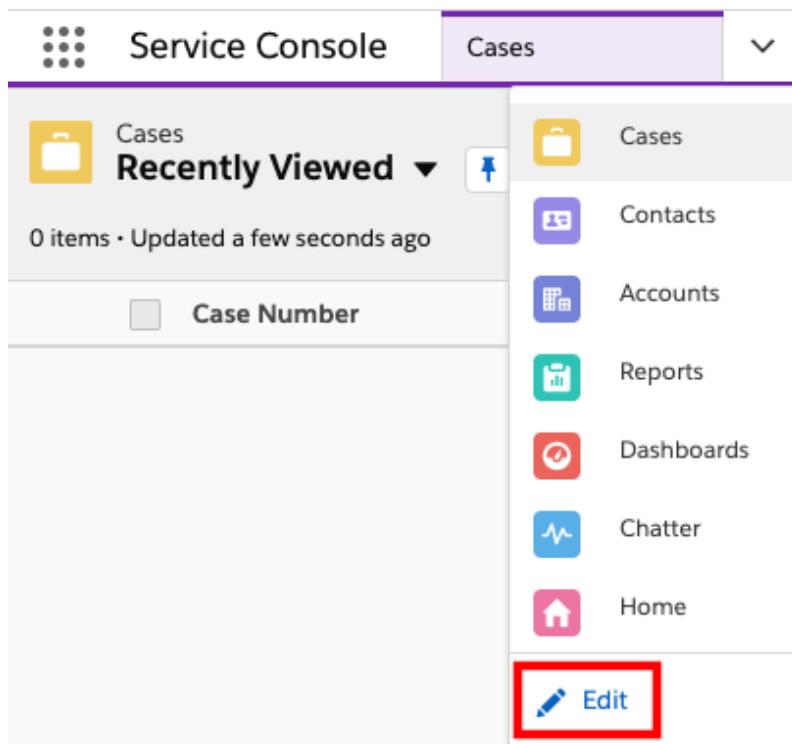
9. The Contact Trace Record is emitted shortly after call completion and the import happens almost immediately.

Note: If you are expecting more than 1000 concurrent calls, you may have to increase the timeout for the `sfCTRTrigger` lambda.

Adding Contact Trace Records to the Service Console

1. Log in into your Salesforce org and go to the **Service Console**

2. Expand the **navigation menu** by selecting the down arrow and choose **Edit**.



3. On the Edit Service Console App Navigation Items page, select **Add More Items**

Edit Service Console App Navigation Items

Personalize your nav bar for this app. Reorder items, and rename or remove items you've added.

[Learn More](#) ⓘ

NAVIGATION ITEMS (7)

[Add More Items](#)

4. Select the + next to **AC Contact Trace Records**

5. Select Add 1 Nav Item

6. Change the order of your Navigation Items if desired, then choose **Save**

Edit Service Console App Navigation Items

Personalize your nav bar for this app. Reorder items, and rename or remove items you've added.

[Learn More](#) 

 1 item added to your list. Save your updates.

NAVIGATION ITEMS (12)

[Add More Items](#)

	 AC CTI Adapters	
	 AC Queue Metrics	
	 AC Real Time Queue Metrics	
	 AC Contact Channel Analytics	
	 Cases	
	 Contacts	
	 Accounts	
	 Reports	
	 Dashboards	
	 Chatter	
	 Home	
	 AC Contact Trace Records	

[Reset Navigation to Default](#) 

[Cancel](#)

[Save](#)

7. Once the save completes, expand the **navigation menu** by selecting the down arrow and choose **AC Contact Trace Records**

The screenshot shows the Service Console interface. On the left, there's a sidebar titled "Quarterly Performance" with a chart showing "CLOSED \$1,820,000". To the right is a list of metrics and records. The "AC Contact Trace Records" item is highlighted with a red box.

- AC CTI Adapters
- AC Queue Metrics
- AC Real Time Queue Metrics
- AC Contact Channel Analytics
- AC Contact Trace Records**
- Cases

8. Change the list view from Recently Viewed to **All**

The screenshot shows the "AC Contact Trace Records" list view. The "Recently Viewed" dropdown menu is open, showing two options: "All" (which is selected and highlighted with a red box) and "Recently Viewed (Pinned list)".

9. Once the view refreshes, you should see your record(s)

The screenshot shows the "AC Contact Trace Records" list view with the "All" filter selected. It displays 5 items, all of which are Contact Trace Records (CTR) with ContactId values ranging from 000000000 to 000000004.

	Contact Trace Record
1	CTR 000000000
2	CTR 000000001
3	CTR 000000002
4	CTR 000000003
5	CTR 000000004

10. Select a record to view it

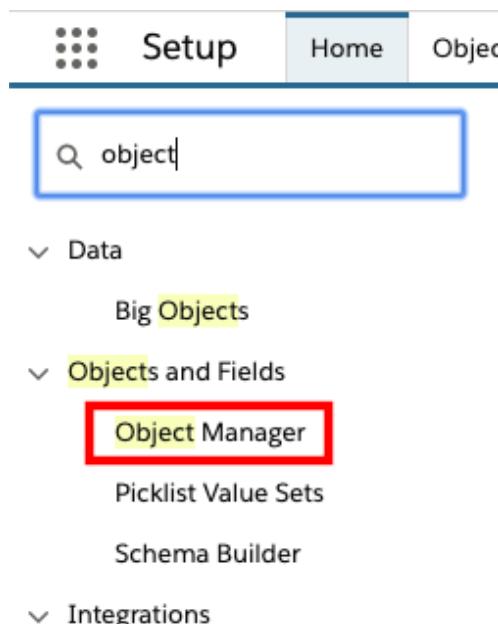
11. Note the ContactId value from Amazon Connect

Display Additional Contact Trace Record Data

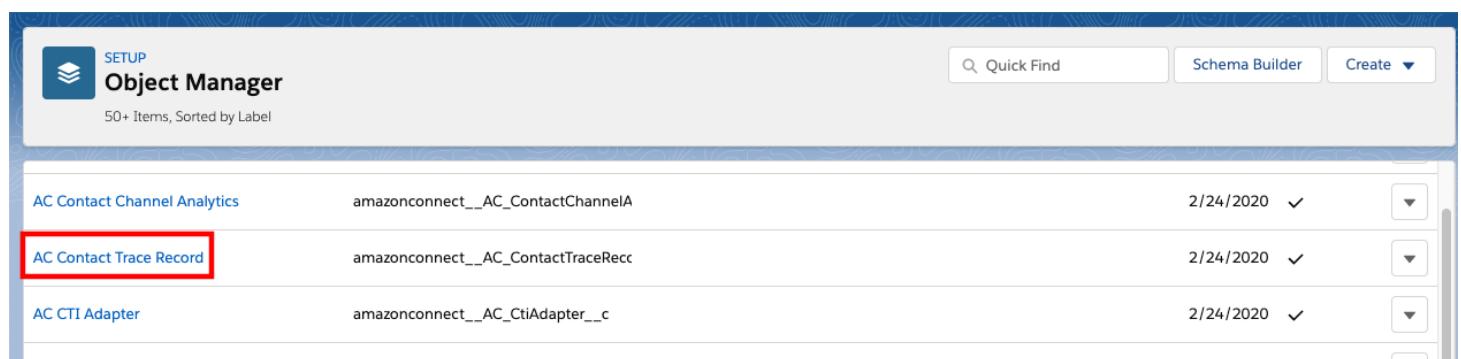
By default, the AC Contact Trace Record layout only contains the ContactId. However, all of the CTR data has been imported. It is likely that you will want to customize this view to show more data.

Customizing the AC Contact Trace Record Layout

1. Log in into your Salesforce org and go to **Setup**
2. In the **Quick Find** field, enter object and choose **Object Manager** from the results



3. In the Object Manager, find the **AC Contact Trace Record** object and select it



4. In the left navigation, choose **Page Layouts**

5. Select **AC Contract Trace Record Layout**

6. Select items from the Fields section and add them to the layout as you wish. In the example below, I have selected Agent Username, Queue Name, Queue Duration, After Contact Work Duration, Agent Interaction Duration, and Attributes

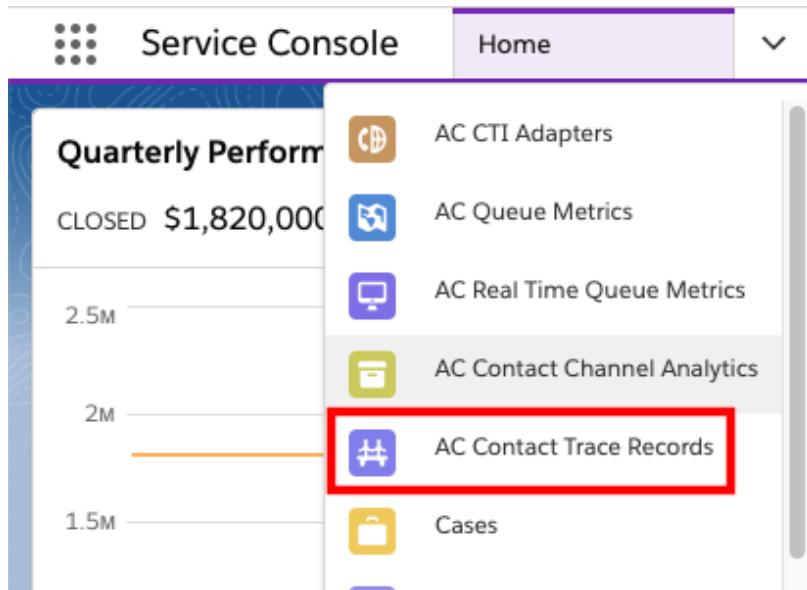
The screenshot shows the 'AC Contact Trace Record Detail' page. At the top, there are standard buttons: 'Edit', 'Delete', 'Clone', 'Change Owner', 'Change Record Type', 'Printable View', and 'Sharing'. Below this is a section titled 'Information (Header visible on edit only)'. It contains a table with fields: 'Contact Trace Record' (value: GEN-2004-001234), 'Channel' (value: Sample Text), 'ContactId' (value: Sample Text), 'After Contact Work Duration' (value: 76,916), 'Agent Interaction Duration' (value: 37,408), 'Owner' (value: Sample Text), 'Agent Username' (value: Sample Text), 'Queue Name' (value: Sample Text), 'Queue Duration' (value: 18,140), and 'Attributes' (value: Sample Text). There are also 'Standard Buttons' and 'Custom Buttons' sections.

7. Save the layout

8. Return to the **Service Console**

9. Refresh the browser

10. Expand the **navigation menu** by selecting the down arrow and choose **AC Contact Trace Records**



11. Select a contact trace record

12. You should now see your modified layout

The screenshot shows the details page for an AC Contact Trace Record (CTR) with ID 000000003. The page is divided into two main sections: 'Related' and 'Details'.

Related:

- Contact Trace Record: CTR 000000003
- Channel: VOICE
- ContactId: 71662532-8da9-41bf-bba1-3755ed070cdd
- After Contact Work Duration: 2
- Agent Interaction Duration: 10

Details:

- Owner: apiouser
- Agent Username: doug [REDACTED]@com
- Queue Name: BasicQueue
- Queue Duration: 24
- Attributes:

```
{"phone_number": "+17048076561", "postal_code": "98121", "postcallCTRImportEnabled": "true", "postcallRecordingImportEnabled": "true", "postcallTranscribeEnabled": "true", "postcallTranscribeLanguage": "en-US"}
```
- Created By: apiouser, 2/27/2020, 10:38 AM
- Last Modified By: apiouser, 2/27/2020, 10:38 AM

Postcall Contact Lens Import

Contact Lens for Amazon Connect is a set of machine learning (ML) capabilities integrated into Amazon Connect. With Contact Lens for Amazon Connect, contact center supervisors can better understand the sentiment, trends, and compliance of customer conversations to effectively train agents, replicate successful interactions, and identify crucial company and product feedback.

Contact Lens are available within your Amazon Connect instance in CTR page, and Contact Lens data are stored in Amazon Connect S3 bucket. With the AWS Serverless Application for Salesforce (Amazon Connect Salesforce Lambda), you can import Contact Lens data into your Salesforce org.

Contact Lens Import

Before using AWS Serverless Application (Amazon Connect Salesforce Lambda) to import Contact Lens data, you need to enable Contact Lens in Amazon Connect. More information can be found at <https://docs.aws.amazon.com/connect/latest/adminguide/enable-analytics.html>.

Once enabled during the installation of AWS Serverless Application (Amazon Connect Salesforce Lambda), Contact Lens import is activated on a call by call basis by adding a specific contact attribute. This attribute is used during Contact Lens processing to trigger the import task.

Creating the AWS Lambda Trigger for the Contact Lens Data

1. Make sure you set **ContactLensImportEnabled** to **true** during the deployment of Amazon Connect Salesforce Lambda application.
2. Once the deployment is finished, you need to configure a trigger that invokes a Lambda function when Contact Lens output file is generated and stored in S3.
3. In a browser tab, login to the [AWS Console](#).
4. Open the [AWS Lambda Console](#).
5. In the filter field of the AWS Lambda console, enter sfProcessContactLens and press enter to filter the list of functions.
6. Select the Lambda that includes sfProcessContactLens in the name.
7. Expand the Designer section.
8. Select Add trigger

▼ Designer

[Go back to application serverlessrepo-AmazonConnectSalesforceLambda](#)

AWS Lambda function configuration page. The function name is 'serverlessrepo-Amazo nConnectS-sfProcessC ontactLens-X7O29Q1 V175S'. A red box highlights the '+ Add trigger' button.

9. In Trigger configuration, select S3 from the dropdown list

Lambda > Add trigger

Add trigger

Trigger configuration

Select a trigger

S3

DynamoDB	aws database nosql
Kinesis	analytics aws streaming
S3	aws storage
SNS	aws messaging notifications pub-sub push
SQS	aws queue

10. Select the bucket of your Amazon Connect instance. You can find your Amazon Connect bucket name by clicking on your Amazon Connect instance alias in Amazon Connect console.

11. Change the Event type to PUT.

12. Set the Prefix to **Analysis/Voice/2020**. Note that this might change as the date changes so you will need to update this on the first day of every new year.

13. Set the Suffix to .json

14. The trigger configuration should now be similar to the following:

Add trigger

Trigger configuration



S3

aws storage

Bucket

Please select the S3 bucket that serves as the event source. The bucket must be in the same region as the function.

connect-[REDACTED]



Event type

Select the events that you want to have trigger the Lambda function. You can optionally set up a prefix or suffix for an event. However, for each bucket, individual events cannot have multiple configurations with overlapping prefixes or suffixes that could match the same object key.

PUT



Prefix - optional

Enter a single optional prefix to limit the notifications to objects with keys that start with matching characters.

Analysis/Voice/2020

Suffix - optional

Enter a single optional suffix to limit the notifications to objects with keys that end with matching characters.

.json

Lambda will add the necessary permissions for Amazon S3 to invoke your Lambda function from this trigger. [Learn more](#) about the Lambda permissions model.



The Lambda console no longer supports disabling S3 and CloudWatch Logs triggers. Delete these triggers to stop further actions.

Recursive invocation

If your function writes objects to an S3 bucket, ensure that you are using different S3 buckets for input and output. Writing to the same bucket increases the risk of creating a recursive invocation, which can result in increased Lambda usage and increased costs. [Learn more](#)

I acknowledge that using the same S3 bucket for both input and output is not recommended and that this configuration can cause recursive invocations, increased Lambda usage, and increased costs.

Cancel

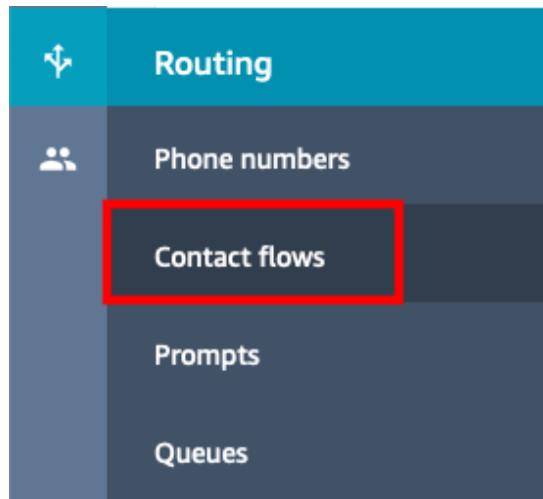
Add

15. Select Add

16. If everything has been configured correctly, you should receive a success message.

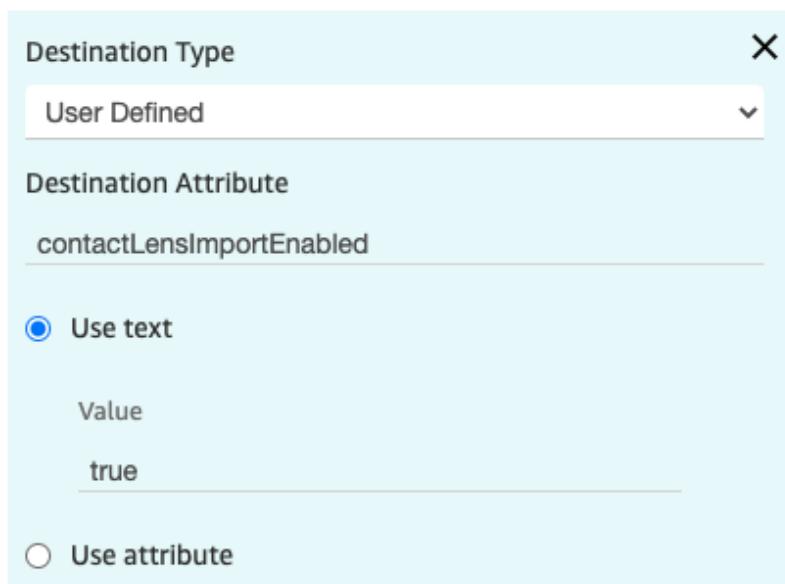
Enabling Contact Lens Import

1. Login to your Amazon Connect instance as an Administrator
2. From the left navigation, choose **Routing** then select **Contact flows**



3. Open the contact flow that you want to use to enable Contact Lens import.
4. In your contact flow, before you transfer to queue, add a new **Set contact attributes** block
5. Configure the block to set a few contact attributes:

- To turn on Contact Lens data import, set ***contactLensImportEnabled*** to **true**.



- For recording import, there are two options: original call recording and redacted call recording.
Note that you can only import one of the recordings for each contact.
 - To turn on original recording import, set ***postcallRecordingImportEnabled*** to **true**

Destination Type X

User Defined ▼

Destination Attribute

`postcallRecordingImportEnabled`

Use text

Value

true

Use attribute

- To turn on redacted recording import, set `postcallRedactedRecordingImportEnabled` to **true**

Destination Type X

User Defined ▼

Destination Attribute

`postcallRedactedRecordingImportEnabled`

Use text

Value

true

Use attribute

- Save the Set contact attributes block. Make sure it is appropriately connected to your contact flow, and **Publish** the flow.
- Wait approximately 2 minutes to give the contact flow time to publish.
- Place a call, connect to your agent, speak for a few moments, then end the call. Make sure the agent exits after call work
- The Contact Lens data is emitted a couple of minutes after call completion and the import happens almost immediately.

Configuring My Domain in Salesforce

The latest CTI adapter includes several lightning components that provide a better administrative user experience. Salesforce requires that My Domain be enabled to make use of lightning components. Setting up My Domain is a fairly simple setup, but it does require some time for the changes to propagate, so it will be helpful to complete this configuration in advance of your CTI adapter deployment.

Register Your Domain

Step 1 in the process is registering your domain in Salesforce. This allows you to check availability of the domain and complete the registration process. It will take some amount of time for the registration to complete.

1. Log in into your Salesforce org and go to **Setup**
2. In the **Quick Find** field, enter **My Domain**, then select **My Domain** from the result list

A screenshot of the Salesforce Setup interface. At the top, there's a navigation bar with icons for Home and Objects. Below it is a search bar containing the text "My domain". Underneath the search bar, a list of categories is shown, with "Company Settings" expanded. A result named "My Domain" is listed under this category, and it is highlighted with a red rectangular box. To the left of the results, there's a link that says "Didn't find what you're looking for? Try using Global Search."

3. In the **My Domain Step 1** section, enter your desired domain name and select **Check Availability** to determine if the domain is available.

A screenshot of the "Choose Your Domain Name" step in the My Domain setup wizard. The heading says "Choose Your Domain Name". Below it, there's a note: "Enter a domain name and check whether it's available. Be sure of your name before registering. Only Salesforce Customer Support can change your domain name once it's registered. Your domain name can be up to 34 characters. It can include letters, numbers, and hyphens; but it can't start or end with a hyphen." A text input field contains the URL "https://sfseorgb-dev-ed.my.salesforce.com/". Below the input field is a button labeled "Check Availability", which is also highlighted with a red rectangular box.

4. If the domain is not available, you will need to try a different name.
5. If the domain is available, select **Register Domain

[Check Availability](#)  Available

Register Domain After you click Register Domain, Salesforce takes a few minutes to update its naming registries. You receive an email when it's done.

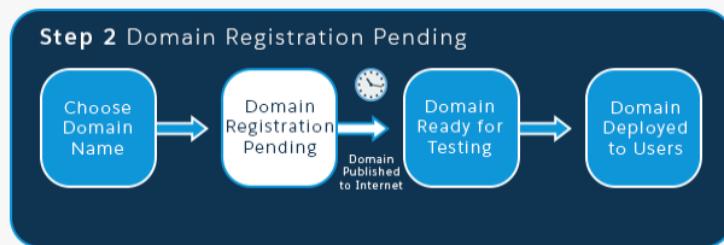
6. The domain registration process will begin. You will receive an email once it is complete. Once you receive the confirmation, you may continue with the next section.

My Domain

[Help for this Page](#) 

My Domain Step 2

Showcase your company's brand and keep your data more secure by adding a custom domain name to your Salesforce URL. Because having a custom domain is more secure, some Salesforce features require it. It's easy to set up My Domain—the hardest part is choosing a name that your stakeholders can agree on.



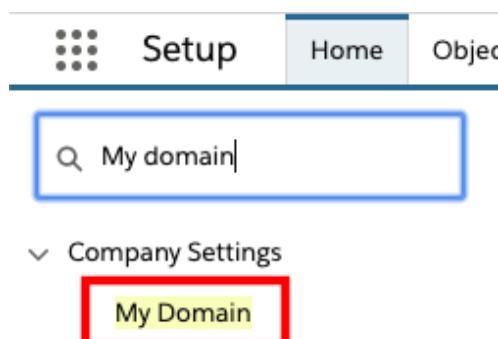
Your domain name is **sfseorgb-dev-ed.my.salesforce.com**

 Registering your domain. You'll receive an email when it's ready for testing.

Deploy the Domain to Your Users

Once the domain registration process completes, you then need to deploy the domain to your users.

1. Log in into your Salesforce org and go to **Setup**
2. In the **Quick Find** field, enter **My Domain**, then select **My Domain** from the result list



The screenshot shows the Salesforce Setup interface. The top navigation bar includes 'Setup' (highlighted), 'Home', and 'Objects'. A search bar contains the text 'My domain'. The main content area displays a list of settings under 'Company Settings', with 'My Domain' highlighted and surrounded by a red box.

Didn't find what you're looking for?
Try using Global Search.

3. In the **My Domain Step 2** section, note the domain name, then select the **Log in** button to login using the new domain.

Your domain name is **sfseorgb-dev-ed.my.salesforce.com**

Your domain name is ready. Log in to test it out.

[Log in](#)

To test your new domain, click tabs and links. If you've customized the UI, check for hard links to your original URL.

4. Once the login completes, you should see your new domain in the address bar of your browser. You should also be returned to the My Domain configuration.

5. Select the Deploy to Users button to deploy your domain

Your domain name is **sfseorgb-dev-ed.my.salesforce.com**

Your domain name is ready. Log in to test it out.

[Log in](#)

To test your new domain, click tabs and links. If you've customized the UI, check for hard links to your original URL.

[Deploy to Users](#) Roll out the new domain to your org. [i](#)

6. You should get a popup message that warns you about the domain deployment. Select OK.

...edded page at sfseorgb-dev-ed.my.salesforce.com says

When you deploy the new domain, we activate it immediately. Only Salesforce Customer Support can disable or change your domain name once it's deployed.

[Cancel](#)

[OK](#)

7. Deployment should now be complete

 [Edit this page](#)

Configure Salesforce Omnichannel for Testing

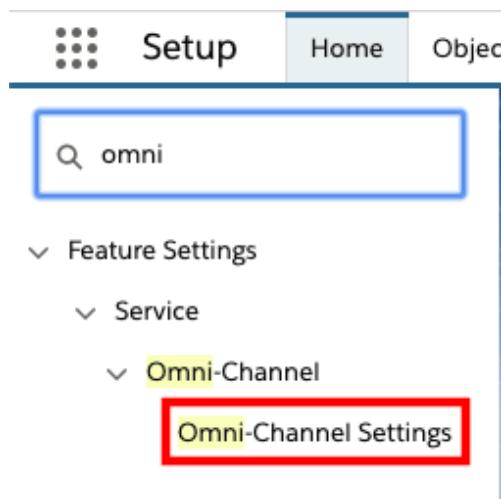
In order to sync your Connect User status with your Omni-Channel agent status, you must configure Omni-Channel Presence Syncing. This will make your Omni-Channel presence status match your Amazon Connect Agent Status and vice versa.

Enable Omnichannel

First, we must enable omni-channel. Once you enable Omni-Channel, you will have access to the other components in Salesforce that will be required for Omni-Channel setup.

Enable Omnichannel in Your Salesforce Org

1. Log in into your Salesforce org and go to **Setup**
2. In the **Quick Find** field, enter omni and choose **Omni-Channel Settings** from the results



3. Select the checkbox for Enable Omni-Channel and choose Save

Omni-Channel Settings

Omni-Channel routes work items to your support agents. It sets agent capacity for accepting work and agent availability.

Enable Omni-Channel	<input checked="" type="checkbox"/>
Enable Skills-Based Routing	<input type="checkbox"/>
Enable Secondary Routing Priority	<input type="checkbox"/>
Display a login confirmation upon loading a console with Omni-Channel	<input type="checkbox"/>

Save Cancel

4. Omni-Channel is now enabled.

Configure Presence Statuses

Once you have enabled Omni-Channel, you will need to configure presence statuses to reflect the different presence states that you wish your Omni-Channel agents to enter. These do not need to match agent statuses in Amazon Connect exactly, but it does make it easier to track what you are doing.

Add a Presence Status

1. Log in into your Salesforce org and go to **Setup**

2. In the **Quick Find** field, enter presence and choose **Presence Statuses** from the results

The screenshot shows the 'Setup' tab selected in the top navigation bar. A search bar contains the text 'presence'. Below the search bar, the 'Feature Settings' section is expanded, showing 'Service' and 'Omni-Channel' sub-sections. Under 'Omni-Channel', three items are listed: 'Presence Configurations', 'Presence Decline Reasons', and 'Presence Statuses', with 'Presence Statuses' highlighted and enclosed in a red box.

3. In the Presence Statuses page, choose New

4. Provide a status name, for example Lunch

5. Set the Status options appropriately, for example, Busy

6. For Online statuses, you will need to provide a channel. Please reference the [Omni-Channel documentation](#) for details

7. Choose Save

Presence Statuses

Let agents indicate when they're online and available to receive work items from a specific service channel, or whether they're away or offline.

The screenshot shows the 'Basic Information' section with fields for 'Status Name' (containing 'Lunch') and 'Developer Name' (containing 'Lunch'). Below this is the 'Status Options' section, which includes a note: 'Choose whether agents are online or busy when they use this status. Online statuses let agents receive new work items. Busy statuses ma...'. It features two radio buttons: 'Online' (unchecked) and 'Busy' (checked). At the bottom of the form are 'Save' and 'Cancel' buttons.

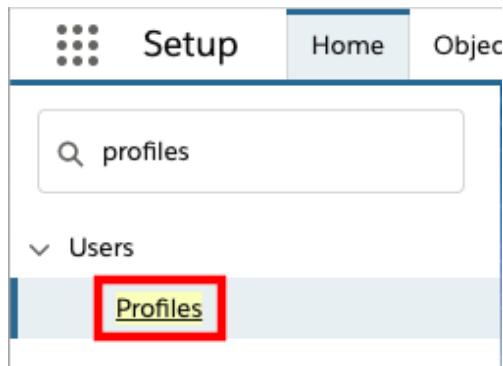
8. Repeat as necessary for all desired statuses

Configure Profiles to Use the New Statuses

Before agents can use the statuses that have been configured, you will need to make sure that they have been provided rights to them. This is done by modifying the profiles assigned to your agents.

Modify Profiles to Use New Statuses

1. Log in into your Salesforce org and go to **Setup**
2. In the **Quick Find** field, enter profiles and choose **Profiles** from the results

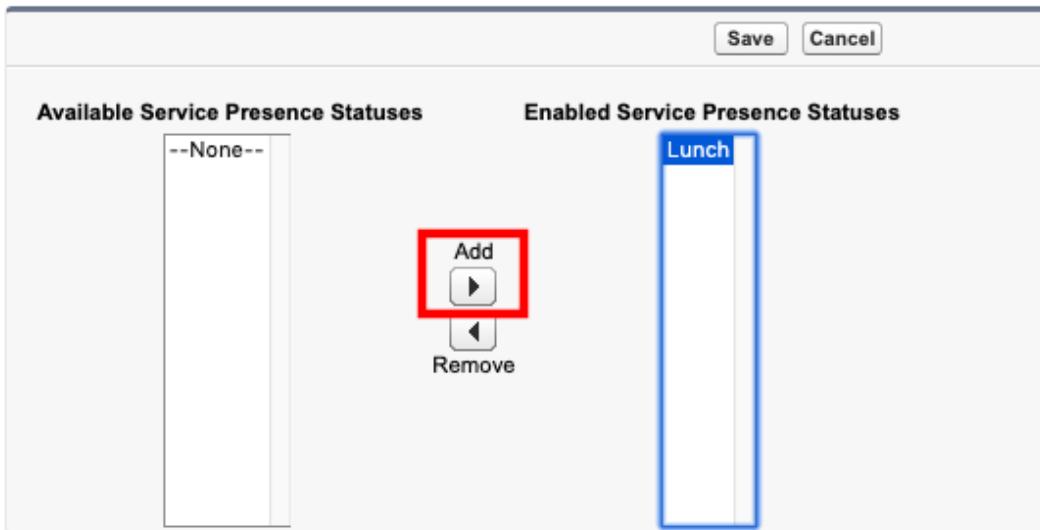


3. Select the profile assigned to your users
4. Hover over the Enabled Service Presence Status link and choose Edit

A screenshot of the 'Profiles' page for the 'System Administrator' profile. The page title is 'Profile System Administrator'. It shows a list of permissions with 'Enabled Service Presence Status Access' highlighted with a red box. Below this section, there's an 'Edit' button also highlighted with a red box. A note at the bottom says 'No Service Presence Status enabled'.

5. Select the available status from the left, then choose the Add button to add it to the Enabled Service Presence Statuses field

Enable Service Presence Status Access



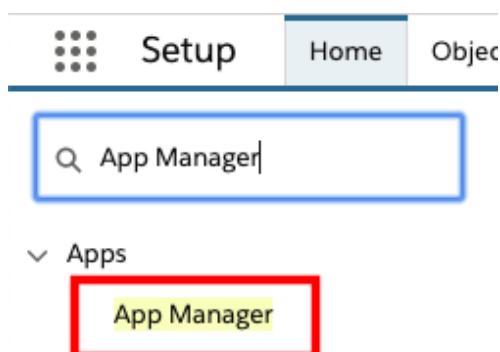
6. Select Save
7. Repeat as necessary for other statuses or profiles.

Add Omni-Channel to the Utility Bar

To provide agents access to the Omni-Channel tool, you will need to add it to the Service Console.

Add the Omni-Channel Utility Item

1. Log in into your Salesforce org and go to **Setup**
2. In the **Quick Find** box, type **App Manager**, then choose **App Manager** from the result list.



Didn't find what you're looking for?
Try using Global Search.

3. Expand the drop-down menu associated to Service Console and select **Edit**.

12	Salesforce Chatter	Chatter	The Salesforce Chatter social network, including profiles and feeds	1/21/2020, 8:46 PM	Classic	✓	▼
13	Service	Service	Manage customer service with accounts, contacts, cases, and more	1/21/2020, 8:46 PM	Classic	✓	▼
14	Service Console	LightningService	(Lightning Experience) Lets support agents work with multiple re...	1/21/2020, 8:46 PM	Lightning	✓	▼
15	Site.com	Sites	Build pixel-perfect, data-rich websites using the drag-and-drop Sit...	1/21/2020, 8:46 PM	Classic	Edit	▼

4. Once the **Lightning App Builder** opens, select **Utility Items** from the left Navigation

APP SETTINGS

App Details & Branding

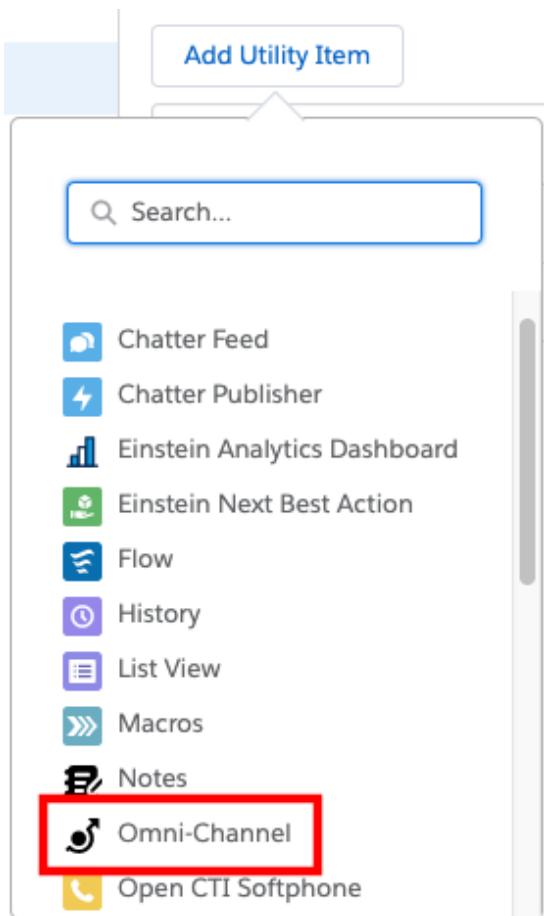
App Options

Utility Items

Navigation Items

Navigation Rules

5. Choose Add Utility Item, then select Omni-Channel



6. Adjust the order of the utility items as desired and select Save.

7. Return to the Service Console and refresh your browser.

8. You should now see the Omni-Channel utility item.

Amazon Connect

Omni-Channel

History

Edit this page

Appendix B: Configuring Salesforce as Your Identity Provider

Prerequisites

To complete the SSO integration between Salesforce and Amazon Connect, you need:

1. An Amazon Connect Instance configured for SAML authentication
2. Appropriate AWS permissions to create Identity and Access Management (IAM) roles and policies
3. Administrator permissions for your Salesforce Org
4. Amazon Connect CTI Adapter AppExchange package installed and configured

Configuring Salesforce as an Identity Provider

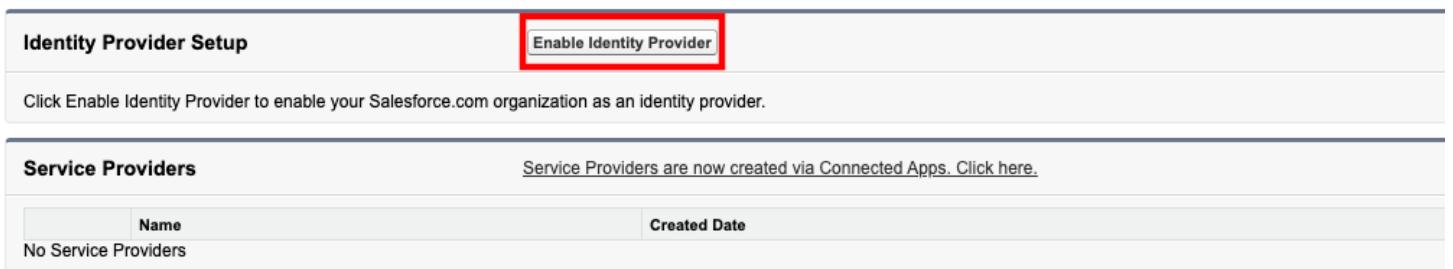
First, we need to enable Salesforce to act as an identity provider (IdP). An IdP performs end user authentication and provides the credentials to the requesting service provider. In this case, Salesforce server as the IdP and Amazon Connect the service provider, while being embedded in Salesforce.

Setup Identity Provider & Download Metadata

1. Log in into your Salesforce org and go to **Setup**.
2. In the **Quick Find** field, type **Identity Provider**, then select **Identity Provider** from the result list
3. Identity Provider may be enabled by default. If not, choose **Enable Identity Provider**, then select the appropriate certificate and select Save.

Identity Provider

Enable Salesforce.com as an identity provider so you can use single sign-on with other web sites, and define the appropriate service providers whose applications support single sign-on. You can switch to different service providers without having to log in again. [Learn more...](#)



The screenshot shows the 'Identity Provider Setup' section of the Salesforce setup. At the top, there's a button labeled 'Enable Identity Provider' which is highlighted with a red box. Below it, a message says 'Click Enable Identity Provider to enable your Salesforce.com organization as an identity provider.' Under the heading 'Service Providers', it says 'Service Providers are now created via Connected Apps. Click here.' There's a table with columns 'Name' and 'Created Date', showing 'No Service Providers'.

4. Choose **Download Metadata** and save the file to your computer.

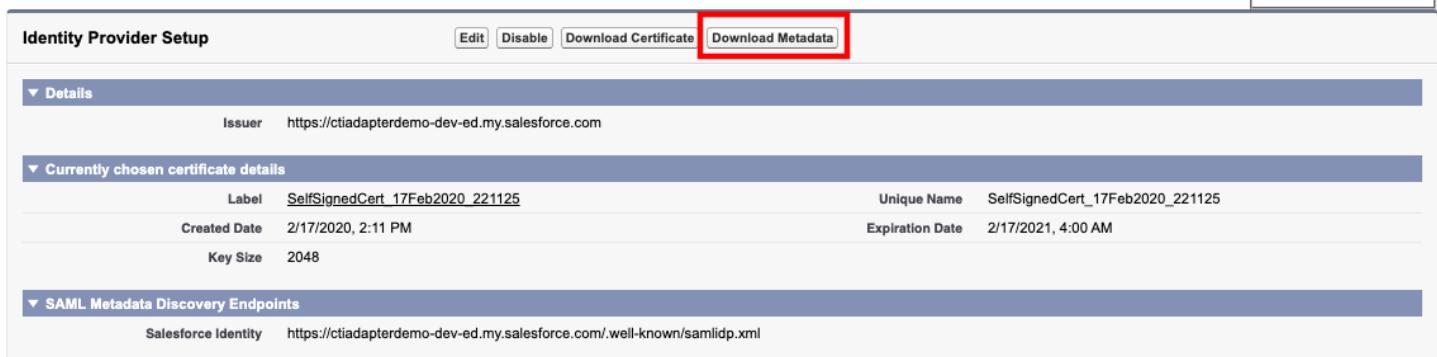
Identity Provider

[Help for this Page](#) 

Enable Salesforce.com as an identity provider so you can use single sign-on with other web sites, and define the appropriate service providers whose applications support single sign-on. You can switch to different service providers without having to log in again. [Learn more...](#)

Quick Tips

- [Certificates and Keys](#)
- [About Single Sign-On](#)
- [My Domain](#)



The screenshot shows the 'Identity Provider Setup' page. The 'Download Metadata' button is highlighted with a red box. Below it, there are sections for 'Details' (Issuer: https://ctiadapterdemo-dev-ed.my.salesforce.com), 'Currently chosen certificate details' (Label: SelfSignedCert_17Feb2020_221125, Created Date: 2/17/2020, 2:11 PM, Unique Name: SelfSignedCert_17Feb2020_221125, Expiration Date: 2/17/2021, 4:00 AM, Key Size: 2048), and 'SAML Metadata Discovery Endpoints' (Salesforce Identity: https://ctiadapterdemo-dev-ed.my.salesforce.com/.well-known/samlidp.xml).

Configure the Identity Provider, Policy, and Role in the AWS Console

Next, you need to configure the identity provider (Salesforce) in the AWS console and provide access to Amazon Connect via IAM policies and roles. This allows AWS to acknowledge Salesforce as the identity provider and to provide users authenticated through Salesforce with the access required to login to Amazon Connect.

Configure the Identity Provider

1. Login to the [AWS console](#)
2. Open the [AWS identity and Access Management \(IAM\) Console](#)
3. Select **Identity providers**

Identity and Access Management (IAM)

Dashboard

▼ Access management

Groups

Users

Roles

Policies

Identity providers

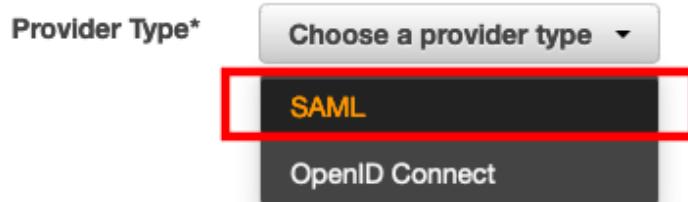
Account settings

4. Choose **Create Provider**

5. On the Configure Provider screen, select **SAML** as the Provider Type

Configure Provider

Choose a provider type.



6. Set the Provider Name to **SalesforceConnect**

7. Import the metadata file you downloaded previously by selecting Choose File and navigating to the downloaded metadata file.

8. Select Next Step

9. Choose Create

10. The Identity provider has been created

Create the IAM Role and Policy

1. Login to the [AWS console](#)

2. Open the [AWS identity and Access Management \(IAM\) Console](#)

3. Select **Roles**, then choose **Create role**

4. Choose **SAML 2.0 federation**

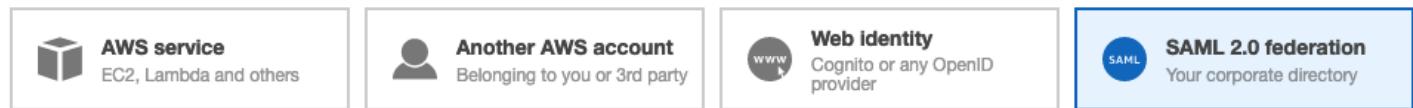
5. In the SAML provider dropdown, select the provider you just created, which should be named **SalesforceConnect**

6. Select the radio button for **Allow programmatic and AWS Management Console access**. The Attribute and Value fields should auto-populate

Create role

1 2 3 4

Select type of trusted entity



Allows users that are federated with SAML 2.0 to assume this role to perform actions in your account. [Learn more](#)

Choose a SAML 2.0 provider

If you're creating a role for API access, choose an Attribute and then type a Value to include in the role. This restricts access to users with the specified attributes.

SAML provider

Allow programmatic access only
 Allow programmatic and AWS Management Console access

Attribute

Value*

Condition

7. Select **Next: Permissions**

8. On the Attach permissions policies page, select **Create policy**. This will open a new browser tab.

9. Choose the **JSON** tab to switch to the JSON editor

10. Replace the existing JSON with the following:

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "Statement1",
      "Effect": "Allow",
      "Action": "connect:GetFederationToken",
      "Resource": [
        "arn:aws:sso:::federationToken"
      ]
    }
  ]
}
```

```
        "/*YOUR ARN*/user/${aws:userid}"  
    ]  
}  
}
```

11. Replace **YOUR ARN** with the ARN of your Amazon Connect instance. To find your Amazon Connect instance ARN:
12. Open a new tab in your browser and navigate to [Amazon Connect Console](#)
13. Click on the name (alias) of your Amazon Connect instance
14. Copy the Instance ARN and paste it to your computer's notepad (you will use it in a few places)
15. Choose **Review policy**
16. Set the Name to **SalesforceConnectPolicy**
17. Select **Create Policy**
18. Once the Policy has been created, close the tab, go back to the original (Role) tab in your browser and select the **Refresh** button (do not refresh the browser)
19. In the search field, enter **SalesforceConnectPolicy** and select the box to attach the policy.

Create role

1 2 3 4

▼ Attach permissions policies

Choose one or more policies to attach to your new role.

Create policy		
Filter policies ▾		
	Policy name ▾	Used as
<input checked="" type="checkbox"/>	SalesforceConnectPolicy	None

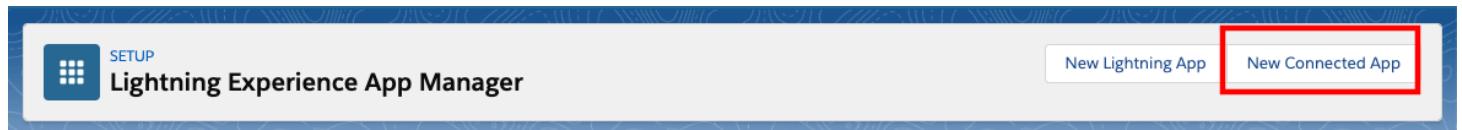
20. Choose **Next: Tags** and set tags if desired, then choose **Next: Review**
21. Name the Role **SalesforceConnectRole** and provide a description if you like
22. Select Create role

Complete the Base Salesforce Configuration

Next, you need to configure a Connect App in Salesforce and provide further configuration to complete the SAML integration.

Create the Connected App in Salesforce

1. Log in into your Salesforce org and go to **Setup**
2. In the **Quick Find** field, type **App Manager**, then select **App Manager** from the result list
3. Select New Connected App



4. Provide a name for the Connected App, such as **AmazonConnectSAML**, then press tab and the API Name should auto-populate
5. Provide an email contact address

New Connected App

The screenshot shows the 'New Connected App' configuration page. At the top right are 'Save' and 'Cancel' buttons. Below is a section titled 'Basic Information' with the following fields:

- Connected App Name: AmazonConnectSAML
- API Name: AmazonConnectSAML
- Contact Email: dougjaso+ctiadapterdemo@amazon.ci
- Contact Phone: (empty)
- Logo Image URL: (empty)
Upload logo image or Choose one of our sample logos
- Icon URL: (empty)
Choose one of our sample logos
- Info URL: (empty)
- Description: (empty)

6. In the Web App Settings section, choose **Enable SAML**
7. Leave Start URL empty
8. Set Entity Id to the same name that you gave the Identity Provider in the IAM console, which should be **SalesforceConnect**
9. Set ACS URL as <https://signin.aws.amazon.com/saml>
10. Set Subject Type as **Persistent ID**

Web App Settings

Start URL	<input type="text"/>
Enable SAML	<input checked="" type="checkbox"/>
Entity Id	SalesforceConnect
ACS URL	https://signin.aws.amazon.com/saml
Enable Single Logout	<input type="checkbox"/>
Subject Type	Persistent ID
Name ID Format	urn:oasis:names:tc:SAML:1.1:nameid-format:unspecified
Issuer	https://ctiadapterdemo-dev-ed.my.salesforce.com
IdP Certificate	Default IdP Certificate
Verify Request Signatures	<input type="checkbox"/>
Encrypt SAML Response	<input type="checkbox"/>

11. Choose **Save**. The screen should refresh and the new Connected App should be displayed

12. Scroll down to the **Custom Attributes** section and select **New**

13. Set Key as <https://aws.amazon.com/SAML/Attributes/RoleSessionName>

14. Set Value as **\$User.Email**

15. Select **Save**

Create Custom Attribute

Key	<input type="text" value="https://aws.amazon.com"/>
Value	<input type="button" value="Insert Field"/> <input type="button" value="Insert Operator"/> <div style="border: 1px solid #ccc; padding: 5px; width: 100%; height: 150px; margin-top: 10px;"> <div style="border: 1px solid #ccc; padding: 2px; width: 100%; height: 100%;">\$User.Email</div> </div>
<input type="button" value="Save"/> <input type="button" value="Cancel"/>	

16. Select New again to configure another custom attribute

17. Set Key as <https://aws.amazon.com/SAML/Attributes/Role>

18. The Value is going to be a combination of the Identity Provider and IAM Role ARNs.

a. In a new tab, open the [AWS identity and Access Management \(IAM\) Console](#)

b. On the left navigation, select **Identity providers**

- c. Select the Identity provider you created earlier, which should be named **SalesforceConnect**
- d. Copy the **Provider ARN** to your computer's notepad
- e. Return to the IAM console and select **Roles**
- f. Select the Role you created earlier, which should be **SalesforceConnectRole**
- g. Copy the **Role ARN** to your computer's notepad
- h. Format the combined value as follows: 'Identity Provider ARN' & ',' & 'Role ARN'
- i. Paste the formatted value into the Custom Attribute Value

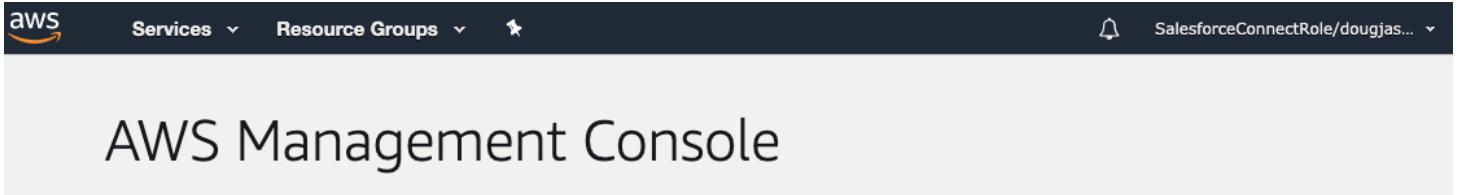
19. Select **Save**

Create Custom Attribute

The screenshot shows a 'Create Custom Attribute' dialog box. The 'Key' field is set to 'https://aws.amazon.com'. The 'Value' field contains the following expression:
'arn:aws:iam:::YOURACCOUNT:saml-provider/SalesforceConnect' & ',' &
'arn:aws:iam:::YOURACCOUNT:role/SalesforceConnectRole'
Below the dialog are 'Save' and 'Cancel' buttons.

- 20. At the top of the Connected App description, select **Manage**
- 21. Scroll down to the **SAML login Information** section
- 22. Copy the **IdP-Initiated Login URL** to your computer's notepad
- 23. Scroll down to find the Profiles section, then select **Manage Profiles**
- 24. Select a profile from the list, for example System Administrator for testing purposes
- 25. Choose **Save**
- 26. Open a new tab in your browser and navigate to IdP-Initiated Login URL that you copied in an earlier step

27. The browser will redirect to AWS Console and log you in automatically as a federated user **Note:** you may be able to see AWS services, but you should have no configuration rights.



AWS Management Console

28. The Federated Login consists of the Role name and your Salesforce email address.
29. Initial validation is complete

Complete the Amazon Connect Configuration

The last step in the SAML setup is to add users to Amazon Connect that exist in your Salesforce org, then validate login. It is critical that the usernames for both platforms match exactly.

Add Users to Amazon Connect

1. In a new browser tab, login to the [AWS console](#)
2. Open the [Amazon Connect Console](#)
3. Select the name (alias) of your Amazon Connect instance
4. Choose **Login as administrator**

Overview

Instance ARN	arn:aws:connect:us-west-2: XXXXXXXXXX instance: XXXXXXXXXX
Directory	ctiadapterdemo
Service-linked role	AWSServiceRoleForAmazonConnect Learn more
Login URL	https://ctiadapterdemo.awsapps.com/connect/login

5. Within the Amazon Connect administration portal, select **Users** then choose **User Management**
6. Leave **Create and setup a new user** selected and choose **Next**
7. Complete the First and Last name fields as appropriate
8. Set the login name to match the **Email Address** of your Salesforce user
9. Set the **Routing Profile**. In this example, the default Basic Routing Profile is shown

10. Set the **Security Profile**. In this example, *Admin* is shown

Add new user

1 Select source 2 Add user details 3 Verify user details

First name Jason	Last name Douglas	Login name j+ctladapterdemo@amazon.com
Routing Profile: Basic Routing Profile		
Security Profiles: Admin		
Phone Type: Soft phone <input type="checkbox"/> Auto-Accept Call After call work (ACW) timeout: 0		

11. Select **Save**

12. Select **Create Users**

13. Repeat this process as required for your staff

Final Configuration for the Lightning Experience

Now that all of the underlying pieces are in place, the last steps are to create the Amazon Connect Single Sign On URL and validate that it works correctly, then configure the Lightning CTI adapter and login the agent.

Create the Amazon Connect SSO URL

You create the Amazon Connect SSO URL by combining the IdP-Initiated Login URL that you copied earlier, and a relay state URL that will redirect the authenticated user to your Amazon Connect instance.

The 'RelayState' will be in the following format:

```
https://console.aws.amazon.com/connect/federate/[object Object]?
destination=%2Fconnect%2Fccp
```

Please note that "console.aws.amazon.com" refers to US-East-1 region (N. Virginia). If your Amazon Connect instance is in a different region, please use the region Console URL. For example:

```
https://us-west-2.console.aws.amazon.com/connect/federate/[object Object]?
destination=%2Fconnect%2Fccp
```

1. To begin, format the relay state URL by replacing **InstanceId** with your Instance Id. To find your Amazon Connect Instance Id:

a. Open a new tab in your browser and navigate to the [Amazon Connect Console](#)

b. Click on the name (alias) of your Amazon Connect

c. From the Instance ARN, copy the portion after the '/'. This is the Instance Id

Overview

Instance ARN arn:aws:connect:us-east-1:█████████████████████:instance/f0c669ee-21dc-█████████████████████

Directory ██████████

Login URL <https://████████.awsapps.com/connect/login>

[Login as administrator](#)

2. Concatenate the 'IdP-Initiated Login URL' and the 'RelayState', by combining the two with "&RelayState=" in between, for example:

```
https://mXXXXXXrun-dev-ed.my.salesforce.com/idp/login?  
app=0sp0N00000Caid&RelayState=https://console.aws.amazon.com/connect/federate/  
Object]?destination=%2Fconnect%2Fccp
```

3. This is the Final SSO URL, needed for the Amazon Connect Lightning CTI Adapter Configuration.

4. To validate this URL:

a. Open a new tab in the same browser that you are logged into Salesforce

b. Paste the fully concatenated URL into the new browser and press enter

c. You should automatically login and be redirected to the Amazon Connect Contact Control Panel.

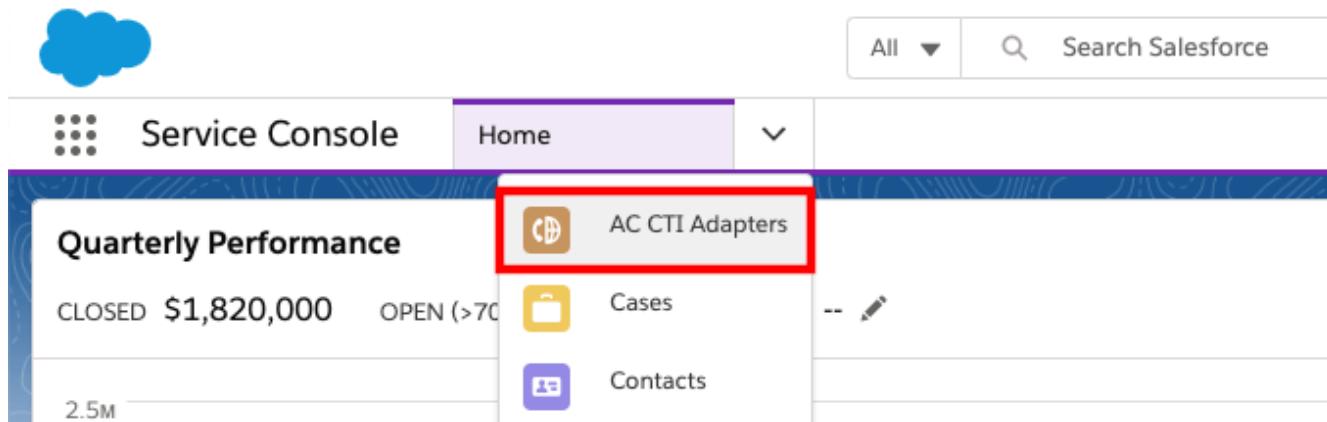
5. Once you validate the full URL, you are ready to add it to the Lightning Adapter

Configure the CTI Lightning Adapter in Salesforce For SSO

Now we are ready to complete the last step in the configuration process: Adding the SSO settings for Salesforce to the Lightning Adapter. This will configure the adapter to authenticate via SSO and redirect to the Amazon Connect Contact Control Panel once authentication completes.

1. Log in into your Salesforce org and go to the **Service Console**

2. Expand the **navigation menu** by selecting the down arrow and choose **AC CTI Adapters**.



3. Select **ACLightningAdapter**

4. Scroll down to the Single SignOn (SSO) section and choose the pencil icon of either field to edit

▼ Single SignOn (SSO)

SSO Url

SSO Relay State



5. For the SSO Url, copy the first part of the SSO URL that you created previously, up to the first question mark (do not copy the question mark), for example:

`https://mXXXXXrun-dev-ed.my.salesforce.com/idp/login?`

`app=0sp0N00000Caid&RelayState=https://console.aws.amazon.com/connect/federat
e/InstanceId?destination=%2Fconnect%2Fccp`

6. Paste this portion of the URL into the **SSO Url** field

▼ Single SignOn (SSO)

SSO Url

`https://sample-dev-ed.my.salesforce.com/idp/login`

7. For the SSO Relay State, copy everything AFTER the question mark (do not copy the question mark), for example:

`https://mXXXXXrun-dev-ed.my.salesforce.com/idp/login?`

`app=0sp0N00000Caid&RelayState=https://console.aws.amazon.com/connect/federat
e/InstanceId?destination=%2Fconnect%2Fccp`

8. Paste this portion of the URL into the **SSO Relay State** field

✓ Single SignOn (SSO)

SSO Url

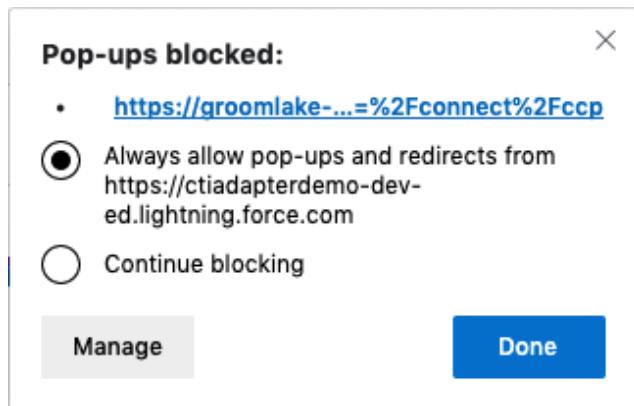
SSO Relay State

9. Choose **Save**

Note: With the new Amazon Connect instance urls (`*.my.connect.aws`) you must put the full URL into the `Amazon Connect Instance` field in the AC CTI Adapter record for SSO to work. Ex: using `https://myinstance.my.connect.aws` instead of `my instance`.

10. Refresh your browser to make the changes take effect

- a. **NOTE:** If you receive a blocked popup warning, select the warning and change the setting to always allow popups from your Salesforce org, then refresh the browser again



11. After a few seconds, a new window should pop up for a moment. This window is performing the authentication and setting your session cookie. Once it does this, it will close automatically.



Change status ▾



Initializing...

12. Once the authentication window closes, select the **phone icon** in the console toolbar to open the CCP
Note: You may also receive popups to allow notifications and microphone access. Please accept both.
13. You should now see the authenticated and logged in CCP

ACLightningAdapter | Sale X Lightning

AdapterTest Burner Accounts -...

Service Console AC CTI Adapters

Recently Viewed

1 item · Updated 4 minutes ago

Search this list...

Amazon Connect

Offline

Welcome Jason

Quick connects

Number pad

Amazon Connect History

14. Configuration is complete

Edit this page

Appendix C: CTI Flow Sources and Events

The following sources are defined in the adapter for use with CTI Flows:

- Initialization
 - onInit -- The CTI adapter has initialized.
- Amazon Connect Agent
 - onRefresh -- The Connect agent's data was updated.
 - onStateChange -- The Connect agent's state changed.
 - onRoutable -- The Connect agent became available for contacts.
 - onNotRoutable -- The Connect agent became unavailable for contacts.
 - onOffline -- The Connect agent's state was set to "Offline".
 - onError -- The Connect agent encountered a system error.
 - onAfterCallWork -- The Connect agent entered "After Call Work".
 - onInit -- The Connect agent has logged in.
- Amazon Connect Voice Contact
 - onIncoming -- The voice contact is incoming. Note: This event fires for queued callback contact only.
 - onConnecting -- The voice contact is connecting. Note: This event fires for inbound and outbound contacts except queued callback contacts.
 - onConnected -- The voice contact is connected.
 - onEnded -- The voice contact is ended or destroyed.
 - onRefresh -- The voice contact is updated.
 - onAccepted -- A voice contact is accepted.
 - onPending -- The voice contact is pending.

- onMissed -- The voice contact is / was missed.
- onDestroy - The voice contact is destroyed.
- Amazon Connect Chat Contact
 - onConnecting -- The chat contact is connecting.
 - onConnected -- The chat contact is connected.
 - onEnded -- The chat contact ended.
 - onRefresh -- The chat contact is updated.
 - onAccepted -- The chat contact is accepted.
 - onPending -- The voice contact is pending.
 - onMessageReceived -- A message was received from the customer
 - onMessageSent -- A message was sent to the customer
 - onMissed -- The chat contact was missed.
 - onDestroy - The voice contact is destroyed.
- Amazon Connect Task Contact
 - onIncoming -- The tasks contact is incoming.
 - onConnecting -- The task contact is connecting.
 - onConnected -- The task contact is connected.
 - onEnded -- The task contact ended.
 - onRefresh -- The task contact is updated.
 - onAccepted -- The task contact is accepted.
 - onPending -- The voice contact is pending.
 - onMissed -- The task contact was missed.
 - onDestroy - The voice contact is destroyed.
 - onTransferInitiated -- When the server has initiated the task transfer.

- onTransferSucceeded -- When the task transfer has succeeded.
 - onTransferFailed -- When the task transfer has failed.
 - onTaskExpiring -- Triggers 2 hours before the task expires.
 - onTaskExpired -- When the task has expired.
- Salesforce Agent
 - onStateChange -- The Salesforce agent's state changed.
 - onWorkAccepted -- The Salesforce agent accepted work.
 - onWorkloadChanged -- The Salesforce agent's workload changed.
 - Salesforce UI
 - onClickToDial -- A phone number, within the Salesforce UI, was clicked.
 - onNavigationChange
 - onHvsWorkStart

 [Edit this page](#)

Appendix D: CTI Flow Examples

Voice Contact Screenpop (Legacy Adapter Support)

Source: Amazon Connect Voice Contact

Event: onConnecting

[Download](#)

Chat Contact Screenpop

Source: Amazon Connect Chat Contact

Event: onConnecting

[Download](#)

Click-to-Dial

Source: Amazon Connect Chat Contact

Event: onClickToDial

[Download](#)

Screen Pop on Customer Phone Number

Source: Amazon Connect Voice Contact

Event: onConnecting

[Download](#)

Screen Pop a Case on Contact Attribute Data (if it exists) or Pop a New Case (if it does not)

Source: Amazon Connect Voice Contact

Event: onConnecting

[Download](#)

Create a Task (Call Activity) and Pop That Task

Source: Amazon Connect Voice Contact

Event: onConnecting

[Download](#)

Screenpop on Customer Email Address (in contact attribute data)

Source: Amazon Connect Chat Contact

Event: onConnecting

[Download](#)

Create a Task (Call Activity) and Pop That Task

Source: Amazon Connect Chat Contact

Event: onConnecting

[Download](#)

Default CTI Flows

The following zip file includes default flows, which are automatically added and activated on new installations of the package. However, if you are upgrading from an earlier version you may need to replace your legacy script with the new flow.

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Appendix E: Integration with Salesforce High Velocity Sales

What is High Velocity Sales?

Salesforce HVS (HVS) is a process for your inside sales team to follow a repeatable pre-defined sales cadence for your business. It enables sales managers and representatives to work on a prioritized list of prospects and follow best sequence of sales outreach activities as defined by your sales process.

Enabling the Integration with High Velocity Sales

In order to make HVS works for your connect users, you must enable High Velocity Sales in your Salesforce Org.

Enable High Velocity Sales

1. From Setup, enter High Velocity Sales in the Quick Find box, then select High Velocity Sales.
2. Toggle "Enable High Velocity Sales Features" from disable to enable state



Call Outcomes for Branching

In this step, you can define call disposition values which can be used to branch sales cadence to define next best action for your sales process.

Define Call Outcomes for Branching

1. From Setup, enter High Velocity Sales in the Quick Find box, then select High Velocity Sales.
2. Edit the Define Call Outcomes for Branching.
3. Enter the call result values used by your org next to related call outcomes.

3 Configure High Velocity Sales

Define Call Outcomes for Branching RECOMMENDED Close

Call results are disposition values such as "Left Voicemail" that are captured when you log a call. Relate those values to call outcomes to display this data in reports and use it as branching criteria for sales cadences.

Call Outcomes Displays in reports and the Sales Cadence Builder.

Call Back Later

Left Voicemail

Meaningful Connect

Not Interested

Unqualified

Call Result Values Enter related call result values. If you have multiple, separate each value with a comma.

Call Back later, No Answer

Left Voicemail

Connected

Not Interested

Unqualified

Save

Assign HVS permission sets to Connect Users

For creating Sales Cadence, you need to have **High Velocity Sales Cadence Creator** permission set otherwise assign the **High Velocity Sales User** permission set to sales users.

Assign the permission set

1. From Setup, enter permission Sets in Quick Find box, and then select Permission Sets.
2. Select permission set, then click Manage Assignments to assign the permission set to users.

Create Sales Cadence

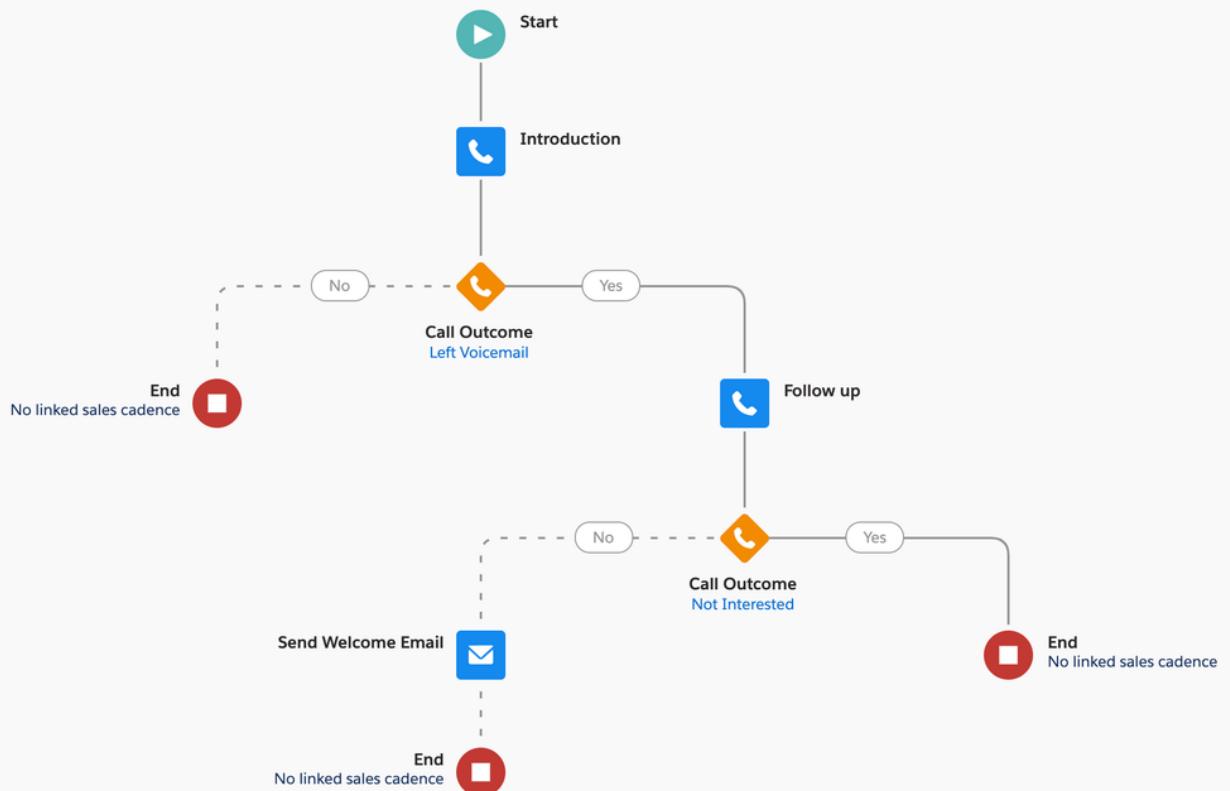
In HVS application, you will need to create a Sales Cadence based on Sales process

Create a Sales Cadence

1. Choose **Sales Cadence** from navigation menu.
2. Click the down arrow button then click **New**
3. Enter name and description. Click **Save** button which opens **Sales Cadence** builder screen.

The screenshot shows the Microsoft Sales Cadence builder interface. On the left, there's a sidebar titled 'Recently Viewed' with items like 'Sales Cadence 1' and 'New Sales Cadence'. A search bar and a 'New' button are also present. The main area is titled 'New Sales Cadence' and contains sections for 'Information' (with fields for 'Name' and 'Description') and 'Steps' (which is currently empty).

4. Click + sign in the builder to add a step. Choose a type of step you want to add for your sales cadence. Once you finish adding steps, click the **Activate** button. Once a sales cadence is active, you can add leads, contact, and personal accounts to Sales Cadence.



Assigning Prospects

You can assign a prospect to a Sales Cadence either on a prospect detail page or through an automated flow. In this example, using prospect detail page to assign a sales cadence.

Jo Jim

New Contacted Nurturing Unqualified Converted

Status: New

Mark Status as Complete

Activity Chatter Details

Log a Call New Task New Event

Recap your call... Add

Email insights only Disabled

Filters: Within 2 months • All activities • All types

Refresh • Expand All • View All

Upcoming & Overdue

No next steps.
To get things moving, add a task or set up a meeting.

This list is filtered.

Show All Activities

Click **Add to Sales Cadence** button to add this prospect to a Sales Cadence.

Create and Map Dispositions

In this step you need to add a disposition field on Activity object and map disposition options to what is defined in HVS call outcomes. In this example, I am going to create a picklist field and add it to default task page layout to track disposition value for each call.

Create and map disposition fields

1. Go to the Setup screen then click **Object Manager**
2. Click **Activity Object**
3. In Fields and Relationships section select **New**
4. Select a picklist field and choose **Next**
5. Enter require information and add HVS call outcomes as picklist options.
6. Select all default options and add this filed on Task page layout. (If there is already a field called **Call Result** on Task Page layout then remove it from the page layout.)
7. Choose **Save**

Field Information

Field Label	Call Result
Field Name	Call_Result
API Name	Call_Result_c
Description	
Help Text	
Data Owner	
Field Usage	
Data Sensitivity Level	
Compliance Categorization	
Created By	Sunil Sinha, 10/10/2019 11:04 PM

Object Name **Activity**
Data Type **Picklist**

Modified By Sunil Sinha, 10/10/2019 11:04 PM

General Options

Required
Default Value

Picklist Options

Restrict picklist to the values defined in the value set
Controlling Field [\[New\]](#)

Field Dependencies

[New](#)

No dependencies defined.

Values

[New](#) [Reorder](#) [Replace](#) [Printable View](#) [Chart Colors](#)

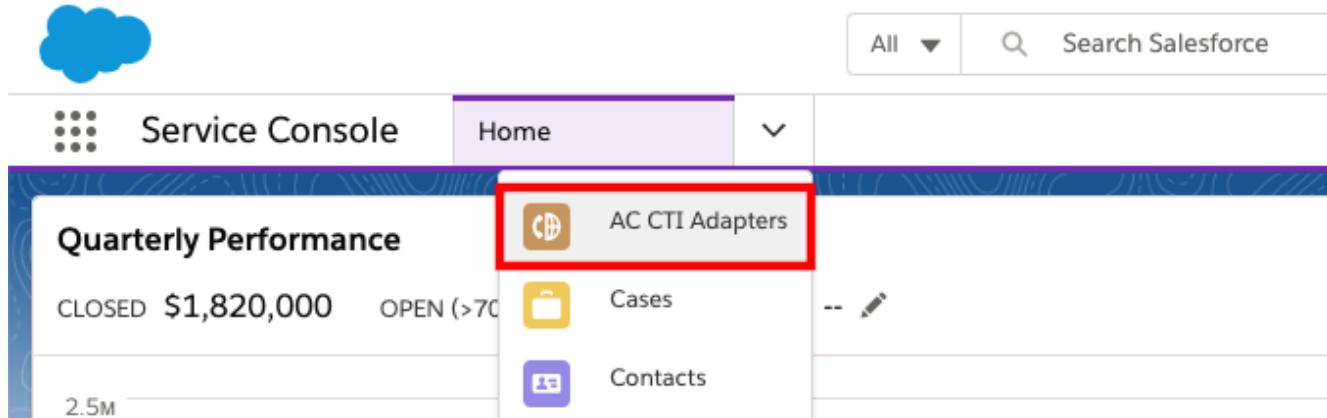
Action	Values	API Name	Default	Chart Colors	Modified By
Edit Del Deactivate	Completed	Completed	<input type="checkbox"/>	Assigned dynamically	Sunil Sinha, 10/10/2019 11:04 PM
Edit Del Deactivate	Connected	Connected	<input type="checkbox"/>	Assigned dynamically	Sunil Sinha, 10/10/2019 11:04 PM
Edit Del Deactivate	Left Voicemail	Left_Voicemail	<input type="checkbox"/>	Assigned dynamically	Sunil Sinha, 10/10/2019 11:04 PM
Edit Del Deactivate	Not Interested	Not_Interested	<input type="checkbox"/>	Assigned dynamically	Sunil Sinha, 10/10/2019 11:04 PM
Edit Del Deactivate	Unqualified	Unqualified	<input type="checkbox"/>	Assigned dynamically	Sunil Sinha, 10/10/2019 11:04 PM

Setup CTI Flows for High Volume Sales

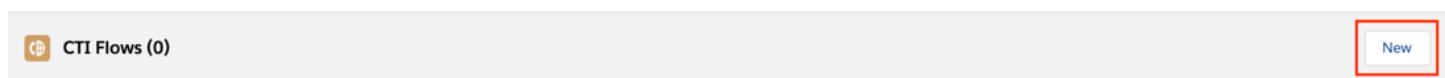
Next you will need to create a new set of CTI Flows for High Volume Sales.

Configuring the CTI Flow

1. Log in into your Salesforce org and go to the **Service Console**
2. Expand the **navigation menu** by selecting the down arrow and choose **AC CTI Adapters**.



3. Select **ACLightningAdapter**
4. Scroll down to the **Scripts** section
5. Select New to create a new CTI Flow



6. In the **CTI Flow Name** field, enter **Voice onHvsWorkStart**

7. Make sure the checkbox for **Active** is selected

8. For the **Source**, select **Salesforce UI**

9. For the **Event**, select **onHvsWorkStart**

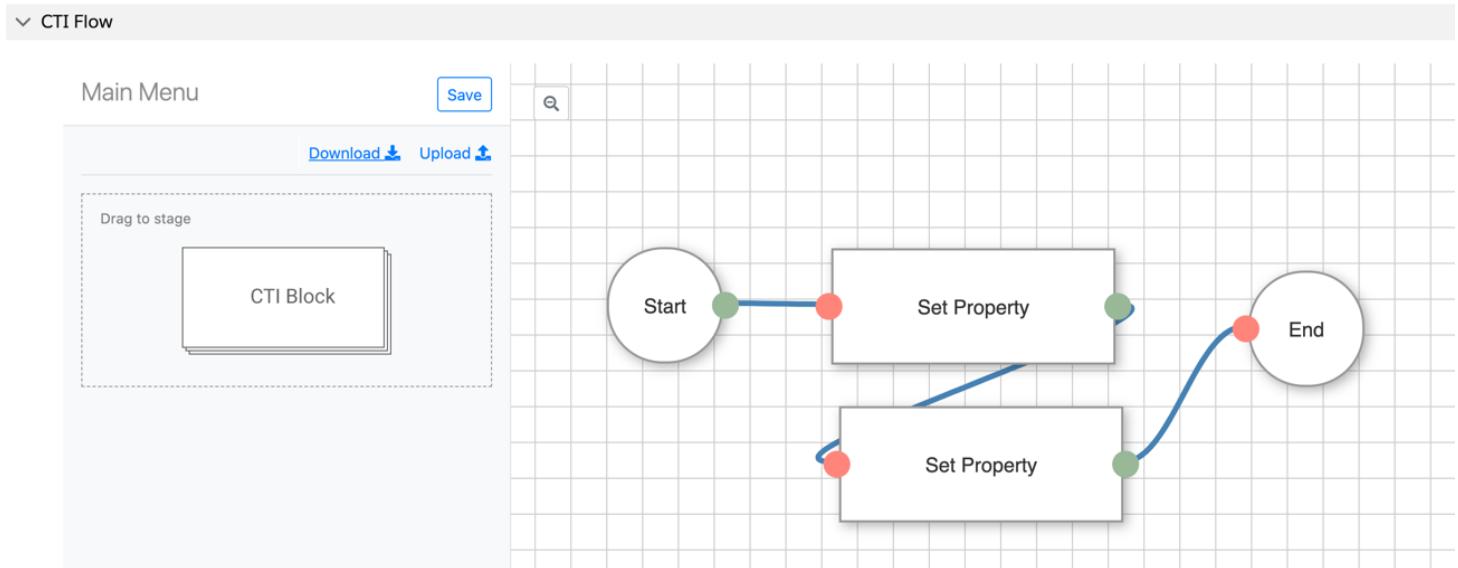
10. Provide a **Description**

11. Click **Save**.

12. Scroll down and click on the link **Voice onHvsWorkStart**.

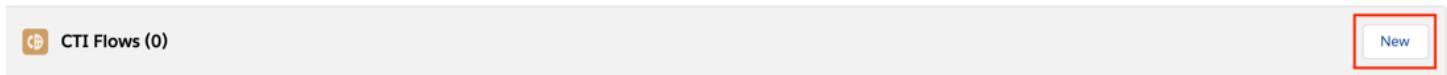
13. [Download this file](#)

14. Click **Upload** and find the file you just downloaded. You should now see this:**



15. Click **Save**. This creates a CTI Flow that is invoked when you start a HVS work and capture the workId for the third CTI Flow below.

16. Go back to the CTI Adapter page and select **New** in CTI Flows section to create another CTI Flow.



17. In the **CTI Flow Name** field, enter **HVS Voice onConnecting**

18. Make sure the checkbox for **Active** is selected

19. For the **Source**, select **Amazon Connect Voice Contact**

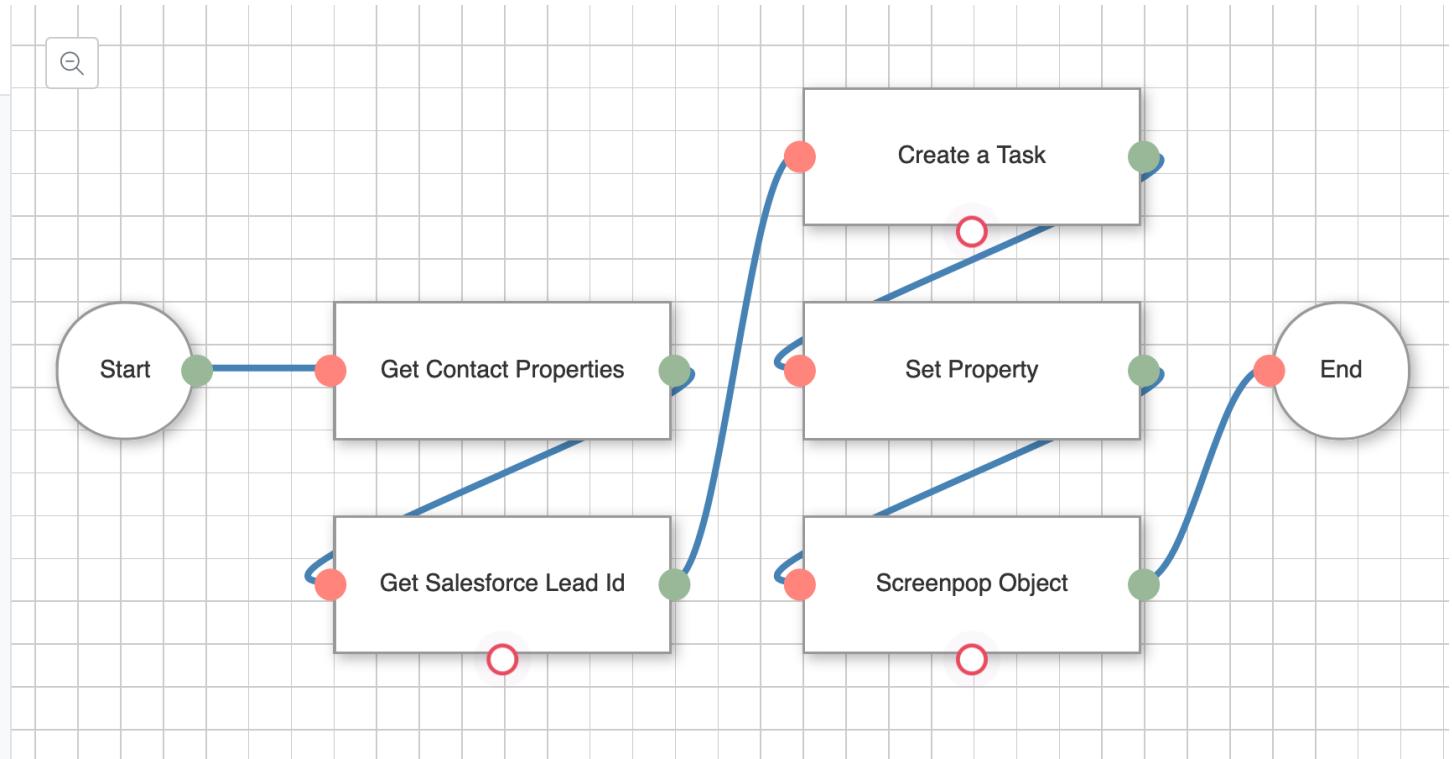
20. For the **Event**, select **onConnecting**

21. Provide a **Description** and Save

22. Scroll down and click on the link **HVS Voice onConnecting**.

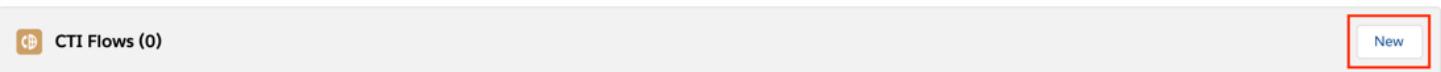
23. [Download this file](#)

24. Click **Upload** and find the file you just downloaded. You should now see this:



25. Click **Save**. This creates a CTI Flow creates task for the voice contact and save the taskId for the third CTI Flow below. If you already have a CTI Flow that creates task for voice contact, you do not need to add this one but just need to add a **Set Property** CTI Block to save the taskId

26. Go back to the CTI Adapter page and select **New** in CTI Flows section to create another CTI Flow.



27. In the **CTI Flow Name** field, enter **HVS Voice onRoutable**.

28. Make sure the checkbox for **Active** is selected

29. For the **Source**, select **Amazon Connect Agent**

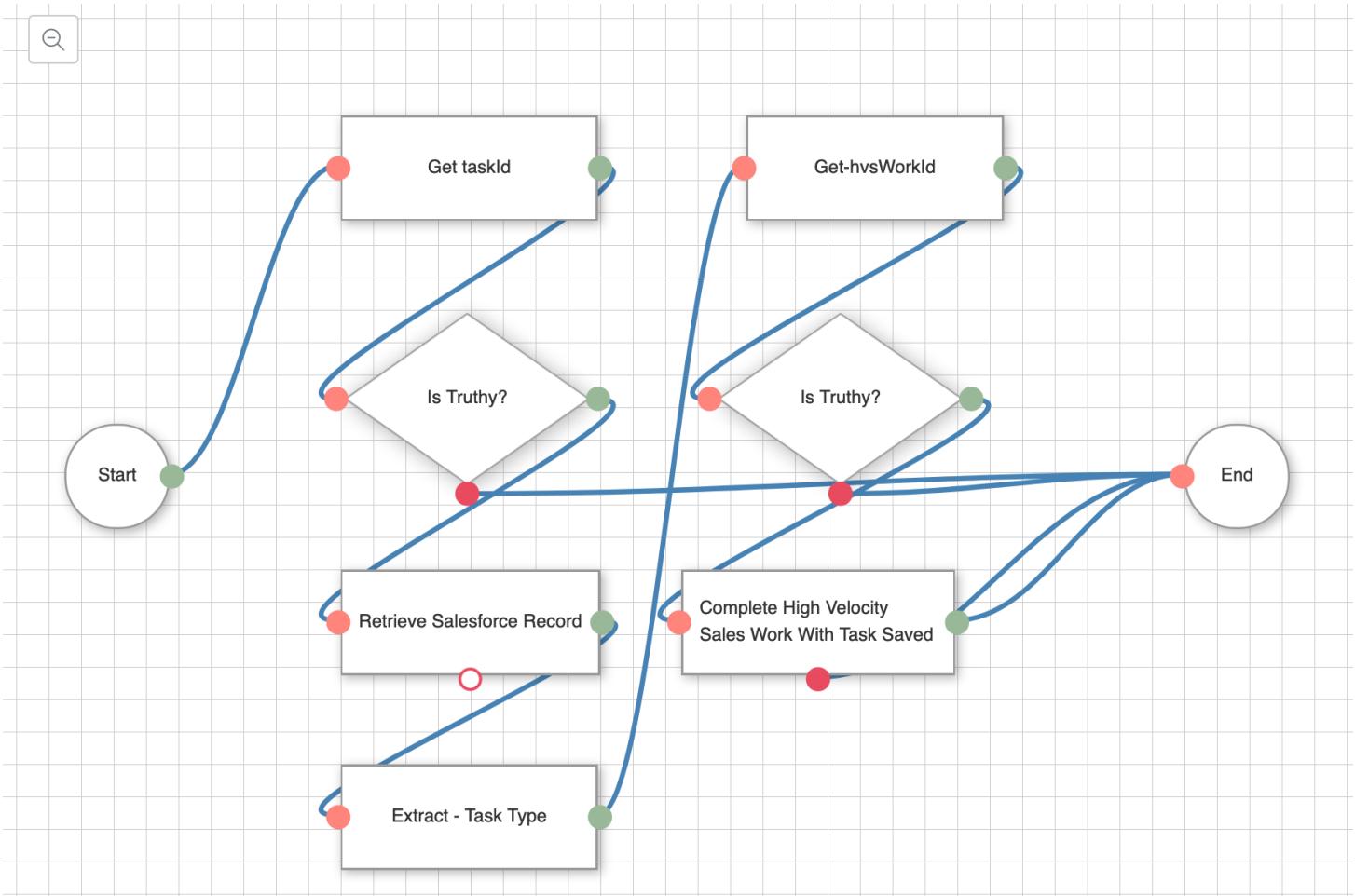
30. For the **Event**, select **onRoutable**

31. Provide a **Description** and Save

32. Scroll down and click on the link **HVS Voice onRoutable**

33. [Download this file](#)

34. Click **Upload** and find the file you just downloaded. You should now see this:



35. Click **Save**. This CTI Flow is executed before your agent is back to routable and retrieves the call result based on the task Id you set in the second CTI Flow, and use it to complete the HVS work

36. Once you've created the flows refresh your browser and the new scripts will take effect.

Expected Behavior

1. Adding Lead to the Sales Cadence you created

High Velocity Sales Leads ACLightingAdapter Yiming demo Timing Tang HVS - voice HVS - voice

Mr. Timing Tang

Status: Contacted

Sales Cadence Steps

Timing Tang is not currently in a sales cadence.

Add to Sales Cadence

Campaign History

We found no potential duplicates of this Lead.

2. Make a call to the lead using the call button

Sandbox: ACCT1
Einstein Activity Capture is enabled. To start using it, connect your email and calendar to Salesforce.

High Velocity Sales Leads ACLightningAdapter Yiming demo Timing Tang HVS - voice HVS - voice

Status: Contacted

Activity Chatter Details

Log a Call New Task New Event

Last engaged: Call 2h ago

Engagements within 30 days:

Sales Cadence Steps

Yiming demo Step 1

Call

Introduction Attempt 1: Introduction to CTI Adapter

Call

Branch on Call Result

Call Connected?

View All Sales Cadence Steps

Phone History Notes

3. An outbound call is made and a task is created and popup

Task HVS - voice

Name Related To

Timing Tang

Details Related

Available Connected call

Hold Mute

Number pad Quick connects

End call

Related To

Name Timing Tang

Call Duration

Call Type Outbound Task Subtype Call

Last Modified By Yiming Wang, 7/20/2021 1:42 PM

Yiming demo - Introduction Attempt 1

Phone History Notes

4. While agent is in After Call Work status, Agent update the Call Result of the popup task and click Save.

All Search... Name Search AWS Phone Calls...

Yiming Wang

*Subject HVS - voice

Due Date

Call Object Identifier

*Call Result

--None--

✓ --None--

Call Back Later

Left Voicemail

Meaningful Connect

Not Interested

Unqualified

Yiming Wang, 7/20/2021 1:42 PM

Cancel Save

Yiming demo - Introduction Attempt 1

5. Agent click Close Contact to be available for the next call. The third CTI Flow will be invoked to retrieve the call result and the Sales Cadence Steps for this lead will be updated (highlighted in red below). The popup task should be linked to the lead as well (highlighted in orange below).

The screenshot shows the Salesforce Lead Details page for a lead named "Yiming demo". The lead has a status of "Contacted". The "Sales Cadence Steps" section on the left is highlighted with a red border and contains the following steps:

- Yiming demo Step 3
- Branch on Call Result: Call Connected? Yes a few seconds ago
- Send Email: welcome : welcome
- Sales Cadence Completed

The "Activity" feed on the right is highlighted with an orange border and shows the following items:

- Call: Introduction Attempt 1, Yiming demo, Timing Tang, YimingTestCompany (Upcoming)
- HVS - voice (Recent activity)

Other visible sections include "Chatter" and "Details". A message bar at the top right says "We found no potential duplicates of this Lead." and a "Campaign History" sidebar is visible.

[Edit this page](#)

Appendix F: CTI Flow Blocks

If-else

Change the flow of your script depending on value of fields you fetch or store. This is a simple "if-else" utility for your flow.

HTTP Request

Make an HTTP request.

Get Property

Fetches a property from the local data store. You can access a property you have retrieved from the local store by referring to the return value of this block.

Get All Properties

Returns all stored properties.

Format Phone Number

Formats a phone number for a country code.

Format Phone Number (E164)

Formats a phone number for a country code in E164 format.

Format a Date object

Returns a formatted date.

Is Truthy?

This is a utility to branch your flow depending on the truthiness of a value.

Set Property

Assigns a value to a property in the local data store.

Log to Console

Sends a static or dynamic value from an action to a logger.

Show Modal

The command to open modal.

Enable Click To Dial?

The query to determine whether Click to Dial should be enabled.

Enable Click To Dial

The command to enable Click to Dial.

Disable Click To Dial

The command to disable Click to Dial.

Get App View Info

The command to get App View information.

Get Softphone Layout

The query to get softphone layout.

Get Agent Workload on Salesforce

Returns the agent's current workload.

Complete High Velocity Sales Work With Task Saved

This methods allow your CTI implementation to communicate with High Velocity Sales (HVS) to handle HVS work.

Refresh View

The command to refresh the view.

Show Softphone Panel

The command to show softphone panel.

Hide Softphone Panel

The command to hide softphone panel.

Set Softphone Panel Height

The command to set the height of softphone panel.

Set Softphone Panel Width

The command to set the width of softphone panel.

Screenpop Object

The command to open a screenpop with information from object.

Screenpop Url

The command to screenpop a url in a new browser tab or browser window.

Screenpop Object Home

The command to screenpop to an object's home page.

Screenpop List

The command to screenpop a list view.

Screenpop Search

The command to screenpop search results based upon the search input. Not to be confused with "Search And Screenpop."

Screenpop New Record

The command to screenpop to a new record of the specified type with specified default field values.

Search And Screenpop

This command searches objects specified in the softphone layout for a given string. Returns search results and screen pops any matching records. Not to be confused with "Screenpop Search."

Run Apex

The command to run an apex method. Make sure the apex method is in a class that extends the AC_Utils class, and your class must be specified in the extensions list of `AC_CtiScript__c.page` Visualforce page. [See the Salesforce documentation for an example.](#)

Get Agent State from Salesforce

The command to get an agent's state.

Set Agent State on Salesforce

The command to set an agent's presence state on Salesforce.

Login Agent on Salesforce

The command to login an agent on Salesforce.

Logout Agent on Salesforce

The command to logout an agent on Salesforce.

Save (or Create) a Record

The command to save or create a Salesforce object.

Create a Task

The command to create a Task. (The Subject of the task will be a string made up of upto 3 field values.)

Is Contact "Do Not Call"?

The query to check if the Contact requested not to be called.

Dial Number

The command to dial a phone number or to conference to an endpoint.

Mute Agent

The command to mute the agent.

Unmute Agent

The command to unmute the agent.

Get Agent Status from Connect

The command to get the current presence status of the agent from Connect.

Set Agent Status on Connect

The command to set the current presence status of the agent on Connect.

Set Agent Status By Name on Connect

The command to set the current presence status of the agent on Connect by name of the state.

Set Agent as Available on Connect

The command to set the current state of the agent to "Available."

Get Quick Connection List

Gets the list of quick connects available to the current agent

Get Transfer Connection List

Gets the list of quick connects available to the current agent.

Get Endpoint by Phone Number

Generates and returns an endpoint for a provided phone number.

Get Available Agent States

Gets all of the available agent states including custom states.

Get Agent Name

Returns the agent's user friendly display name for the agent.

Get Agent Extension

Returns the phone number that is dialed by Amazon Connect to connect calls to the agent for incoming and outgoing calls, if softphone is not enabled.

Get Agent Deskphone Number

Returns the phone number that is dialed by Amazon Connect to connect calls to the agent for incoming and outgoing calls, if softphone is not enabled.

Is Agent Softphone Enabled?

Checks if agent softphone is enabled. Branches in different directions if it is or not.

Change Agent to Softphone

Changes the current agent to softphone mode.

Change Agent to Deskphone

Changes the current agent to desktop phone mode with the specified phone number.

Get Agent Configuration

Returns the phone number that is dialed by Amazon Connect to connect calls to the agent for incoming and outgoing calls, if softphone is not enabled.

Get Agent Dialable Countries

Returns the list of dialable countries for the current agent.

Create Task Contact

The command to create a task contact that is sent to the provided quick connect endpoint. The quick connect must be available to any queue the agent has access too.

Get Contact Attribute

The command to get value of an attribute from the contact in the current session.

Is Voice Contact?

The command to determine if the contact is a voice contact.

Is Chat Contact?

The command to determine if the contact is a chat contact.

Is Task Contact?

The command to determine if the contact is an amazon connect task contact.

Is Contact Inbound?

The command to determine if the contact is inbound.

Is Contact Transfer?

The command to determine if the contact is transferred.

Is Callback?

The command to determine if the contact is a queue callback.

Get Contact Properties

The command to get properties of a contact.

Get Customer Phone Number

The command to get customer phone number of a contact.

Get Contact Interaction Metadata

The command to get metadata about a contact interaction.

Pop Task Contact's ReferenceUrls

The command to pop any reference urls if the contact is a task. Returns the number of urls popped.

Query value

The query to execute an arbitrary SOQL statement and returns the results.

Get Salesforce Lead Id

The command to get a salesforce lead id using a formatted phone number.

Open Salesforce Primary Tab

Opens a new primary tab to display the content of the specified URL.

Open Salesforce Sub Tab

Opens a new subtab (within a primary tab) that displays the content of a specified URL.

Get Focused Primary Tab Object Id

Returns the object ID of the primary tab on which the browser is focused.

Get Focused Subtab Object Id

Returns the object ID of the subtab on which the browser is focused.

Call jQuery Method

Perform a method call on a jQuery selection with your arguments.

Replace String

Perform a .replace() method on an input string.

Text Starts With Value

Checks whether a text input starts with one of the values.

Text Ends With Value

Checks whether a text input ends with one of the values.

Join Strings

Concatenates 2 values into a string.

SOQL Query

The query to execute an arbitrary SOQL statement and returns the results.

Multiply

Multiply two numbers.

Divide

Divide two numbers.

Get Tab Object Map

Returns a map of all visible primary tabs and their associated objects (if available).

Close Salesforce Tab

Closes the Salesforce with a given id.

Delay

Delays execution for a period of time. (Keep in mind that your flow may be stopped if it runs longer than the maximum allowed execution window of 10 seconds.)

Get Primary Tab Ids

Returns all of the IDs of open primary tabs.

Get Tabs With Matching Url

Returns the ids of the primary tabs with the url matching a provided string.

Length

Returns the length of a value.

Slice

Returns the slice of a value.

Cast a Value to a Type

Cast an input value to a Javascript type, such as Number or String.

Get CCP Logs

The command to get the logs of agent from Connect.

Clear All Properties

Clears all stored properties.

Unset Property

Removes the value assigned to a property in the local data store.

Show Attributes

This command displays the contact attributes in the CCP overlay.

Is Task Contact?

Check if the contact is a task

Create Task Contact

Creating a new task contact with certain inputs.

Pop Task Contact's ReferenceUrls

Pop any reference urls that are related to the task contact

Start Recording

Use the contact recording API to start recording the call.

Stop Recording

Use the contact recording API to stop recording the call.

Update Contact Attributes

Use the Connect API to update the attributes of the current contact.

Get Payload

Retrieve the payload of the CTI Flow. (The payload can be configured by CTI Actions.)

Send Data to CCP Overlay

Send an object to Data panel of CCP Overlay.

Leave a Voicemail

Use Voicemail drops to leave a voicemail.

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