Setup and Installation Guide

July, 2023

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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 Notes

Summer '23 Release

The Salesforce summer release '23 blocks Username-Password Flow by default (see more details here). If your org uses this version of Salesforce, please unblock the flow by following these instructions.

Salesforce Enhanced Domains

Salesforce is making changes to the instance domains on account of the enhanced domains feature in the Spring 23 release. Once this feature is enabled, you must migrate the CTI adapter to using these new domains. See here for migration instructions.

Spring '22 Release

The Salesforce Spring '22 release introduces a change that will likely cause an install or update to any version of the adapter before 5.18 to fail. In addition if you are using the `ac_PhoneCallListView` component in any version of the adapter, the loading of your component may fail. This component has been depricated in v5.18.

WebRTC Plan-B Deprecation

The Plan-B deprecation should not affect any current users of the CTI Adapter, as we utilize the embedded CCP and do not build in connect-rtc-js seperately.

Installing as Admin

Please **confirm that the application was installed for admins only** (see installation for more details). 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. If you are updating the package, please verify that all users have the proper AC permission set.

Important: when upgrading the CTI Adapter, please make sure that the Salesforce Lambdas are also updated to the newest version.

5.20.1 July 2023

- **Enhancement:** Amazon Connect Streams API Upgrade : The Amazon Connect Streams API has been upgraded to version 2.2.0 for improved performance and functionality.

- **Enhancement:** CCP Element Editor Permission Change : For CCP Element Editor, editing features was previously available to users assigned to permission sets Agent (AC_Agent), Manager (AC_Manager), and Administrator (AC_Administrator). Starting from this version, only users with the Administrator permission set (AC_Administrator) will be able to view and edit feature. This change is designed to restrict modification access of CCP Overlay Elements.
- **Enhancement:** Chat Widget Integration Setup Process Changes: The setup process for Chat Widget Integration has been updated to enhance the integration experience and security.
- **Backward Incompatibility Notice::** Chat Widget Integration Update : Customers who have previously set up Chat Widget Integration will need to redo the setup process due to changes introduced in this version. This ensures compatibility with the latest enhancements. *Note: To avoid any downtime of feature, set up should be completed before upgrading the version*
- **Security:** Improved Amazon Connect Instance Security : Throttling mechanisms have been introduced to enhance the security of Amazon Connect Instances, ensuring a safer environment for users and their data.

5.19 April 2022

- **Enhancement:** replace call recording audio streaming via cloudfront distribution with the connect native get-recording endpoint. This change makes it so that the cloudfront infrastructure and associated setup process is no longer necessary. Please note that this change will remove audio recording infrastructure from your AWS account, please make sure to test this change before fully deploying.
- **Enhancement:** add IgnorePermissionSet setting to FEATURE_WISDOM_PANEL feature. The setting determines whether the AC_CallRecording/AC_Administrator permission set is checked before showing Wisdom to the logged in user.
- **Bug fix:** CTI Flows on contact events will fire after the page was reloaded during a contact's life cycle
- **Bug fix:** Fixed an issue where we would create a CCACase or CCAContact batch job even if there were no updates to any related fields.

5.18 January 2022

- **Bug Fix:** Updated the **Get Salesforce Contact ID** block to accept E.164 numbers.
- **Bug Fix:** Fixed **onMessage** event name and label which was causing CTI flows to not trigger.
- **Bug Fix:** Fixed stray template tag in `ac_contactChannelListView` causing Spring '22 package installation failure.
- **Bug Fix:** Depricated `ac_PhoneCallListView` LWC, as it is an artifact of an old version of the adapter and was causing Spring '22 package installation failure.

- **Bug Fix:** Fixed issue where switching contact tabs didn't update the CCP overlay attributes.
- **Bug Fix:** Fixed issue where some `sfInvoke` operations were returning complex JSON objects that don't work with Connect Contact Flows

5.17 November 2021

- **Feature:** Added the integration with Amazon Connect Wisdom, which delivers articles and article recommendations to agents. See here for more details.
- **Feature:** Added the integration with Voice id, which provides real-time caller authentication. See here for more details.
- **Bug Fix:** Fixed a bug where CTI Actions would only load if you switched overlay tabs. Now they will load immediately.
- **Bug Fix:** Fixed a few bugs with Contact Attributes Overlay.
  - Where you needed to set they would not populate in the overlay unless the CTI Attribute Name value was the same as the contact attribute key.
  - Selecting DisplayValue of `Key` did not show just the Key value.
  - When using the ShowAllAttributes feature, the already configured CTI Attributes did not maintain the same HTML formatting as before.
- **Bug Fix:** Fixed a bug where DialedNumber__c was not filled on outbound calls.
- **Bug Fix:** Fixed a bug where Update Contact Attributes didn't work for Chat or Task contacts.
- **Bug Fix:** Fixed a bug where the CTI Flow payload would only contain the CTI Action Additional Data when both CTI Action Payload and Additional Data are configured. Now the CTI Flow payload will have both the CTI Action Payload and Additional Data
- **Enhancement:** Added two new CTI Flow Blocks - Destroy Live Contact and Clear Contact.

5.16 August 2021

- **Feature:** Added a `callIncomingDuration` field to the `Contact Interaction Metadata` CTI Flow block, which captures the time between the call coming into an agent and it being accepted/missed/declined.
- **Feature:** Moved the medialess popout page to be an optional feature. Learn how to enabled it here
- **Bug Fix:** Fixed an issue where the `callInteractionDuration` would be too large if the call is missed. It is now defaulted to 0 if the call is not picked up.
- **Bug Fix:** Fixed an issue with the medialess adapter where media was still coming through the adapter and causing audio quality issues. Now, when the medialess option is checked, this will disable the allowFramedSoftphone option in CCP config, and media will not be sent through the CCP embedded on Salesforce.

- **Bug Fix:** Fixed an issue where Agents couldn't see some CTI Actions if more than 20 CTI Actions are set up. Now, a scroll bar should appear to navigate to all of them.
- **Bug Fix:** Fixed an issue with the isInbound CTI Flow block, which would return false if the Customer hangs up the error before the Agent could answer the call, even if it was inbound.
- **Bug Fix:** Fixed an issue with the InitialAgentStatus sub-feature of SetAgentStatusOnSessionEnd, which would not follow the IfProfileNameIncludes condition.
- **Bug Fix:** Fixed an issue with CCP overlay where if no additional data is added, including Title, Instructions and Fields, the right pointing caret icon will be displayed for detailed form view. Now the execute button will be displayed in this case.
- **Bug Fix:** Fixed an issue with CCP overlay where the order parameter was not affecting the sorting of the CTI Actions in the overlay.
- **Bug Fix:** Fixed an issue with the CCP Element Editor where typing the CTI Action name first caused the cursor to move out of the input box.
- **Bug Fix:** Fixed an issue with the Set Agent Salesforce State CTI Flow block.

5.15 July 2021

When installing v5.15, please **confirm that the application was installed for admins only** (see installation for more details). 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.

- **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 Call Recording Playback 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 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:** Added batch processing to CCA Case Trigger and CCA Contact Trigger.
- **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 Reference Urls - 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**: 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

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.

5.2 September 2020

- **Bugfix**: Fix the issue that prevented users from creating a new record using CTI Flows in Classic.
- **Bugfix**: Fix the issue that caused the contact channel analytics to not get updated at the end of a call.
- **Bugfix**: Fix the contact channel analytics recording view.
- **Feature**: Add a CTI block called "Get Chat Message."
- **Feature**: Add a CTI block called "SOQL Query." This block executes an arbitrary SOQL statement and returns the results.

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 CTI 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 workflows for Lightning and Classic via a drag and 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 package 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:** Added AC Administrator, AC Agent, and AC Manager permission sets to enforces objects access and fields level security (FLS) as per Salesforce security guideline for managed package. To access 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 and 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 to 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 evaluate security access check for Amazon Connect managed package objects
- **Bugfix:** Contact interaction duration 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 role 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 enforced Salesforce sharing model (record and field level) support.

4.4 March 2020

- **This release has significant new features and updates:** Please test and validate version 4.3 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:** OmniChannel workload related 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 4.0 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.

3.11 August 2019

- Added support for Salesforce platform encryption
- Fixed issue with logout action not re-rendering the sign-in button
- Fixed documentation issue regarding presence sync sources
- Fixed documentation issue regarding recorded conversations security configuration
- Updated documentation for presence sync rule configuration

3.10 July 2019

- Added support for enabling / disabling softphone popout
- Added support for previousWorkloadPct and newWorkloadPct operands in presence sync rules
- Fixed issue with presence sync rules loading

3.9 May 2019

- Added support for Opportunities for Task association
- Fixed issue with presence sync rules loading

- Fixed issue with state setting when no presence rules defined
- Fixed issue with Task pop in specific config scenarios

3.87 May 2019

- NOTE: The "mini" Task page has been deprecated in this release of the adapter. Users requiring custom functionality may use the page and controller code included in this document as a starting point for a custom Task page of their design.
- Added rules-based configuration of agent presence state between Amazon Connect and Salesforce
- Added enhanced contact attribute display and configuration including clickable hyperlinks, key-value display options, and key-value formatting
- Added option to enable/disable automatic call duration updating on the Task object
- Added functionality to directly pop associated record on click-to-dial avoiding search and pop behavior
- Fixed issue with callback Task pops not occurring in some cases

3.7 May 2019

- Unpublished version

3.6 April 2019

- NOTE: Automatic association of accounts, contacts, leads, or contacts to call activity (Task) records based upon tab navigation has been deprecated. Automatic association of accounts, contact, leads or contacts to call activity (Task) records when a single match is made via ANI lookup OR by contact attribute is supported.
- NOTE: The "mini" Task page will be deprecated in future releases. The default setting is now "DEFAULT_TASK_LAYOUT".
- NOTE: Automatic pop of Tasks in an object's (Account, Contact, Lead, Case) subtab is only supported with the object (Account, Contact, Lead, Case) is open in a primary tab.
- Added support for queued callback calls
- Added support for specifying call types for which to create Task objects
- Added support for enabling / disabling automatic call duration updates of call activity (Task) objects.
- Fixed issue with secondary click-to-dial in console mode
- Fixed issue with Task pop occurring during call connecting when set to start of call
- Fixed issue with call context data remaining after a call has ended
- Fixed issue with contact attributes being displayed after a call has ended or has been missed
- Fixed issue with click to dial with ani match to multiple Salesforce objects

3.1 March 2019

- Added ability to specify DEFAULT_TASK_LAYOUT for the Call Activity Page setting
- Added ability to specify static values used during initial task creation
- Added support for Standard Lightning navigation
- Added support for secondary click-to-dial in Console mode
- Fixed issue with primary tab closing upon call activity (Task) save
- Fixed issue with Case handling and Task association

3.0 February 2019

- Removed requirement for Omni-channel to be enabled to perform installation
- Added ability to specify custom ringtone
- Added ability to enable or disable the automatic creation of task (call activity) objects
- Added ability to specify a page to select creation of Lead or Contact when an object with matching ANI is not found
- Added ability specify task (call activity) object pop at the start of call, end of call, or to disable pop
- Added ability to edit task (call activity) subject
- Added automatic setting of whoId and whatId on task (call activity) objects
- Added ability to specify a custom task pop page
- Added ability to include agent friendly name when creating task (call activity) objects for calls delivered to agent queues
- Added ability to add third call participant via click to dial
- Added call attributes display in classic mode
- Fixed call attributes display being persistent when no attributes are defined
- Added ability for automatic task creation on outbound calls
- Upgraded API to amazon connect streams 1.3
- Added support for Lightning Flow Setup

Further Reading

For additional information, see the following:

- Amazon Connect CTI Adapter for Salesforce:
  https://appexchange.salesforce.com/appxListingDetail?listingId=a0N3A00000EJH4yUAH

- Amazon Connect User Guide: https://docs.aws.amazon.com/connect/latest/userguide/using-amazon-connect.html

- Amazon Connect Admin Guide: https://docs.aws.amazon.com/connect/latest/adminguide/what-is-amazon-connect.html

- Amazon Connect API Reference: https://docs.aws.amazon.com/connect/latest/APIReference/Welcome.html

- Amazon Connect Release Notes: https://docs.aws.amazon.com/connect/latest/adminguide/amazon-connect-release-notes.html

- Amazon Connect FAQ: https://aws.amazon.com/connect/faqs

Key Benefits and Requirements

Key Benefits

The key benefits of the adapter include:

- **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.

- **IVR data dips:** easily inject salesforce data into the customer experience. Businesses can offer personalized greetings and dynamic routing based on customer information.

- **Call disposition and activity management:** configure post call workflows to support your Agent's after call work.

- **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.

- **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.

- **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.

- **Lightning CCP extensions:** easily customize and extend behaviors within the CTI Adapter such as screenpop and activity management. Default scripts 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.

We recommend that you initially install the package into your Salesforce sandbox. After the package is installed, you can configure your Salesforce Call Center configuration within Salesforce.

The next step is to allowlist your Salesforce Visualforce domain within your Amazon Connect Approved Origins. This allows cross-domain access to your Amazon Connect instance.

If you want to quickly get setup with basic CTI capabilities in Lightning, we suggest you walk through our Salesforce trailhead available at https://sfdc.co/Amazon-Connect.

Requirements

To successfully create, configure, and implement the Amazon Connect CTI Adapter for Salesforce, you must ensure that the requirements and prerequisites described in this section are in place before you start.

Prerequisites

To install the Amazon Connect CTI package, you must:

1. Have a running instance of Salesforce Classic, Salesforce Console, or Lightning Experience

2. Create an Amazon Connect instance (https://aws.amazon.com/connect/)

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 (https://aws.amazon.com/connect/resources/#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. Console navigation is fully supported.

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**

Search Results for "amazon connect"

40 Apps · Sorted by Relevance

6. On the **Amazon Connect CTI Adapter** detail page, select **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
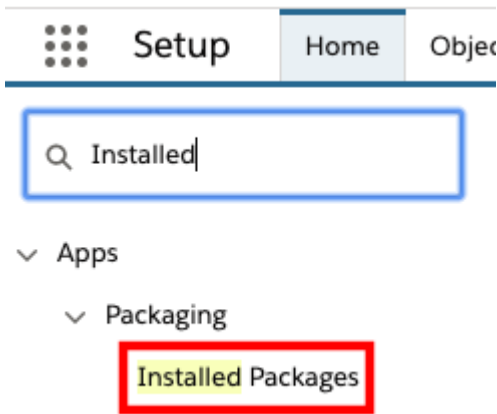
16. Once the **Installed Packages** page opens, validate that the **Amazon Connect -- Universal Package** is installed
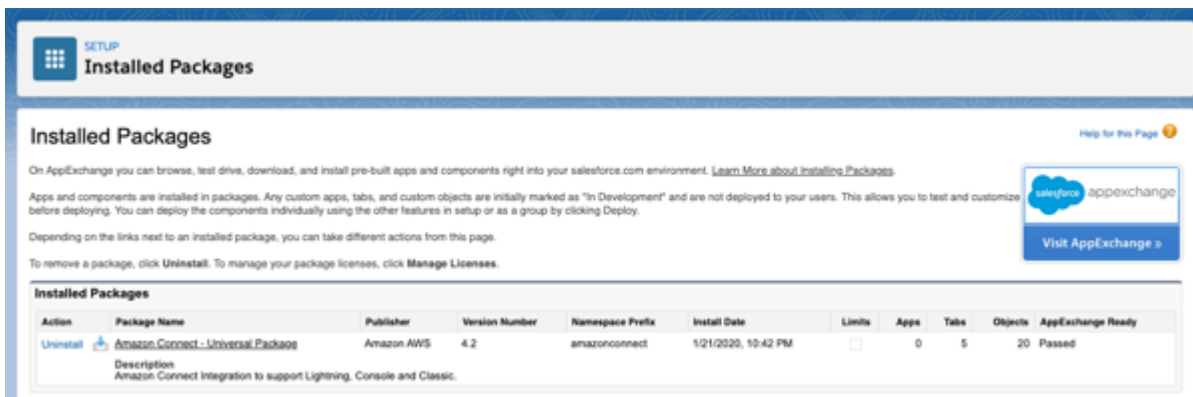
Amazon Connect Salesforce Lambda package

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**

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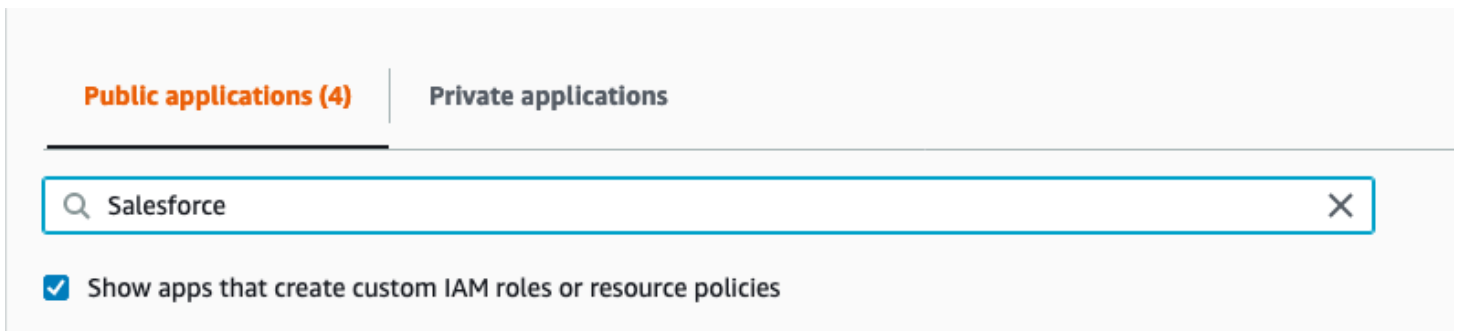
8. Select AmazonConnectSalesForceLambda
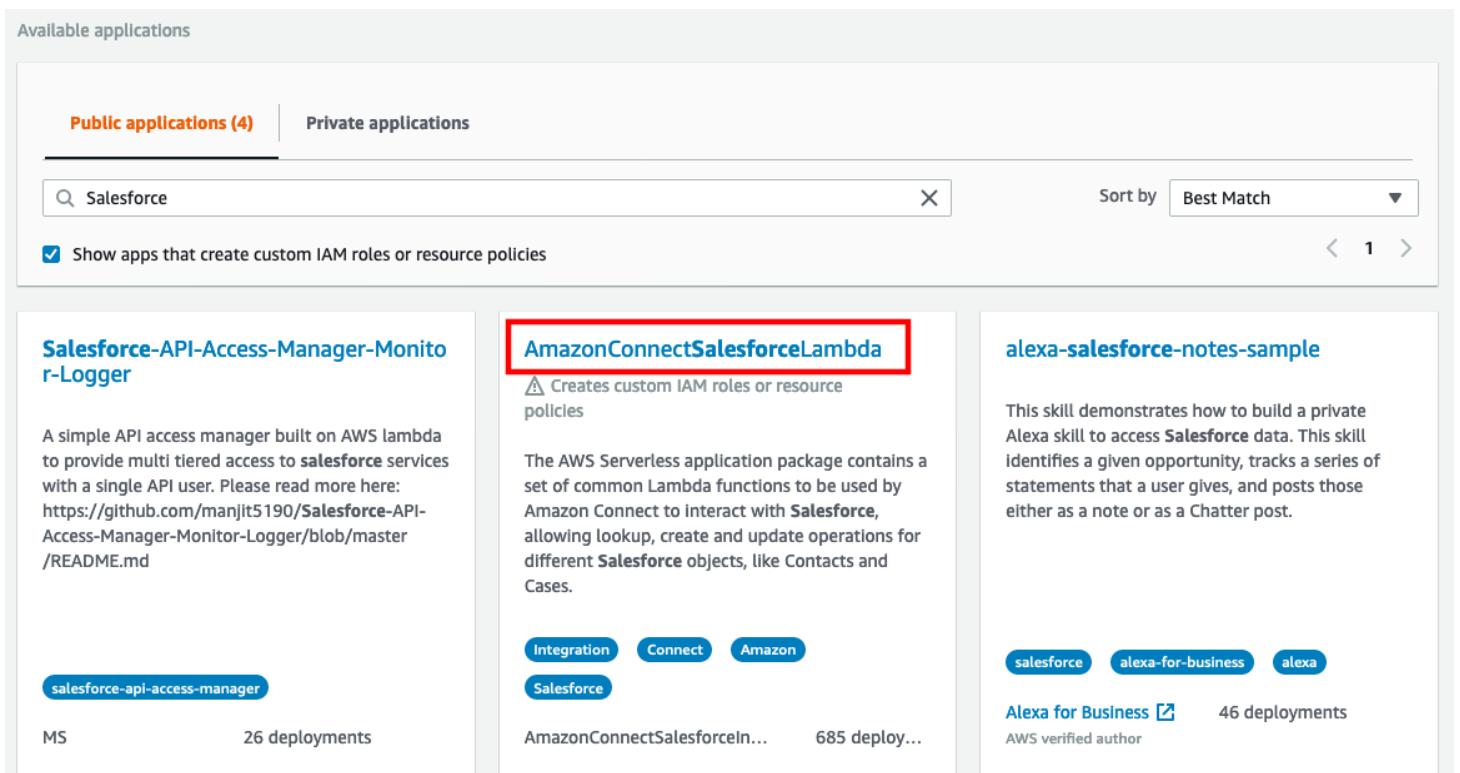
9. When the Application loads, scroll down to the **Application settings** section

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 and follow the instructions (skipping the rest of the instructions on the page).

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.

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

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*.

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

5. Next, navigate to the Lambda Console. In the functions tab, search for *sfExecuteAWSService*.
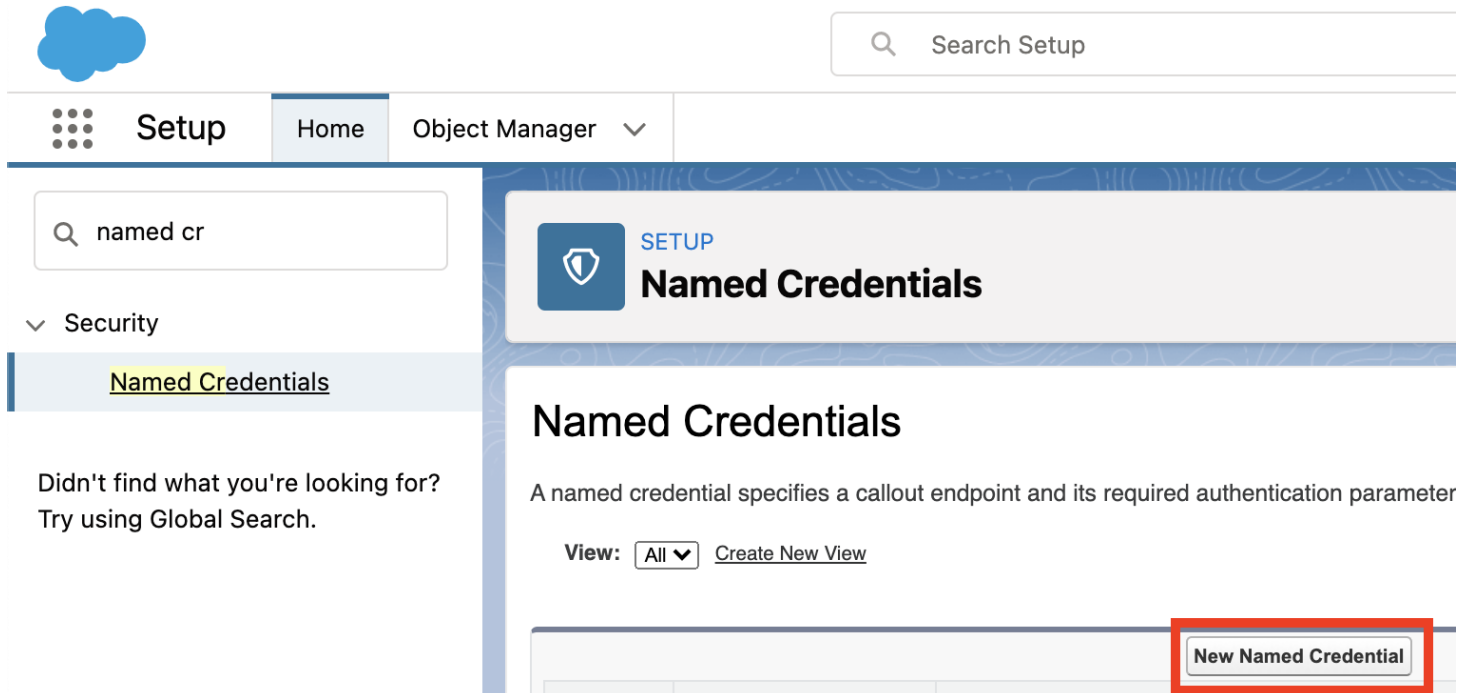
6. Copy down the name of the function. Make sure you are not copying any extra characters.

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

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

9. Click **Save**.

After following the above instructions, follow these instructions to navigate to the Guided Setup feature.

Setting Up The CTI Adapter Using Guided Setup

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 Setup section in your Salesforce instance.

2. Search for Visualforce Pages, and select **AC_GuidedSetup**.

3. Select **Preview**.

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

The 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 to Salesforce

2. Navigate to Setup > Create > Apps

3. Click on the "New" button for the Connected Apps at the bottom of the page

4. In the following form, fill out the Connected App Name, API Name and Contact Email with values of your choice. We recommend "Amazon Connect Integration" as the Connected App Name and the default value for the API name.

5. Select the checkbox next to "Enable OAuth Settings" as shown below.

API (Enable OAuth Settings)

Enable OAuth Settings ✅

6. Set the **Callback URL** to your domain url. Find the domain at *Setup -> My Domain*.

Enable OAuth Settings ✅

Enable for Device Flow ☐

Callback URL❓ https:// ████████████ .my.salesforce.com

7. Ensure Selected OAuth Scopes has the following values selected:

a. Access the identity URL service (id, profile, email, address, phone)

b. Manage user data via APIs (api)

8. Select the checkbox "Require Secret for Web Server Flow", and the checkbox "Require Secret For Refresh Token Flow"

API (Enable OAuth Settings)

Enable OAuth Settings	✅
Enable for Device Flow	☐
Callback URL❓	https://www.salesforce.com
Use digital signatures	☐

Selected OAuth Scopes

Available OAuth Scopes		Selected OAuth Scopes
Access Analytics REST API Charts Geodata resources (eclair_api) Access Analytics REST API resources (wave_api) Access Connect REST API resources (chatter_api) Access Lightning applications (lightning) Access Visualforce applications (visualforce) Access chatbot services (chatbot_api) Access content resources (content) Access custom permissions (custom_permissions) Access unique user identifiers (openid) Full access (full)	Add ▶ ◀ Remove	Access the identity URL service (id, profile, email, address, phone) Manage user data via APIs (api)

Require Secret for Web Server Flow❓	✅
Require Secret for Refresh Token Flow❓	✅
Introspect All Tokens❓	☐
Configure ID Token❓	☐
Enable Asset Tokens	☐
Enable Single Logout❓	☐

9. Click "Save" at the bottom of the screen.

10. Click "Continue" on the next screen

New Connected App

Allow from 2-10 minutes for your changes to take effect on the server before using the connected app.

[Continue] [Cancel]

11. Once the app has been created, on the app's detail screen, please copy the "Consumer Key" value to your installation notes

12. Select "Click to reveal" next to Consumer Secret and record this value to "Consumer Secret" in your installation notes.

13. Click "Manage" at the top of the page

Connected App Name
Amazon Connect Integration

« Back to List: Custom Apps

Edit Delete Manage

14. On the page that appears, click "Edit Policies"

15. Set "Permitted Users" to "Admin approved users are pre-authorizes"

OAuth policies

Permitted Users | Admin approved users are pre-authorized ⬍

16. Click "OK" on the pop-up dialog:

Enabling this option will result in all users currently using this app being denied access. Please reference the Connected Apps OAuth Usage Report if you are unsure who is using the app.

Cancel   OK

17. Set "IP Relaxation" to "Relax IP restrictions"

IP Relaxation | Relax IP restrictions ⬍

18. Click "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 (if your Amazon Connect instance uses the `https://(instancename).awsapps.com/connect/login` domain, then remove

everything after ".com"):

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

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 pla
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**.

	Full Name	Alias	Username	Role	Profile
☑	Douglas, Jason	JDoug			System Administrator
☐	User, Integration	integ	integration@00d6q000004znwseak.com		Analytics Cloud Integration User
☐	User, Security	sec	insightssecurity@00d6q000004znwseak.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 Permission Sets-- one for agents, one for managers, one for administrators, and a few for specific features, 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.

2. Navigate to **Setup** > **Manage Users** > **Permission Sets**.

SETUP
Permission Sets

Permission Sets

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

In addition, you can use the SalesforceA 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

	Action	Permission Set Label ↑	Description
☐	Clone	Toolkit for Amazon Connect - Agent	Permissions to all components that an agent would need to use the toolkit.
☐	Clone	Toolkit for Amazon Connect - Manager	Permissions required to access the toolkit reports.

2. Choose **AC_Manager**.

3. Choose **Manage Assignments**.

4. Choose **Add Assignments**.

5. Select the users to assign the permissions, then choose **Assign**. More information on assigning user permissions can be found at: https://help.salesforce.com/articleView?id=perm_sets_mass_assign.htm&type=5

AC_Administrator

Object Name	Object Permissions	Total Fields	Tab Settings
AC Agent Performance	Read, Create, Edit, Delete, View All, Modify All	124	--
AC CCP Overlay Elements	No Access	9	--
AC Contact Channel Analytics	Read, Create, Edit, Delete, View All, Modify All	31	Visible
AC Contact Channels	Read, Create, Edit, Delete, View All, Modify All	24	--
AC Contact Trace Records	Read, Create, Edit, Delete, View All, Modify All	50	Visible
Accounts	No Access	25	--
AC CTI Adapters	Read, Create, Edit, Delete, View All, Modify All	22	Visible
AC CTI Attributes	Read, Create, Edit, Delete, View All, Modify All	11	--
AC CTI Scripts	Read, Create, Edit, Delete, View All, Modify All	10	--
AC Events	No Access	--	--
AC Features	Read, Create, Edit, Delete, View All, Modify All	6	--
AC Guided Setup	--	--	Visible
AC Historical Queue Metrics	Read, Create, Edit, Delete, View All, Modify All	119	--
AC Phone Calls	No Access	22	--
AC Presence Sync Rules	Read, Create, Edit, Delete, View All, Modify All	13	--
AC QueueMatrices	No Access	16	--
AC Queue Metric Events	No Access	--	--
AC Queue Metrics	--	--	Visible
AC Real Time Queue Metrics	Read, Create, Edit, Delete, View All, Modify All	16	--
AC Voice Id Channel	Read, Create, Edit, Delete, View All, Modify All	15	--
AC Voicemail Drops	Read, Create, Edit, Delete, View All, Modify All	10	Visible
AC Wisdom	--	--	Visible

AC_Manager

Object Name	Object Permissions	Total Fields	Tab Settings
AC Agent Performance	Read, View All	124	--
AC CCP Overlay Elements	No Access	9	--
AC Contact Channel Analytics	Read, Create, Edit, Delete, View All, Modify All	31	Visible
AC Contact Channels	Read, Create, Edit, View All	24	--
AC Contact Trace Records	Read, Create, Edit, Delete, View All, Modify All	50	--
Accounts	No Access	25	--
AC CTI Adapters	Read	22	Visible
AC CTI Attributes	Read	11	--
AC CTI Scripts	Read	10	--
AC Events	Read, Create	--	--
AC Features	Read	6	--
AC Guided Setup	--	--	--
AC Historical Queue Metrics	Read, View All	119	--
AC Phone Calls	No Access	22	--
AC Presence Sync Rules	Read, View All	13	--
AC QueueMatrices	No Access	16	--
AC Queue Metric Events	Read	--	--
AC Queue Metrics	--	--	Visible
AC Real Time Queue Metrics	Read, View All	16	--
AC Voice Id Channel	Read, Create, Edit, Delete, View All, Modify All	15	--
AC Voicemail Drops	Read, Create, Edit, Delete	10	Available
AC Wisdom	--	--	--

AC_Agent

Object Name	Object Permissions	Total Fields	Tab Settings
AC Agent Performance	Read	124	--
AC CCP Overlay Elements	No Access	9	--
AC Contact Channel Analytics	Read, View All	31	Visible
AC Contact Channels	Read, Create, Edit, View All	24	--
AC Contact Trace Records	Read, Edit, View All	50	--
Accounts	No Access	25	--
AC CTI Adapters	Read	22	--
AC CTI Attributes	Read	11	--
AC CTI Scripts	Read	10	--
AC Events	Read, Create	--	--
AC Features	Read	6	--
AC Guided Setup	--	--	--
AC Historical Queue Metrics	Read	119	--
AC Phone Calls	No Access	22	--
AC Presence Sync Rules	Read, View All	13	--
AC QueueMatrices	No Access	16	--
AC Queue Metric Events	Read	--	--
AC Queue Metrics	--	--	Visible
AC Real Time Queue Metrics	No Access	16	--
AC Voice Id Channel	Read, Create, Edit, Delete, View All, Modify All	15	--
AC Voicemail Drops	Read, Create, Edit, Delete	10	Available
AC Wisdom	--	--	--

Create the Softphone Layout

Next, we need to create a softphone layout for the solution.

1. In the **Quick Find** box, type *Softphone Layouts*, then choose **Softphone Layouts**.

2. Choose **New**.

3. 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, outbo

			Save	Cancel
	Name	AmazonConnectDefault	☑ Is Default Layout	

4. 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, besides default selection, I'm adding "Case", as I want to search and screen-pop by CaseID.

Display these salesforce.com objects:

▼ Account, Contact, Lead, Case

Available		Selections
Campaign		Account
Event		Contact
Opportunity		Lead
Task	**Add** ▶	Case
User	◀ **Remove**	**Up** ▲ **Down** ▼

5. If necessary, configure the search behavior in the case that one or multiple records are found upon CTI search.

▶ **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

6. In this example, keep the default configuration, then choose **Save**.

Softphone Layout Edit

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

			Save	Cancel
	Name	AmazonConnectDefault	☑ Is Default Layout	

Softphone Layouts

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 lay custom softphone layouts and assign them to call center users based on their user profile.

| | | | New | Softphone Layout Assignment | | | | |

Action	Name ↑	Default	Created By Alias	Created Date	Last Modified By Alias	Last Modified Date
Edit	AmazonConnectDefault	✓	ASFDC	23/05/2018 13:48	ASFDC	23/05/2018 13:48

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

3. Select New

4. Select the Version Settings tab

5. Note the Salesforce.com API version in your notepad. The pattern of this value is `vXX.X`.

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 to Salesforce

2. Navigate to Setup > Manage Users > Profiles

3. Click "New Profile"

4. Enter the Profile Name (i.e. "API Only")

5. Select the existing profile to clone (The integration user\'s access to just those objects required for the integration)

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

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.

6. Click "Save". A New Profile is created:

Profile
API Only
« Back to List: Profiles

Users with this profile have the permissions and page layouts listed below. Administrators can change a user's profile by editing that user's personal information.

If your organization uses Record Types, use the Edit links in the Record Type Settings section below to make one or more record types available to users with this profile.

Login IP Ranges [0] | Enabled Apex Class Access [2] | Enabled Visualforce Page Access [11] | Enabled External Data Source Access [0] | Enabled Named Credential Access [0] | Enabled Service Presence Status Access [0] | Enabled Custom Permissions [0]

Profile Detail		Edit Clone Delete View Users	
Name	API Only		
User License	Salesforce	Custom Profile	✓
Description			

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

System

System Permissions
Permissions to perform actions t

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

Lightning Experience User ☐

9. Save the system permissions, then go back to Profile Overview

10. Select the *Password Policies* link, click edit

System

Settings that apply across all apps, such as record and user management
Learn More

System Permissions
Permissions to perform actions tha

Login Hours
Settings that control when users ca

Login IP Ranges
Settings that control the IP address

Service Providers
Permissions that let users switch to

Session Settings
Settings that control required sessi

Password Policies
Profile Based password policies

Default Experience
Setting for assigning a default com

Password Policies

User passwords expire in	90 days
Enforce password history	3 passwords remembered
Minimum password length	8
Password complexity requirement	Must mix alpha and numeric characters
Password question requirement	Cannot contain password
Maximum invalid login attempts	10
Lockout effective period	15 minutes
Obscure secret answer for password resets	☐
Require a minimum 1 day password lifetime	☐
Don't immediately expire links in forgot password emails	☐

Edit | Clone | Delete | View Users

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

Password Policies

User passwords expire in	Never expires
Enforce password history	No passwords remembered
Minimum password length	8
Password complexity requirement	Must mix alpha and numeric characters
Password question requirement	Cannot contain password
Maximum invalid login attempts	10
Lockout effective period	15 minutes
Obscure secret answer for password resets	☐
Require a minimum 1 day password lifetime	☐
Don't immediately expire links in forgot password emails	☐ ⓘ

12. Select **Save**

13. Navigate to Setup > Manage Apps > Connected Apps

14. Select the app you have created in the previous step (i.e. Amazon Connect Integration)

Connected Apps

Manage access to apps that connect to this Salesforce organization.

App Access Settings	Edit
☑ Allow users to install canvas personal apps	

View: [All ⬍] Create New View

Action	Master Label ↑
Edit	Amazon Connect Integration

15. Click "Manage Profiles"

Profiles	Manage Profiles
No profiles associated with this app.	

16. Ensure the "API Only" profile is selected:

Application Profile Assignment

« Back to Connected App Detail

Select the appropriate profiles to choose which users have access to this application.

Select	Profiles
☐	Analytics Cloud Integration User
☐	Analytics Cloud Security User
☑	API Only

17. Click "Save" at the bottom of the page

18. Navigate to Setup > Manage Users > Users

19. Click "New User"

All Users

On this page you can create, view, and manage users.

In addition, download SalesforceA to view and edit user details, reset passwords, and perform other administrative tasks from your mobile devices: iOS | Android

View: [All Users ⬍] Edit | Create New View

			New User	Reset Password(s)	Add Multiple Users
☐ Action	Full Name ↑	Alias	Username		

20. Set necessary fields: Last Name, Alias, Email, Username, Nickname

New User

User Edit

General Information

First Name	[ ]
Last Name	[APIUser]
Alias	[apiuser]
Email	[ ]
Username	[apiuser]
Nickname	[apiuser] ℹ
Title	[ ]
Company	[ ]
Department	[ ]
Division	[ ]

21. On the right-hand side, set the User License and Profile

Role	[<None Specified> ⬍] ℹ
User License	[Salesforce ⬍]
Profile	[API Only ⬍] ℹ
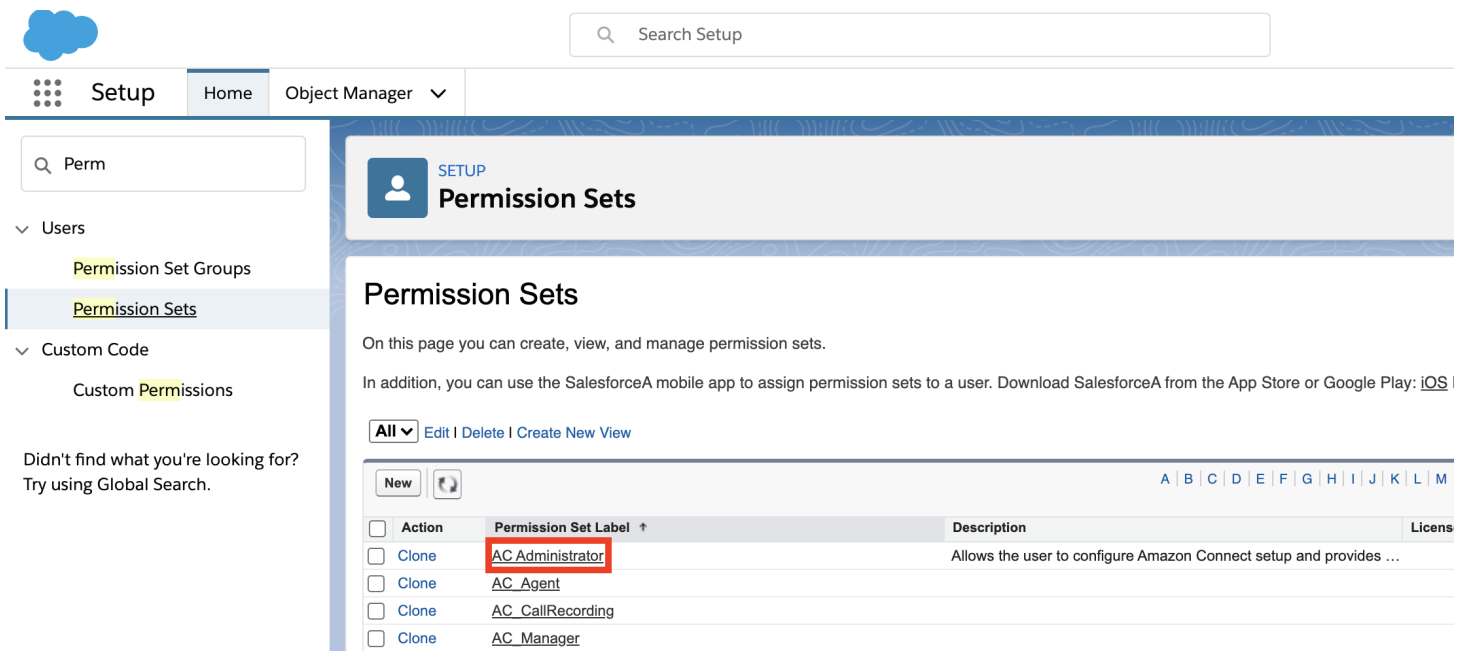
22. Click "Save"

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

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

25. A confirmation email will be sent, with an activation link. Click the link to activate your user.

Change (set) a password for apiuser (Considered a strong that contains at least 20 random characters):

Change Your Password

Enter a new password for apiuser@acsfdcdryrun.com.
Your password must have at least:

- ○ 8 characters
- ○ 1 letter
- ○ 1 number

* New Password

| |

* Confirm New Password

| |

Security Question

| ▼ In what city were you born? |

* Answer

| |

| Change Password |

Password was last changed on 18/09/2018 17:29.

26. Click "Change Password"

27. Access the apiuser personal settings by selecting the username in the top right corner, then "My Settings".

28. Type "Security Token" in the Quick Find box and click "Reset My Security Token".

29. Your security token will be emailed to you

30. Copy the security token from the email in to your installation notes for the "Access Token" value.

Allowing the API user to authenticate using password

The api user created above authenticates using username-password flow in Salesforce. This flow needs to be unblocked and to do that, go to *Setup* and in the Quick Find box, search for **OAuth and OpenID Connect Settings**. After that, make sure that the toggles for **Allow OAuth Username-Password Flows** and **Allow OAuth User-Agent Flows** are turned ON, as shown in below image.

SETUP
OAuth and OpenID Connect Settings

OAuth and OpenID Connect Flows
Control which OAuth 2.0 and OpenID Connect flows your connected apps can use. These settings affect your entire org. Username-password flows are blocked by default in orgs created in Summer '23 or later. Blocking a flow can break managed packages, mobile apps, and other integrations that use the flow. We recommend testing changes in a sandbox before implementing in production.

Allow OAuth Username-Password Flows   On

Allow OAuth User-Agent Flows   On

Allow Authorization Code and Credentials Flows   Off

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 ▼ C

Add new key ⧉

Cancel   **Next**

23. Click Next

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

25. Click Next

26. Make sure **automatic rotation** is disabled.

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
-

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.

Before proceeding, please **confirm that the application was installed for admins only** (see installation for more details). 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.

Lightning Flow Setup Installation

1. Navigate to **Service Setup** within the Lightning UI under the gear icon.

2. Click **View All**

3. Search for or select **Add Phone Support**

4. Click **Start** on the **Voice Setup** screen

5. Under **Select Your Voice Provider**, select Amazon Connect CTI Adapter

6. Agree to the terms and conditions and click Install **Package**

7. Under **Add Voice Service Provider Details**, add the URL to your Amazon Connect instance (see instructions below if you are unsure). You will also need to allowlist your Salesforce domain within Amazon Connect.

8. Under **Who's Answering the Phone?**, select the name of the users you would like to access the phone configuration. This can be modified later under the Call Center configuration.

9. Click Finish. You can also launch the Amazon Connect Setup Guide.

Installing from the Salesforce AppExchange

1. Log in into your Salesforce instance and open **Setup**.
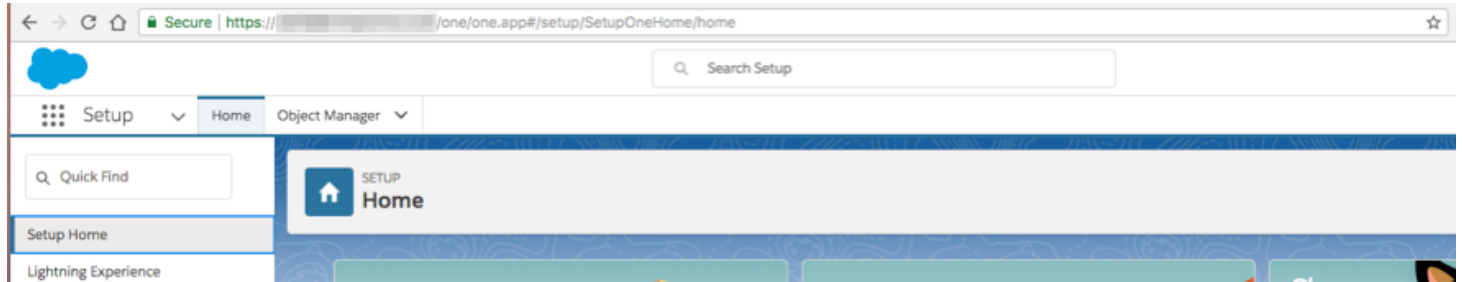
2. Open the Amazon Connect CTI Package URL, then choose **Install for Admins Only**.

Install Amazon Connect - Universal Package
By

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

Install **Cancel**

Install Amazon Connect - Universal Package
By Amazon AWS

ℹ **Installation Complete!**
Please review the instructions below to properly configure this app. **View in another browser**

Done

3. Choose **Done**. The **Installed Packages** page opens.

Installed Packages

Help for this Page ?

On AppExchange you can browse, test drive, download, and install pre-built apps and components right into your salesforce.com environment. Learn More about Installing Packages.

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.

Depending on the links next to an installed package, you can take different actions from this page.

To remove a package, click Uninstall. To manage your package licenses, click Manage Licenses.

Installed Packages

Action	Package Name	Publisher	Version Number	Namespace Prefix	Install Date	Limits	Apps	Tabs	Objects	AppExchange Ready
Uninstall	Amazon Connect - Universal Package	Amazon AWS	2.3	amazonconnect	20/09/2018 14:47	☐	0	0	2	Passed
	Description Amazon Connect Integration to support Lightning, Console and Classic.									

4. In the **Quick Find** box, type *Call Center*, then choose **Call Centers**.

The Call Centers page opens. You should see 3 Call Center configurations: Classic, Console and Lightning.

All Call Centers

A call center corresponds to a single computer-telephony integration (CTI) system already in place at your organization. Salesforce.com users must be assigned to a call center before they can use any Call Center features.

Import

Action	Name ↑	Version	Created Date	Last Modified Date
Edit | Del	Amazon Connect CCP Adapter Classic		23/05/2018 13:27	23/05/2018 13:27
Edit | Del	Amazon Connect CCP Adapter Console		23/05/2018 13:27	23/05/2018 13:27
Edit | Del	Amazon Connect CCP Adapter Lightning		23/05/2018 13:27	23/05/2018 13:27

Create the Softphone Layout

Next, we need to create a softphone layout for the solution.

6. In the **Quick Find** box, type *Softphone Layouts*, then choose **Softphone Layouts**.

7. Choose **New**.

Softphone Layout Edit   Help for this Page

Each softphone layout allows you to customize the appearance of a softphone for inbound, outbound, and internal calls. Assign softphone layouts to user profiles by clicking Layout Assignment in the Softphone Layouts page.

| | Save   Cancel | |
| Name | ☐ Is Default Layout | |

Select Call Type   Inbound

Softphone Layout   Help about this section ❓

Display these call-related fields:
▸ Caller ID, Dialed Number   Edit

Display these salesforce.com objects:
▸ Account, Contact, Lead   Add / Remove Objects

▸ **If single Account found, display:** Account Name   Edit
   If multiple matches are found, only the Account Name is displayed in Salesforce Classic. In Lightning Experience, all the selected fields are displayed.

▸ **If single Contact found, display:** Name   Edit
   If multiple matches are found, only the Name is displayed in Salesforce Classic. In Lightning Experience, all the selected fields are displayed.

▸ **If single Lead found, display:** Name   Edit
   If multiple matches are found, only the Name is displayed in Salesforce Classic. In Lightning Experience, all the selected fields are displayed.

8. 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, outbo

| | | Save   Cancel |
| Name | AmazonConnectDefault | ☑ Is Default Layout |

9. 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, besides default selection, I'm adding "Case", as I want to search and screen-pop by CaseID.

10. If necessary, configure the search behavior in the case that one or multiple records are found upon CTI search.

▶	**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

11. In this example, keep the default configuration, then choose **Save**.

Softphone Layout Edit

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

	Save	Cancel
Name	AmazonConnectDefault	☑ Is Default Layout

Softphone Layouts

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 lay custom softphone layouts and assign them to call center users based on their user profile.

			New	Softphone Layout Assignment		
Action	**Name** ↑	**Default**	**Created By Alias**	**Created Date**	**Last Modified By Alias**	**Last Modified Date**
Edit	AmazonConnectDefault	✓	ASFDC	23/05/2018 13:48	ASFDC	23/05/2018 13:48

Set Access Permissions

All users must be assigned the required permission set to access the Salesforce metadata included in this package. The Amazon Connect CTI integration package comes with two Permission Sets, one for agents and one for managers, that grant the users all necessary access to use the softphone.

1. Log in into your Salesforce Org.

2. Navigate to **Setup** > **Manage Users** > **Permission Sets**.

SETUP
Permission Sets

Permission Sets

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

In addition, you can use the SalesforceA 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 ⟲

	Action	**Permission Set Label** ↑	**Description**
☐	Clone	Toolkit for Amazon Connect - Agent	Permissions to all components that an agent would need to use the toolkit.
☐	Clone	Toolkit for Amazon Connect - Manager	Permissions required to access the toolkit reports.

2. Choose **AC_Manager**.

All Users

View: [All Users ▾] Edit | Create New View

[Assign] [Cancel]

3. Choose **Manage Assignments**.

4. Choose **Add Assignments**.

5. Select the users to assign the permissions, then choose **Assign**. More information on assigning user permissions can be found at: https://help.salesforce.com/articleView?id=perm_sets_mass_assign.htm&type=5

AC_Administrator

Object Name	Object Permissions	Total Fields	Tab Settings
AC Agent Performance	Read, Create, Edit, Delete, View All, Modify All	124	--
AC CCP Overlay Elements	No Access	9	--
AC Contact Channel Analytics	Read, Create, Edit, Delete, View All, Modify All	31	Visible
AC Contact Channels	Read, Create, Edit, Delete, View All, Modify All	24	--
AC Contact Trace Records	Read, Create, Edit, Delete, View All, Modify All	50	Visible
Accounts	No Access	25	--
AC CTI Adapters	Read, Create, Edit, Delete, View All, Modify All	22	Visible
AC CTI Attributes	Read, Create, Edit, Delete, View All, Modify All	11	--
AC CTI Scripts	Read, Create, Edit, Delete, View All, Modify All	10	--
AC Events	No Access	--	--
AC Features	Read, Create, Edit, Delete, View All, Modify All	6	--
AC Guided Setup	--	--	Visible
AC Historical Queue Metrics	Read, Create, Edit, Delete, View All, Modify All	119	--
AC Phone Calls	No Access	22	--
AC Presence Sync Rules	Read, Create, Edit, Delete, View All, Modify All	13	--
AC QueueMatrices	No Access	16	--
AC Queue Metric Events	No Access	--	--
AC Queue Metrics	--	--	Visible
AC Real Time Queue Metrics	Read, Create, Edit, Delete, View All, Modify All	16	--
AC Voice Id Channel	Read, Create, Edit, Delete, View All, Modify All	15	--
AC Voicemail Drops	Read, Create, Edit, Delete, View All, Modify All	10	Visible
AC Wisdom	--	--	Visible

AC_Manager

Object Name	Object Permissions	Total Fields	Tab Settings
AC Agent Performance	Read, View All	124	--
AC CCP Overlay Elements	No Access	9	--
AC Contact Channel Analytics	Read, Create, Edit, Delete, View All, Modify All	31	Visible
AC Contact Channels	Read, Create, Edit, View All	24	--
AC Contact Trace Records	Read, Create, Edit, Delete, View All, Modify All	50	--
Accounts	No Access	25	--
AC CTI Adapters	Read	22	Visible
AC CTI Attributes	Read	11	--
AC CTI Scripts	Read	10	--
AC Events	Read, Create	--	--
AC Features	Read	6	--
AC Guided Setup	--	--	--
AC Historical Queue Metrics	Read, View All	119	--
AC Phone Calls	No Access	22	--
AC Presence Sync Rules	Read, View All	13	--
AC QueueMatrices	No Access	16	--
AC Queue Metric Events	Read	--	--
AC Queue Metrics	--	--	Visible
AC Real Time Queue Metrics	Read, View All	16	--
AC Voice Id Channel	Read, Create, Edit, Delete, View All, Modify All	15	--
AC Voicemail Drops	Read, Create, Edit, Delete	10	Available
AC Wisdom	--	--	--

AC_Agent

Object Name	Object Permissions	Total Fields	Tab Settings
AC Agent Performance	Read	124	--
AC CCP Overlay Elements	No Access	9	--
AC Contact Channel Analytics	Read, View All	31	Visible
AC Contact Channels	Read, Create, Edit, View All	24	--
AC Contact Trace Records	Read, Edit, View All	50	--
Accounts	No Access	25	--
AC CTI Adapters	Read	22	--
AC CTI Attributes	Read	11	--
AC CTI Scripts	Read	10	--
AC Events	Read, Create	--	--
AC Features	Read	6	--
AC Guided Setup	--	--	--
AC Historical Queue Metrics	Read	119	--
AC Phone Calls	No Access	22	--
AC Presence Sync Rules	Read, View All	13	--
AC QueueMatrices	No Access	16	--
AC Queue Metric Events	Read	--	--
AC Queue Metrics	--	--	Visible
AC Real Time Queue Metrics	No Access	16	--
AC Voice Id Channel	Read, Create, Edit, Delete, View All, Modify All	15	--
AC Voicemail Drops	Read, Create, Edit, Delete	10	Available
AC Wisdom	--	--	--

Configure Console Experience

For the Console experience, we are going to use Sample Console application, but the procedure is the same for other applications.

In the top navigation bar, select the "+" icon.

Select "AC CTI Adapters"

Create a new adapter. Fill in the CTI Adapter Name. For the Call Center Definition Name, type in ACConsoleAdapter. For the Amazon Connect Instance, type in the login url to the instance (this can be found in the Amazon Connect Instance details page), removing everything after ".com".

Select Save.

In the Quick Find field, type Visualforce Pages and select Visual Force Pages:

Take Salesfo
Run your business

Visualforce Pages

Expand All | Collapse All

Build

☑ Develop

  Visualforce Pages

Security	🔲 ⬇	AC_RecordingViewer	AC_RecordingViewer	amazonconnect
Security	🔲 ⬇	AC_CtiScriptEditor	AC_CtiScriptEditor	amazonconnect
Security	🔲 ⬇	AC_LightningAdapter	AC_LightningAdapter	amazonconnect
Security	🔲 ⬇	AC_LightningScriptIncludes	AC_LightningScriptIncludes	amazonconnect
Security	🔲 ⬇	AC_RealTimeQueueMetrics	AC_RealTimeQueueMetrics	amazonconnect
Security	🔲 ⬇	AC_ClassicScriptIncludes	AC_ClassicScriptIncludes	amazonconnect
Security	🔲 ⬇	AC_ConsoleAdapter	AC_ConsoleAdapter	amazonconnect
Security	🔲 ⬇	AC_ConsoleScriptIncludes	AC_ConsoleScriptIncludes	amazonconnect
Security	🔲 ⬇	ACSFCCP_CallTask	ACSFCCP_CallTask	amazonconnect
Security	🔲 ⬇	ACSFCCP_ObjectType	ACSFCCP_ObjectType	amazonconnect
Security	🔲 ⬇	ACSFCCP_PostCallUpdateTask	ACSFCCP_PostCallUpdateTask	amazonconnect
Security	🔲 ⬇	AC_ClassicAdapter	AC_ClassicAdapter	amazonconnect
Security	🔲 ⬇	ACSFCCP_CallRecordingTask	ACSFCCP_CallRecordingTask	amazonconnect
Security	🔲 ⬇	ACSFCCP_CallLogging_View	ACSFCCP_CallLogging_View	amazonconnect

Security	🔲	⬇	ACSFCCP_CallRecordingCase	ACSFCCP_CallRecordingCase	amazonconnect
Security	🔲	⬇	AC_HelperIncludes	AC_HelperIncludes	amazonconnect
Security	🔲	⬇	AC_HelperIncludesCcpV1	AC_HelperIncludesCcpV1	amazonconnect

As we are currently setting up the Console experience, click on AC_ConsoleAdapter page.

Visualforce Page
amazonconnect__AC_ConsoleAdapter

Page Detail   [Where is this used?] [Preview]

Label	AC_ConsoleAdapter	Name	AC_ConsoleAdapter
Namespace Prefix	amazonconnect	Available for Lightning Experience, Lightning Communities, and the mobile app	☐
Require CSRF protection on GET requests	☐	Description	

Click on the **Preview** button. A new browser tab will open with the URL of this page. If you are using the "enhanced domains" update, it will be in this format:

```
https://XXXXXXXX--amazonconnect.sandbox.vf.force.com/AC_ConsoleAdapter
```

Otherwise, it will be in this format:

```
https://XXXXXXXX--amazonconnect.visualforce.com/apex/AC_ConsoleAdapter
```

This is what we are going to use as "Origin URL" in our Amazon Connect configuration. From AWS Console, select Amazon Connect service and then select your Amazon Connect instance, and select "Approved Origins" on the left-hand side:

Amazon Connect   ✕   Amazon Connect > guidedsetuptest-instance-w3dgh2 > Approved origins

Instances

Approved domains

Amazon Connect can integrate with other products including Customer Relationship Management (CRM) and Workf details on how to set up integrations with Amazon Connect. Learn more 🔗

Overview
Telephony
Data storage
Data streaming
Contact flows
Analytics tools
Approved origins

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

🔍 Find resources

URL

Click on "Add origin" link and enter the origin URL

Click "Add" button

From the Setup screen, type Apps in Quick Find field and select Build>Create>Apps:
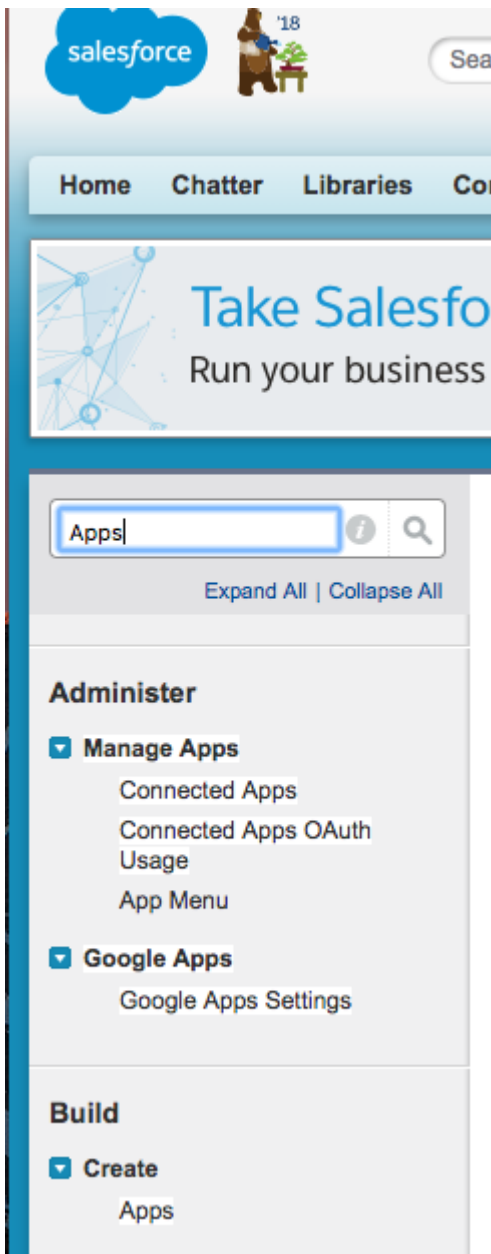
You will be able to see all applications that are available in your account.

Click "Edit" next to the Sample Console application.

Scroll to the bottom of the page and "Assign to Profiles"

Profile	Visible	Default
Analytics Cloud Integration User	☐	☐
Analytics Cloud Security User	☐	☐
Contract Manager	☐	☐
Cross Org Data Proxy User	☐	☐
Custom: Marketing Profile	☐	☐
Custom: Sales Profile	☐	☐
Custom: Support Profile	☐	☐
Force.com - App Subscription User	☐	☐
Identity User	☐	☐
Marketing User	☐	☐
Partner App Subscription User	☐	☐
Read Only	☐	☐
Solution Manager	☐	☐
Standard Platform User	☐	☐
Standard User	☐	☐
System Administrator	☑	☐

In this example, I'm assigning Sample console as Visible to System Administrator.

Choose **Save**.

From Setup, type Call Centers in the Quick Find field and select Call Centers.

All Call Centers

A call center corresponds to a single computer-telephony integration (CTI) system already in place at your organization. Salesforce.com users mu:

Action	Name ↑	Version
Edit | Del	Amazon Connect CCP Adapter Classic	
Edit | Del	Amazon Connect CCP Adapter Console	
Edit | Del	Amazon Connect CCP Adapter Lightning	

Select "Amazon Connect CCP Adapter Console 3.9"

Call Center
AC Console Adapter
All Call Centers » AC Console Adapter

Call Center Detail   [Edit] [Delete] [Clone]

General Information

InternalName	ACConsoleAdapter
Display Name	AC Console Adapter
CTI Adapter URL	/apex/amazonconnect__AC_ConsoleAdapter?ccpVersion=2
Softphone Height	544
Softphone Width	325
Use CTI API	true
Salesforce Compatibility Mode	Classic
Default CallCenter	true
Package Namespace	amazonconnect

Replace the **CTI Adapter URL** with the AC Lightning Adapter visualforce page url you copied in the previous section. If you wish to specify your version of the ccp user interface, add "?ccpVersion=x",

where x is the version of the ccp (either 1 or 2). Click on the Save button.

Click on the "Manage Call Center Users" button at the bottom of the page.

Call Center Users	Manage Call Center Users
Call Center Users by Profile	
Total 0	

Call Center
Amazon Connect CCP Adapter Console: Manage Users

All Call Centers » Amazon Connect CCP Adapter Console » Manage Users

View: All ⬍ Create New View

			Add More Users	Remove Users
Full Name ↑		**Alias**	**Username**	
No records to display.				

Call Center
Amazon Connect CCP Adapter Console: Search for New Users

All Call Centers » Amazon Connect CCP Adapter Console » Manage Users » Search for New Users

Set the search criteria below and then click Search to find salesforce.com users who should be enabled as

--None--	--None--		AND
--None--	--None--		AND
--None--	--None--		AND
--None--	--None--		AND
--None--	--None--		

Filter By Additional Fields (Optional):

- You can use "or" filters by entering multiple items in the third column, separated by commas.
- For date fields, enter the value in following format: 23/05/2018
- For date/time fields, enter the value in following format: 23/05/2018 15:07

Find

Set filters and click on the Find button. Select the checkbox next to the user and click "Add to Call Center" button.

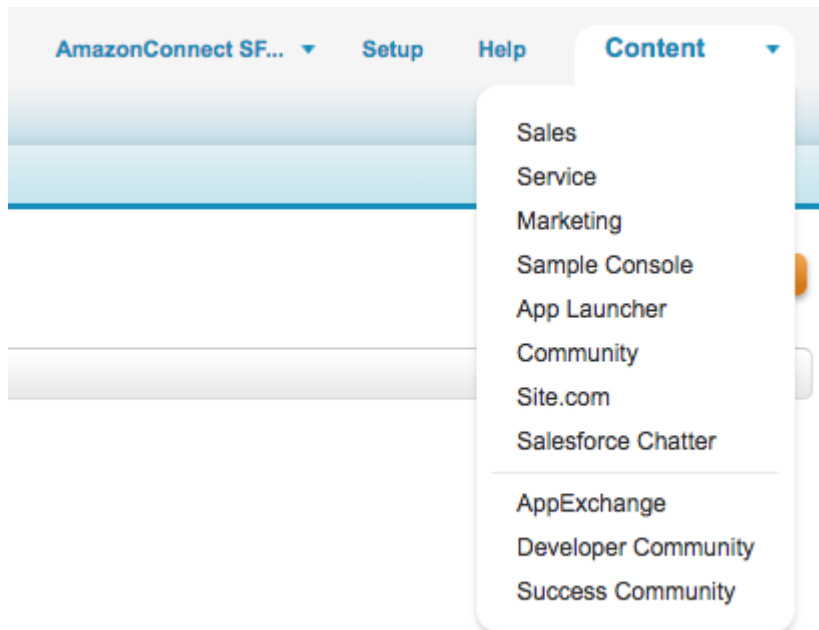|					Add to Call Center	Cancel	
	Full Name	**Alias**	**Username**			**Role**	**Profile**
☑	SFDCDryRun, AmazonConnect	ASFDC	acsfdcdryrun				System Administrator
☐	User, Integration	integ	integration@00d0n000001bsn5uaa.com				Analytics Cloud Integration User
☐	User, Security	sec	insightssecurity@00d0n000001bsn5uaa.com				Analytics Cloud Security User

Repeat the steps to add more users.
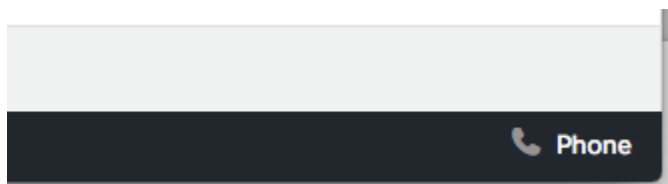
Amazon Connect CCP Adapter Console: Manage Users

View: All ⟳ Create New View

	Action	Full Name ↑		Alias	Username
	☐	Remove	SFDCDryRun, AmazonConnect	ASFDC	acsfdcdryrun

Add More Users   Remove Users

From the top-right corner, select Sample Console application.

AmazonConnect SF... ▼   Setup   Help   **Content**   ▼

- Sales
- Service
- Marketing
- Sample Console
- App Launcher
- Community
- Site.com
- Salesforce Chatter

- AppExchange
- Developer Community
- Success Community

In the bottom-right corner, you will be able to see the Phone button.

📞 Phone

Click on the Phone button to open the softphone pop-up.
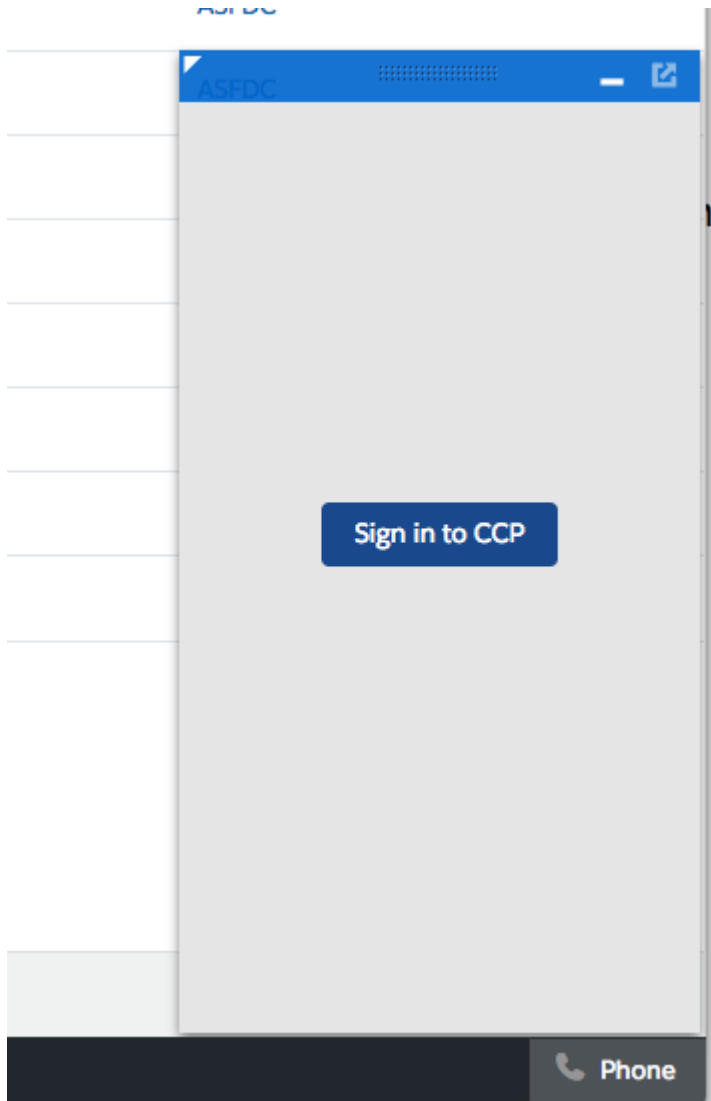
You will need to Sign in into your Amazon Connect CCP. Click on the Sign in to CCP button. A new modal pop-up will show, asking you to enter your credentials.
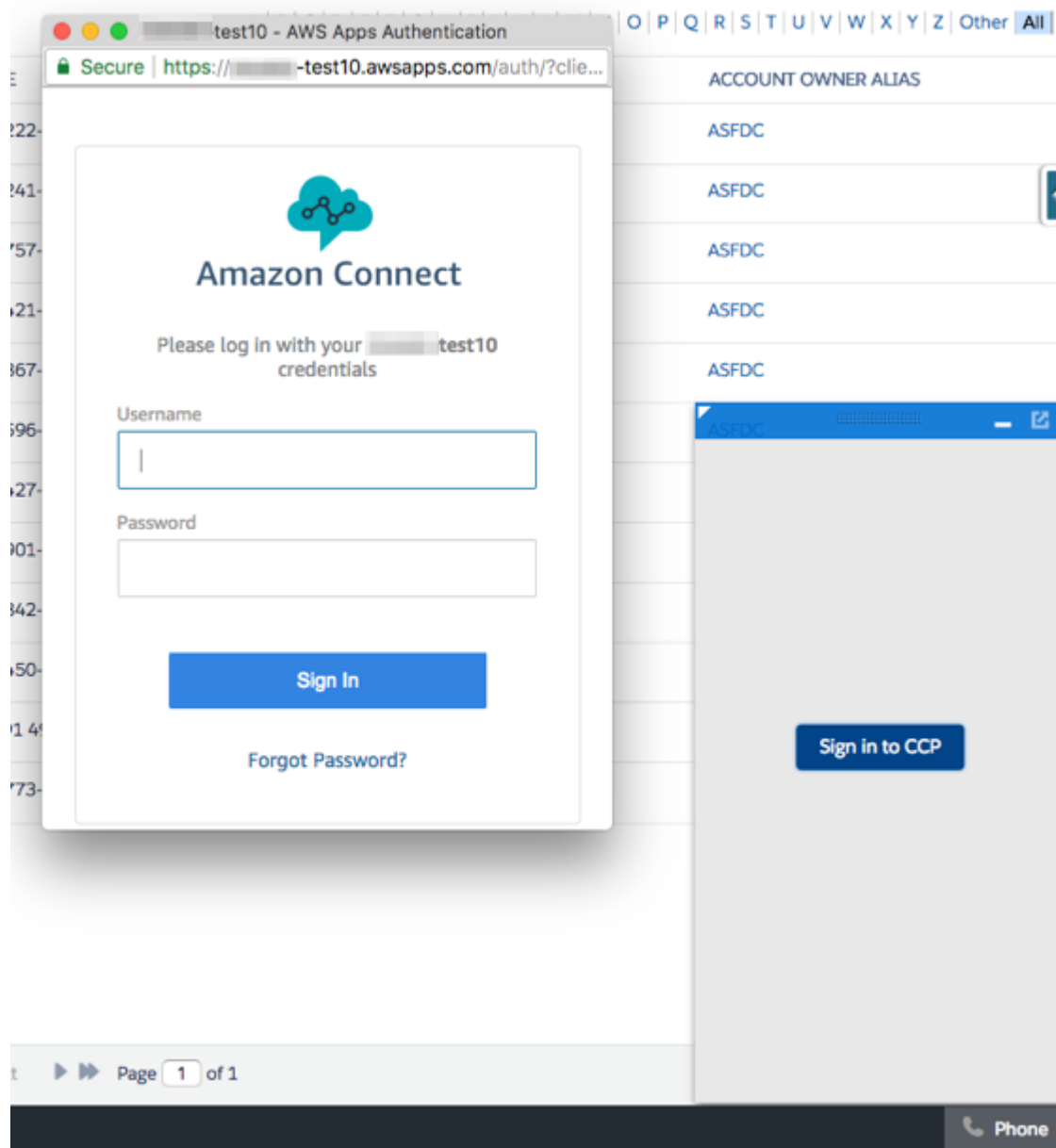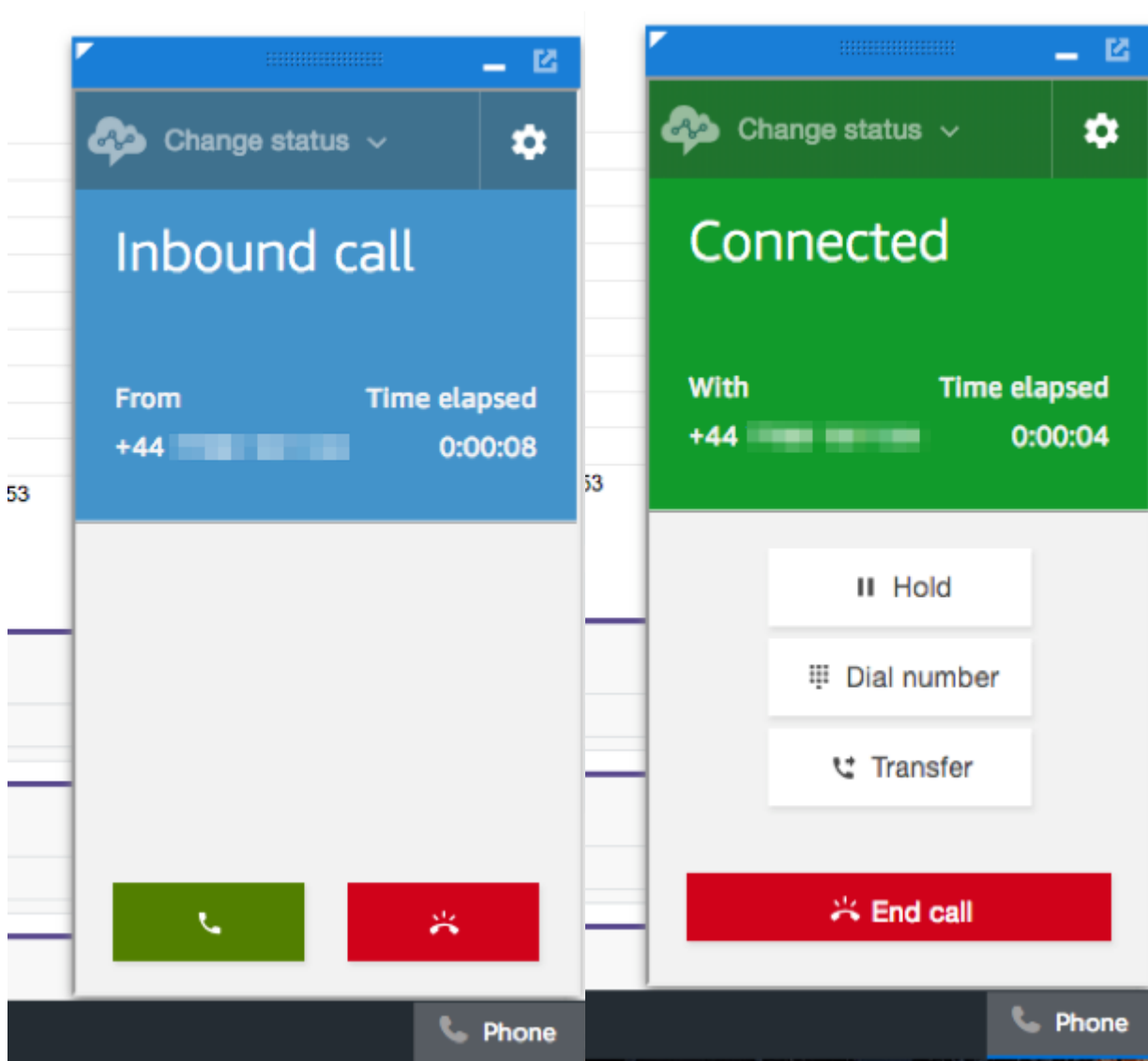
Enter your credentials and click Sign in. Allow Microphone access (if asked by browser). Once login is successful, the pop-up window will automatically close.
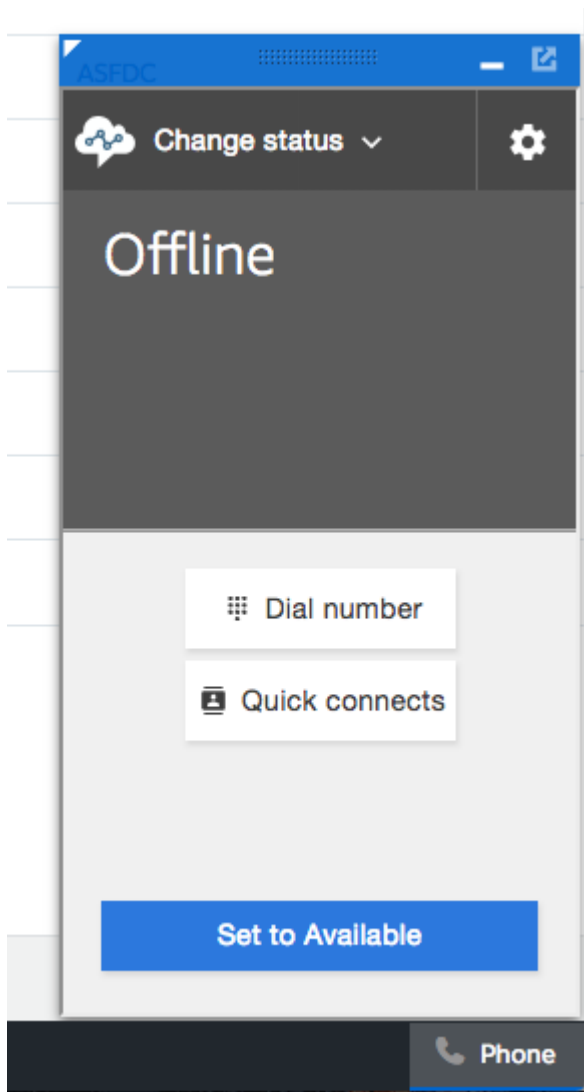
Select "Change status" and select "Available".
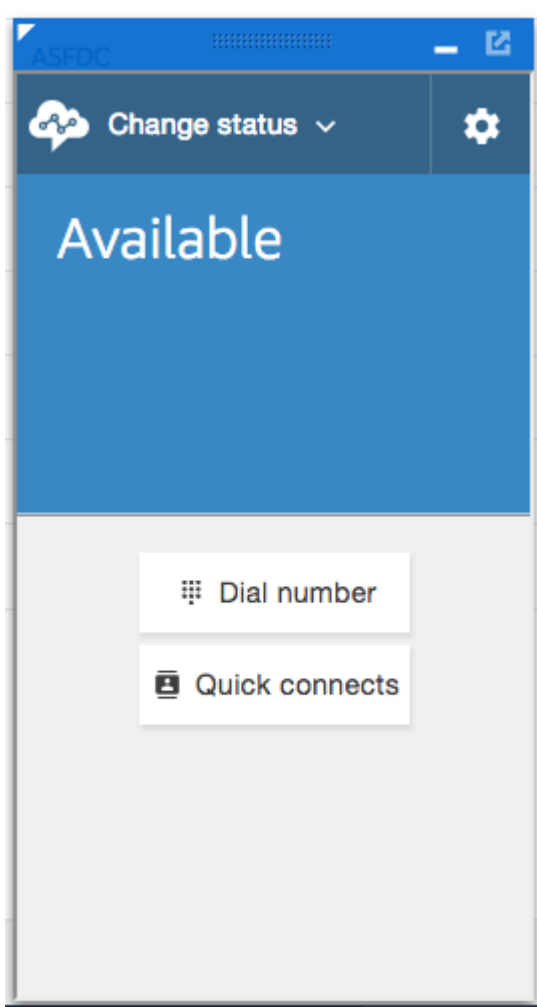
Make an inbound phone call to your Amazon Connect instance. The CCP is going to "ring" and you can answer the call.

Configure Classic Experience

The Salesforce Classic is the easiest to configure, but it has some limitations. Most important limitation is that, with Classic layout, there are no tabs and modal containers, so each time new object is selected, a full page reload occurs. This full reload causes softphone to be reloaded too, which could cause an issue in the voice call audio stream. Because of that, in the Classic environment, we have to run a separate instance of softphone (CPP) which will carry the audio, while embedded instance of CCP can be used for call control and screen-pop functionality.

First, we have to configure Amazon Connect integration.
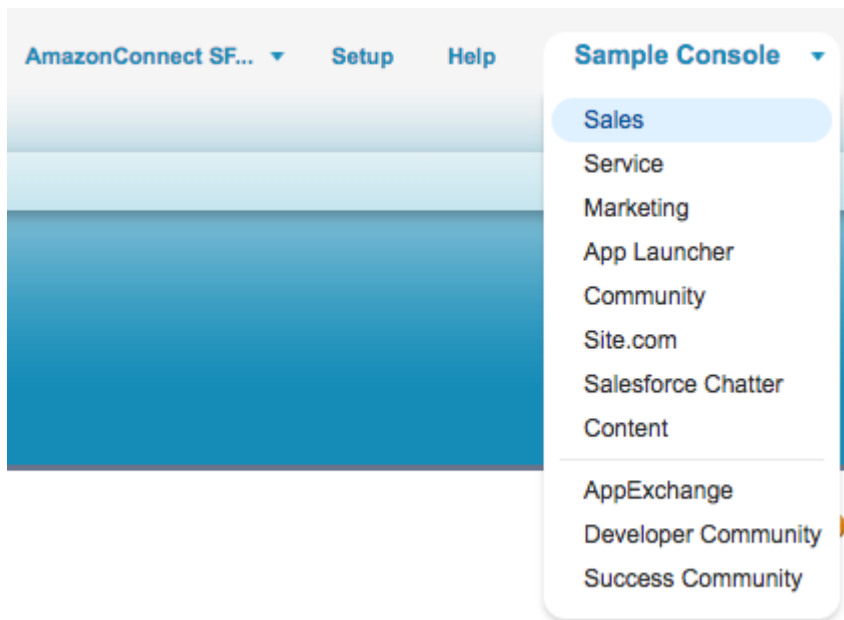
From the top right corner, select the Sales application.

In the top navigation bar, select the "+" icon.
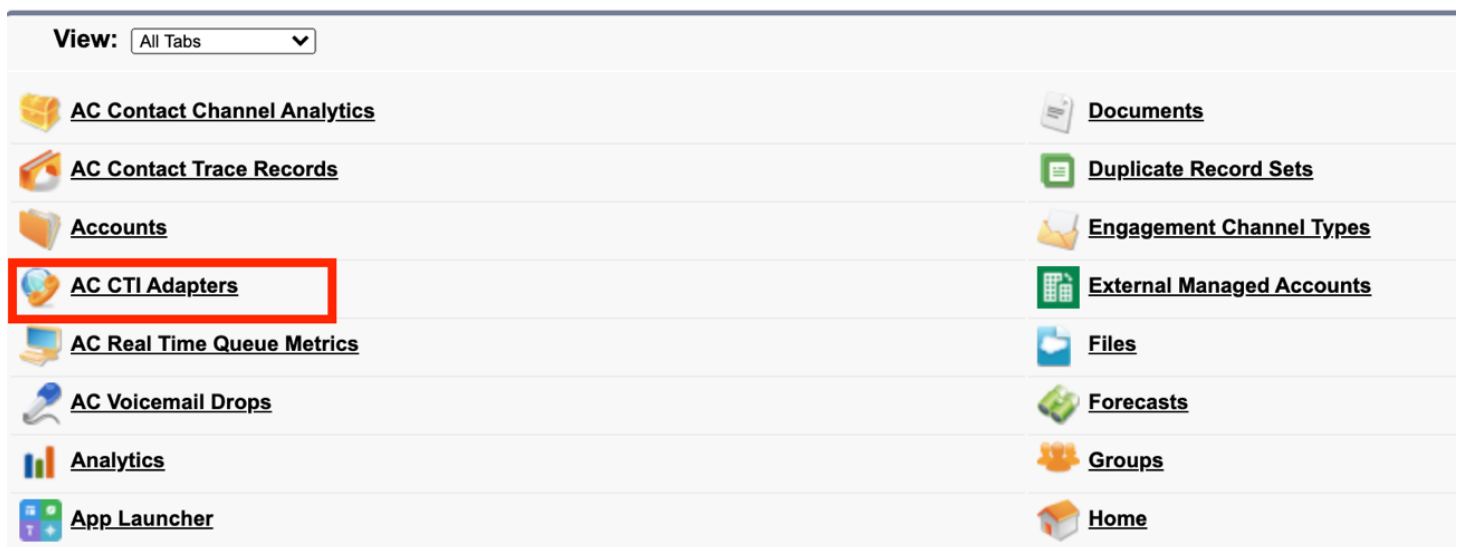
Select "AC CTI Adapters"

Create a new adapter. Fill in the CTI Adapter Name. For the Call Center Definition Name, type in ACConsoleAdapter. For the Amazon Connect Instance, type in the login url to the instance (this can be found in the Amazon Connect Instance details page), removing everything after ".com".

Overview
Telephony
Data storage
Data streaming
Application integration
Contact flows

Overview

Instance ARN	a⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛⬛
Directory	⬛⬛⬛⬛⬛
Service-linked role ⓘ	AWSServiceRoleForAmazonConnect_x8eOtNYvgBDc9FlXHHQc Learn more
Login URL	https://⬛⬛⬛⬛⬛.awsapps.com/connect/login

Select Save.

In the Quick Find field, type Visualforce Pages and select Visual Force Pages:

Take Salesfo

Run your business

Visualforce Pages

Expand All | Collapse All

Build

▼ Develop

Visualforce Pages

Security	🔲	⬇	AC_RecordingViewer	AC_RecordingViewer	amazonconnect
Security	🔲	⬇	AC_CtiScriptEditor	AC_CtiScriptEditor	amazonconnect
Security	🔲	⬇	AC_LightningAdapter	AC_LightningAdapter	amazonconnect
Security	🔲	⬇	AC_LightningScriptIncludes	AC_LightningScriptIncludes	amazonconnect
Security	🔲	⬇	AC_RealTimeQueueMetrics	AC_RealTimeQueueMetrics	amazonconnect
Security	🔲	⬇	AC_ClassicScriptIncludes	AC_ClassicScriptIncludes	amazonconnect
Security	🔲	⬇	AC_ConsoleAdapter	AC_ConsoleAdapter	amazonconnect
Security	🔲	⬇	AC_ConsoleScriptIncludes	AC_ConsoleScriptIncludes	amazonconnect
Security	🔲	⬇	ACSFCCP_CallTask	ACSFCCP_CallTask	amazonconnect
Security	🔲	⬇	ACSFCCP_ObjectType	ACSFCCP_ObjectType	amazonconnect
Security	🔲	⬇	ACSFCCP_PostCallUpdateTask	ACSFCCP_PostCallUpdateTask	amazonconnect
Security	🔲	⬇	AC_ClassicAdapter	AC_ClassicAdapter	amazonconnect
Security	🔲	⬇	ACSFCCP_CallRecordingTask	ACSFCCP_CallRecordingTask	amazonconnect
Security	🔲	⬇	ACSFCCP_CallLogging_View	ACSFCCP_CallLogging_View	amazonconnect

Security |		ACSFCCP_CallRecordingCase	ACSFCCP_CallRecordingCase	amazonconnect
Security |		AC_HelperIncludes	AC_HelperIncludes	amazonconnect
Security |		AC_HelperIncludesCcpV1	AC_HelperIncludesCcpV1	amazonconnect

As we are currently setting up the Classic experience, click on AC_ClassicAdapter page

Visualforce Page
amazonconnect__AC_ClassicAdapter

Page Detail   [Where is this used?] [Preview]

Label	AC_ClassicAdapter	Name	AC_ClassicAdapter
Namespace Prefix	amazonconnect	Available for Lightning Experience, Lightning Communities, and the mobile app	☐
Require CSRF protection on GET requests	☐	Description	

Click on the **Preview** button. A new browser tab will open with the URL of this page. If you are using the "enhanced domains" update, it will be in this format:

```
https://XXXXXXXX--amazonconnect.sandbox.vf.force.com/AC_ConsoleAdapter
```

Otherwise, it will be in this format:

```
https://XXXXXXXX--amazonconnect.visualforce.com/apex/AC_ConsoleAdapter
```

This is what we are going to use as "Origin URL" in our Amazon Connect configuration. From AWS Console, select Amazon Connect service and then select your Amazon Connect instance, then select "Approved origins" on the left-hand side:

Amazon Connect ✕

Instances

Overview
Telephony
Data storage
Data streaming
Contact flows
Analytics tools
Approved origins

Amazon Connect > guidedsetuptest-instance-w3dgh2 > Approved origins

Approved domains

Amazon Connect can integrate with other products including Customer Relationship Management (CRM) and Workf details on how to set up integrations with Amazon Connect. Learn more ↗

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

🔍 Find resources

URL

Click on "Add origin" link and enter the origin URL

Click "Add" button

From the Salesforce Classic layout, select Setup then type Call Centers in the Quick Find field and select Call Centers.

All Call Centers

A call center corresponds to a single computer-telephony integration (CTI) system already in place at your organization. Salesforce.com users mus

		Import
Action	**Name ↑**	**Version**
Edit | Del	Amazon Connect CCP Adapter Classic	
Edit | Del	Amazon Connect CCP Adapter Console	
Edit | Del	Amazon Connect CCP Adapter Lightning	

Select "Amazon Connect CCP Adapter Classic 3.9"

Call Center Detail

[Edit] [Delete] [Clone]

General Information

InternalName	ACClassicAdapter
Display Name	AC Classic Adapter
CTI Adapter URL	/apex/amazonconnect__AC_ClassicAdapter?ccpVersion=2
Softphone Height	460
Softphone Width	200
Use CTI API	true
Salesforce Compatibility Mode	Classic
Default CallCenter	true
Package Namespace	amazonconnect

Replace the **CTI Adapter URL** with the AC Lightning Adapter visualforce page url you copied in the previous section. If you wish to specify your version of the ccp user interface, add "?ccpVersion=x", where x is the version of the ccp (either 1 or 2). Click on the Save button.

Click on the "Manage Call Center Users" button at the bottom of the page.

Click on the "Add More Users" button.

Set filters and click on the Find button. Select the checkbox next to the user and click "Add to Call Center" button.

Repeat the steps to add more users.

Call Center
Amazon Connect CCP Adapter Classic: Manage Users
All Call Centers » Amazon Connect CCP Adapter Classic » Manage Users

View: [All ⬍] Create New View

			[Add More Users] [Remove Users]	
☐ **Action**	**Full Name** ↑		**Alias**	**Username**
☐ | Remove	SFDCDryRun, AmazonConnect		ASFDC	acsfdcdryrun████

From the top-right corner, select Sales application.

On the left-hand side, you will be able to see the Phone container.

You will need to Sign in into your Amazon Connect CCP. Click on the Sign in to CCP button. A new browser tab will open, asking you to enter your credentials.

Enter your credentials and click Sign in. Allow Microphone access (if asked by browser). Once Login is successful, the new tab with CCP will stay open, as this tab is going to carry the audio for voice calls.
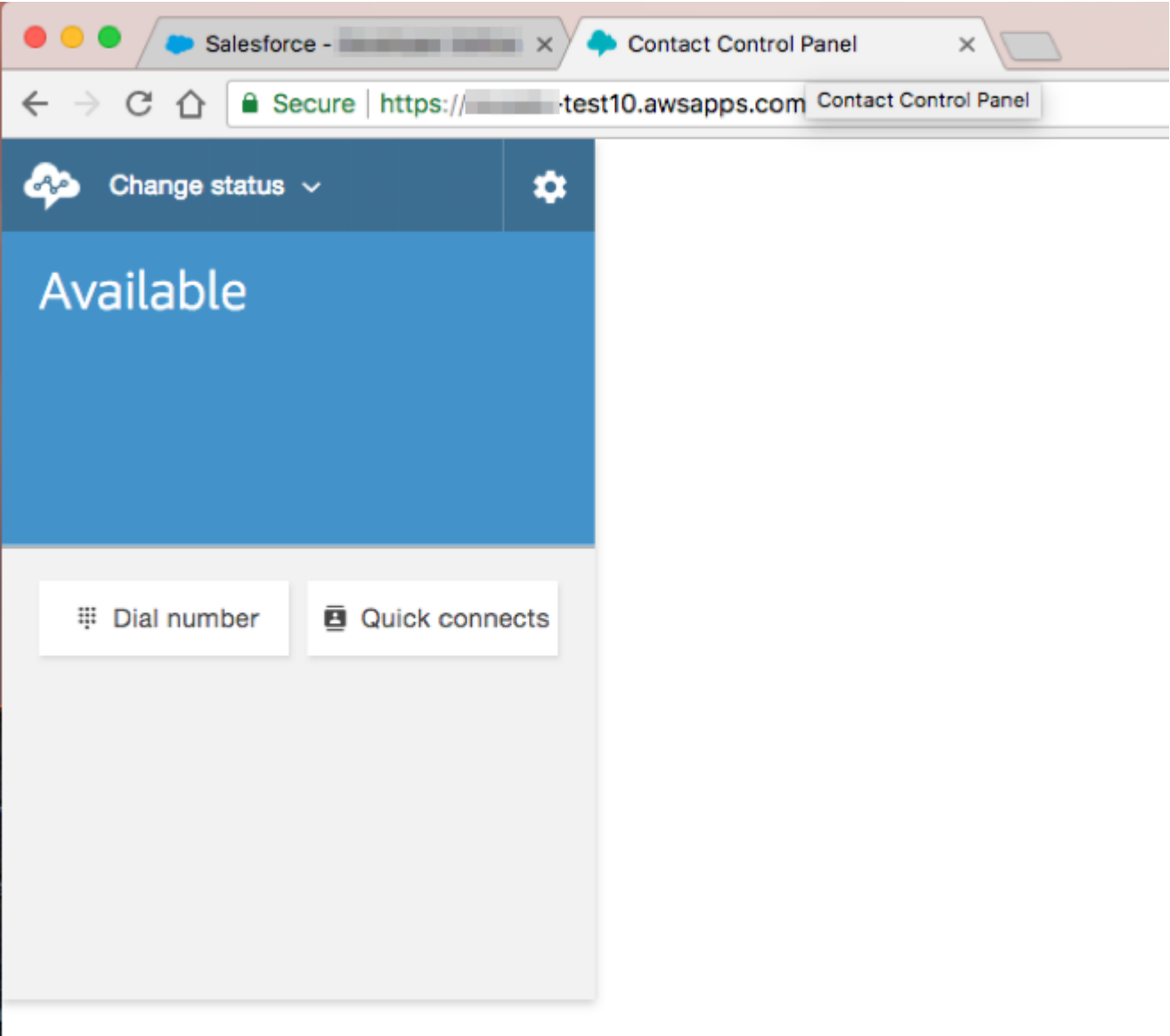
Switch back to Salesforce tab in your browser.

Select "Change status" and select "Available".

Make an inbound phone call to your Amazon Connect instance. The CCP is going to "ring" and you can answer the call.

Some CTI Flow features will reload the page the agent is currently on. The page is fully reloaded, but the softphone preserved the audio stream, as another instance of CCP was running in the 2nd tab. If the 2nd tab is closed, the audio will be lost. The 2nd CCP instance can also run in a separate browser window, if preferred.

Go to Salesforce Setup page and type Call Centers in Quick Find, then select Call Centers.

Select "Amazon Connect CCP Classic"

Amazon Connect CCP Adapter Classic

Call Center Detail

Edit	Delete	Clone

Amazon Connect Salesforce CCP Adapter

Internal Name	AmazonConnectSFCCPAdapterClassic
Display Name	Amazon Connect CCP Adapter Classic
Description	Amazon Connect Call Center
CTI Adapter URL	/apex/ACSFCCP_Classic
Use CTI API	true
Softphone Height	400
Softphone Width	250
Salesforce Compatibility Mode	Classic

Click on the Edit button and find the "Amazon Connect CCP Login Popup" field. By default, this field is set to "false", which means that Login Popup will be opened in a 2nd tab. If we change this value to "true", then Login Popup will be opened in a new browser window.

You may also notice that "Amazon Connect CCP Medialess" field is set to "true". This basically means that embedded CCP instance will not carry any media. Set the value to "true" and click on the Save button. Go back to Sales application. If CCP is already logged in, please log out.
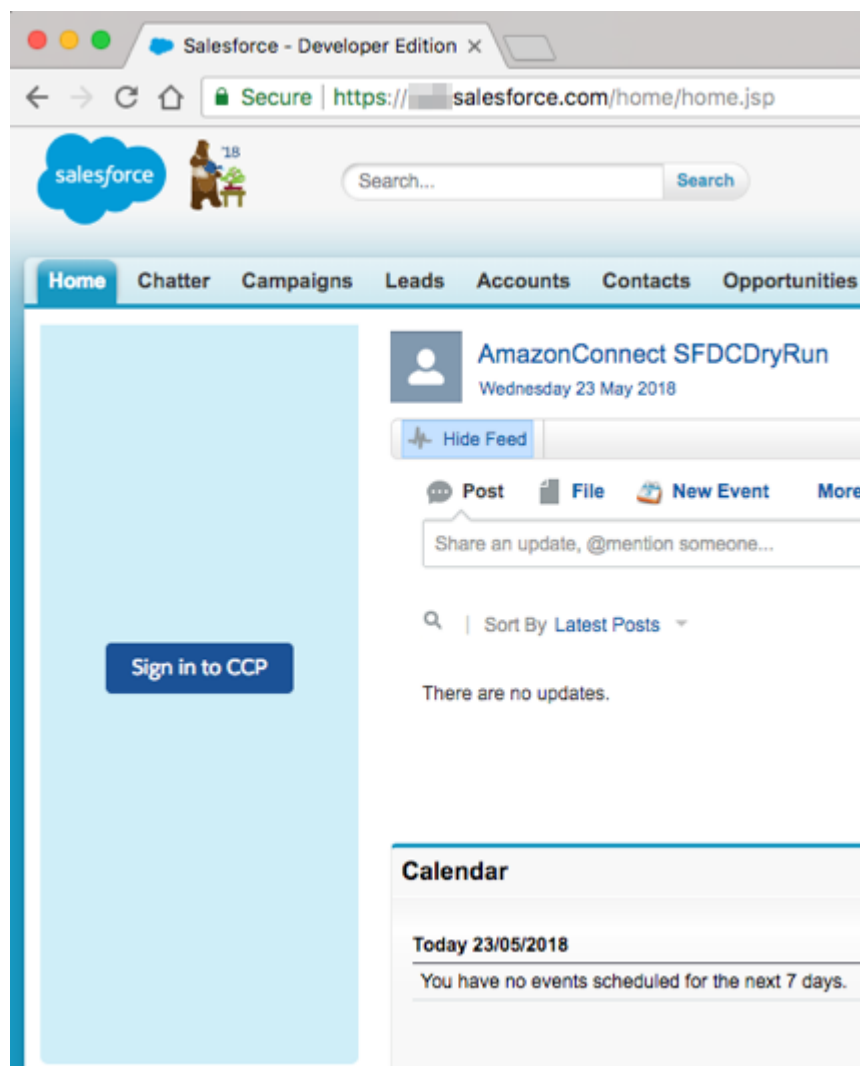
Click on the "Sign in to CCP" button and new browser window will open, asking you for credentials.
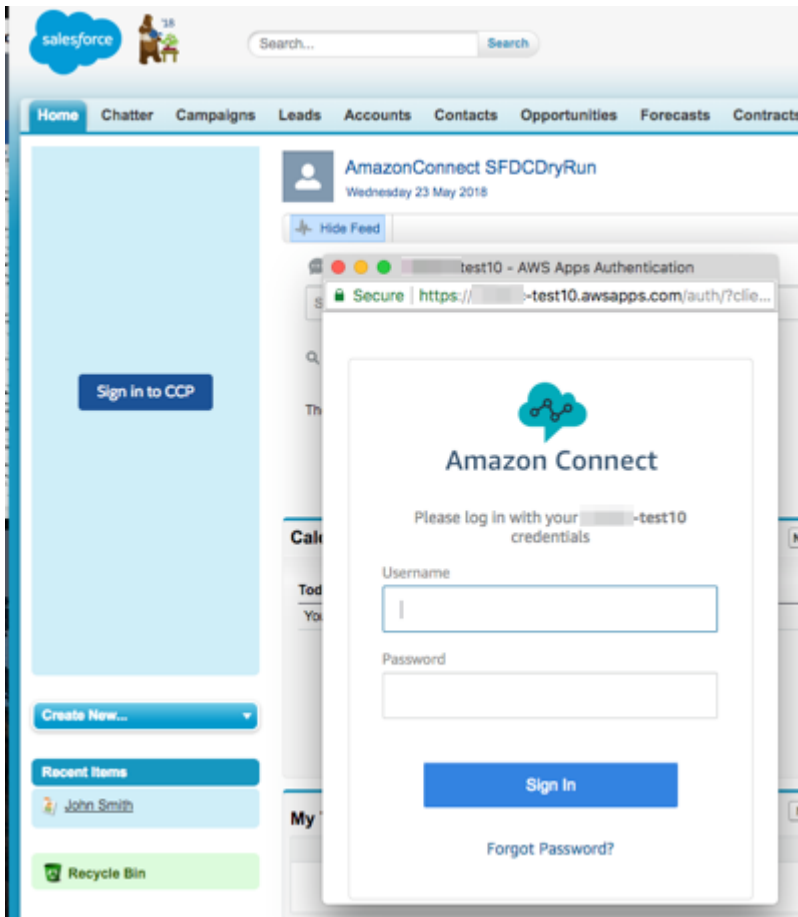
Enter your credentials and click Sign In. The CCP application will login, but popup window will stay open and it will host the 2nd CCP which will carry the audio stream. This window can be minimized or moved to 2nd screen.
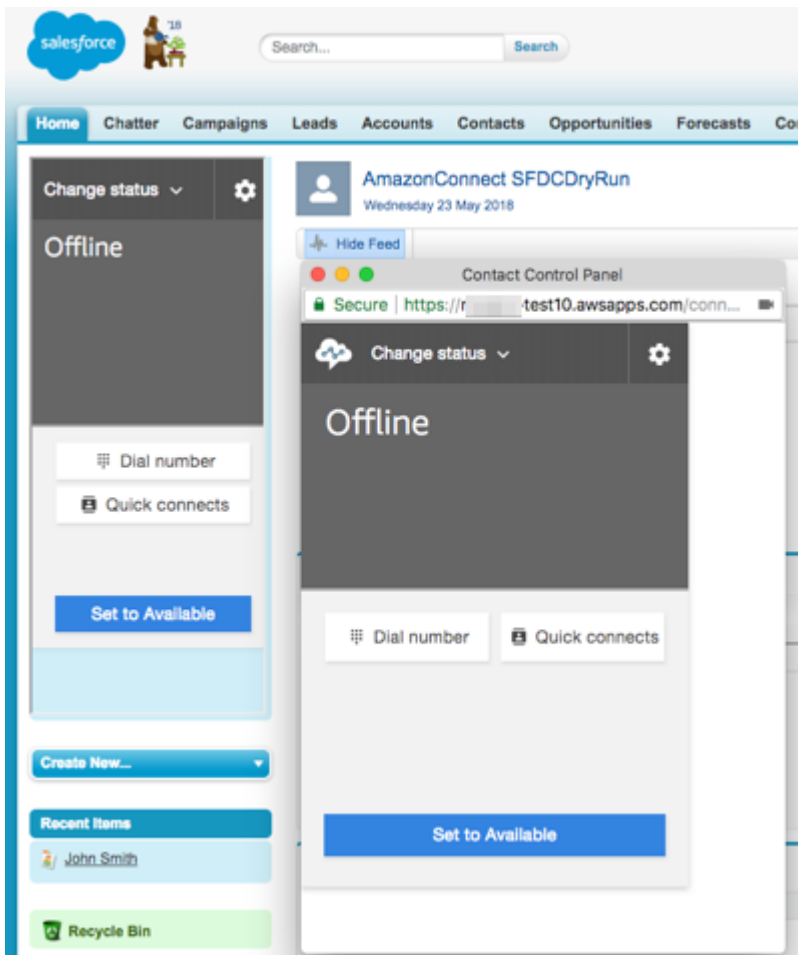
Setting Up The Salesforce Lambdas Manually

Below are manual setup instructions for the Salesforce Lambdas.

How it works: Deploying applications

Search and discover
Browse or search the AWS Serverless Application Repository to find an application

Configure
Configure the application. You can set environment variables, parameter values, and more before deploying the app

Deploy and manage
Deploy the application to your AWS account. You can then manage it from the AWS Management Console
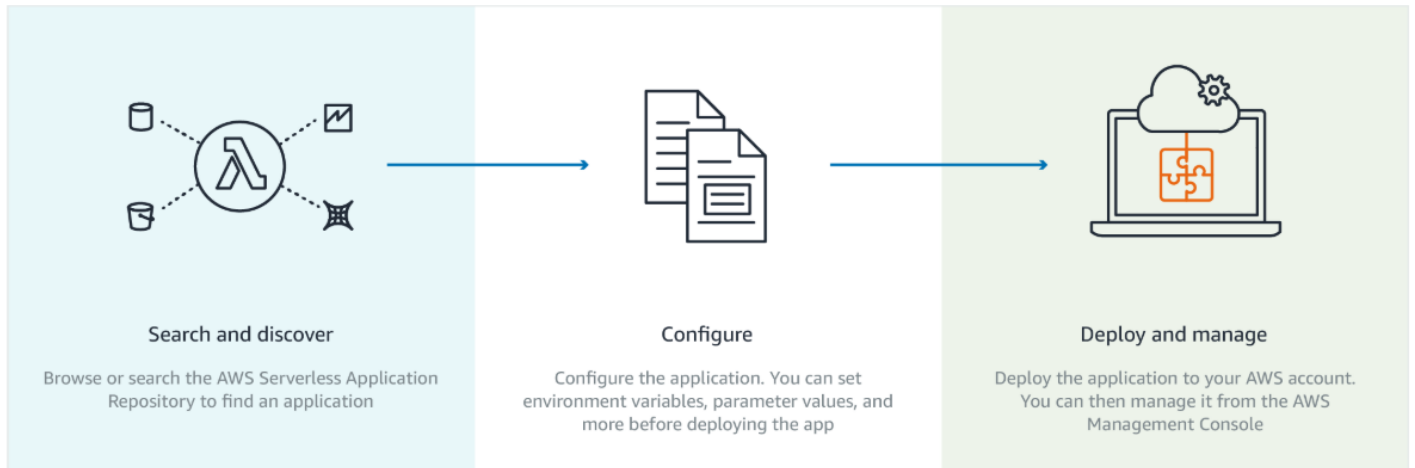
Salesforce Lambda Prerequisites

Consider the following prerequisites before you install the Lambda package.

Determine your production Environment

In your installation notes, enter the value for "Production Environment" as "true" or "false", depending on whether the Salesforce environment that you are deploying the package into is a production or a sandbox. For Production, enter "true". For Sandbox enter "false".

Determine your Consumer Key and Secret

To leverage the full potential of the integration, Salesforce data needs to be accessed from AWS environment. The AWS Serverless package comes with a set of pre-built queries to lookup, update and create Salesforce objects within Amazon Connect Contact Flows, in form of AWS Lambda functions.

The 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 to Salesforce

2. Navigate to Setup > Create > Apps

Apps

An *app* is a group of tabs that work as a unit to provide functionality. Users can switch between apps using the app drop-down menu at the top-right corner of every page.

You can customize existing apps to match the way you work, or build new apps by grouping standard and custom tabs.

ⓘ Custom apps work in conjunction with User Profile Tab Visibility settings. View User Profiles now.

Apps   Quick Start New Reorder   Apps Help ?

Action	App Label	Console	Custom	Description
Edit	App Launcher	☐	☐	App Launcher tabs
Edit	Community	☐	☐	Salesforce CRM Communities
Edit	Content	☐	☐	Salesforce CRM Content
Edit	Marketing	☐	☐	Best-in-class on-demand marketing automation
Edit	Platform	☐	☐	The fundamental Lightning Platform
Edit	Sales	☐	☐	The world's most popular sales force automation (SFA) solution
Edit	Salesforce Chatter	☐	☐	The Salesforce Chatter social network, including profiles and feeds
Edit	Sample Console	✓	☐	(Salesforce Classic) Lets agents work with multiple records on one screen
Edit	Service	☐	☐	Manage customer service with accounts, contacts, cases, and more
Edit	Site.com	☐	☐	Build pixel-perfect, data-rich websites using the drag-and-drop Site.com application, and manage content and published sites.

Subtab Apps   Subtab Apps Help ?

Action	App Label	Description
Edit	Profile (Others)	The tabs displayed when users view someone else's profile
Edit	Profile (Self)	The tabs displayed when users view their own profile

Connected Apps   New   Connected Apps Help ?

Action	Connected App Name	Description	Version

3. Click on the "New" button for the Connected Apps at the bottom of the page

4. In the following form, fill out the Connected App Name, API Name and Contact Email with values of your choice. We recommend "Amazon Connect Integration" as the Connected App Name and the default value for the API name.

New Connected App

Save Cancel

Basic Information

Connected App Name	Amazon Connect Integration
API Name	Amazon_Connect_Integration
Contact Email	

5. Select the checkbox next to "Enable OAuth Settings" as shown below.

API (Enable OAuth Settings)

Enable OAuth Settings ☑

6. Set the **Callback URL** to your domain url. Find the domain at *Setup -> My Domain*.

Enable OAuth Settings ☑

Enable for Device Flow ☐

Callback URL ⓘ https://[   ].my.salesforce.com

7. Ensure Selected OAuth Scopes has the following values selected:

a. Access the identity URL service (id, profile, email, address, phone)

b. Manage user data via APIs (api)

8. Select the checkbox "Require Secret for Web Server Flow", and the checkbox "Require Secret For Refresh Token Flow"

9. Click "Save" at the bottom of the screen.

10. Click "Continue" on the next screen

New Connected App

Allow from 2-10 minutes for your changes to take effect on the server before using the connected app.

Continue   Cancel

11. Once the app has been created, on the app's detail screen, please copy the "Consumer Key" value to your installation notes

▼ API (Enable OAuth Settings)

Consumer Key   3MVG9TSaZ8   bOcgUMSvusvy   Consumer Secret   Click to reveal

12. Select "Click to reveal" next to Consumer Secret and record this value to "Consumer Secret" in your installation notes.

13. Click "Manage" at the top of the page

Connected App Name

Amazon Connect Integration

« Back to List: Custom Apps

Edit   Delete   Manage

14. On the page that appears, click "Edit Policies"

15. Set "Permitted Users" to "Admin approved users are pre-authorizes"

OAuth policies

Permitted Users   Admin approved users are pre-authorized

16. Click "OK" on the pop-up dialog:

Enabling this option will result in all users currently using this app being denied access. Please reference the Connected Apps OAuth Usage Report if you are unsure who is using the app.

Cancel   OK

17. Set "IP Relaxation" to "Relax IP restrictions"
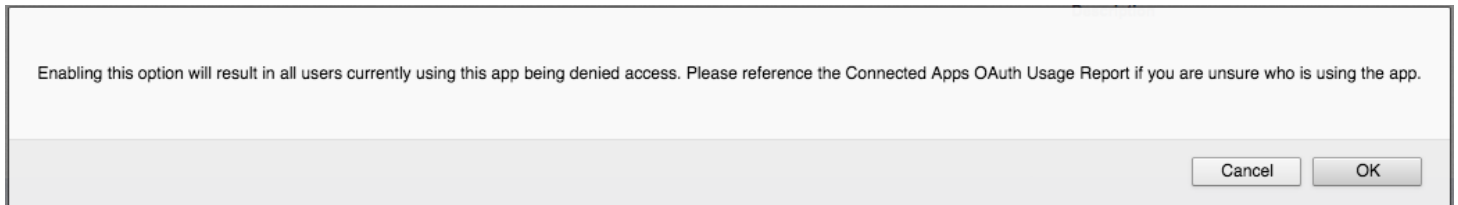
IP Relaxation   Relax IP restrictions
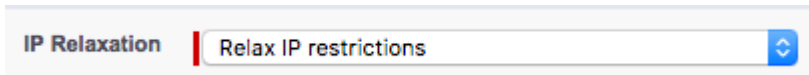
18. Click "Save"

Determine your Username, Password and Security Token

The authentication of the Lambda Functions requires valid user credentials. It is a common practice to create an API user account for this purpose.

1. Log in to Salesforce

2. Navigate to Setup > Manage Users > Profiles

3. Click "New Profile"

4. Enter the Profile Name (i.e. "API Only")

5. Select the existing profile to clone (The integration user\'s access to just those objects required for the integration)

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
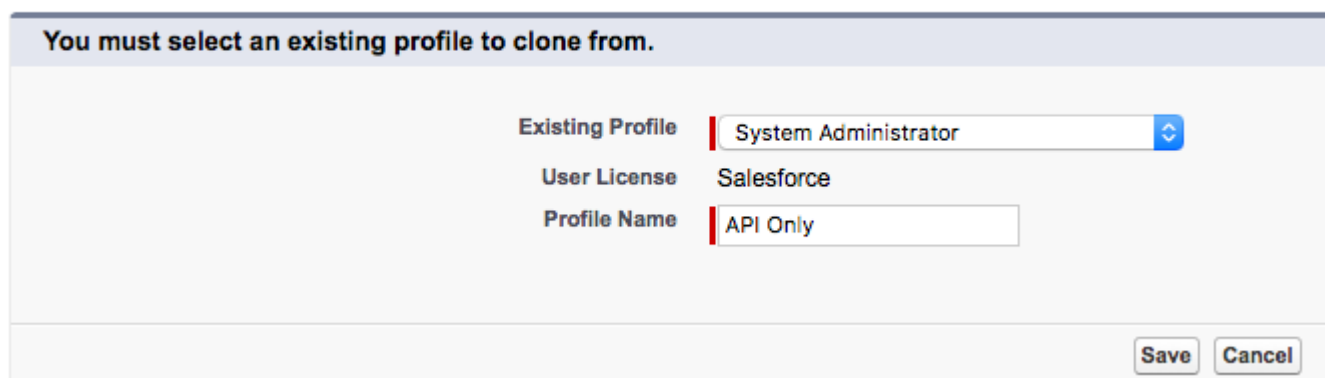
NOTE: You\'re advised to use a full Salesforce License for the user to be able to set the below permissions and have full access to avoid any other errors.

6. Click "Save". A New Profile is created:

Users with this profile have the permissions and page layouts listed below. Administrators can change a user's profile by editing that user's personal information.

If your organization uses Record Types, use the Edit links in the Record Type Settings section below to make one or more record types available to users with this profile.

Login IP Ranges [0] | Enabled Apex Class Access [2] | Enabled Visualforce Page Access [11] | Enabled External Data Source Access [0] | Enabled Named Credential Access [0] | Enabled Service Presence Status Access [0] | Enabled Custom Permissions [0]

Profile Detail   Edit | Clone | Delete | View Users

Name	API Only			
User License	Salesforce		Custom Profile	✓
Description				

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

System

System Permissions
Permissions to perform actions tl

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

Lightning Experience User ☐

9. Save the system permissions, then go back to Profile Overview

10. Select the *Password Policies* link, click edit

System

Settings that apply across all apps, such as record and user management
Learn More

System Permissions
Permissions to perform actions tha

Login Hours
Settings that control when users ca

Login IP Ranges
Settings that control the IP address

Service Providers
Permissions that let users switch tc

Session Settings
Settings that control required sessi

Password Policies
Profile Based password policies

Default Experience
Setting for assigning a default com

Password Policies

User passwords expire in	90 days
Enforce password history	3 passwords remembered
Minimum password length	8
Password complexity requirement	Must mix alpha and numeric characters
Password question requirement	Cannot contain password
Maximum invalid login attempts	10
Lockout effective period	15 minutes
Obscure secret answer for password resets	☐
Require a minimum 1 day password lifetime	☐
Don't immediately expire links in forgot password emails	☐

Edit | Clone | Delete | View Users

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

Password Policies

User passwords expire in	Never expires
Enforce password history	No passwords remembered
Minimum password length	8
Password complexity requirement	Must mix alpha and numeric characters
Password question requirement	Cannot contain password
Maximum invalid login attempts	10
Lockout effective period	15 minutes
Obscure secret answer for password resets	☐
Require a minimum 1 day password lifetime	☐
Don't immediately expire links in forgot password emails	☐ i

12. Select **Save**

13. Navigate to Setup > Manage Apps > Connected Apps

14. Select the app you have created in the previous step (i.e. Amazon Connect Integration)

Connected Apps

Manage access to apps that connect to this Salesforce organization.

App Access Settings	**Edit**
☑ Allow users to install canvas personal apps	

View: All | Create New View

Action	Master Label ↑
Edit	Amazon Connect Integration

15. Click "Manage Profiles"

Profiles	**Manage Profiles**
No profiles associated with this app.	

16. Ensure the "API Only" profile is selected:

Application Profile Assignment

« Back to Connected App Detail

Select the appropriate profiles to choose which users have access to this application.

Select	Profiles
☐	Analytics Cloud Integration User
☐	Analytics Cloud Security User
☑	API Only

17. Click "Save" at the bottom of the page

18. Navigate to Setup > Manage Users > Users

19. Click "New User"

All Users

On this page you can create, view, and manage users.

In addition, download SalesforceA to view and edit user details, reset passwords, and perform other administrative tasks from your mobile devices: iOS | Android

View: All Users ⬍   Edit | Create New View

			New User	Reset Password(s)	Add Multiple Users
☐ Action	Full Name ↑		Alias	Username	

20. Set necessary fields: Last Name, Alias, Email, Username, Nickname

New User

User Edit

General Information

First Name	
Last Name	APIUser
Alias	apiuser
Email	
Username	apiuser
Nickname	apiuser [i]
Title	
Company	
Department	
Division	

21. On the right-hand side, set the User License and Profile

Role	<None Specified>
User License	Salesforce
Profile	API Only

22. Click "Save"

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

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

25. A confirmation email will be sent, with an activation link. Click the link to activate your user.

Welcome to Salesforce!

Click below to verify your account.

Verify Account

To easily log in later, save this URL:
https://login.salesforce.com/

Change (set) a password for apiuser (Considered a strong that contains at least 20 random characters):

salesforce

Change Your Password

Enter a new password for apiuser@acsfdcdryrun.com.
Your password must have at least:

○ 8 characters
○ 1 letter
○ 1 number

* New Password

```
|
```

* Confirm New Password

Security Question

▼   In what city were you born?

* Answer

Change Password

Password was last changed on 18/09/2018 17:29.

26. Click "Change Password"

27. Access the apiuser personal settings by selecting the username in the top right corner, then "My Settings".

28. Type "Security Token" in the Quick Find box and click "Reset My Security Token".

Reset My Security Token

When you access Salesforce from an IP address that isn't trusted for your company, and you use a desktop clie

After you reset your token, you can't use your old token in API applications and desktop clients.

Reset Security Token

29. Your security token will be emailed to you

Reset My Security Token
Check Your Email

We sent a new security token to the email address for your account,

30. Copy the security token from the email in to your installation notes for the "Access Token" value.

Allowing the API user to authenticate using password

The api user created above authenticates using username-password flow in Salesforce. This flow needs to be unblocked and to do that, go to *Setup* and in the Quick Find box, search for **OAuth and OpenID Connect Settings**. After that, make sure that the toggles for **Allow OAuth Username-Password Flows** and **Allow OAuth User-Agent Flows** are turned ON, as shown in below image.

SETUP
OAuth and OpenID Connect Settings

OAuth and OpenID Connect Flows
Control which OAuth 2.0 and OpenID Connect flows your connected apps can use. These settings affect your entire org. Username-password flows are blocked by default in orgs created in Summer '23 or later. Blocking a flow can break managed packages, mobile apps, and other integrations that use the flow. We recommend testing changes in a sandbox before implementing in production.

Allow OAuth Username-Password Flows — On

Allow OAuth User-Agent Flows — On

Allow Authorization Code and Credentials Flows — Off

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. Navigate back to the Secrets Manager setup tab

20. 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

21. Click Next

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

23. Click Next

24. Make sure **automatic rotation** is disabled.

25. Click Next

26. Click Store

27. 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
-

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

Install the Amazon Connect Salesforce Lambda package

1. Login into your AWS Account

2. Navigate AWS Serverless Application Repository
   (https://aws.amazon.com/serverless/serverlessrepo/)
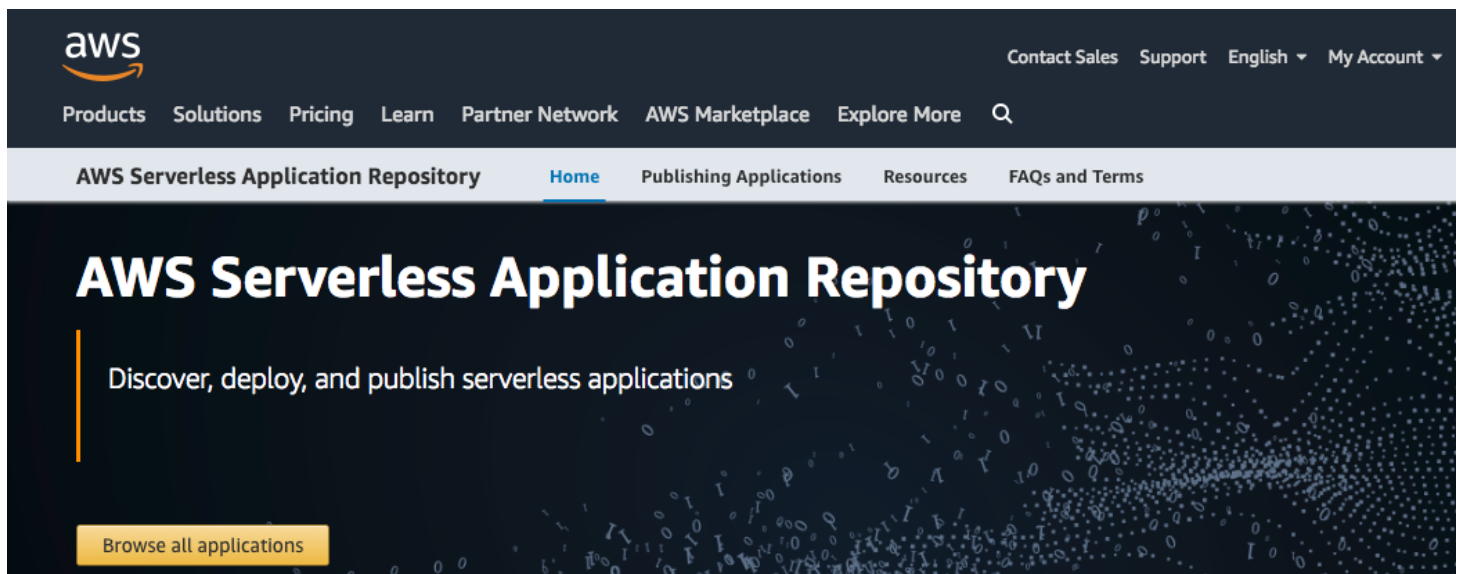
3. Click on the Search (magnifying glass) and type in Amazon Connect Salesforce.
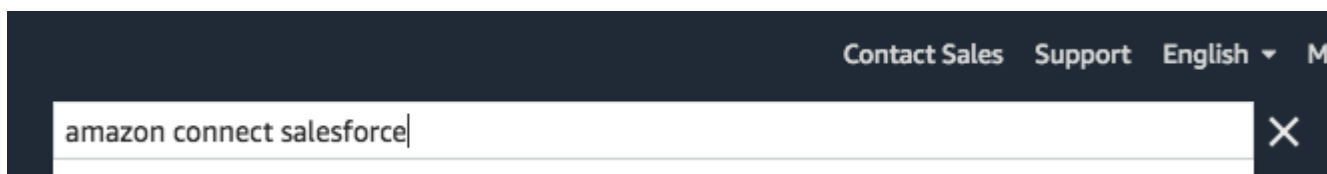
4. Select AmazonConnectSalesForceLambdas and click "Deploy"

AmazonConnectSalesForceLambdas — Version

Review details and configure parameters below to deploy the application

Dashboard

Functions

5. Fill in all Salesforce related fields in "Configure application parameters".\ All values should be available in your installation notes:

Configure application parameters

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

AmazonConnectSalesForceLambdas

SalesforceAccessToken
The security token of the Salesforce API user account used above.

SalesforceConsumerKey
Your Salesforce consumer key

SalesforceConsumerSecret
Your Salesforce consumer secret is available in Salesforce immediately to the right of your Salesforce Consumer Key

SalesforceHost
Your Salesforce Host

SalesforcePassword
The password of a valid Salesforce API account for your environment. This account must be the same one as entered in the "Salesforce API Configuration Username" parameter above.

SalesforceProduction
True for Production Environment, False for Sandbox

true

SalesforceUsername
The username of a valid Salesforce API account for your environment. For example, user@domain.com

Salesforce API Username

SalesforceVersion
To find the Salesforce Edition and API Version please visit https://help.salesforce.com/articleView?id=000199268&type=1

v42.0

Cancel   Previous   Deploy

6. The Lambda package includes additional features which can be enabled or disabled, based on particular use-case:

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

   ii. **AmazonConnectInstanceId:** You Amazon Connect Instance Id. Only required if you enable real time reporting

   iii. **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.

   iv. **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

   v. **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**

   vi. **LambdaLoggingLevel:** DEBUG | INFO | WARNING | ERROR | CRITICAL - Logging level for Lambda functions

   vii. **PrivateVpcEnabled:** Set to true if functions should be deployed to a private VPC. Set VpcSecurityGroupList and VpcSubnetList if this is set to true.

   viii. **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**

   ix. **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.

   x. **SalesforceCredentialsKMSKeyARN:** This is the ARN for KMS customer managed key that you created in the previous section.

   xi. **SalesforceCredentialsSecretsManagerARN:** This is the ARN for the Secrets Manager Secret that you created in the previous section.

   xii. **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`.

   xiii. **SalesforceProduction:** true | false - True for Production Environment, False for Sandbox

xiv. **SalesforceUsername:** The username for the API user that you configured in the previous section. Salesforce usernames are in the form of an email address.

xv. **SalesforceVersion:** This is the Salesforce.com API version that you noted in the previous section. The pattern of this value is `vXX.X`.

xvi. **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.

xvii. **VpcSecurityGroupList:** The list of SecurityGroupIds for Virtual Private Cloud (VPC). Not required if PrivateVpcEnabled is set to false.

xviii. **VpcSubnetList:** The list of Subnets for the Virtual Private Cloud (VPC). Not required if PrivateVpcEnabled is set to false.

xix. **AmazonConnectQueueMaxRecords:** Enter record set size for list queue query. Max is 100.

xx. **AmazonConnectQueueMetricsMaxRecords:** Enter record set size for queue metrics query. Max is 100.

xxi. **CTREventSourceMappingMaximumRetryAttempts:** Maximum retry attempts on failure for lambdas triggered by Kinesis Events.

xxii. **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

xxiii. **ContactLensImportEnabled:** true | false – Set to false if importing Contact Lens into Salesforce should not be enabled.

xxiv. **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.

xxv. **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.

xxvi. **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.

xxvii. **TranscriptionJobCheckWaitTime:** Time between transcription job checks

7. Once completed, click "Deploy" function:

Lambda > Functions

Functions (31) ↻

Actions ▾

Q Add filter

keyword : aws-serv ⊗

Function name	▼	Description	Runtime ▼
○ aws-serverless-repository-AmazonConnec-sfInvokeAPI-2R3T34AMGSWS			Python 3.6
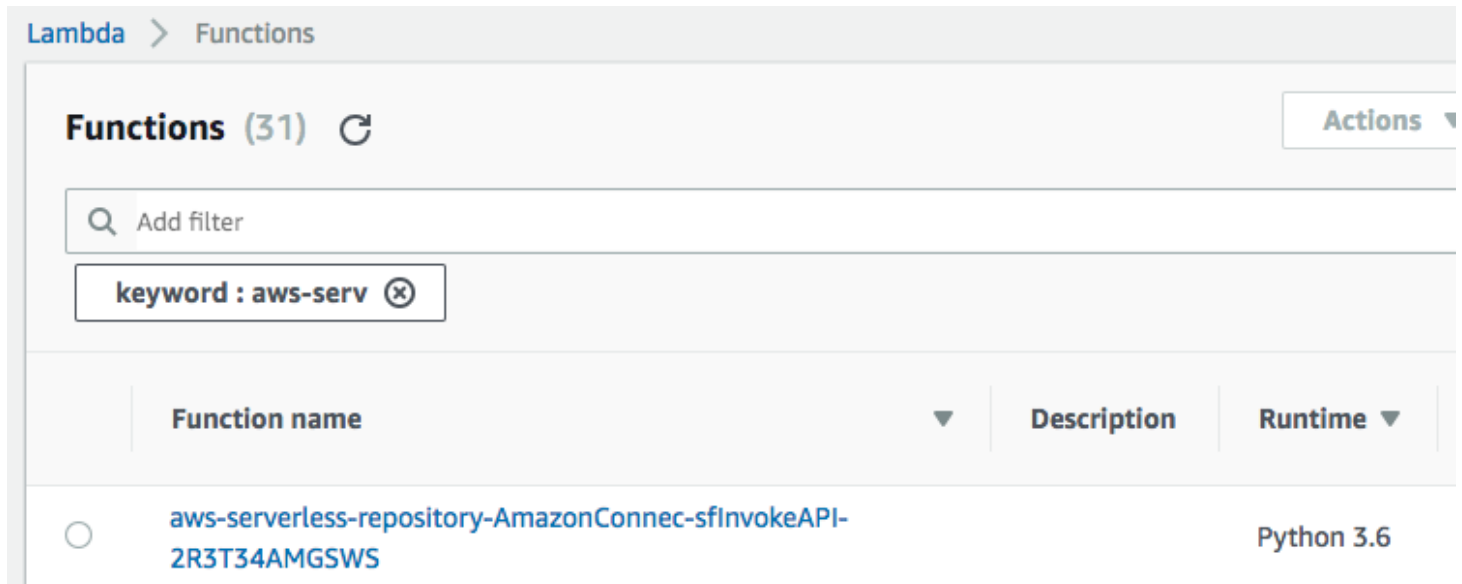
8. The package provides a single Lambda function (sfInvokeAPI) that supports multiple operations, like lookup, create and update. For the initial validation, sample events are provided within the function. Click on the function name and check the list of files in the editor.


```
File   Edit   Find   View   Goto

▼ 📁 aws-serverless-repository-A
  ▶ 📁 phonenumbers
    <> event-create.json
    <> event-lookup.json
    <> event-phoneLookup.json
    <> event-update.json
    ▤ README.md
```
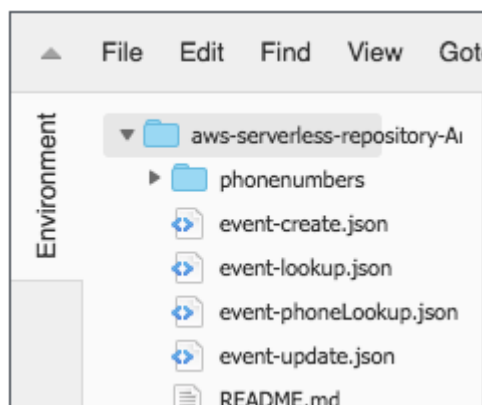
9. To validate a phone number lookup, double-click on event-phoneLookup.json file and copy the text in your clipboard.


```
sfInvokeAPI.py  ×      event-phoneLool ×      ⊕

1  {
2      "Details": {
3          "Parameters": {
4              "sf_operation" : "phoneLookup",
5              "sf_phone": "+441122334455",
6              "sf_fields": "Id, Name, Email"
7          }
8      }
9  }
```
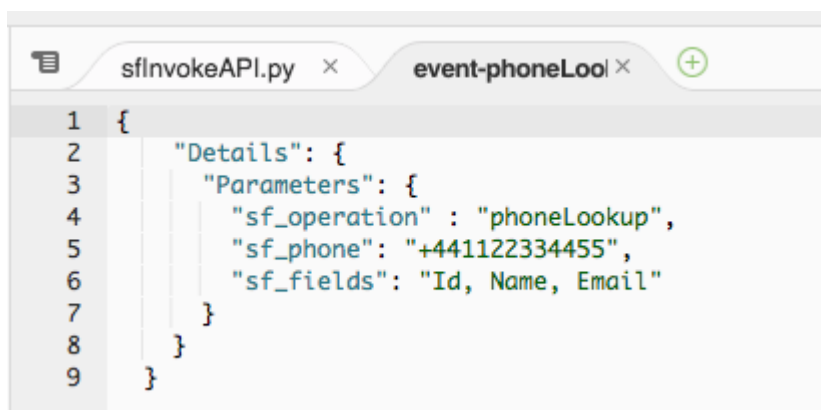
10. In the top-right corner, click the drop-down arrow next to the "Test" button and select "Configure test events"

Select a test event.. ▼   Test

Configure test events

11. Select "Create new test event", set Event name (i.e. phoneLookup) and paste the JSON payload you've copied in the previous step.

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

| eventLookup |

```
1 ▾ {
2 ▾    "Details": {
3 ▾       "Parameters": {
4             "sf_operation": "phoneLookup",
5             "sf_phone": "+441122334455",
6             "sf_fields": "Id, Name, Email"
7          }
8       }
9  }
```

12. Click "Create" button

13. From the drop-down list, select your "eventLookup" and click "Test" button

| eventLookup   ▼ | Test

14. 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.

```
{
   "Id": "0031r000026MVPIAA4",
   "Name": "Milos Cosic",
   "Email": "mcosic@amazon.com",
   "sf_count": 1
}
```

15. As a next step, we are going to use the ContactId provided and create a Case in Salesforce. Double-click on "event-create.json" file and set the ContactId value from the previous step. Copy the JSON text into your clipboard.

```json
{
    "Details": {
        "Parameters": {
            "sf_operation" : "create",
            "sf_object": "Case",
            "Origin": "Phone",
            "Status": "New",
            "ContactId": "0031r000026MVPIAA4",
            "Subject": "Amazon Connect Case",
            "Priority": "Low"
        }
    }
}
```

16. In the top-right corner, click the drop-down arrow next to the "Test" button and select "Configure test events"

```
eventLookup          ▼      Test

Saved Test Events

     eventLookup

Configure test events
```
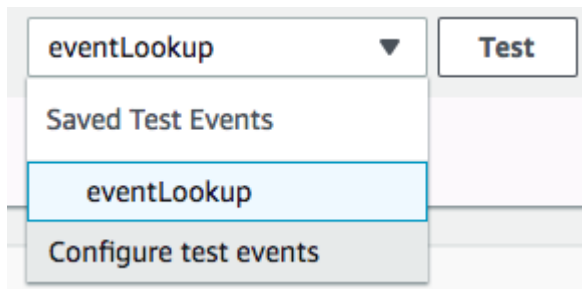
17. Select "Create new test event", set Event name (i.e. createCase) and paste the JSON payload you've copied in the previous step.

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

Saved Test Event

createCase ▼   ↻

```
1 ▾ {
2 ▾   "Details": {
3 ▾     "Parameters": {
4         "sf_operation": "create",
5         "sf_object": "Case",
6         "Origin": "Phone",
7         "Status": "New",
8         "ContactId": "0031r000026MVPIAA4",
9         "Subject": "Amazon Connect Case",
10        "Priority": "Low"
11      }
12    }
13 }
```

18. Click "Create" button

19. From the drop-down list, select your "createCase" and click "Test" button

createCase ▼   Test

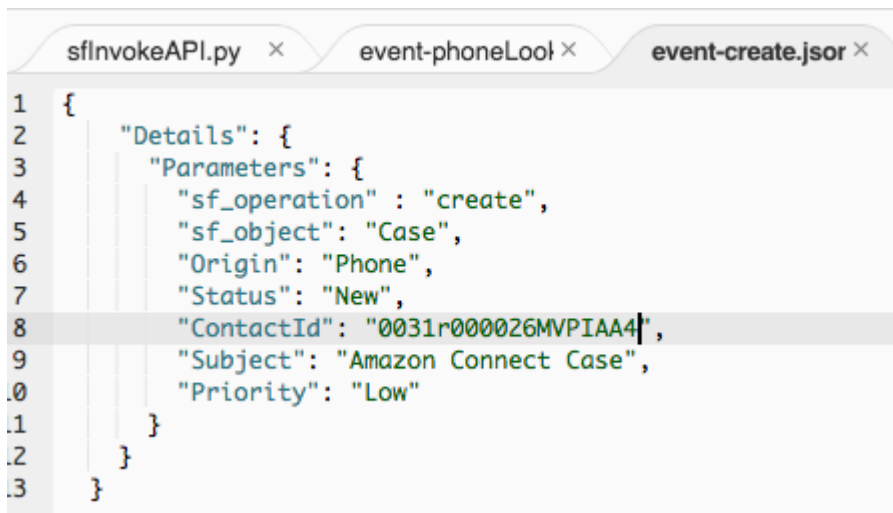20. If successful, the result will contain a Case Id for newly created case:

⊘ Execution result: succeeded (logs)

▾ Details

The area below shows the result returned by your function execution.

```
{
   "Id": "5001r000023QcAcAAK"
}
```

21. As defined in the event payload, Status is "New" and Priority is "Low". We are going to use the update operation to close the case. Copy the Case Id provided in the previous step, then double-click on "event-update.json" file and paste the Case Id in "sf_id" parameter:

```
     sflnvokeAPI.py  ×         event-phoneLook ×        event-create.jsor ×        event-update.jso ×
 1  {
 2      "Details": {
 3         "Parameters": {
 4            "sf_operation" : "update",
 5            "sf_object": "Case",
 6            "sf_id": "5001r000023QcAcAAK",
 7            "Status": "Closed"
 8         }
 9      }
10  }
```

22. In the top-right corner, click the drop-down arrow next to the "Test" button and select "Configure
    test events"

```
createCase                    ▼      Test

Saved Test Events

    eventLookup

    createCase

Configure test events
```
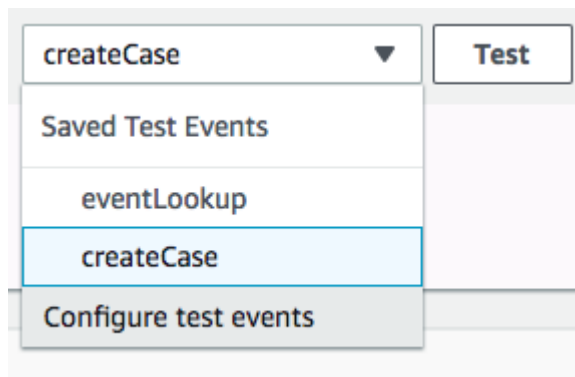
23. Select "Create new test event", set Event name (i.e. closeCase) and paste the JSON payload you've
    copied in the previous step.

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

Saved Test Event

```
closeCase                                                       ▼      ↻
```

```
 1 ▾ {
 2 ▾   "Details": {
 3 ▾     "Parameters": {
 4          "sf_operation": "update",
 5          "sf_object": "Case",
 6          "sf_id": "5001r000023QcAcAAK",
 7          "Status": "Closed"
 8        }
 9      }
10  }
```

24. Click "Create" button

25. From the drop-down list, select your "closeCase" and click "Test" button

| closeCase | ▼ | Test |

26. If successful, the result will be HTTP code 204 ("No Content" success code):

⊘ Execution result: succeeded (logs)

▼ Details

The area below shows the result returned by your function execution.

204

27. Login in to Salesforce and search for Case and it's details. The Case status should be "Closed".

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"

SETUP
Object Manager
3 Items, Sorted by Label

🔍 ac cti

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.

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
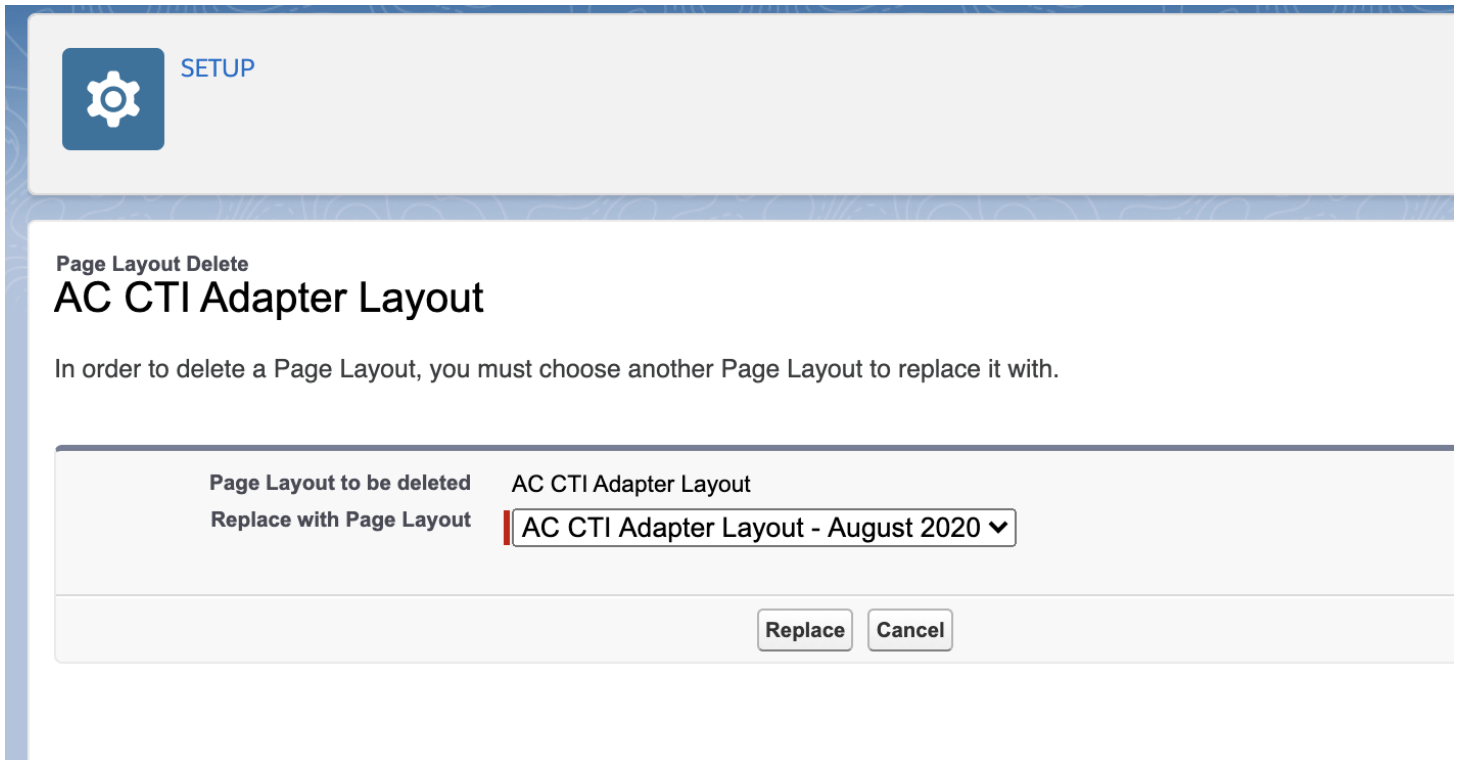
Back to Previous Page

> ⚠ **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.**

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.

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**.

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	AC CTI Flow Layout ▼

Replace   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

⬇
Download

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

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 `Objects` and click the option under `Create`. Once you're on the Custom Object page, search for the `AC CTI Adapter` object and click on it. Then go into `Page Layouts` and click `Edit` 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.
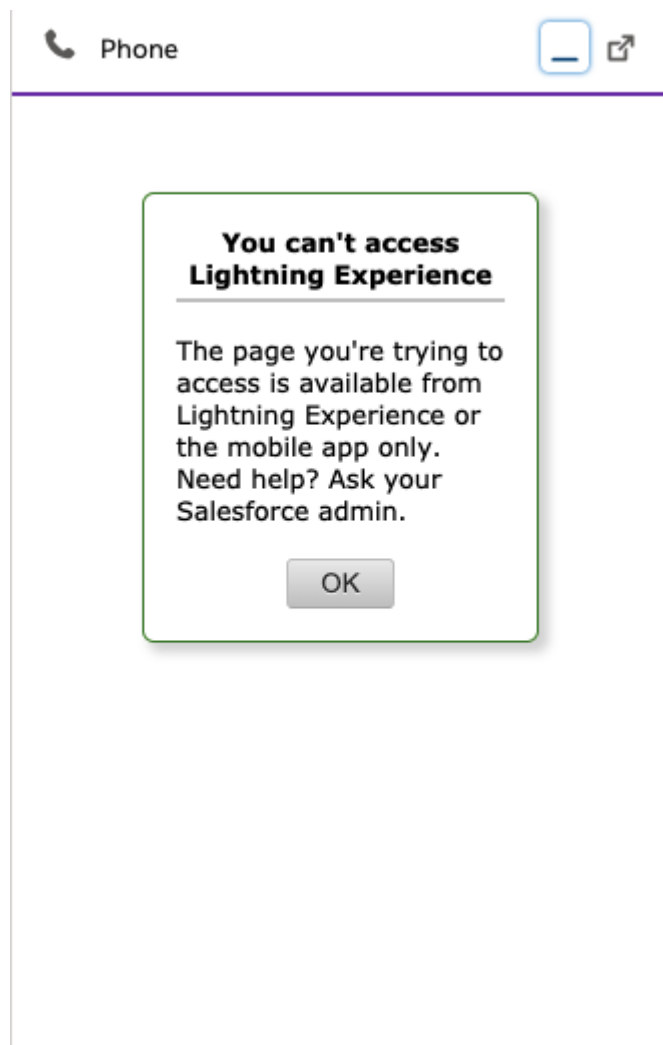
Error "refused to run the JavaScript URL because it violates the following Content Security Policy directive..."

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

Error "refused to frame" Visualforce page
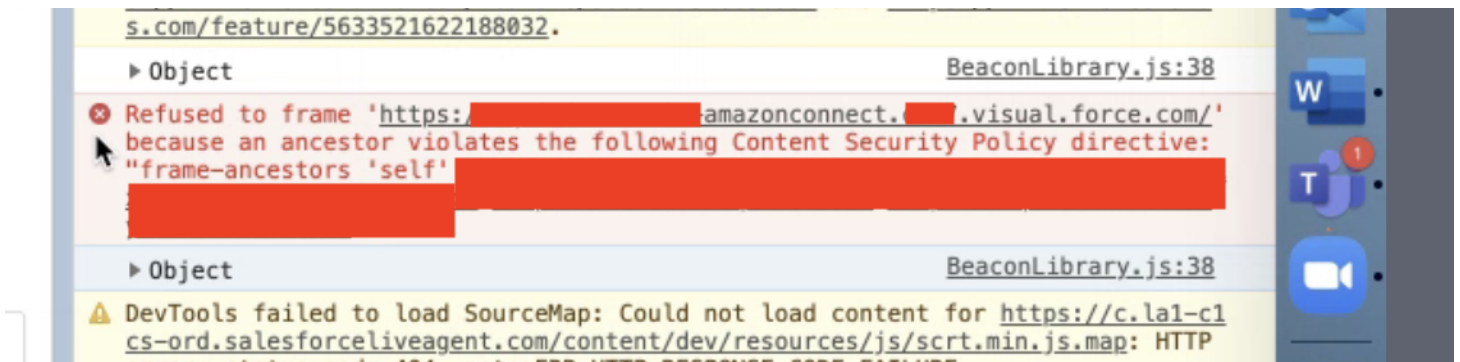
This can happen if the customer has checked "Enable clickjack protection" on Salesforce session settings. The solution is to uncheck that.
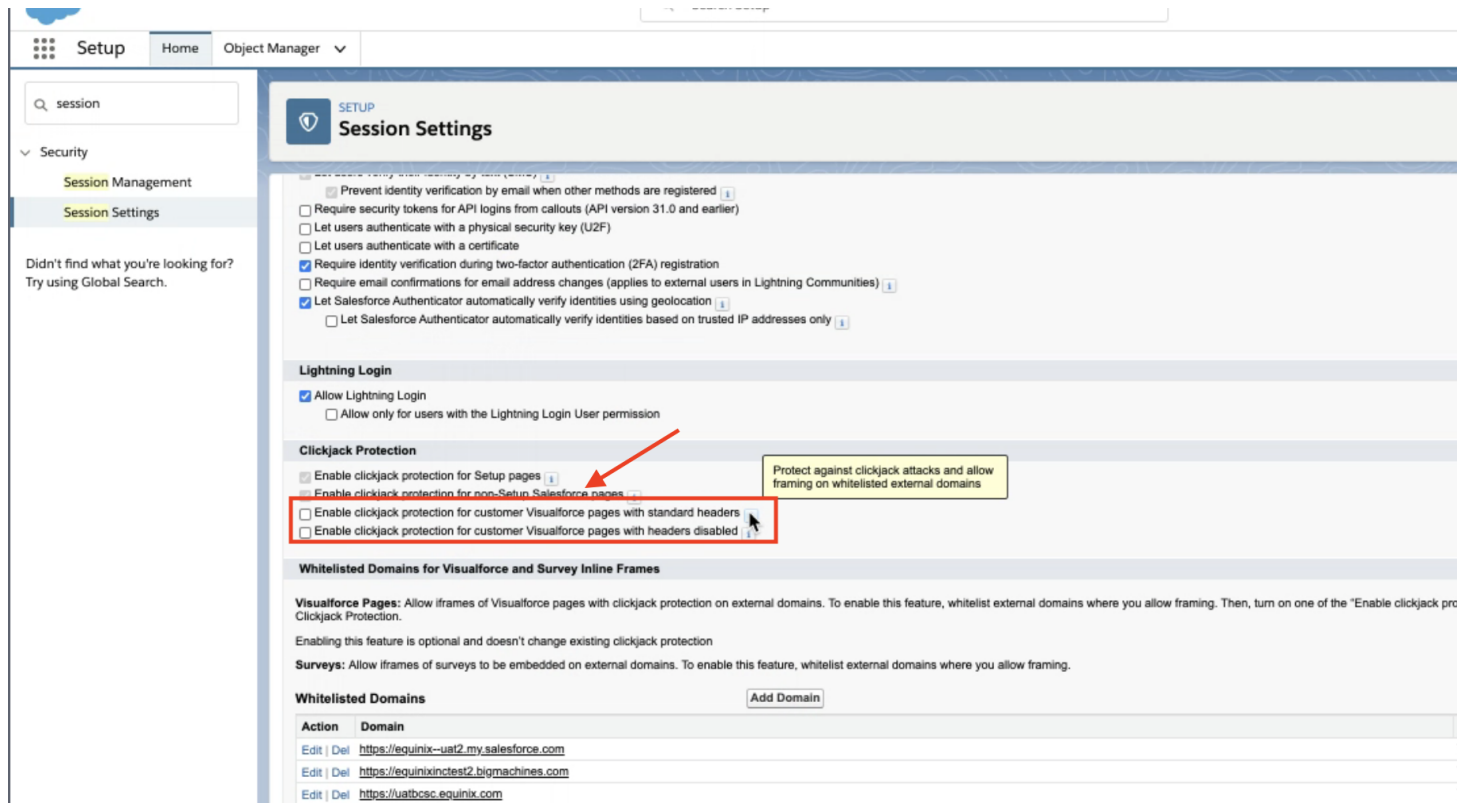
I upgraded my adapter to v5, but I don't see the CTI Flows feature.

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.

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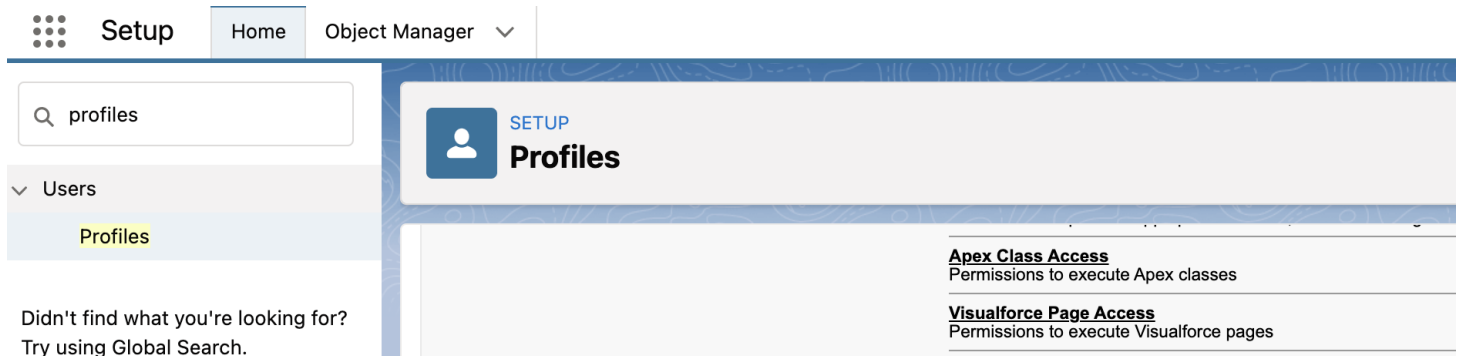
4. Select **Edit** and remove any desired permissions. All permissions can be removed because permissions are managed through permission sets, not through profiles.

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

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 relationsihp between the two records. This trigger uses batching to process the update requests.
- CCA Contact Trigger – This trigger looks for any ContactChannelAnalytics records that could be related to a updated/inserted Contact, and creates a relationsihp between the two records. This trigger uses batching to process the update requests.
- 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 relationsihp 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.

CTI Adapter Configuration

The CTI Adapter installed by the managed package provides a number of features that change or enhance the functionality of the integration. By default, many of these features have been configured during install with a default setting. This section will detail the options available.

AC CTI Adapter Detail		Edit Delete Clone	
CTI Adapter Name	ACLightningAdapter	Owner	
Amazon Connect Instance	https://sfadaptertest.awsapps.com/	Amazon Connect Instance Region	us-east-1
Custom Ringtone		Call Center Definition Name	ACLightningAdapter
Softphone Popout Enabled	✓	Debug Level	Off
Medialess	☐	Presence Sync Enabled	✓
Audio Device Settings	☐	Phone Type Settings	✓

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

Medialess Popout CCP

To enable a popout CCP for agents to use, you need to enable it using `Features`.

1. Open the CTI Adapter that you have medialess enabled on.
2. In the bottom tabs, select the `Features` section and click `New`.
3. Set the `AC Feature Name` to be **EnableMedialessPopout**
4. Set the `Value` to be **Enabled:true**
5. Ensure that the `Active` checkbox is checked, then hit Save.
6. Now refresh your page, and you should see the a popup created, which you can use to handle media.

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://mXXXXXXrun-dev-ed.my.salesforce.com/idp/login?app=0sp0N000000Caid
```

The 'RelayState' will be in the following format (replace `us-west-2` with the region you are using):

```
https://us-west-2.console.aws.amazon.com/connect/federate/InstanceId?
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**.
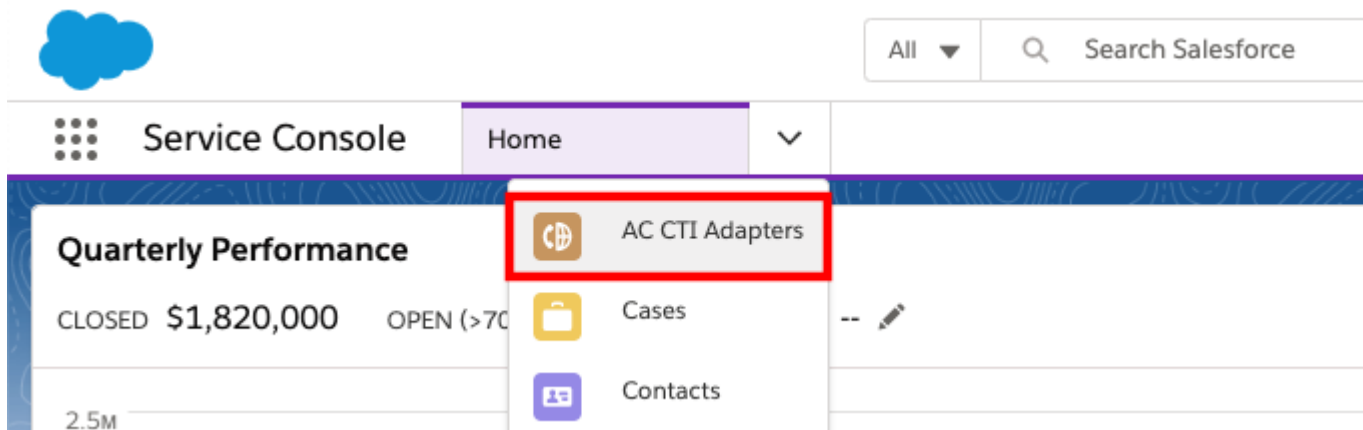
3. Select **ACLightningAdapter**

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

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://mXXXXXXrun-dev-ed.my.salesforce.com/idp/login?
app=0sp0N000000Caid
```

Microsoft ADFS:

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

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

7. For the SSO Relay State:

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

```
app=0sp0N000000Caid&RelayState=https://us-west-
2.console.aws.amazon.com/connect/federate/InstanceId?
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://us-west-
2.console.aws.amazon.com/connect/federate/instanceId?
```

```
destination=%2Fconnect%2Fccp
```

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

9. Choose **Save**

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. 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.

12. Click the Sign into CCP button

13. You should now see the authenticated and logged in CCP

SSO Configuration is complete

Omnipresence Agent State Sync

Amazon Connect CTI Connector supports the bidirectional synchronization of Amazon Connect agent states with Salesforce omnichannel presence states.

Omnipresence Agent State Sync Enabled	true

NOTE: After Salesforce Winter '22 Release, users need to have View Setup and Configuration OR View DeveloperName permission via a profile or permission set to use this feature. See New Permission Requirements for DeveloperName Field for more information.

Enable Omnichannel

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.

First, we must enable omni-channel. To do this, navigate to "Setup" and type "omni" into the Quick Find box, then select "Omni-Channel Settings" from the menu.

Place a check in the checkbox for "Enable Omni-Channel".

Omni-Channel Settings

Welcome to Omni-Channel!

Omni-Channel is a comprehensive customer service solution that lets contact centers push work to
Omni-Channel lets you create work items from your Salesforce records—including cases, chats, lea
objects—and route them to the most qualified, available agents in your organization, all in real time.
integrates seamlessly into the Salesforce console, so it's easy for your support agents to use.

With Omni-Channel, you can manage the priority of work items to make sure that critical assignmer
quickly. You can manage your agents' capacity and availability for work to ensure that they're given
assignments that they can handle. You can also define which agents can work on different types of
Omni-Channel routes all of these assignments to the correct agents automatically. Agents no longer
work items manually from a queue, and managers no longer have to triage or dispatch work to ager
most qualified available agent in real time!

ℹ️ **Show diagram** ▼

First, you need to enable Omni-Channel. Then, **create Service Channels**.

Enable Omni-Channel ☑️ ← This must be checked

Use Skills-Based Routing ⓘ ☐

Save Cancel

Create Presence Statuses

In this step, we need to add and map Presence Statuses to what is defined in Amazon Connect under
Users -> Agent Status.

Open the Setup in your Salesforce Org and type "presence", then select "Presence Statuses" from the menu. Click the "New" button and add statuses to match what is defined in Amazon Connect.

Presence Statuses

Let agents indicate when they're online and available to receive work items from a

View: [All ▼]   Create New View

	New

Action	Status Name ↑
Edit	Available
Edit	Break
Edit	Day Dreaming
Edit	Lunch
Edit	Offline
Edit	Wrap Up

Each status is flagged as either Online or Busy. For each status that is marked as Online, you will need to specify a service channel to associate the presence status.

Presence Statuses

Let agents indicate when they're online and available to receive work items from a specific serv

| | Save | Cancel |

Basic Information

Status Name	Available
Developer Name	Available

▼ Status Options

Choose whether agents are online or busy when they use this status. Online statuses let items.

- ⦿ Online
- ○ Busy

▼ Service Channels

Select one or more service channels to assign to this presence status. Agents logged into

Available Channels   **Selected Channels**

Add
▶

Remove
◀

Selected Channels:
Live Agent
Outbound Campaign Chan

| | Save | Cancel |

Configure Enabled Service Presences Status Access

Next, we need to assign access to these statuses by going to Profiles in Salesforce Setup, and ensure that the agent will be able to access the statuses that map to their Amazon Connect statuses.

In the Salesforce Setup, under Manage Users, select Profiles, then select the user profile to edit. Scroll down the page until you find the section labeled "Enabled Service Presence Status Access".

SETUP
Profiles

StdExceptionTemplate
Unauthorized
UnderConstruction

Enabled External Data Source Access   [Edit]

No External Data Sources enabled

Enabled Named Credential Access   [Edit]

No Named Credential enabled

Enabled Service Presence Status Access   [Edit]

Service Presence Status Name

Available
Day Dreaming   *Matches Connect Statuses*
Offline
On Break

Enabled Custom Permissions   [Edit]

Click the "Edit" button and on the next page, "Add" presence statuses you want to have enabled for the user.

Enable Service Presence Status Access

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

Configure Presence Status Synchronization Rules

The Amazon Connect Salesforce CTI Adapter provides a rules-based presence status synchronization system allowing for flexibility in mapping agent states between Amazon Connect and Salesforce Omnichannel.

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.

Presence Status Configuration Rules

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 pervious 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

The configuration setting illustrated in the previous example, are described below:

- source -- The triggered event. In this case, an Amazon Connect agent state change is the triggering event

- destination -- The target system on which to execute the action

- criteria -- The values and comparator that will be evaluated to determine whether or not to trigger the action

  - operandA -- The left side of the criteria statement

- operandB -- The right side of the criteria statement

  - comparator -- The comparison operator used to evaluate the criteria statement

- state -- The target agent state of the destination system

Example rule:

Summary: This rule is triggered when the Connect agent's state is changed (Source). If their state is changed to the static value (Operand B) "Lunch" (Operand B Value), then the Salesforce Agent's state (Destination) is set to Lunch (Value).

Contact Attributes Display

Amazon Connect allows for user defined Contact Attributes to be attached to a phone call within Contact Flows. This can be used to track caller inputs, IVR selections, outcomes of an interaction with Amazon Lex, or data lookup from backend systems through Lambda. Some of those values can be useful to be displayed to the agent to speed up data input or skip processes such as authenticating the customer.

Amazon Connect allows data classifications for contact\'s attributes. The classification engines scans configured metadata and identifies text and links attributes to display in Attributes and Links sections respectively.

To configure a contact attribute for display within embedded CCP:

In the top navigation bar, select the "+" icon.

Select "AC CTI Adapters"

Create a new adapter. Fill in the CTI Adapter Name, and Amazon Connect Instance Alias. For the Call Center Definition Name, type in ACConsoleAdapter. Select Save.

1. Log in to your Salesforce Org.

2. From the top right corner, select the **Sales** application.
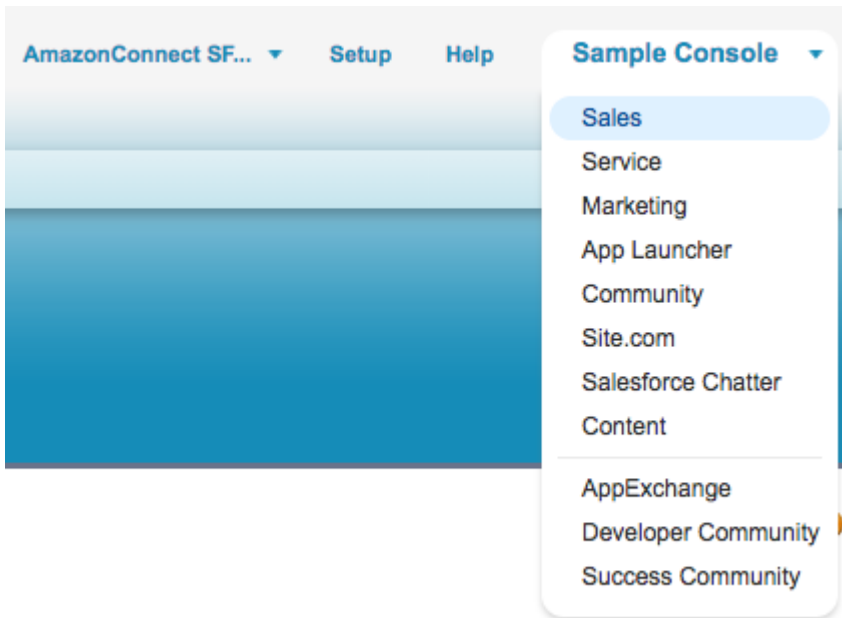
All Tabs

Use the links below to quickly navigate to a tab. Alternatively, you can add a tab to your display to better suit the way you work.

View: [All Tabs ▾]

🗄 **AC Contact Channel Analytics**		📄 **Documents**
📕 **AC Contact Trace Records**		🗐 **Duplicate Record Sets**
📁 **Accounts**		📩 **Engagement Channel Types**
🌐 **AC CTI Adapters**		🗃 **External Managed Accounts**
🖥 **AC Real Time Queue Metrics**		☁ **Files**
🎙 **AC Voicemail Drops**		🪙 **Forecasts**
📊 **Analytics**		👥 **Groups**
📱 **App Launcher**		🏠 **Home**

3. Select **AC CTI Adapters** and select your adapter

    4. Scroll down to the attributes section and select **New AC CTI Attribute**
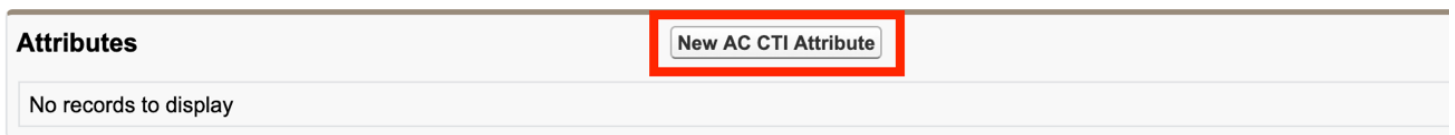
    5. Provide a **CTI Attribute Name**, for example: authenticated

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

    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**

13. Open the Amazon Connect Contact Flow Designer and drop *Set > Set Contact Attributes* block to your Contact Flow. Set the attribute based on your business logic. For example:

14. Place and inbound call and ask to speak with an agent. Accept the incoming call and check if Contact Attribute is displayed in the embedded CCP.

There are additional features that can be used to further customize CTI attributes.

AC CTI Adapter
ACClassicAdapter
« Back to List: Call Centers

Attributes [1] | CTI Flows [0] | Presence Sync Rules [0] | Features [0]
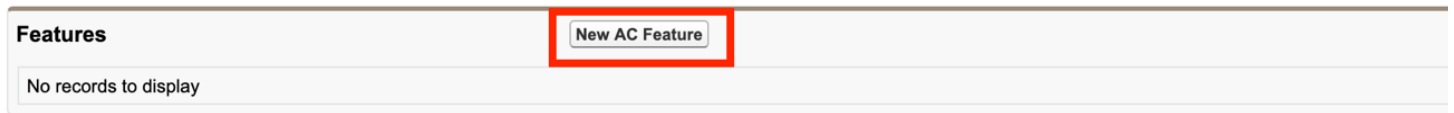
AC CTI Adapter Detail   Edit | Delete | Clone | Sharing

CTI Adapter Name	ACClassicAdapter	Owner	
Amazon Connect Instance Alias	ac-test-east-1	Amazon Connect Instance Region	
Custom Ringtone		Call Center Definition Name	
Softphone Popout Enabled	✓	Debug Level	
Medialess	☐	Presence Sync Enabled	

1. In the Sales application, navigate to your CTI Adapter your CTI Adapter

Features	New AC Feature
No records to display	
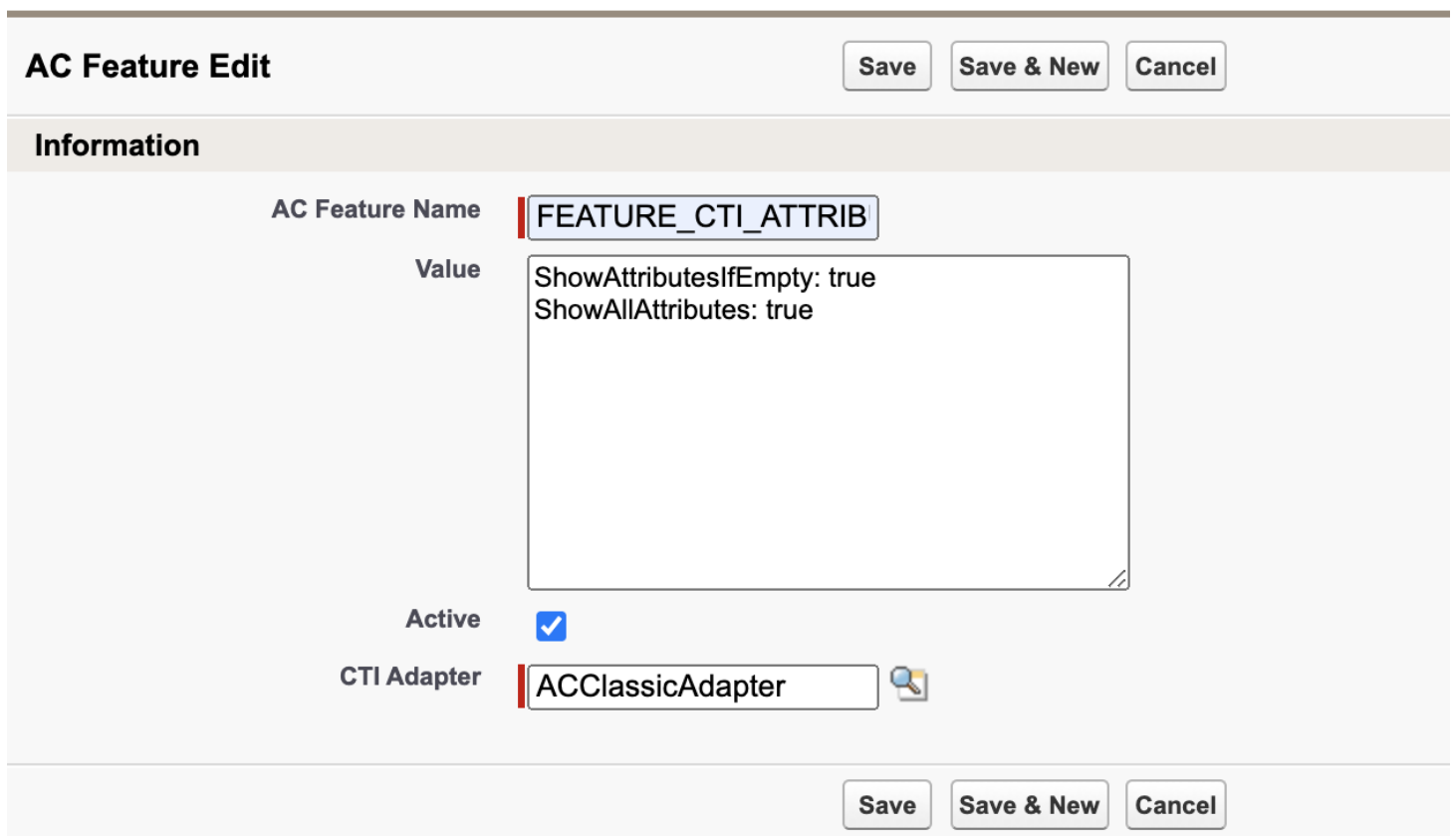
2. Scroll down to the Features section. Select **New AC Feature**.

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

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

    a. **ShowAttributesIfEmpty** (Boolean, default true): show attributes text box when contact has no attributes

    b. **ShowAllAttributes** (Boolean, default false): show all attributes, including attributes with no value

AC Feature Edit   Save Save & New Cancel

Information

AC Feature Name: FEATURE_CTI_ATTRIB

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

Active: ☑

CTI Adapter: ACClassicAdapter

Save Save & New Cancel

5. Select **Save**

Call Recording Playback

The Adapter comes with a Visualforce component that provides users with the ability to download a call recording created within Amazon Connect from a Salesforce page. You can play the call recordings on either the Contact Channel Analytics page or the Task page.

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:

Note: If you are expecting more than 1000 concurrent calls, you may have to increase the timeout for the `sfCTRTrigger` 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**
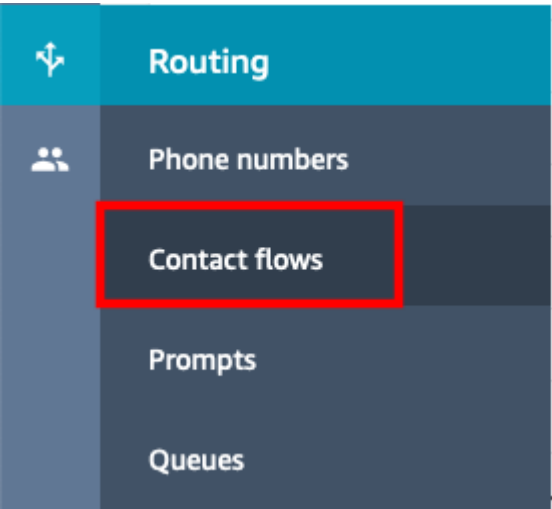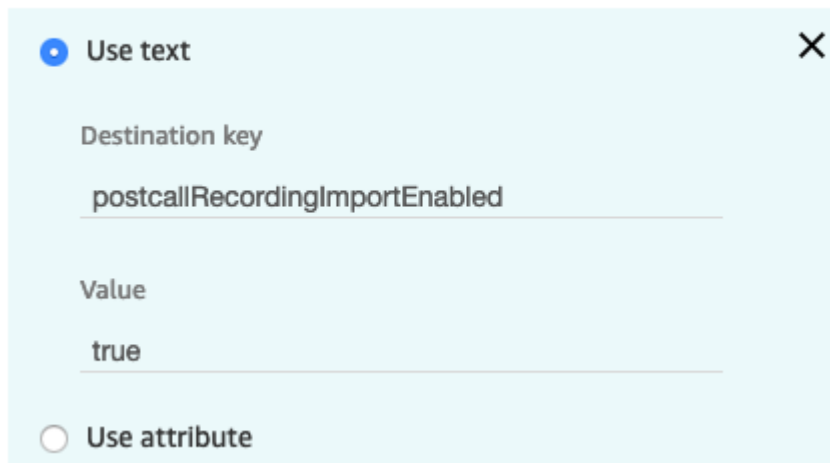
3. Open the contact flow that you want to use to enable call recording import. This contact flow must have Amazon Connect's native recording turned on.

4. In you 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
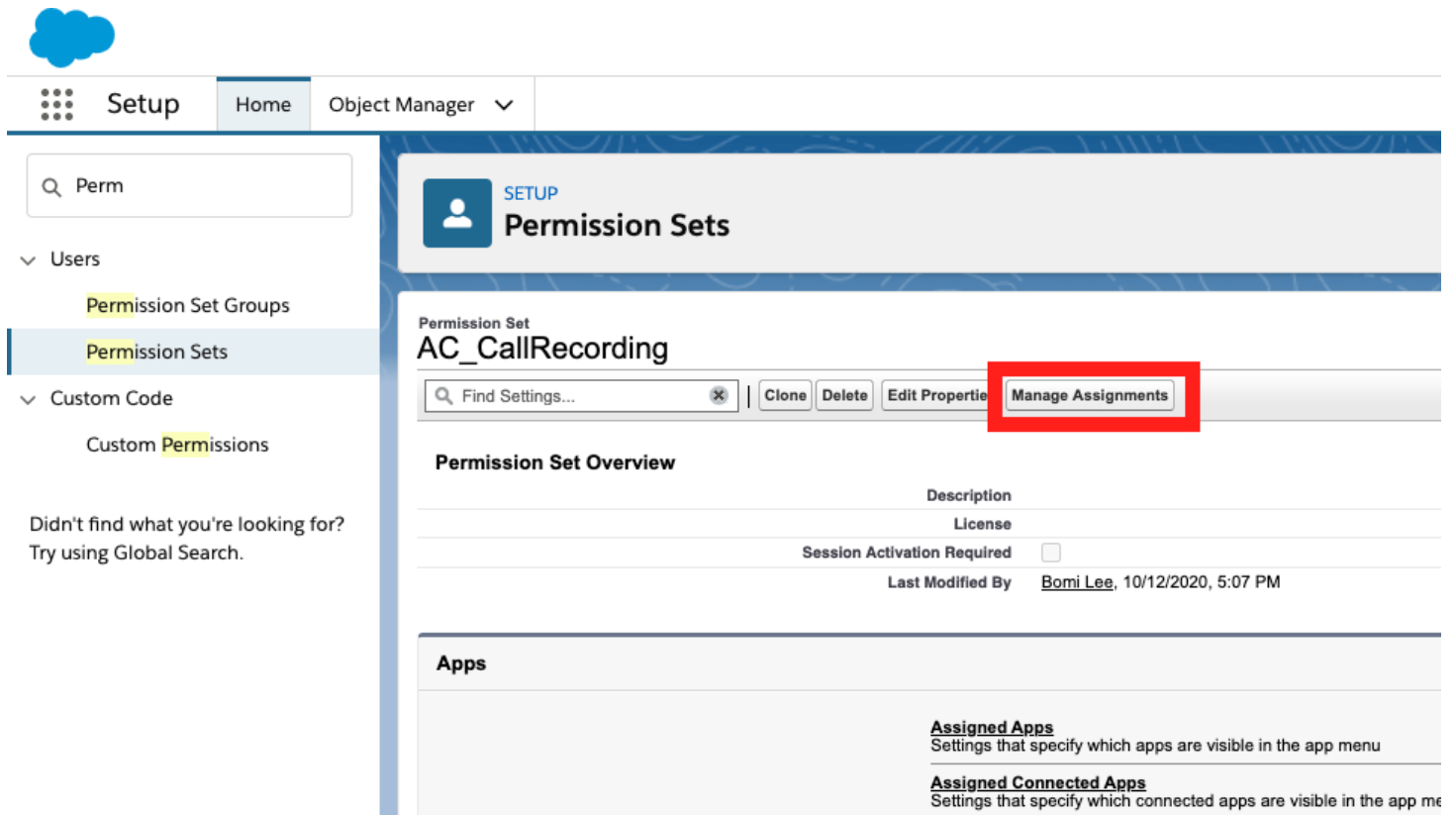
Attribute to save

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
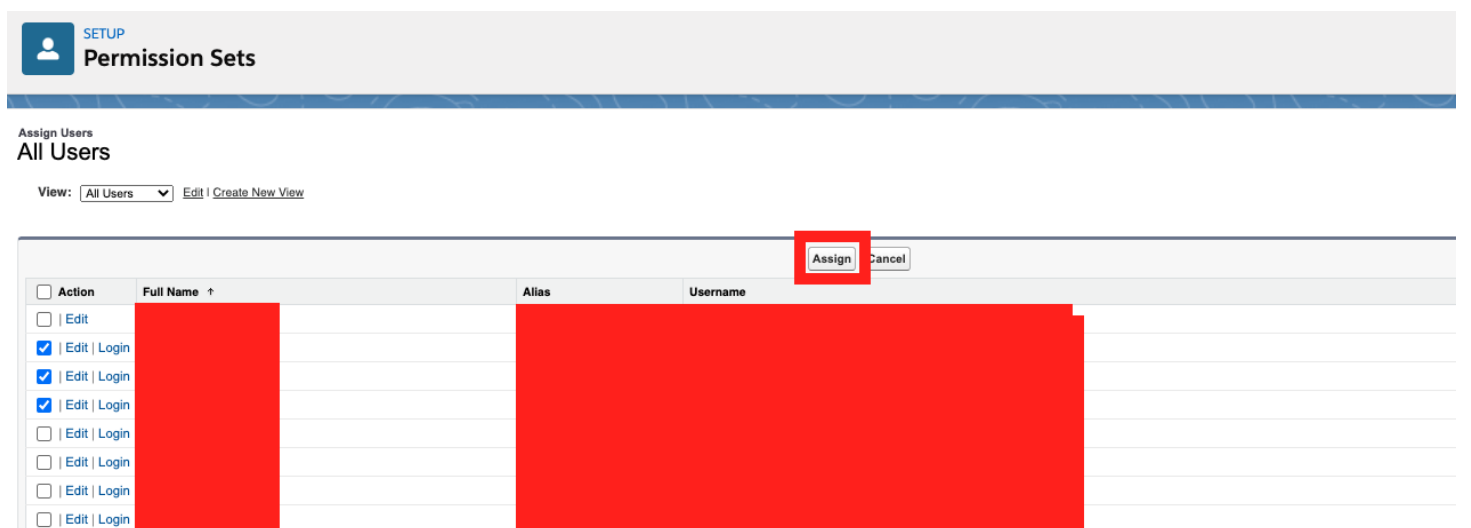
This step is only necessary for non admin user accounts.

1. In the setup search box, search for "Permission sets". Select the "AC_CallRecording" permission set. Select "Manage Assignments".

2. Select "Add Assignments". Add the users that should have access to the audio recordings and select "assign".

Enable call recording streaming on the Contact Channel Analytics page

1. Navigate to the Sales Console, and select the **+** button on the top bar.

2. Select **AC Contact Channel Analytics**.

All Tabs

Use the links below to quickly navigate to a tab. Alternatively, you can add a tab to your display to better suit the way you work.

View: [All Tabs ▾]

📦 **AC Contact Channel Analytics**	👥 **Individuals**
📙 **AC Contact Trace Records**	📖 **Knowledge**
📁 **Accounts**	🏃 **Leads**
🌐 **AC CTI Adapters**	🗄 **Libraries**
🔧 **AC Guided Setup**	🛡 **Licenses**
🎙 **AC Voicemail Drops**	✉ **List Emails**
🔲 **App Launcher**	🗺 **Locations**
📝 **Article Management**	⊘ **Location Trust Measures**

3. Select into a record and then select **Edit Layout**.

📦 AC Contact Channel Analytics
CCA 000000

Customize Page   Edit Layout

Notes & Attachments [0]

AC Contact Channel Analytics Detail   [Edit] [Delete] [Clone]

Contact Channel Analytics Name	CCA 000000
Contact Id	512d2ff1-f9d6-4680-90fc-b4af0afa1008
Keywords	
Named Entities	
Sentiment	
Dominant Language	
Channel	

4. Select **Visualforce Pages** and then drag **AC_RecordingViewer** into your desired location.

AC Contact Channel Analytics Layout ▾

[Save ▾] [Quick Save] [Preview As... ▾] [Cancel] | [↺ Undo] [↻

🔍 **Quick Find** | Page Name

Buttons
Quick Actions
Mobile & Lightning Actions
Expanded Lookups
Related Lists
Report Charts
Visualforce Pages

+🔲 **Section**
+🔲 **Blank Space**
AC_RecordingViewer
AC_Something

5. Select **Save**, and observe that the audio recording component in the Contact Channel Analytics page.

Enable call recording streaming on the Task page

The below steps will add an audio recording component to tasks created from this CTI flow (or any tasks with the CallObject field set to the contactId of the call).

1. Click into a task in your Salesforce org

2. Click "Edit Layout"

3. Drag the "ACSFCCP_CallRecordingTask" item to the desired are of the layout to have that information appear on the agent's screen.

Task Layout ▼

Save ▼ | Quick Save | Preview As... ▼ | Cancel | ↶ Undo | ↷ Redo | 🔲 Layout Properties

Buttons	🔍 **Quick Find**	Page Name	✕
Quick Actions			
Mobile & Lightning Actions	➕🔲 **Section**	ACSFCCP_CallTask	
Expanded Lookups	➕🔳 **Blank Space**	ACSFCCP_PostCallU...	
Related Lists	AC_CallRecordingTask		
Report Charts	ACSFCCP_CallRecor...		
Visualforce Pages			

🔷 New Call

Click to add topics: ⓘ

👤 👥 ☰   1 7 31

« Back to List: Activities

Task Detail   Edit | Delete | Create Follow-Up Task | Create Follow-Up Event

▼ **Task Information**

Assigned To	👤 Bomi Lee		Re
Subject	New Call		
Due Date			

▶ 0:00 / 0:00 ━━━━━━━━━ 🔊

4. To have access to the recording, the user must have an active session with Amazon Connect. This can be achieved by either logging in to the CCP softphone, or by logging in to Amazon Connect outside of Salesforce. After the session is established, a page refresh should make the player appear.

Call Display on the Account Page

The Adapter comes with a Visualforce Page that displays all phone calls made using Amazon Connect for an Account. It differs from thee standard Activity Related List because if filters all other activities out and focuses on the phone calls only.

To show the recent calls on the Account details page, add the "ACSFCCP_CallLogging_View" Visualforce Page to the Account Page layout. It is recommended to create a dedicated section with a 1-Column layout for this purpose, and to make the Visualforce Page scrollable.

1. Log in to your Salesforce Org

2. Navigate to **Setup** then in type *Object Manager* in Quick Find

Setup   Home   Objec

Q   object manager

⌄ Objects and Fields

Object Manager
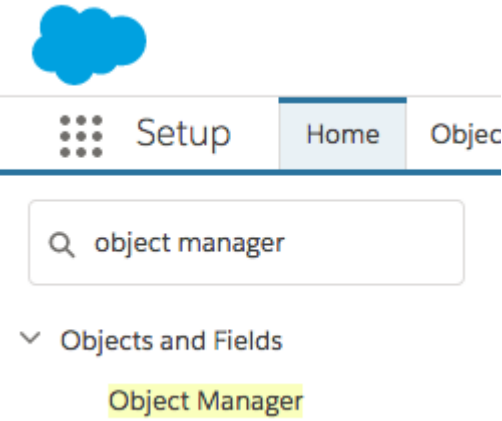
3. Click on the "Account" object

SETUP
Object Manager
34 Items, Sorted by Label

LABEL	▲	API NAME	DESCRIPTION
Account		Account	
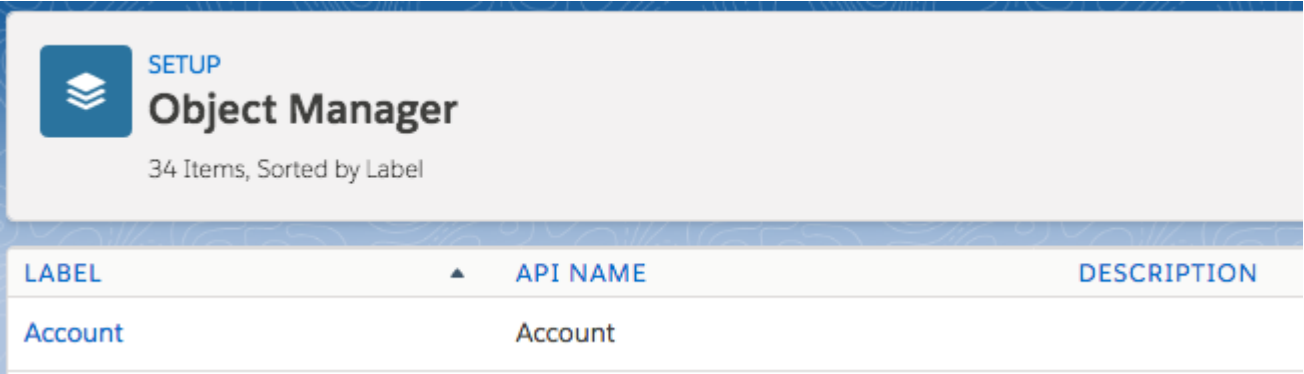
4. Click on the "Page Layouts"

SETUP > OBJECT MANAGER
Account

Details

Fields & Relationships

Page Layouts

Lightning Record Pages

Buttons, Links, and Actions

Compact Layouts

Object Limits

Record Types

Page Layouts
4 Items, Sorted by Page Layout Name

PAGE LAYOUT NAME

Account (Marketing) Layout

Account (Sales) Layout

Account (Support) Layout
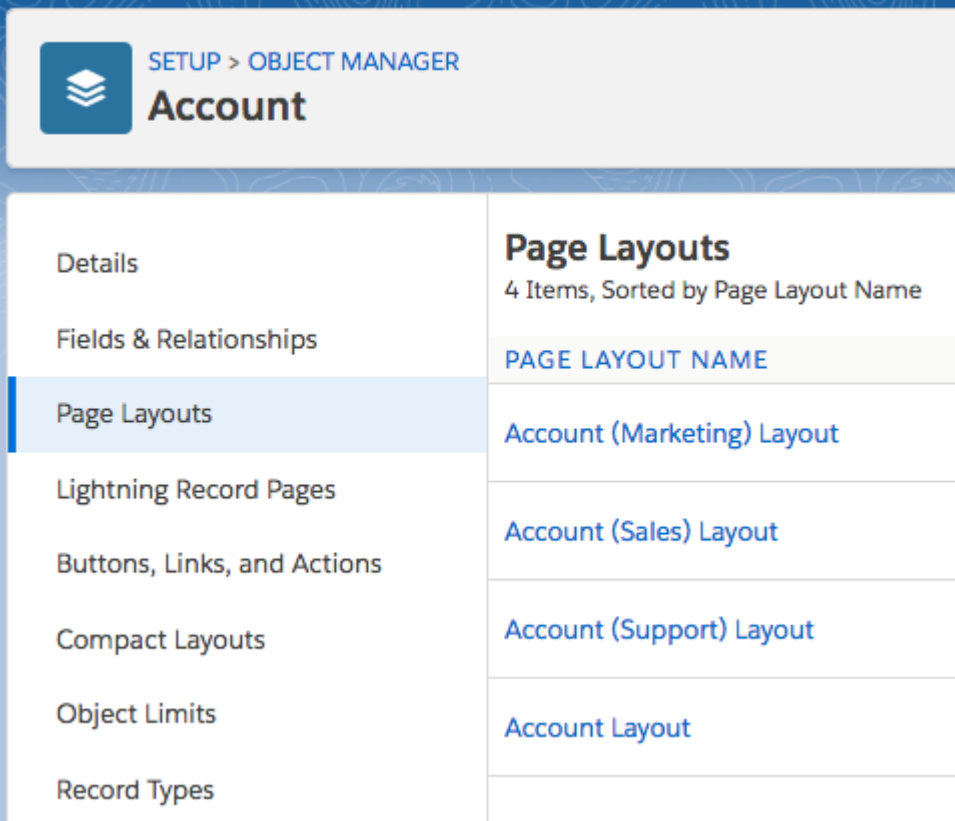
Account Layout

5. Click on the "Account layout" and the layout designer will open
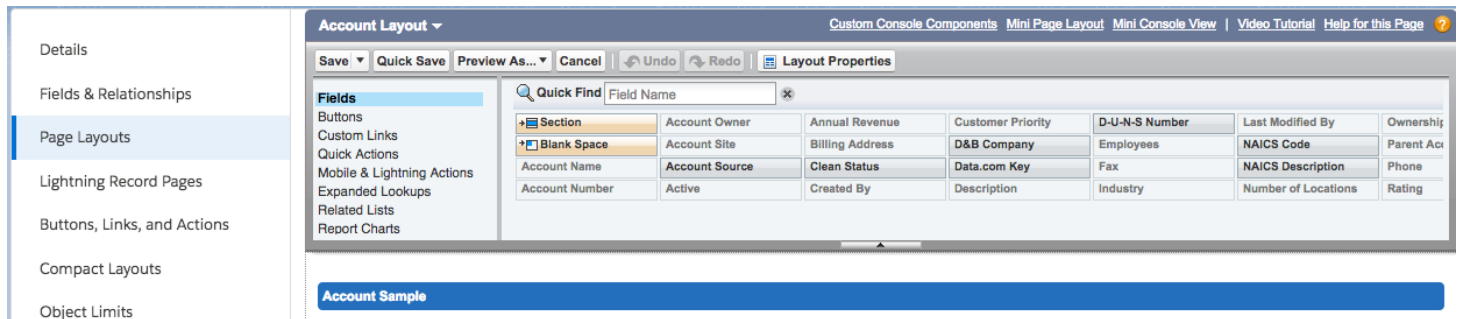
6. From the left-hand side menu, select "Fields"
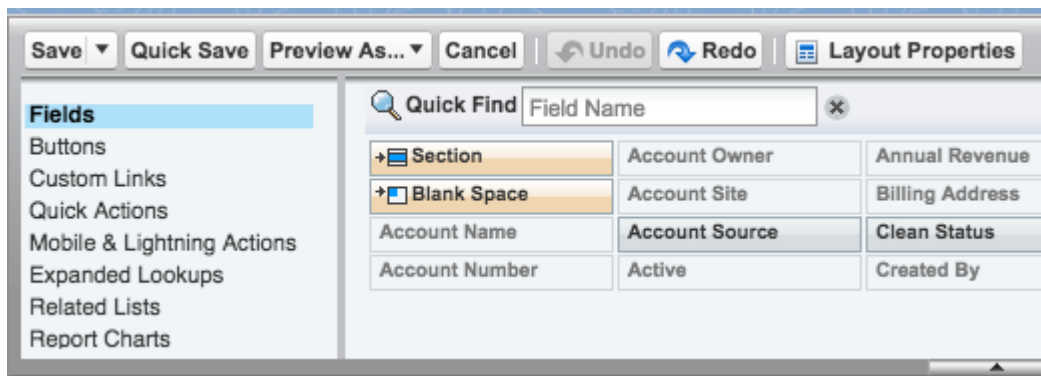
6. Drag and Drop "Section" item to add a new section on the layout
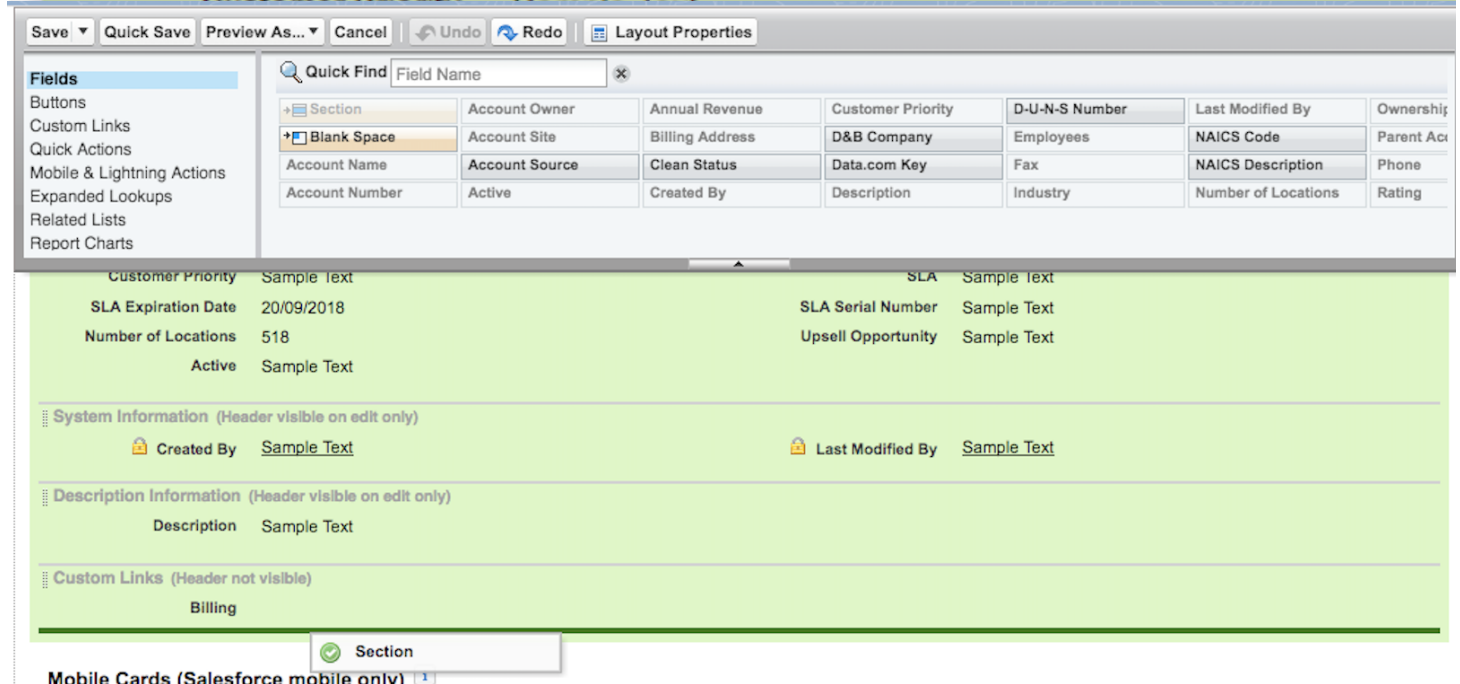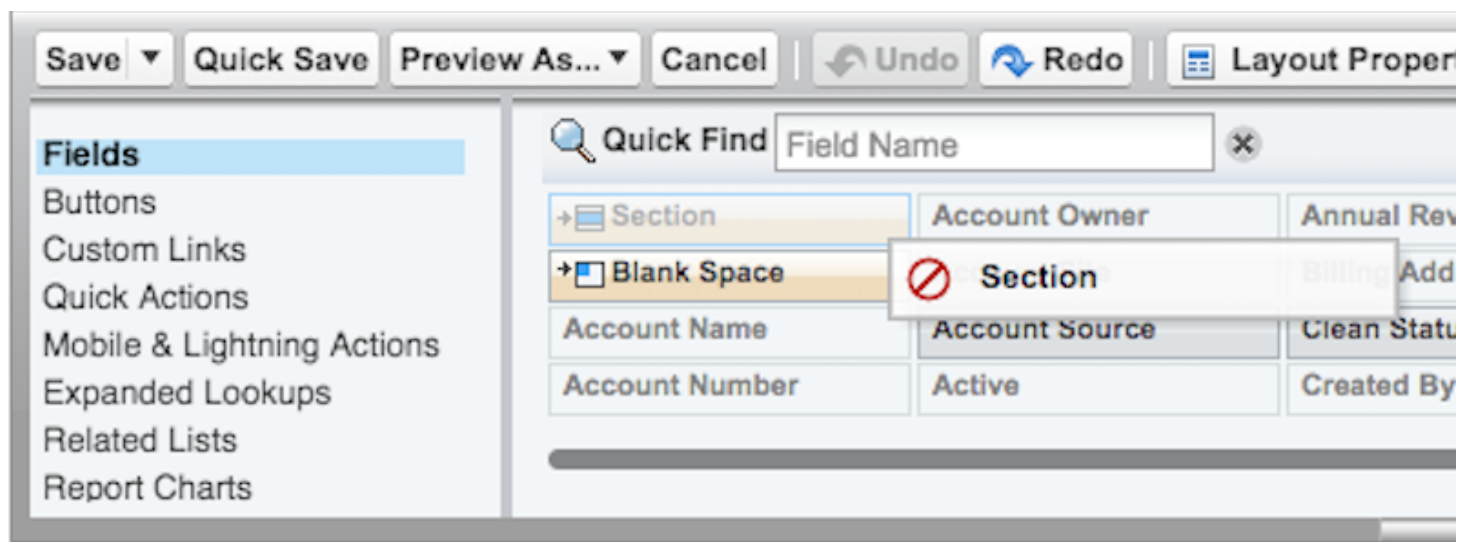
8. On the pop-up form, set Section Name ("Call Logging View") and 1-Column Layout

Section Properties

Section Name	Call Logging View
Display Section Header On	☑ Detail Page
	☑ Edit Page

Layout

○ 1-Column   ○ 2-Column

[OK] [Cancel]

9. Click "OK"

Description Information (Header visible on edit only)

Description   Sample Text

Custom Links (Header not visible)

Billing

Call Logging View

10. From the left-hand side menu, select Visualforce Pages:

Save ▼ Quick Save Preview As... ▼ Cancel | ↶ Undo ↷ Redo | ⊞ Layout Properties

Custom Links
Quick Actions
Mobile & Lightning Actions
Expanded Lookups
Related Lists
Report Charts
Components
Visualforce Pages

🔍 Quick Find Page Name ✖

→⊞ Section
→⊡ Blank Space
ACSFCCP_CallLoggi...

11. Drag and drop "ACSFCCP_CallLogging_View" item to the "Call Logging View" section
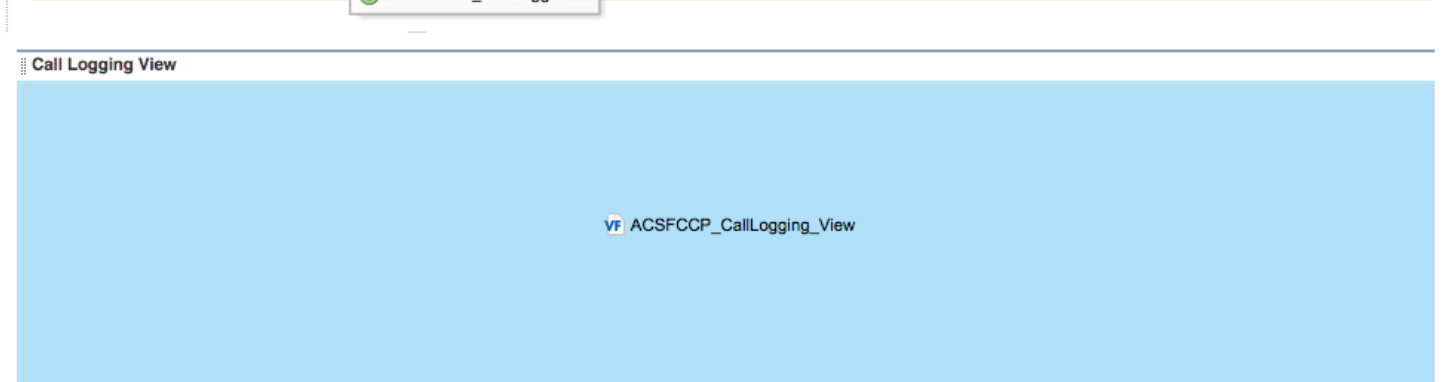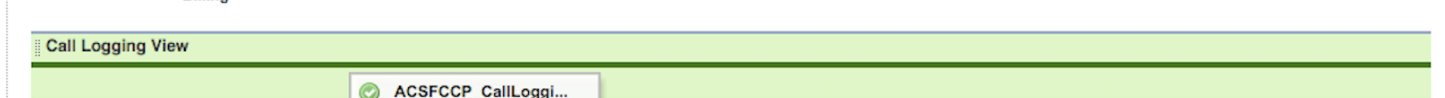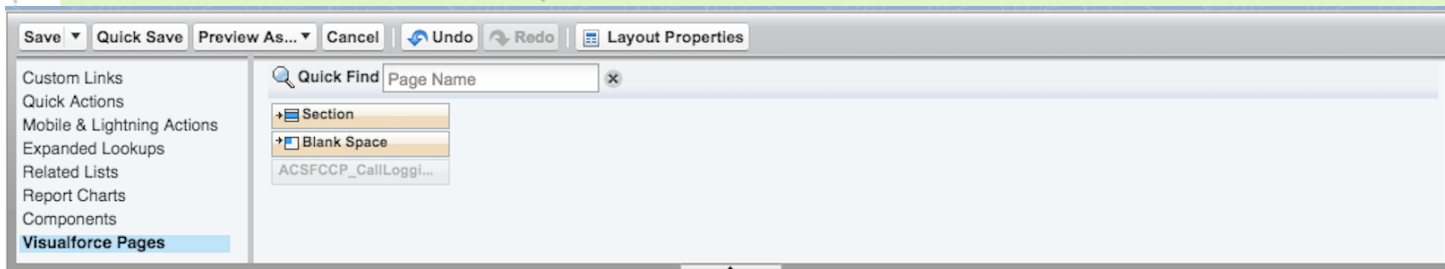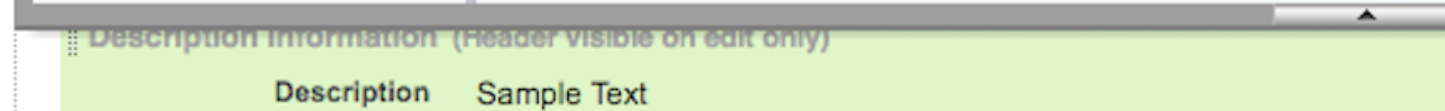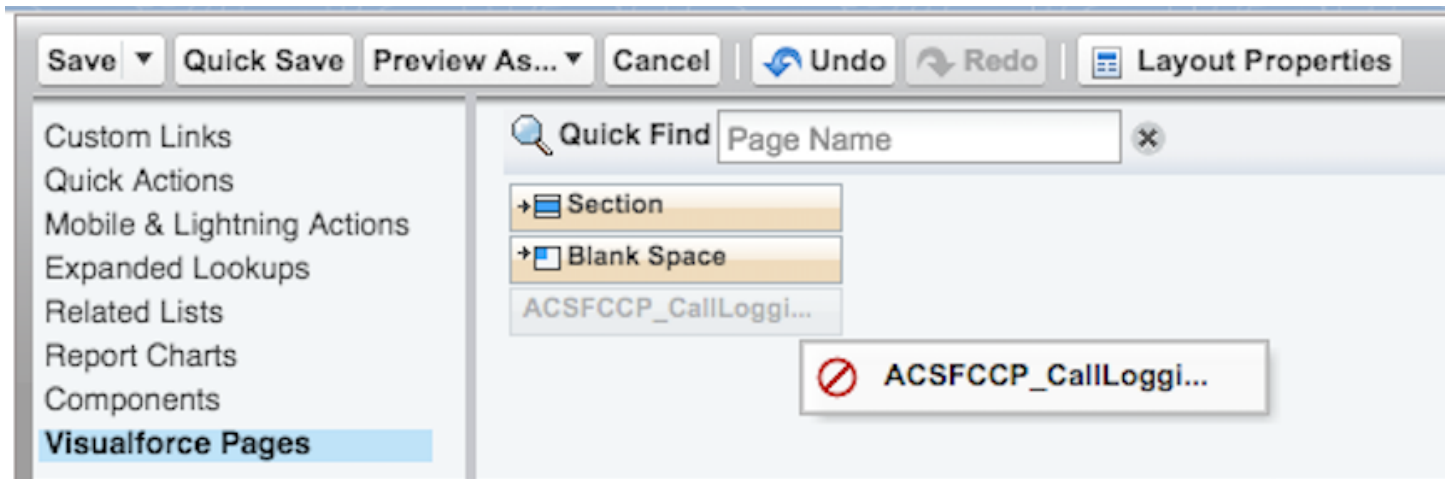
12. Hover the newly added component and click on the "Setting" icon
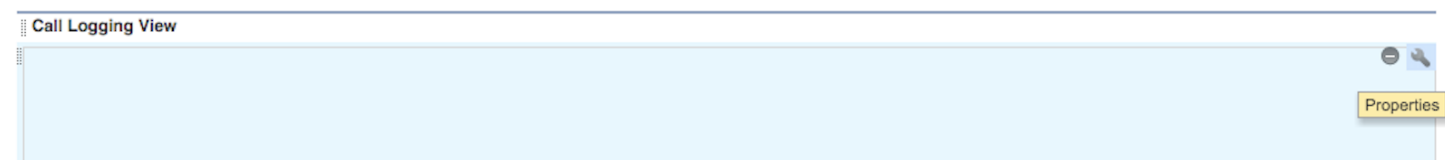
Check "Show scrollbars" and click "OK"

Visualforce Page Properties

Width (in pixels or %)	100%
Height (in pixels)	200
Show scrollbars	☑
Show label	☐

OK   Cancel

13. Click the "Save" button in the top-left corner

Save ▼   Quick Save   Preview As... ▼   Cancel

Custom Links
Quick Actions
Mobile & Lightning Actions

🔍 Quick Find

+🗔 Section

14. Make some phone calls, ask to speak with an agent. Open the Account, then select "Details" tab

Account
TestAccount1 🖧

Type   Phone   Website

RELATED   **DETAILS**   NEWS

15. Scroll down the Details page until you see the "Call Logging View" section

CALL DATE	PHONE NUMBER	CALL TYPE	PHONE CALL DURATION	CALL IDENTIFIER
Thu Jun 07 16:59:54 GMT 2018	+44	Inbound	0 min 31 sec	805f8089-3646-4f9b-ae73-be9236aa26a1
Thu Jun 07 08:17:07 GMT 2018	+44	Inbound	0 min 23 sec	a0a42712-6d3d-4700-b650-d6b8aae189cc
Thu May 17 06:55:21 GMT 2018	+44	Inbound	0 min 10 sec	37491b40-85a7-4feb-a388-fd2c69ea8eb2
Tue May 08 18:26:50 GMT 2018	+44	Inbound	0 min 38 sec	994fbea6-94a6-4cf1-a118-a7c31cc39099
Tue May 08 18:00:11 GMT 2018	+44	Outbound	0 min 4 sec	40c6ad53-429a-42a2-b4c0-d46b20c109b6

For more information on how to add a Visualforce Page to a Page layout, please visit:

https://trailhead.salesforce.com/en/modules/visualforce_mobile_salesforce1/units/visualforce_mobile_salesforce1_layouts_cards

Outbound Campaign Calls

The package allows for running Outbound Call Campaigns using Salesforce Omni Channel routing and Amazon Connect. To enable outbound campaigns, the Custom Object called **Amazon Connect Call Campaign**, which comes bundled with the Adapter, must be configured to be routed by Salesforce Omni.

Outbound call campaigns are a feature of the package that utilizes Omni-Channel routing and Amazon Connect. To use the Call Campaigns, we must first configure the following items:

1. Create a Queue for users to manage a workload and configure it for the custom object.

2. Create a Service Channel and configure it for the custom object.

3. Create a Routing Configuration.

4. Associate the Routing Configuration with the Agents and the Queue.

5. Create a Presence Status and Configuration and assign it to the Users.

First, we must enable omni-channel. To do this, navigate to "Setup" and type "omni" into the Quick Find box, then select "Omni-Channel Settings" from the menu.

Place a check in the checkbox for "Enable Omni-Channel".

Omni-Channel Settings

Omni-Channel Settings

Welcome to Omni-Channel!

Omni-Channel is a comprehensive customer service solution that lets contact centers push work to Omni-Channel lets you create work items from your Salesforce records—including cases, chats, lea objects—and route them to the most qualified, available agents in your organization, all in real time. integrates seamlessly into the Salesforce console, so it's easy for your support agents to use.

With Omni-Channel, you can manage the priority of work items to make sure that critical assignmen quickly. You can manage your agents' capacity and availability for work to ensure that they're given assignments that they can handle. You can also define which agents can work on different types of Omni-Channel routes all of these assignments to the correct agents automatically. Agents no longer work items manually from a queue, and managers no longer have to triage or dispatch work to ager most qualified available agent in real time!

ℹ️ **Show diagram** ▼

First, you need to enable Omni-Channel. Then, **create Service Channels**.

Enable Omni-Channel	☑️ ← This must be checked
Use Skills-Based Routing ⓘ	☐
	Save Cancel

rk Limits

rk Triggers

rk Validatio...

nel Settings

onfigurations

ecline Reaso...

atuses

nfigurations

nnels

ces

sence Limits

sence Triggers

sence Valida...

looking for?

Create a Queue

Navigate to "Setup" and type "queue" into the Quick Find box, then select "Queues" from the menu.

You may see some entries if you are already using Omni-Channel for other things in your instance. We want to create a new queue for the purpose of handling these outbound call campaigns.

On the Queues screen, click the "New" button. Fill-in the required fields and then scroll down the screen until you see "Supported Objects". Select the Amazon Connect Call Campaign object and click the "Add" button.

SETUP

Queues

Supported Objects

Select the objects you want to assign to this queue. Individual records for those objects can then be owned by this

Available Objects   **Selected Objects**

Amazon Connect Historical Report Data
Agent Work
Amazon Connect Call Campaign ← 1
Case
Goal
Knowledge Article Version
Lead
Live Agent Session
Live Chat Transcript
Macro
Metric
Order
Quick Text
Scorecard

--None--

Add
▶ 2
◀
Remove

Queue Members

To add members to this queue, select a type of member, then choose the group, role, or user from the "Available M
the Queue is Public Read/Write/Transfer, you do not need to assign users to the queue, as all users already have

Search: Users ▼ for: [   ] Find

Available Members   **Selected Members**

User:
User:
User:
User:

--None--

Scroll down to the Queue members to select the members of the queue. You can assign the queue by Public Groups, Roles, Roles and Subordinates, or Users. If you need to wade through many users, groups, or roles, feel free to use the "Find" feature.

Once you have found the entity you'd like to add, select it and click Add, just like we did with the object in the previous step.

User Presence
Coaching
Feedback
Feedback Question
Feedback Question Set
Feedback Request
Feedback Template
Performance Cycle

Remove

Queue Members

To add members to this queue, select a type of member, then choose the group, role, or user from the "Avail
the Queue is Public Read/Write/Transfer, you do not need to assign users to the queue, as all users already

Search: Users   for: Find

Available Members   **Selected Members**

User: --None--
User:
User:
User:

Add

1

2

Remove

3

Save   Cancel

Now, our queue has been created and assigned to users.

Queues

Queues allow groups of users to manage a shared workload more effectively. A queue is a location where records can be routed to await processing by a group member. The records remain in the queue until a user accepts them for processing or they are transferred to another queue. You can specify the set of objects that are supported by each queue, as well as the set of users that are allowed to retrieve records from the queue.

View: All ▾ Edit | 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 | **All**

New

Action	Label ↑	Queue Name	Queue Email	Supported Objects	Modified By	Last Modified Date
Edit | Del	Call Campaign	Call_Campaign		Amazon Connect Call Campaign		21/09/2018 04:07
				Amazon Connect Historical Report Data; Amazon Connect Call Campaign; Agent Work; Case; Goal;		

Help for this Page

Create a Service Channel

Click into the Setup search box in the left navigation panel and type "Service Channel". Then click "Service Channels".

∨ Feature Settings

　∨ Service

　　∨ Omni-Channel

　　　Service Channels

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

SETUP

Queues

Queues

Queues allow groups of
queue until a user accep
allowed to retrieve recor

View: [All ▼] Edit | Cr

Action	Label ↑
Edit | Del	Call Campai

Click "New" to create our new Service Channel.

Service Channels

Service Channels let you turn any Salesforce object—such as a case, lead, SOS session, or even a custom object—into a work record. Omni-Channel then plucks these work items from their queues—like flowers from the garden of agent productivity—and routes them to your agents in real time.

Does your organization use Live Agent for chats or SOS for video calls? If so, you'll notice that Salesforce creates those Service Channels for you automatically, so you can get up and running using Live Agent and SOS with Omni-Channel right away.

ℹ **Show diagram** ▼

Let's get this party started and create a new Service Channel. After you create a Service Channel, **create a Routing Configuration** to determine how work items are pushed to your agents.

View: [All ▼] Create New View

We have resources that w
up Omni-Channel for you

Create Service Channel
Need help creating your fi
Salesforce help.

Set Up Omni-Channel - ,
Snuggle up with a cup of
end-to-end process of set

A | B | C | D | E | F | G | H | I | J | K | L | M | N | C

	New	
Action	**Service Channel Name** ↑	**Developer Name**
Edit	Live Agent	██████████

Service Channels

Service Channels let you turn any Salesforce object—such as a case, lead, SOS session, or even a custom object—into a work record. Omni-Channel then plucks these work items from their queues—like flowers from the garden of agent productivity—and routes them to your agents in real time.

ℹ **Show me an example** ▼

After you create a Service Channel, **create a Routing Configuration** to determine how work items are pushed to your agents.

We have resources that will help yo
up Omni-Channel for your organizat

Create Service Channels
Need help creating your first Service
Salesforce help.

Service Channel Settings
Learn more about what individual se

Set Up Omni-Channel - implemen
Snuggle up with a cup of cocoa and
end-to-end process of setting up On

Save	Cancel

Basic Information

Service Channel Name	Call Campaign Channel ▤	← 1
Developer Name	Call_Campaign_Channel	
Salesforce Object	Amazon Connect Call Campaign ▼	← 2
Custom Console Footer ⓘ Component	[ ] 🔍	

3

Save	Cancel

In the new Service Channel form, enter your desired Service Channel Name (step 1). The Developer Name field will auto-populate based on the Service Channel Name content. Then, select the [Amazon Connect Call Campaign]{.ul} object (step 2). Finally, save the new Service Channel (step 3).

Create a Routing Configuration

Now, we need to create a routing configuration. Enter "routing" into the search box in the left navigation and click "Routing Configurations".

Q routing

∨ Feature Settings

  ∨   Service

    ∨   Omni-Channel

        Routing Configurations

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

⚙

SET

Service

« Back to List:

Basic Infor

S

Custom Conso

1. On the Routing Configurations landing page, click "**New**".

Routing Configurations

Routing Configurations determine how work items are routed to agents. They let you prioritize the relative importance and size of work items across your Omni-Channel Queues. Since not all work items take the same amount of effort, Routing Configurations let you control the relative size of items in your Queues so agents can focus the right amount of attention on their work. That way, the most important work items are handled accordingly, and work is evenly distributed to your agents. After all, we want to make sure every agent gets to have an equal amount of fun, right?

ℹ️ Show diagram ▼

After you create your Routing Configuration, you need to associate Routing Configurations with **Queues**. The items in that Queue are pushed to your agents based on the settings in your Routing Configuration. For routing to work correctly, make sure all of your agents are assigned to your Omni-Channel Queues.

We have
up Omni

Create F
Need he
Salesfor

Set Up C
Snuggle
end-to-e

View: [All ▼] Create New View

A | B | C | D | E | F | G | H | I | J

New

Action	Routing Configuration Name ↑	Developer Name	Routing Priority	Routing Model
Edit	Del	TestRouting	TestRouting	1	Most Available

We have resou
up Omni-Chann

Create Routin
Need help crea
Salesforce help

Routing Confi
Learn more abo

Set Up Omni-C
Snuggle up with
end-to-end proc

Save   Cancel

Basic Information

Routing Configuration Name [Call Campaign Routing Co]   → 1

Developer Name [Call_Campaign_Routing_C]

Overflow Assignee ⓘ

⚠️ If you don't give the overflow assignee access to the object types in your queues and set an overfl assignments won't work.

[User ▼] [   ] 🔍

Optional

Routing Settings

The routing priority determines the order in which work items across your Omni-Channel queues get pushed to your agents. Lower-priority iter

The routing model determines how to evenly distribute work items to your agents. It acts as a tiebreaker if two or more agents qualify to take c

Enter the Routing Configuration Name (step 1), and the Developer Name will auto-populate. If you'd like to set an Overflow Assignee, you can optionally do that at this point. The overflow assignee will receive work if your organization reaches its Omni-Channel limits. This setting has no effect until the limits are reached.

Next, you must configure the Routing Settings. First, (step 1) enter the priority of the work across the Omni-Channel queues. Second (step 2), select the model to use to act as the tie-breaker between agents. Third, (step 3) specify the units of capacity or percentage of capacity of the work items in the queue. Finally, (step 4), click "Save".

Routing Configurations

« Back to List: Routing Configurations

Basic Information
[Edit] [Delete]

Routing Configuration Name	Call Campaign Routing Config
Developer Name	Call_Campaign_Routing_Config
Overflow Assignee	

▼ Routing Settings

Routing Priority	2
Routing Model	Most Available
Push Time-Out (seconds)	
Units of Capacity	5.00
Percentage of Capacity	

▼ Related Queues

Label	Queue Name

You have created your Routing Configuration.

Now, we need to assign the Routing Configuration to our queue. From the Quick Find in Setup, enter "queues" and then select "Queues" (step 1).

Click on the "Edit" link next in the row of the queue that was created earlier (step 2).

Use the magnifying glass button to search for our new Routing Configuration created earlier.

🔍 Lookup

Search... | Go!

You can use "*" as a wildcard next to other characters to improve your search results.

Search Results

Routing Configuration Name	Developer Name	Routing Priority	Routing Model	Units of Capacity	Percentag
TestRouting	TestRouting	1	Most Available	5.00	
Call Campaign Routing Config	Call_Campaign_Routing_Config	2	Most Available	5.00	

Select our Routing Configuration from the Lookup window.

👤 Queues

Edit Queue
Call Campaign

Queue Edit   Save | Cancel

Queue Name and Email Address

Enter the name of the queue and the email address to use when sending notifications (for example, when a c
When an object is assigned to a queue, only the queue members will be notified.

Label	Call Campaign
Queue Name	Call_Campaign
Queue Email	
Send Email to Members	☐

Configuration with Omni-Channel Routing

If your organization uses Omni-Channel, you can link queues to a routing configuration. This will push work fr
Configurations.

Routing Configuration   Campaign_Routing_Config 🔍

Supported Objects

Click "Save" to store our changes.

The next steps are to create and configure the Presence Statuses.

Outbound Campaign Custom Object Using Salesforce Data Loader

The following is a description of the steps using the Salesforce Data Loader to insert outbound call campaign records. The Data Loader can be obtained from https://dataloader.io/
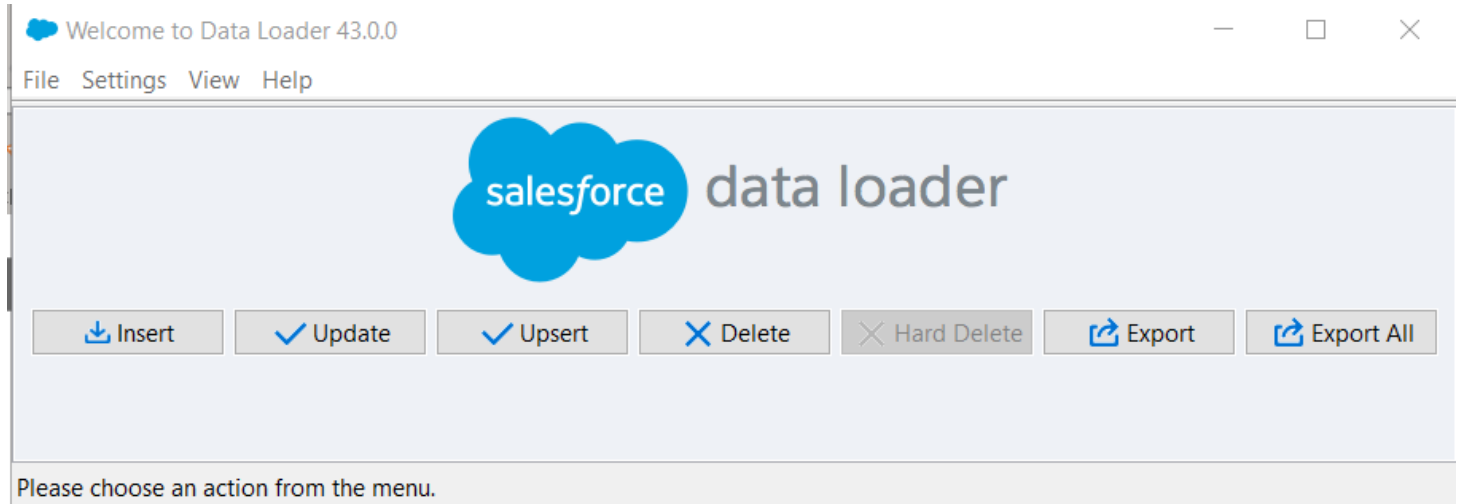
Start by exporting the call campaign custom object. From the Data Loader UI, click the "Export" button. You will be prompted to Login. Select OAuth as the method and then provide your Salesforce login credentials.

From the list of Salesforce objects select the **Amazon Connect Call Campaign** and export it to CSV file.

Next, we need the Object ID of the Queue that was created earlier. To obtain that, use the Data Loader to extract a listing of Queues. You will want to query for the QueueId.

In this example, we want to pop Contact records when the outbound call is presented to the agent, so let's export a list of Contact to be called.

Query for all or specific Contacts, based on pre-defined criteria. At a minimum, you will need to extract a list of the Id and Phone number of the Contact.

Using the data extracted in the Queue listing and the Contact listing files, construct the outbound campaign, by using the first file what was exported as a template. Open the exported "**Amazon Connect Call Campaign**" in a spreadsheet application, such as Microsoft Excel, and build a list of Contacts to be called.

	A	B	C	D	E	F	G
1	OWNERID	ACCOUNT__C	CASE__C	CONTACT__C	LEAD__C	OPPORTUNITY__C	PHONE_NUMBER__C
2	00G1U000000EIDcUAK			0031U000004WGR5QAO			(702) 555-0111
3	00G1U000000EIDcUAK			0031U000004WGR6QAO			(702) 555-0112
4	00G1U000000EIDcUAK			0031U000004WGR7QAO			(702) 555-0113
5	00G1U000000EIDcUAK			0031U000004WGR8QAO			(702) 555-0114
6	00G1U000000EIDcUAK			0031U000004WGR9QAO			(702) 555-0115
7	00G1U000000EIDcUAK			0031U000004WGRAQA4			(702) 555-0116
8	00G1U000000EIDcUAK			0031U000004WGRBQA4			(702) 555-0117
9	00G1U000000EIDcUAK			0031U000004WGRCQA4			(702) 555-0118

In the example above, the **OWNERID** column contains the QueueId obtained from the export of Queues. The **CONTACT__C** column contains the Id of the Contact we want presented to the agent, when the outbound call is initiated, and the **PHONE_NUMBER__C** field contains the phone number to be automatically dialed by Amazon Connect CCP.

Once you have built the campaign file, save it as a CSV file and then import it into Salesforce, using the Data Loader. Select "**Amazon Connect Call Campaign**" as the target of the upload.

Select Salesforce object:

☐ Show all Salesforce objects

Account (Account)
Amazon Connect Call Campaign (actoolkit__Call_Campaign__c)
Amazon Connect Historical Report Data (actoolkit__ACT_HistoricalReportData__c)
Case (Case)
Contact (Contact)
Event (Event)
Lead (Lead)
Opportunity (Opportunity)

Once the campaign has been uploaded, the campaign records will be added to the queue and the agents who are assigned to that queue should start receiving the outbound requests in their Omni-Channel widget.

Customer - Channel   DDEBA

Customer - Direct   DDEBA

● Available   (5) Requests

CC-0010

3 d, 0 h 51 min 56 s

Accept

CC-0005

3 d, 0 h 51 min 56 s

Accept

CC-0002

3 d, 0 h 51 min 56 s

Accept

1

Omni-Channel   Phone

Amazon Connect Reports in Salesforce

Out of the box, within Amazon Connect, you can generate a number of real-time and historical metric reports to monitor efficiency and utilization, agent performance, and other information about your contact center.

Real-time metrics reports show real-time or near-real time metrics information about activity in your contact center. Historical metrics reports include data about past, completed activity and performance in your contact center. You can customize the default report settings to get the view of the data that is most meaningful to you and your organization. You can change the time frame for the report, which metrics are included in the report, and how the data is grouped within the report.

Amazon Connect provides you the ability to export reports to the S3 bucket of your choice, in comma separated value (CSV) format. This enables broad compatibility across many analytics and WFM tools. Encryption is enabled by default for all saved reports, using S3 server-side encryption with KMS. Disabling encryption is not recommended. You can schedule reports run hourly, daily, and monthly. The output will be stored in the S3 bucket. Each report can have different name and prefix.

For the particular integration, at 30-minute intervals, Amazon Connect generates CSV reports which contain statistics for the last (30 minute) period. Two different reports are available to transport Agent and Queue interval data from Amazon Connect to Salesforce.

Each time a new report is exported, S3 is going to trigger a Lambda function from Amazon Connect Salesforce Lambda package (AWS Serverless Application Repository), which is going to import the date into your Salesforce instance.

Amazon Connect scheduled, Agent and Queue reports, are not automatically configured by the Amazon Connect Salesforce Lambda package, therefore the first step would be to create and schedule these reports.

In your Amazon Connect instance, navigate to Metrics and Quality > Historical metrics. By default, you will be able to see the two reports needed for this integration: "Contact metrics" and "Agent Performance".
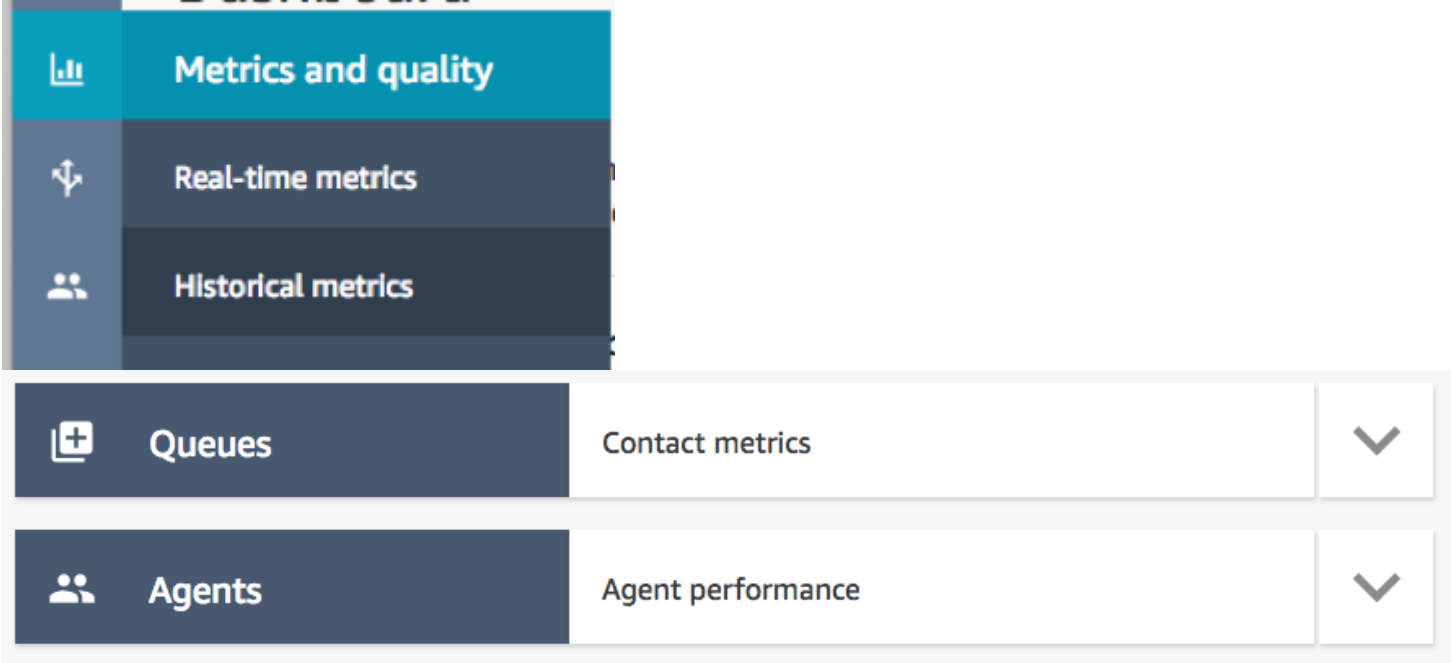
Click on the "Contact metrics" to open the report and then click on the grey gear icon on the right-hand side to configure it.

Set the report configuration by following the screenshots below:

Table Settings   ✕

Interval & Time range   Groupings   Filters   Metrics

Interval   Time Zone

30 Minutes   ▼   UTC   ▼

Time range

Last 24 hours   ▼

Table Settings   ✕

Interval & Time range   **Groupings**   Filters   Metrics

Select the values you'd like to group your metrics by, and add them to the right in the order you prefer.

Grouping options   Selected groupings(Maximum 5)

| Agent | + |

⠿ Queue   —

| Agent Hierarchy Level One | + | ⓘ

2

| Agent Hierarchy Level Two | + | ⓘ

3

| Agent Hierarchy Level Three | + | ⓘ

4

| Agent Hierarchy Level Four | + | ⓘ

5

| Agent Hierarchy Level Five | + | ⓘ

| Routing Profile | + |

| Phone Number | + |

Optionally set the filters:

Table Settings ✖

Queues that match these filters will be displayed on the table

Queue	Queue
Routing profile	Show metrics only for contacts handled in these queues:
Agent hierarchy	🔍 Search ▾
Phone number	

And most importantly, select the correct metrics in the last tab:

Table Settings ✕

Interval & Time range   Groupings   Filters   **Metrics**

Metrics are displayed to the right of grouping columns.

○ **Contact metrics**   ○ **Agent metrics**

🔍 Search   **Metrics definitions** ⬈

☐ Agent Name ❗   ☐ Agent First Name ❗

☐ Agent Last Name ❗

☑ After contact work time   ☑ Agent on contact time

☑ Agent idle time   ☐ Non-Productive Time ❗

☑ Average queue abandon time   ☑ Average after contact work time

☑ Average queue answer time   ☑ Average handle time

☑ Average customer hold time   ☑ Average agent interaction and customer hold time

☑ Average agent interaction time   ☑ Contacts abandoned

☑ Contacts abandoned in 15 seconds   ☑ Contacts abandoned in 20 seconds

☑ Contacts abandoned in 25 seconds   ☑ Contacts abandoned in 30 seconds

☑ Contacts abandoned in 45 seconds   ☑ Contacts abandoned in 60 seconds

☑ Contacts abandoned in 90 seconds   ☑ Contacts abandoned in 120 seconds

☑ Contacts abandoned in 180 seconds   ☑ Contacts abandoned in 240 seconds

☑ Contacts abandoned in 300 seconds   ☑ Contacts abandoned in 600 seconds

☑ Contacts agent hung up first   ☑ Contacts consulted

☑ Contacts handled   ☑ Contacts handled incoming

- [x] Contacts handled outbound
- [ ] Callback contacts handled
- [ ] API contacts handled
- [x] Contacts put on hold
- [x] Contacts hold disconnect
- [x] Contacts hold agent disconnect
- [x] Contacts hold customer disconnect
- [x] Contacts incoming
- [ ] Callback Contacts
- [ ] API Contacts
- [x] Contacts answered in 15 seconds
- [x] Contacts answered in 20 seconds
- [ ] Contacts answered in 25 seconds
- [x] Contacts answered in 30 seconds
- [x] Contacts answered in 45 seconds
- [x] Contacts answered in 60 seconds
- [x] Contacts answered in 90 seconds
- [x] Contacts answered in 120 seconds
- [x] Contacts answered in 180 seconds
- [x] Contacts answered in 240 seconds
- [x] Contacts answered in 300 seconds
- [x] Contacts answered in 600 seconds
- [x] Contacts queued
- [x] Contacts transferred in
- [x] Contacts transferred out
- [ ] Contacts transferred out internal
- [ ] Contacts transferred out external
- [x] Contacts transferred in from queue
- [x] Contacts transferred out from queue
- [ ] Error status time ⚠

☑	Customer hold time	☑	Agent answer rate
☑	Maximum queued time	☑	Contacts missed
☑	Contact handle time	☑	Contact flow time
☑	Occupancy	☑	Service level 15 seconds
☑	Service level 20 seconds	☑	Service level 25 seconds
☑	Service level 30 seconds	☑	Service level 45 seconds
☑	Service level 60 seconds	☑	Service level 90 seconds
☑	Service level 120 seconds	☑	Service level 180 seconds
☑	Service level 240 seconds	☑	Service level 300 seconds
☑	Service level 600 seconds	☐	Online time ❗
☑	Agent interaction and hold time	☑	Agent interaction time
☑	Agent interaction and hold time	☑	Agent interaction time
☑	Average outbound agent interaction time	☑	Average outbound after contact work time
☐	Lunch time ❗	☐	Break time ❗

Cancel   **Apply**

Once metrics are selected, click the Apply button. Next, click the drop-down arrow on the right-hand side and select Schedule.
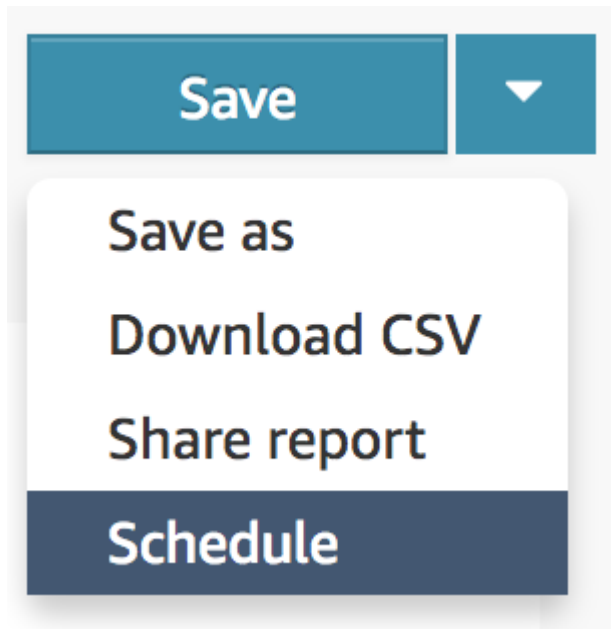
Set the report name, for instance *sfIntervalQueue* and click Continue

Schedule report

First, name your report.

Name   sfIntervalQueue

Cancel   Continue

Schedule report

Note

Once you schedule a report, it will be published to your organization, and all individuals who have proper permissions will be able to access it.

Cancel   Continue

On the next screen, set Recurrence as:

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)

Switch to Delivery Options tab and set the Prefix as *SFDC/Queue*

Recurrence	**Delivery Options**

Default location
connect-62████d2/connect/█████t-test8/Reports

Prefix

SFDC/Queue   ⓘ

| Click the Create button to create the Schedule for the report. The report can be found in Metrics and quality > Saved Reports > Historical metrics

Click on the Clock (Schedule Report) icon to see the configuration. Please note the File name and the Path for the CSV file to be created.

Schedule 1

Repeats: HOURLY - runs every 0.5 hour(s), starting at 01:00 (UTC), for the previous 0.5 hour(s).
File name: connect-62[____]2/connect/[____]-test8/Reports/SFDC/Queue/sfIntervalQueue-YYYY-MM-DDThh:mm:ssZ.csv
Next run: Friday, November 23, 2018 6:00:00 PM UTC
Last run: Friday, November 23, 2018 5:15:26 PM UTC

The Queue Interval report has been created and scheduled to export the data. After a while, you will be able to see CSV files in the S3 bucket.

	Name ⬆☰	Last modified ⬆☰	Size ⬆☰	Storage class ⬆☰
☐	🗋 sfIntervalQueue-2018-11-22T12:00:00Z.csv	Nov 22, 2018 12:15:27 PM GMT+0000	625.0 B	Standard
☐	🗋 sfIntervalQueue-2018-11-22T12:30:00Z.csv	Nov 22, 2018 12:45:27 PM GMT+0000	512.0 B	Standard
☐	🗋 sfIntervalQueue-2018-11-22T13:00:00Z.csv	Nov 22, 2018 1:15:27 PM GMT+0000	512.0 B	Standard

Viewing 1 to 60

Repeat the steps for the Agent Interval report:

In your Amazon Connect instance, navigate to Metrics and Quality > Historical metrics.
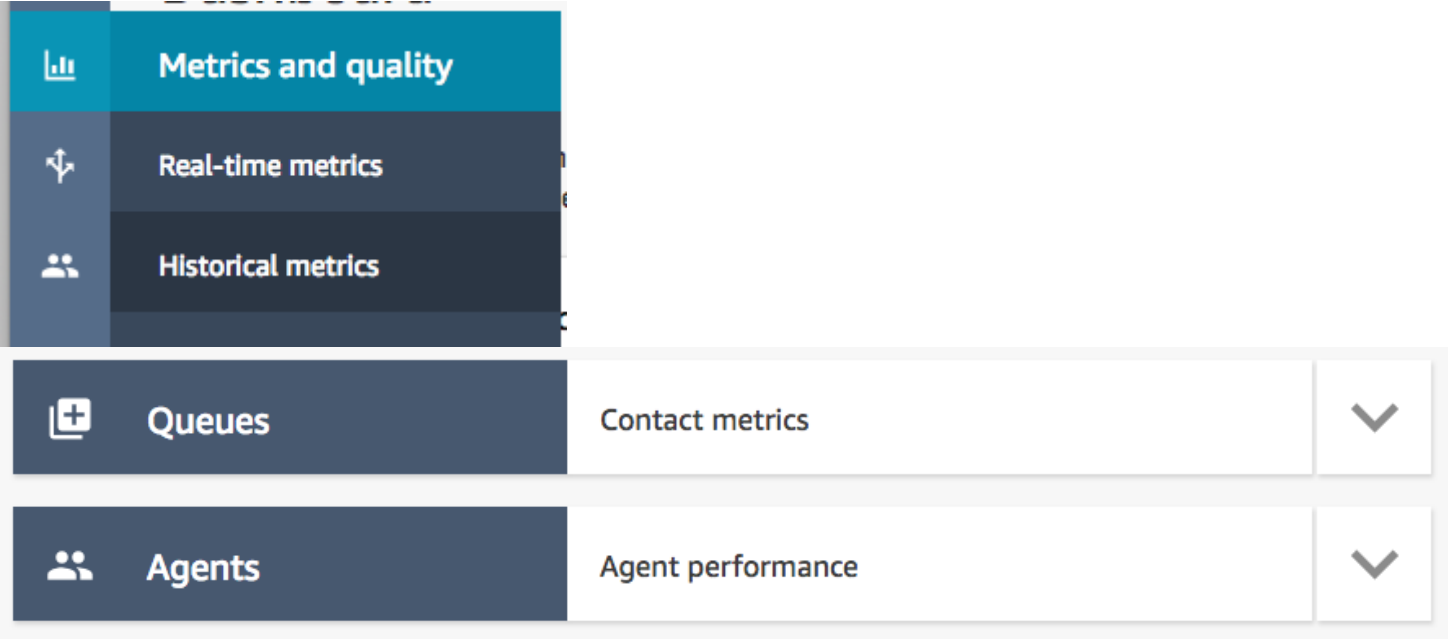
Choose the "Agent Performance" metrics to open the report and then click on the grey gear icon on the right-hand side to configure it.

Set the report configuration by following the screenshots below:

Table Settings   ✕

Interval & Time range   Groupings   Filters   Metrics

Interval   Time Zone

30 Minutes   ▼   UTC   ▼

Time range

Last 24 hours   ▼

Table Settings   ✕

Interval & Time range   **Groupings**   Filters   Metrics

Select the values you'd like to group your metrics by, and add them to the right in the order you prefer.

Grouping options   Selected groupings(Maximum 5)

| Agent Hierarchy Level One   + | ⓘ | ⠿ Agent   — |

| Agent Hierarchy Level Two   + | ⓘ | 2 |

| Agent Hierarchy Level Three + | ⓘ | 3 |

| Agent Hierarchy Level Four   + | ⓘ | 4 |

| Agent Hierarchy Level Five   + | ⓘ | 5 |

| Queue   + |

| Routing Profile   + |

| Phone Number   + |

Optionally set the filters:

Table Settings

Interval & Time range   Groupings   **Filters**   Metrics

Queues that match these filters will be displayed on the table

Queue	Queue
Routing profile	Show metrics only for contacts handled in these queues:
Agent hierarchy	🔍 Search ▼
Phone number	

And most importantly, select the correct metrics in the last tab:

Table Settings   ✕

Metrics are displayed to the right of grouping columns.

○ **Contact metrics**   ○ **Agent metrics**

🔍 Search

Metrics definitions ⧉

☐ Agent Name   ☐ Agent First Name

☐ Agent Last Name

☑ After contact work time   ☑ Agent on contact time

☑ Agent idle time   ☑ Non-Productive Time

☐ Average queue abandon time   ☑ Average after contact work time

☐ Average queue answer time   ☑ Average handle time

☑ Average customer hold time   ☑ Average agent interaction and customer hold time

☑ Average agent interaction time   ☐ Contacts abandoned

☐ Contacts abandoned in 15 seconds   ☐ Contacts abandoned in 20 seconds

☐ Contacts abandoned in 25 seconds   ☐ Contacts abandoned in 30 seconds

☐ Contacts abandoned in 45 seconds   ☐ Contacts abandoned in 60 seconds

☐ Contacts abandoned in 90 seconds   ☐ Contacts abandoned in 120 seconds

☐ Contacts abandoned in 180 seconds   ☐ Contacts abandoned in 240 seconds

☐ Contacts abandoned in 300 seconds   ☐ Contacts abandoned in 600 seconds

☑ Contacts agent hung up first   ☑ Contacts consulted

☑ Contacts handled   ☑ Contacts handled incoming

☑	Contacts handled outbound	☐	Callback contacts handled
☐	API contacts handled	☑	Contacts put on hold
☑	Contacts hold disconnect	☑	Contacts hold agent disconnect
☑	Contacts hold customer disconnect	☐	Contacts incoming
☐	Callback Contacts	☐	API Contacts
☐	Contacts answered in 15 seconds	☐	Contacts answered in 20 seconds
☐	Contacts answered in 25 seconds	☐	Contacts answered in 30 seconds
☐	Contacts answered in 45 seconds	☐	Contacts answered in 60 seconds
☐	Contacts answered in 90 seconds	☐	Contacts answered in 120 seconds
☐	Contacts answered in 180 seconds	☐	Contacts answered in 240 seconds
☐	Contacts answered in 300 seconds	☐	Contacts answered in 600 seconds
☐	Contacts queued	☐	Contacts transferred in
☑	Contacts transferred out	☑	Contacts transferred out internal
☑	Contacts transferred out external	☐	Contacts transferred in from queue
☐	Contacts transferred out from queue	☑	Error status time

☐	Customer hold time	☑	Agent answer rate
☐	Maximum queued time	☑	Contacts missed
☐	Contact handle time	☐	Contact flow time
☑	Occupancy	☐	Service level 15 seconds
☐	Service level 20 seconds	☐	Service level 25 seconds
☐	Service level 30 seconds	☐	Service level 45 seconds
☐	Service level 60 seconds	☐	Service level 90 seconds
☐	Service level 120 seconds	☐	Service level 180 seconds
☐	Service level 240 seconds	☐	Service level 300 seconds
☐	Service level 600 seconds	☑	Online time
☑	Agent interaction and hold time	☑	Agent interaction time
☑	Average outbound agent interaction time	☑	Average outbound after contact work time

Cancel   Apply

Once metrics are selected, click the Apply button. Next, click the drop-down arrow on the right-hand side and select Schedule.

Save ▼

Save as

Download CSV

Share report

Schedule

Set the report name, for instance *sfIntervalAgent* and click Continue

Schedule report ✕

First, name your report.

Name   sfIntervalAgent|

Cancel   Continue

Schedule report ✕

Note

Once you schedule a report, it will be published to your organization, and all individuals who have proper permissions will be able to access it.

Cancel   Continue

On the next screen, set Recurrence as:

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)

Switch to Delivery Options tab and set the Prefix as SFDC/Agent

Recurrence   Delivery Options

Default location

connect-627⬛⬛⬛⬛⬛2/connect/⬛⬛⬛-test8/Reports

Prefix

SFDC/Agent   ⓘ

Click the Create button to create the Schedule for the report. The report can be found in Metrics and quality > Saved Reports > Historical metrics

Click on the Clock (Schedule Report) icon to see the configuration. Please note the File name and the Path for the CSV file to be created.

Schedule 1

Repeats: HOURLY - runs every 0.5 hour(s), starting at 01:00 (UTC), for the previous 0.5 hour(s).
File name: connect-62███████d2/connect/█████-test8/Reports/SFDC/Agent/SfIntervalAgent-YYYY-MM-DDThh:mm:ssZ.csv
Next run: Friday, November 23, 2018 6:30:00 PM UTC
Last run: Friday, November 23, 2018 5:45:07 PM UTC

The Agent Interval report has been created and scheduled to export the data. After a while, you will be able to see CSV files in the S3 bucket.

	Name ↑≡	Last modified ↑≡	Size ↑≡	Storage class ↑≡
☐	📄 SfIntervalAgent-2018-11-21T17:00:00Z.csv	Nov 21, 2018 5:15:08 PM GMT+0000	413.0 B	Standard
☐	📄 SfIntervalAgent-2018-11-21T17:30:00Z.csv	Nov 21, 2018 5:45:07 PM GMT+0000	413.0 B	Standard
☐	📄 SfIntervalAgent-2018-11-21T18:00:00Z.csv	Nov 21, 2018 6:15:11 PM GMT+0000	413.0 B	Standard

Viewing 1 to 98

Amazon Connect Salesforce Lambda package (AWS Serverless Application Repository) deploys two Lambda functions to handle the reporting integration: *sfIntervalQueue* and *sfIntervalAgent*. In the next step, we are going to set Triggers for these functions.

From the AWS Console, select Lambda service and choose *sfIntervalQueue* Lambda function. On the left-hand side, select S3 as a trigger.

Kinesis

S3

Add triggers from the list on the left

After the trigger is selected:

Kinesis

S3

S3
ⓘ Configuration required   ✕

We need to set the trigger configuration. Select the Bucket where the CSV files are stored (from the Filename in previous steps). Set Event type to PUT and set Prefix to the Queue path (from the Filename in previous steps). Click the Add button and Save the function.

Configure triggers

Bucket
Please select the S3 bucket that serves as the event source. The bucket must be in the same region as the function.

connect-62▮▮▮▮▮d2   ▼

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
Enter a single optional prefix to limit the notifications to objects with keys that start with matching characters.

connect/▮▮▮▮-testB/Reports/SFDC/Queue/

Suffix
Enter a single optional suffix to limit the notifications to objects with keys that end with matching characters.

e.g. .jpg

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

The final configuration should look like this:

This Lambda function transfers the Queue reporting data to your SFDC instance. Next, we have to repeat steps for Agent reporting Lambda function.

From the AWS Console, select Lambda service and choose *sfIntervalAgent* Lambda function. On the left-hand side, select S3 as a trigger.

After the trigger is selected:

We need to set the trigger configuration. Select the Bucket where the CSV files are stored (from the Filename in previous steps). Set Event type to PUT and set Prefix to the Agent path (from the Filename in previous steps). Click the Add button and Save the function.

The final configuration should look like this:

This Lambda function transfers the Agent reporting data to your SFDC instance.

The Amazon Connect CTI Adapter comes with a predefined set of reports, which can be customized or additional reports can be created by leveraging the imported data. To see the list of built-in reports, login into your SFDC instance and open the App Launcher, then choose Reports.
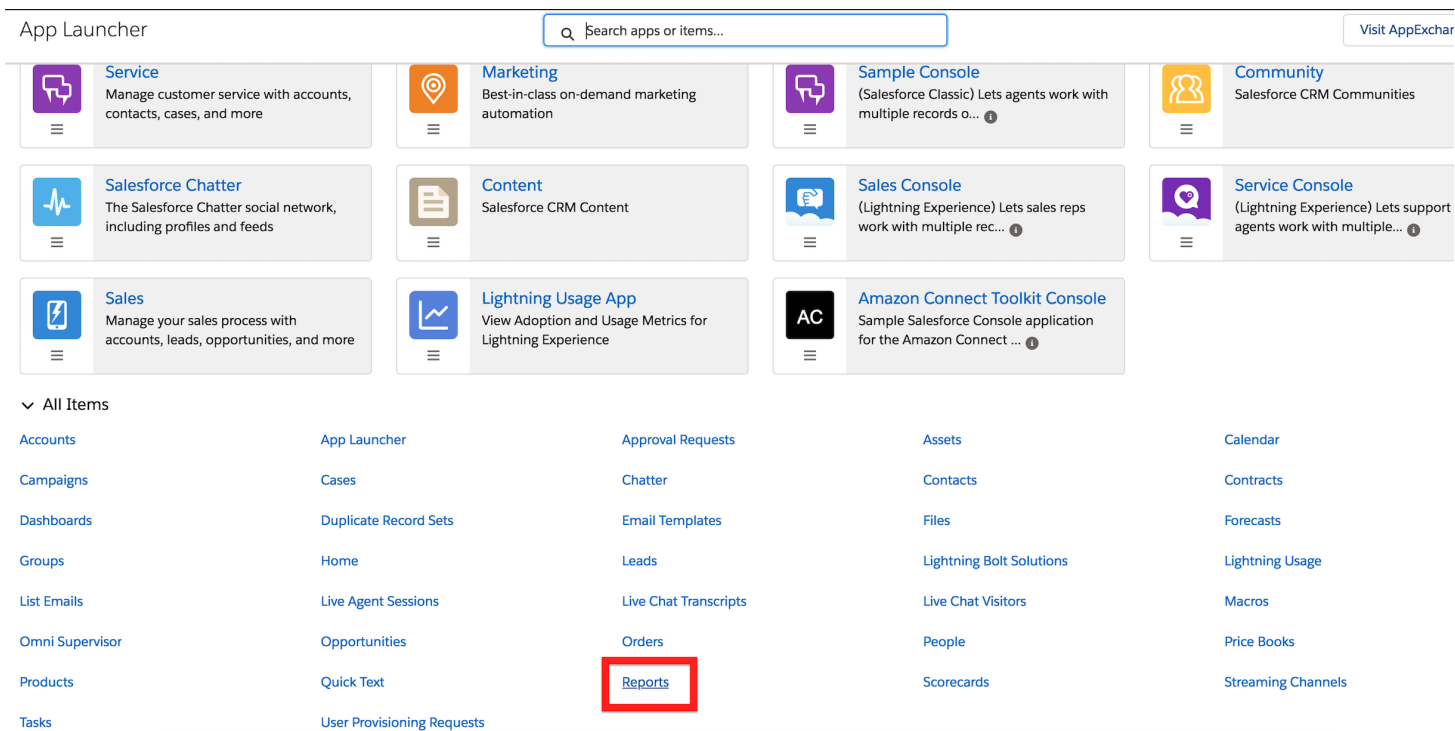
All Amazon Connect built-in reports are deployed in Amazon Connect Reports folder:

Reports
Recent
14 items

REPORTS	REPORT NAME	DESCRIPTION	FOLDER
Recent	Agent All Interval 30 Today		Amazon Connect Reports
Created by Me	Queue All Interval 30 Today		Amazon Connect Reports
Private Reports	Contacts Agent Hung Up First This ...		Amazon Connect Reports
Public Reports	Contacts Handled This Week		Amazon Connect Reports
All Reports	Contacts Queued This Week		Amazon Connect Reports
	Trend of Calls Abandoned This Week		Amazon Connect Reports
FOLDERS	Agent Service Level 60 Today		Amazon Connect Reports
All Folders	Contacts Transferred In This Week		Amazon Connect Reports
Created by Me	Contacts Transferred Out This Week		Amazon Connect Reports
	Contacts Handled Outbound This W...		Amazon Connect Reports
Shared with Me	Contacts Handled Incoming/Outgoi...		Amazon Connect Reports
FAVORITES	Average Occupancy Today		Amazon Connect Reports
	Average Handle Time Today		Amazon Connect Reports
All Favorites	Agent Answer Rate This Week		Amazon Connect Reports

To see the exact layout of imported data for Queue, select the Queue All Interval 30 Today report:

REPORT
Queue All Interval 30 Today

Switch to Enhanced Run Page (Beta)   Edit

Total Records
1

STARTINTERVAL ↑	AC OBJECT NAME	AFTER CONTACT WORK TIME	AGENT ON CONTACT TIME	AGENT IDLE TIME	AVERAGE QUEUE ANSWER TIME	AVERAGE AFTER CONTACT WORK TIME	AVERAGE HANDLE TIME	AVERAGE CUSTOMER HOLD TIME	AVG AGENT INTERACTION AND CUST HOLD TIME	AVERAGE AGENT INTERACTION TIME	CONTACTS ABANDONED	CONTACTS ABANDONED IN 15 SECONDS	CONTACTS ABANDONED IN 20 SECONDS	CONTACTS ABANDONED IN 25 SECONDS	CONTACTS ABANDONED IN 30 SECONDS	CONTACTS ABANDONED IN 45 SECONDS	CONTACTS ABANDONED IN 60 SECONDS	CONTACTS ABANDONED IN 90 SECONDS	CONTACTS ABANDONED IN 120 SECONDS
23/11/2018 16:00	BasicQueue	461	991	18	19	461	992	-	531	531	0	-	-	-	-	-	-	-	-
Grand Total (1 record)																			

To see the exact layout of imported data for Agent, select the Agent All Interval 30 Today report:

REPORT
Agent All Interval 30 Today

Switch to Enhanced Run Page (Beta)   Edit

Total Records
1

STARTINTERVAL ↑	USER	AC OBJECT NAME	AFTER CONTACT WORK TIME	AGENT ON CONTACT TIME	AGENT IDLE TIME	NONPRODUCTIVE TIME	AVERAGE AFTER CONTACT WORK TIME	AVERAGE HANDLE TIME	AVERAGE CUSTOMER HOLD TIME	AVG AGENT INTERACTION AND CUST 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 HOLD AGENT DISCONNECT	CONTACTS HOLD CUSTOMER DISCONNECT
23/11/2018 16:00	-	mcosic	461	991	18	-	461	992	-	531	531	1	-	1	1	0	0	0	0	0
Grand Total (1 record)																				

CTI Flows

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 consist 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 returns values, that you can use from other actions.

CTI Flows

New AC CTI Flow

No records to display

CTI Flow, go to your Adapter page and find a section called "CTI Flows."

AC CTI Flow Edit Save Save & New Cancel

Information

CTI Flow Name	Create Screenpop
Source	Amazon Connect Voice Contact
Description	

CTI Adapter	ACLightningAdapter
Event	onConnecting
Active	☑
Debug	☐

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."

CTI Flow Name

Source

Description

--None--
✓ Initialization
Amazon Connect Agent
Amazon Connect Voice Contact
Amazon Connect Queue Callback Contact
Amazon Connect Chat Contact
Salesforce Agent
Salesforce UI

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 A.)

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.

Create Screenpop

AC CTI Flow Detail

[Edit] [Delete] [Clone]

▼ 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]

Download ⬇   **Upload ⬆**

```
Drag to stage


            Start


```

Let's build a CTI Flow that opens a screenpop in Salesforce when a voice call comes.
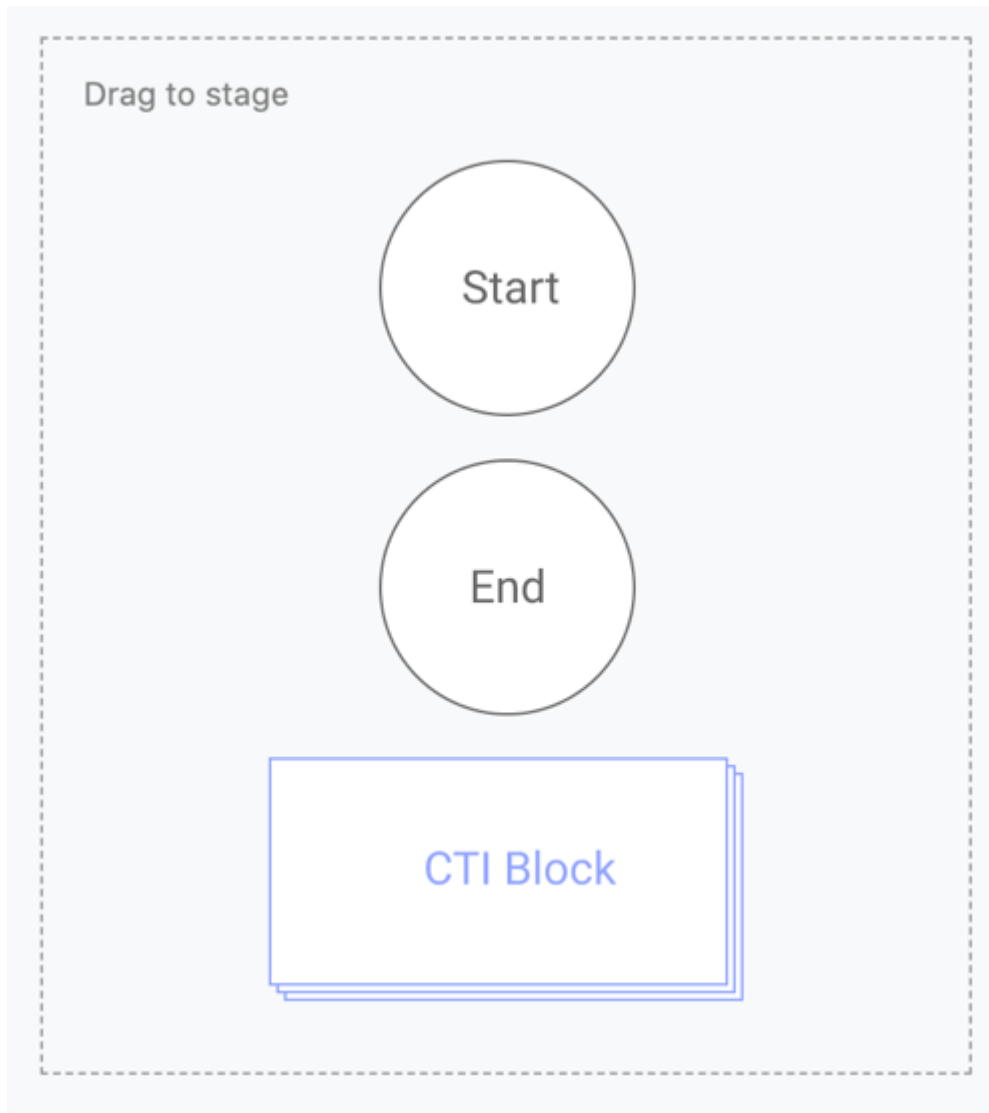
You can start using by dragging the item called "CTI Block" from the sidebar in the Main Menu over the stage, which is marked by a grid pattern.

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

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

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.

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."

Connect these blocks by clicking the green socket (green means "done") on "Get Customer Phone," 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 fill 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.
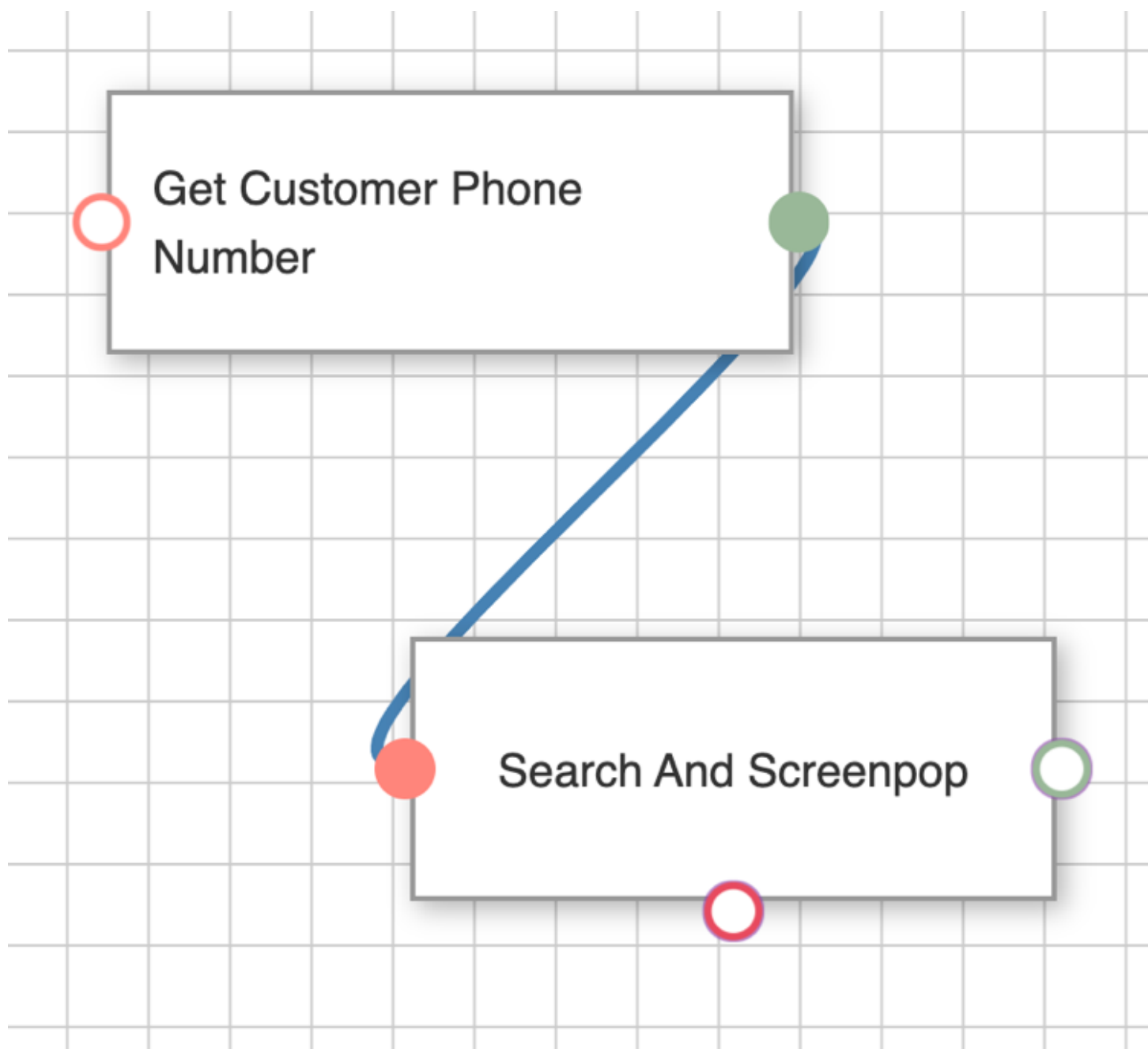
Now we'd like to get the phone number of the customer and use it in "Search and Screenpop." Here is a tip: if two actions are connected, you can use the return values of the first action in the input fields of the next action. (You can even use the return values of actions connected to the last action, 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.
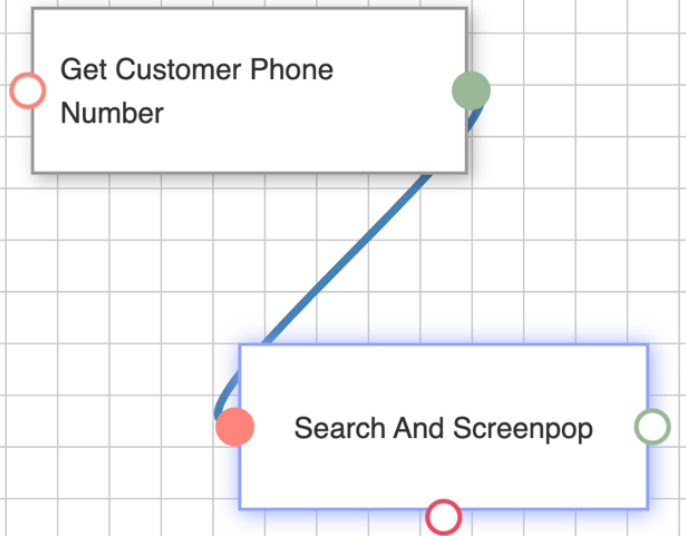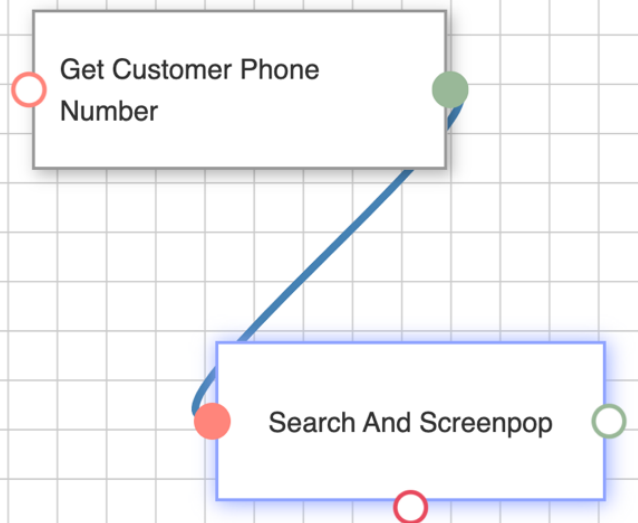
If you want to enter a custom input value, you can type that, and select "Add New Value" from the dropdown.

And make sure to set "callType" to "inbound." Finally, add the "Start" and "End" nodes and connect everything together.
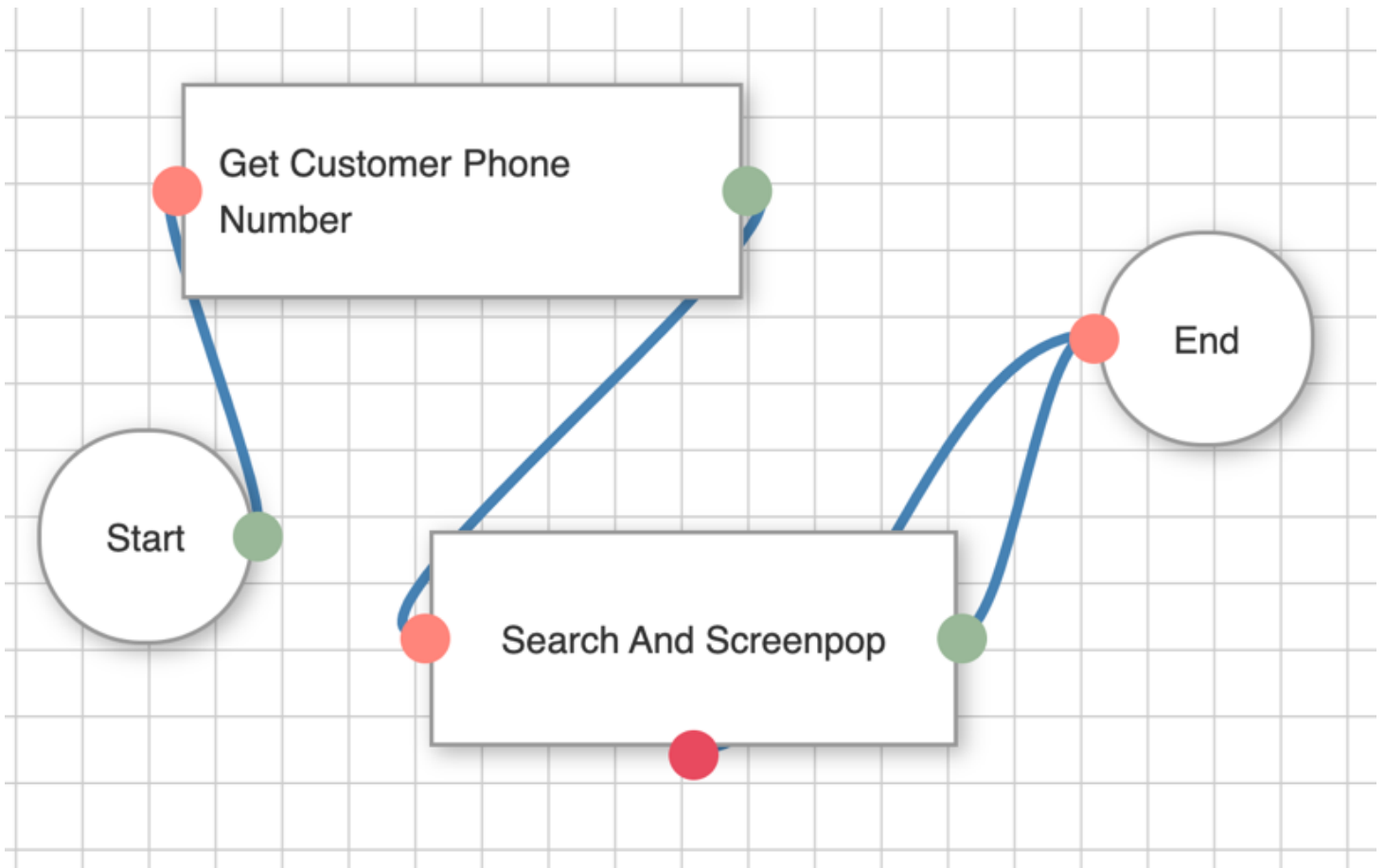
When you're finished, click "Save" in the sidebar. That's it. You created your first CTI Flow.

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.

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 you 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".
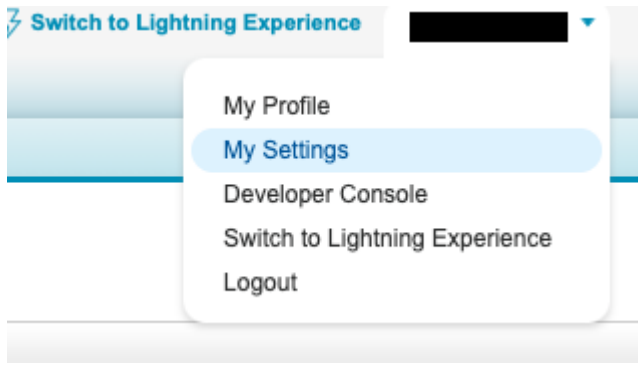
On the setting page on the left panel go to "Personal" and then select "Language & Time Zone".
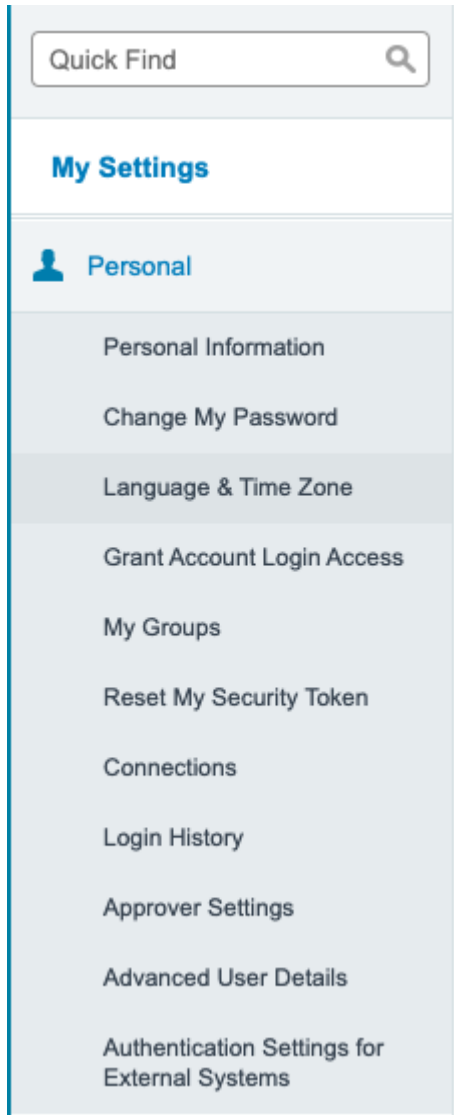
You can then select your preferred language. Note that CTI adapter only have nine languages built within the package.

Language & Time Zone

Settings

Time Zone	(GMT-07:00) Pacific Daylight Time (America/Los_Angeles) ⌄
Locale	English (United States) ⌄ ⓘ
Language	
Email Encoding	...Europe (ISO-8859-1, ISO-LATIN-1) ⌄ ⓘ

✓ English
Deutsch
Español
Français
Italiano
日本語
Svenska
한국어
中文（繁體）
中文（简体）
Português (Brasil)
Nederlands
Dansk
ภาษาไทย
Suomi
Русский
Español (México)
Norsk (bokmål)

Save **Cancel**

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.

Click on Phone pannel on the bottom to see if CCP has been localized. If not right click on CCP and reload.
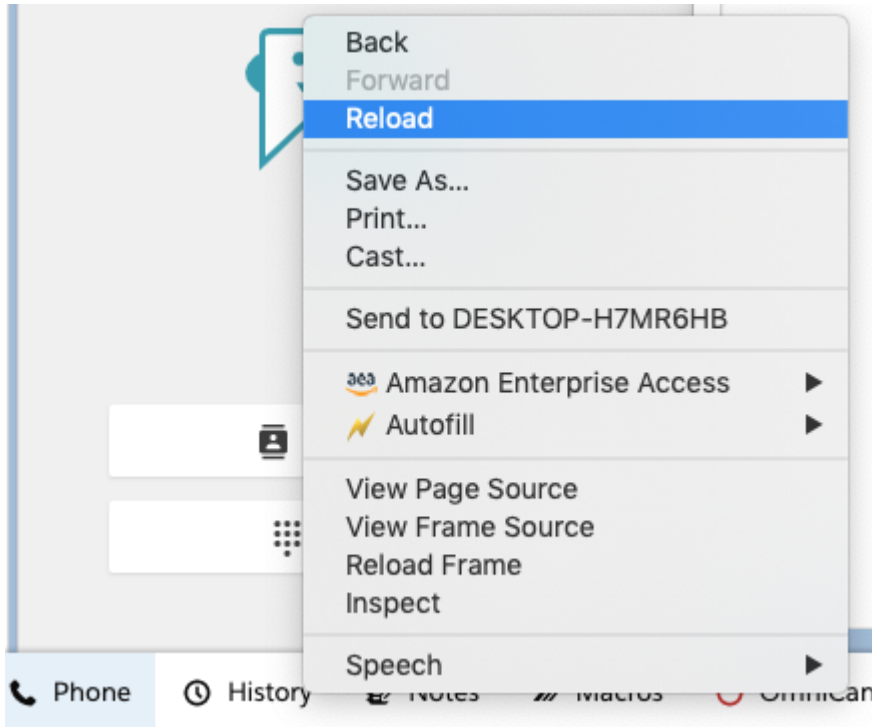
Additional Notes

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.
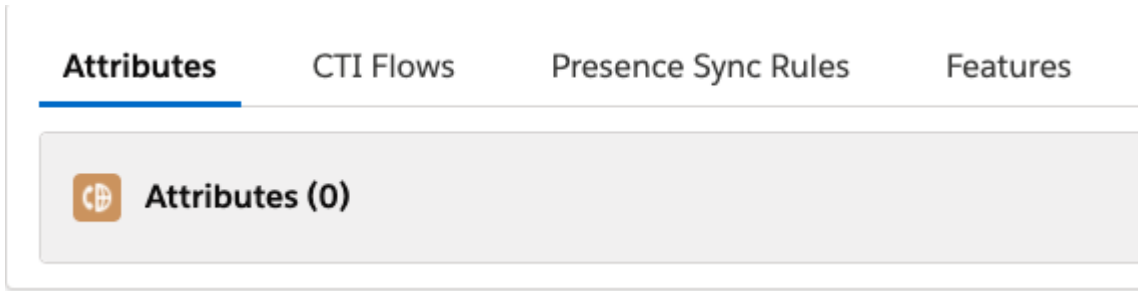
- Reports. This is a missing functionality in Salesforce.

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 starts and stops 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.

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. These fields can be accessed in the CTI Flow through `$.payload.fieldKey`.

Actions

Step 1: Name and Flow	
Step 2: Payload	(optional)
Step 3: Additional Data	(optional)

Save   Quick Save   Delete   Cancel

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.

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	
Step 2: Payload	(optional)
Step 3: Additional Data	(optional)

Save   Quick Save   Delete   Cancel

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.

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.

The screenshots below are showcasing the CTI Actions and their behavior in the CCP Overlay panel, not the individual CTI Flows shown.

Phone

| Attributes | Actions | ⋮ |

Send Customer Giftcard ▶

Activate Customer Account **Execute**

Transfer to Manager **Execute**

Give customer refund **Execute**

Open a Case **Execute**

Find Cases for Customer **Execute**

Create Task and Contact and Screenpop **Execute**

VIP **Execute**

Transfer to Manager **Execute**

Transfer to Peer **Execute**

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.
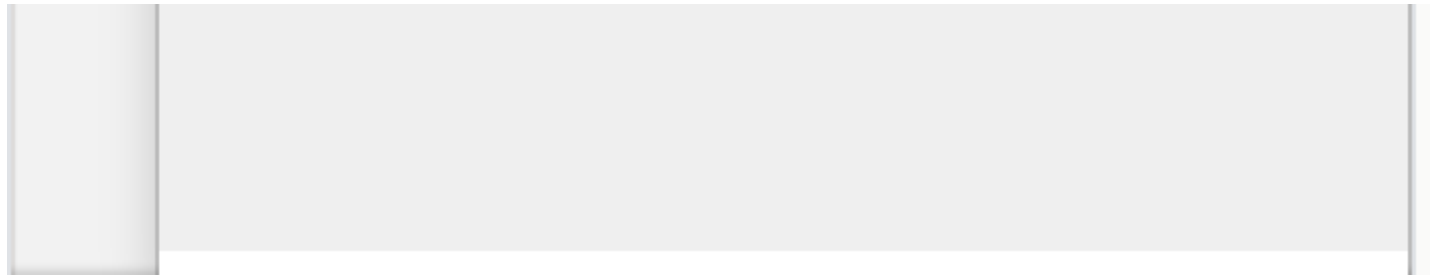
Example

In this section we demonstrate how to use CTI Actions and how they interact with CTI Flows through an example.

Here we setup a CTI Action and Flow to create a Salesforce Task to callback a customer and pop it. The end goal is to have a Task with the subject *Callback - FirstName - LastName* and the number to callback in the comments section of the Task. If a contact exists for that number, we will also link it in the Task. We use a CTI Action to do this to let the agent enter the customer's first and last name and callback number if it is different from the number used to call in. This action looks like this in the CCP Overlay.

◀ Go back

Customer Callback Information

If the callback number is the different from the number used to dial in enter it in the form, otherwise keep it empty.

First Name*

[   ]

• is a required property

Last Name*

[   ]

• is a required property

Callback Number

[   ]

Submit

To achieve this, we need to setup a CTI Action then a CTI Flow.

First, we setup the CTI Action. To do that we need to have created a CTI Flow with the **CTI Actions** as source. For now we create an empty Flow, which we will build later, just to reference it in the Action.

The first step is to name and link the Action to a Flow.

The second step is to add hardcoded fields to the payload, if desired. In this example we add part of the Task subject as hardcoded fields to demonstrate the functionality.

Finally, as shown previously, the action is a form, that means it has additional data that the agent can provide. Below are images showing how they are setup for this example.

Actions

Step 1: Name and Flow	
Step 2: Payload	(optional)
Step 3: Additional Data	(optional)

Save   Quick Save   Delete   Cancel

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.

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
Customer Callback Information

Enter a short title for the form.

(optional)

Instructions
If the callback number is the different from the number used to dial in enter it in the form, otherwise keep it empty.

Enter a few lines about how to fill out this form.

Form fields ▸

Actions

Step 1: Name and Flow	
Step 2: Payload	(optional)
Step 3: Additional Data	(optional)

Save   Quick Save   Delete   Cancel

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.

Overview   **Form fields**   New field +

This is a list of fields that will appear in your form. They are shown in the order they will appear.

First Name	▸
Last Name	▸
Callback Number	▸

◂ Overview

Actions

Step 1: Name and Flow	
Step 2: Payload	(optional)
Step 3: Additional Data	(optional)

Save   Quick Save   Delete   Cancel

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.

Overview   Form fields   New field +

Field Name
FirstName

This is the name of the field in your payload. It should be a camelCased word.

Label
First Name

The label is a human readable text shown to the agent next to the input field.

🗑

Field Type
Text

You have the option to select a text input or a dropdown.

Order
0

☑ Field Required

Cancel   **Finish**

◂ Overview

Actions

Step 1: Name and Flow	
Step 2: Payload	(optional)
Step 3: Additional Data	(optional)

Save Quick Save Delete Cancel

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.

Overview **Form fields**   New field +

Field Name
LastName

This is the name of the field in your payload. It should be a *camelCased* word.

Label
Last Name

The label is a human readable text shown to the agent next to the input field.

Field Type
Text

You have the option to select a text input or a dropdown.

Order
1

☑ Field Required

Cancel **Finish**

◀ Overview

Actions

Step 1: Name and Flow	
Step 2: Payload	(optional)
Step 3: Additional Data	(optional)

Save Quick Save Delete Cancel

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.

Overview **Form fields**   New field +

Field Name
CallbackPhone

This is the name of the field in your payload. It should be a *camelCased* word.

Label
Callback Number

The label is a human readable text shown to the agent next to the input field.

Field Type
Text

You have the option to select a text input or a dropdown.

Order
2

☐ Field Required

Cancel **Finish**

◀ Overview

Then, we setup the CTI Flow. As mentioned above, it's possible to have the callback number different from the number used to call in, or it could be the same. If it's the same, we don't want the agent to enter the number again, in fact we can get that number in the CTI Flow. In the flow we use the **Get Contact Properties** block to get the phone number of the contact. Then using the **Is Truthy?** block, we check if the agent entered a callback number in the form or not. Depending on wether they did or not, we get the Salesforce Contact and create a Task using the correct callback number. In the Flow we reference the CTI Action fields by using `$.payload.fieldKey` for both the hardcoded payload and the fields in the additional data form (Take a look at the **Create a Task** blocks in the flow below).

[Download Flow](#)

To test this action, you can place or accept a call from the CCP, open the overlay, fill in the form then submit it. If everything is setup correctly, a Task should pop up with the desired information.

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.

📞 Phone ▭

Attributes | **Data** | ⋮

Data Sink

+1 3

foo	bar

>

Here is how you would configure your CTI Flow to send data back to the CCP overlay.
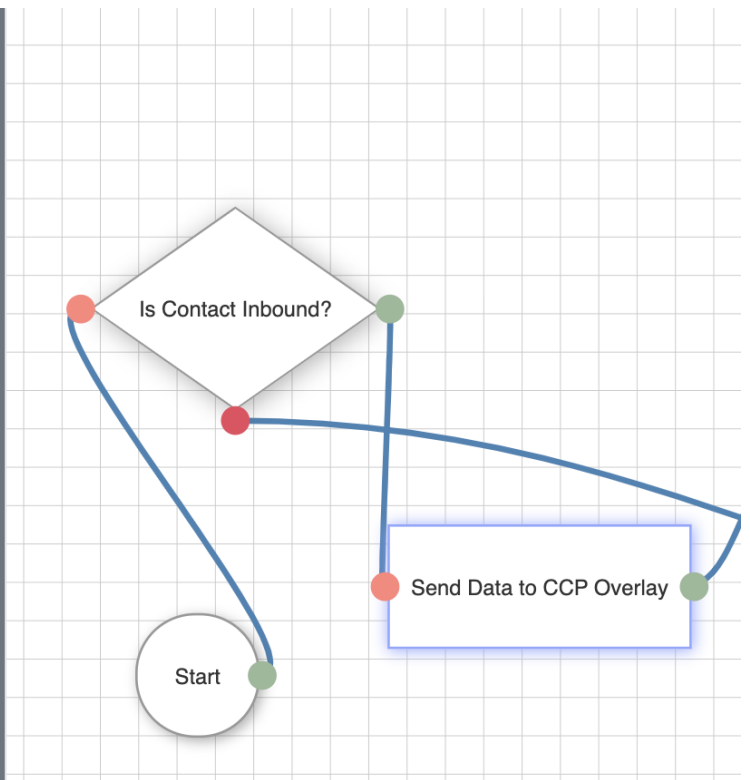
Upgrading from an earlier version

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.

Recording Controls

Recording Controls panel in the CCP Overlay allows your agents to control the recording behavior of the call.
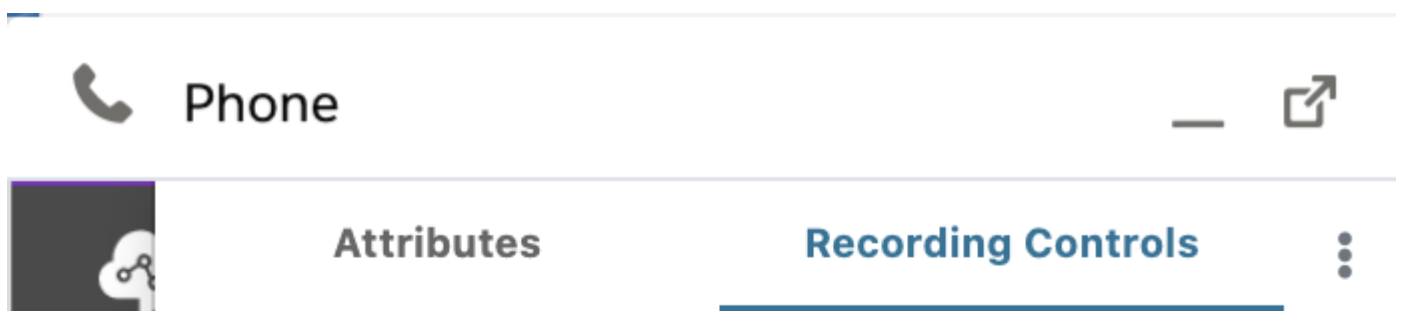
> **Start recording** **⏸ Pause recording**

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`. (Make sure to create this in the same AWS account as the one that owns your Connect instance.)

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

	Save	Cancel

Label ⓘ `AmazonConnectAPI` 📇

Name ⓘ `AmazonConnectAPI`

URL `https://connect.us-east-1.amazonaws.com`

▼ Authentication

Certificate [   ] 🔍

Identity Type `Named Principal ▾`

Authentication Protocol `AWS Signature Version 4 ▾`

AWS Access Key ID `AKIAUYVLTXECVPVW5`

AWS Secret Access Key `••••••••` 🔓

AWS Region `us-east-1`

AWS Service `connect`

Fill in `https://connect-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`.

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.
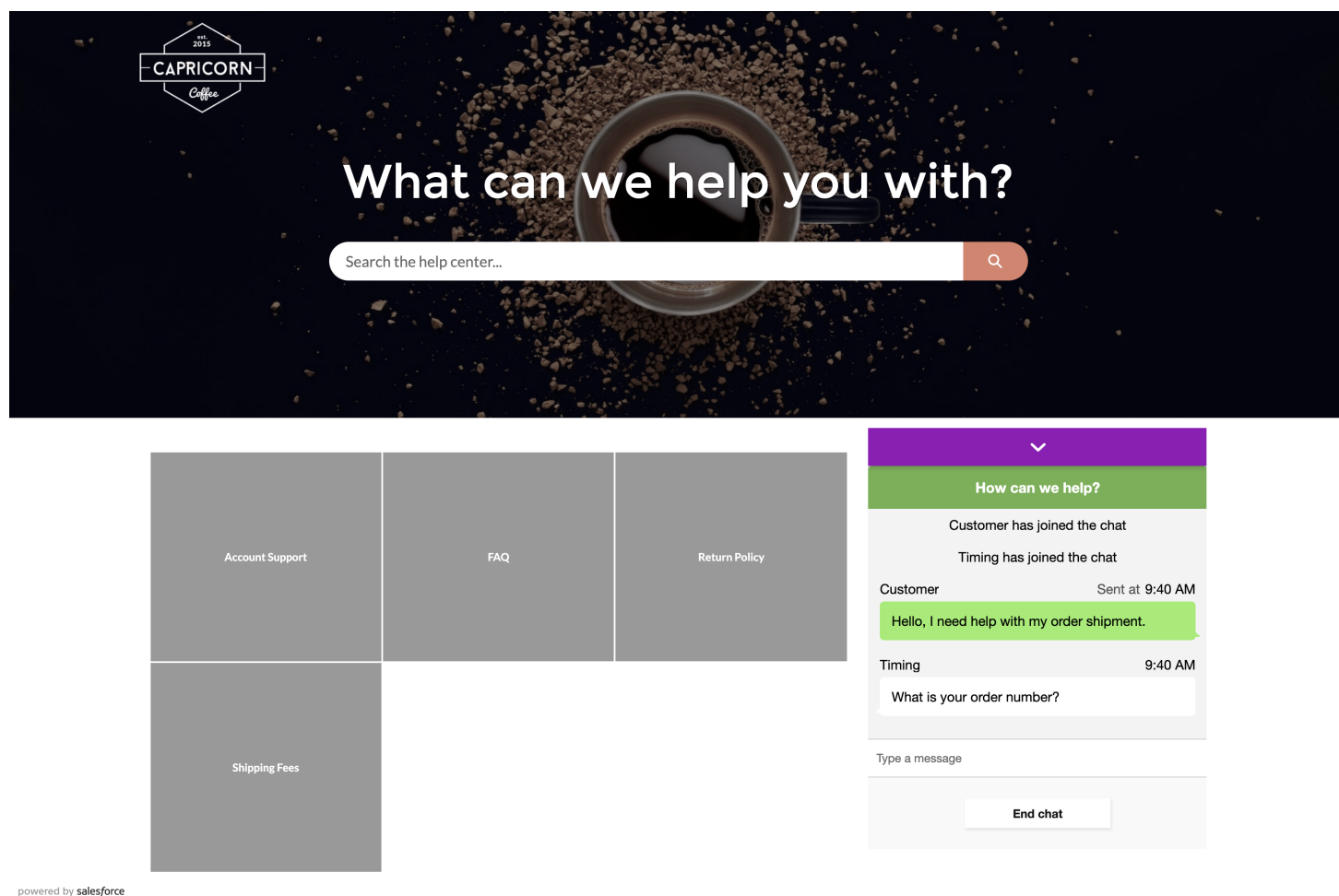
To start using this feature, you can either follow the steps below to setup an Experience Cloud Site for testing purpose, or you can skip to the next section if you are already familiar with SalesForce Experience Cloud. **Setup experience cloud site:**

- Go to Setup

- Search for Digital Experience

- Enable Digital Experience

- Create a new Site by clicking New button

- Choose Help center template to create a new site

- Go to Builder of the new site
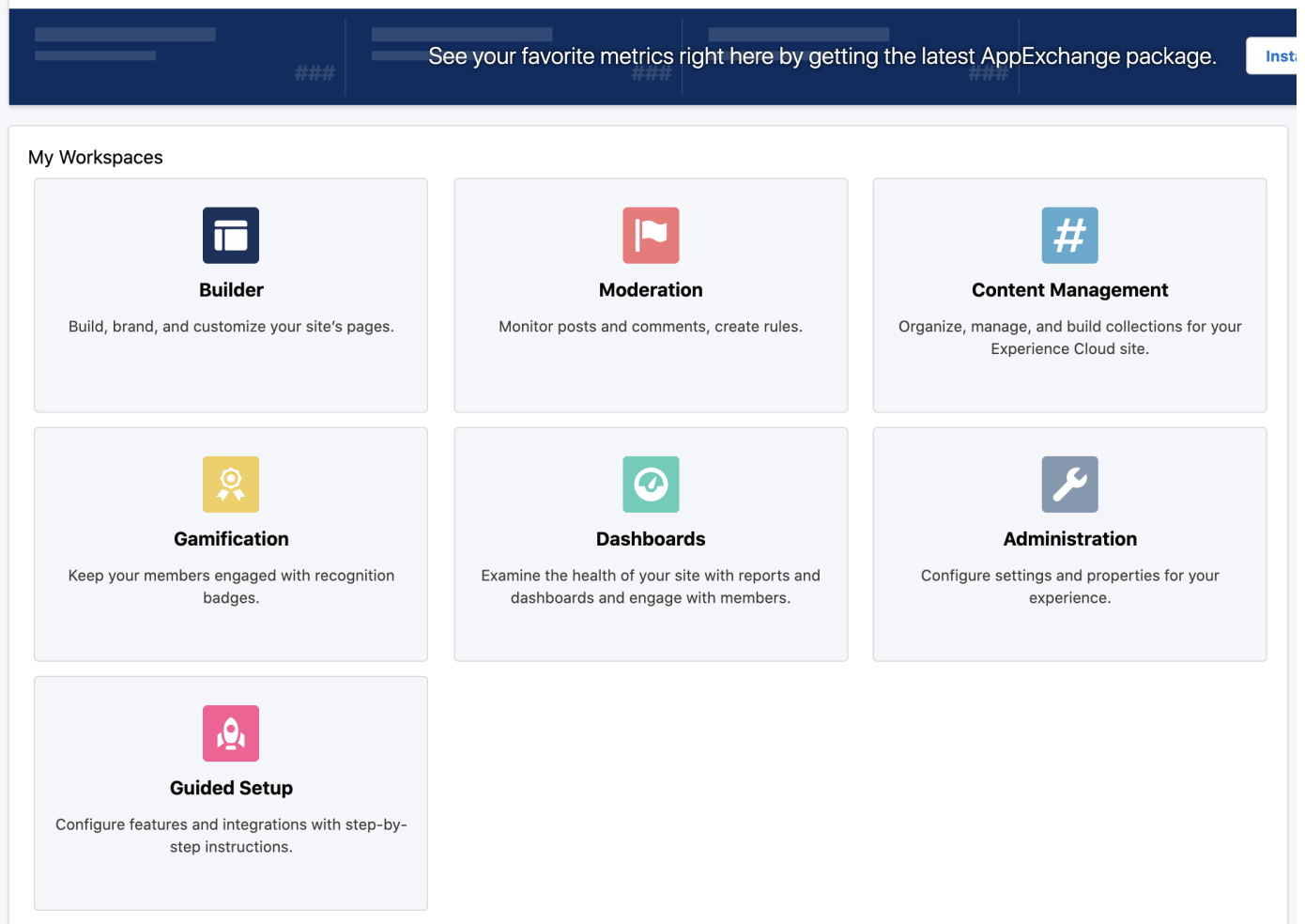
- This will be the place to setup chat widget feature in the following sections. You can get yourself familiar with this Builder before moving to the next section.

Setup Chat Widget in Amazon Connect

- Follow instructions here to setup your Chat Widget and copy the script to a text editor.
- Example of 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.....=');
  amazon_connect('supportedMessagingContentTypes', [ 'text/plain',
'text/markdown' ]);
</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);
    });
  });
});
```

Create Required Visualforce Pages

- Navigate to the Salesforce Setup by clicking on the gear icon in the top-right corner of the page.
- In the Setup menu, search for "Visualforce Pages" in the quick find box and click on that.
- On the "Visualforce Pages" page, click on the "New" button.
- According to Security selected above in Amazon Connect Chat Widget website:
  - If Enabled: Provide name like "AC_ChatWidgetWithJWT" in the "Label" field & "Name" field for your Visualforce page.
  - If Disabled: Provide name like "AC_ChatWidget" in the "Label" field & "Name" field for your Visualforce page.
  - *Note: Going forward in documentation, Use the same name which you mention here in place of "AC_ChatWidgetWithJWT" or "AC_ChatWidget".*
- Check the box front of "Available for Lightning Experience, Experience Builder sites, and the mobile app" field.
- Copy the below snippet in text editor and replace comments with mentioned script copied from [here](/amazon-connect-salesforce-cti/docs/classic/cti-adapter/12-chat-widget-integration#Setup Chat Widget in Amazon Connect).
  - For "AC_ChatWidgetWithJWT" Visual force page:

```
<apex:page id="AC_ChatWidgetWithJWT" showHeader="false" sideBar="false"
docType="html-5.0">
  <html xmlns="http://www.w3.org/2000/svg"
xmlns:xlink="http://www.w3.org/1999/xlink" lang="en">

  <head>
```

```
    <apex:slds />
    <meta charset="utf-8" />
    <meta http-equiv="X-UA-Compatible" content="IE=edge" />
    <meta name="viewport" content="width=device-width, initial-scale=1" />
    <script type="text/javascript">

      <!-- Add Chat widget script here -->
      <!-- Add Call back function for JWT here -->
    </script>
  </head>
  </html>
</apex:page>
```

Example:

```
<apex:page id="AC_ChatWidgetWithJWT" showHeader="false" sideBar="false"
docType="html-5.0">
  <html xmlns="http://www.w3.org/2000/svg"
xmlns:xlink="http://www.w3.org/1999/xlink" lang="en">
  <head>
    <apex:slds />
    <meta charset="utf-8" />
    <meta http-equiv="X-UA-Compatible" content="IE=edge" />
    <meta name="viewport" content="width=device-width, initial-scale=1" />
    <script type="text/javascript">
      <!-- Add Chat widget script here -->
      (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.....=');
      amazon_connect('supportedMessagingContentTypes', [ 'text/plain',
'text/markdown' ]);
      <!-- Add Call back function for JWT here -->
      amazon_connect('authenticate', function(callback) {
```

```
window.fetch('https://www.yourdomain.com/yourAuthEndpoint').then(res => {
        res.json().then(data => {
          callback(data.data);
        });
      });
    });
  </script>
  </head>
  </html>
</apex:page>
```

- For "AC_ChatWidget" Visual force page:

```
<apex:page id="AC_ChatWidget" showHeader="false" sideBar="false"
docType="html-5.0">
<html xmlns="http://www.w3.org/2000/svg"
xmlns:xlink="http://www.w3.org/1999/xlink" lang="en">
<head>
  <apex:slds />
  <meta charset="utf-8" />
  <meta http-equiv="X-UA-Compatible" content="IE=edge" />
  <meta name="viewport" content="width=device-width, initial-scale=1" />
  <script type="text/javascript">
    <!-- Add Chat widget script here -->
  </script>
</head>
</html>
</apex:page>
```

Example:

```
<apex:page id="AC_ChatWidget" showHeader="false" sideBar="false"
docType="html-5.0">
  <html xmlns="http://www.w3.org/2000/svg"
xmlns:xlink="http://www.w3.org/1999/xlink" lang="en">
  <head>
    <apex:slds />
    <meta charset="utf-8" />
    <meta http-equiv="X-UA-Compatible" content="IE=edge" />
    <meta name="viewport" content="width=device-width, initial-scale=1" />
    <script type="text/javascript">
      <!-- Add Chat widget script here -->
      (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.....=');
      amazon_connect('supportedMessagingContentTypes', [ 'text/plain',
'text/markdown' ]);
    </script>
  </head>
  </html>
</apex:page>
```

- Final page should look like below image. Click on Save button.

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.

- 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
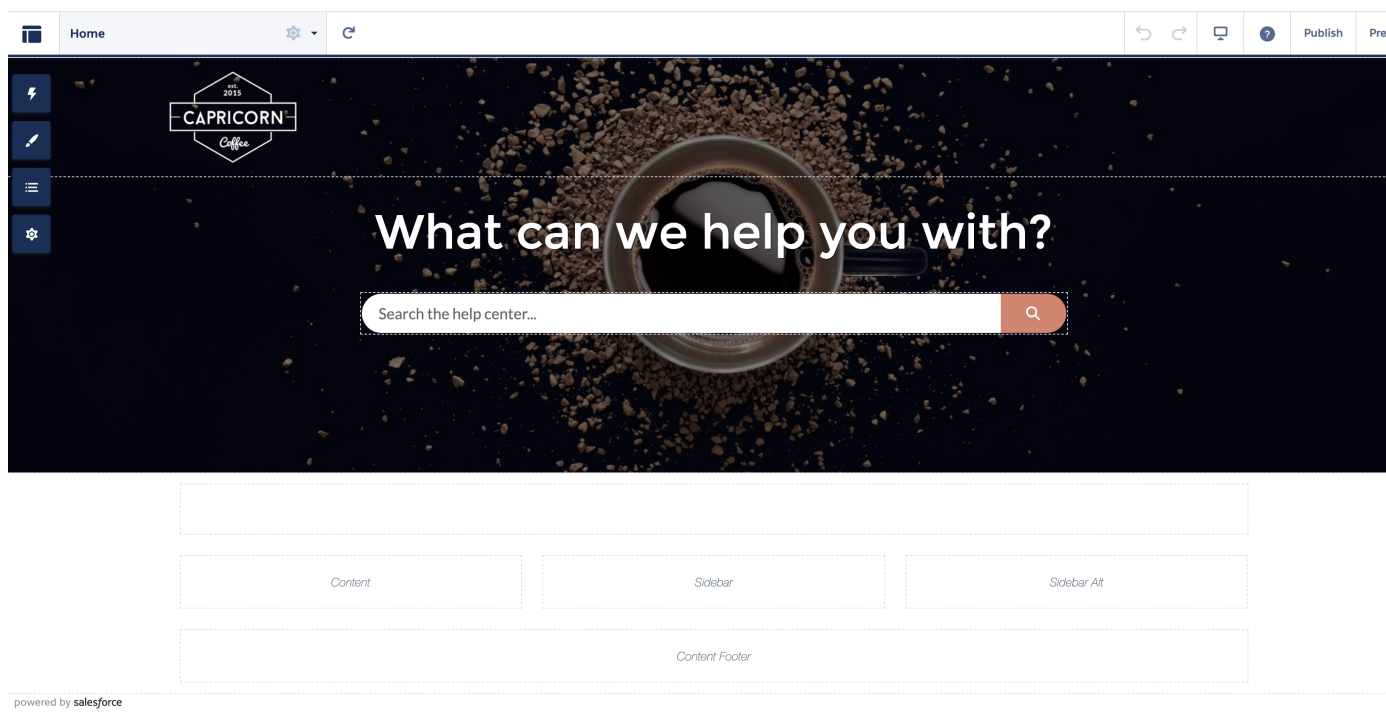
- Open Components

- 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
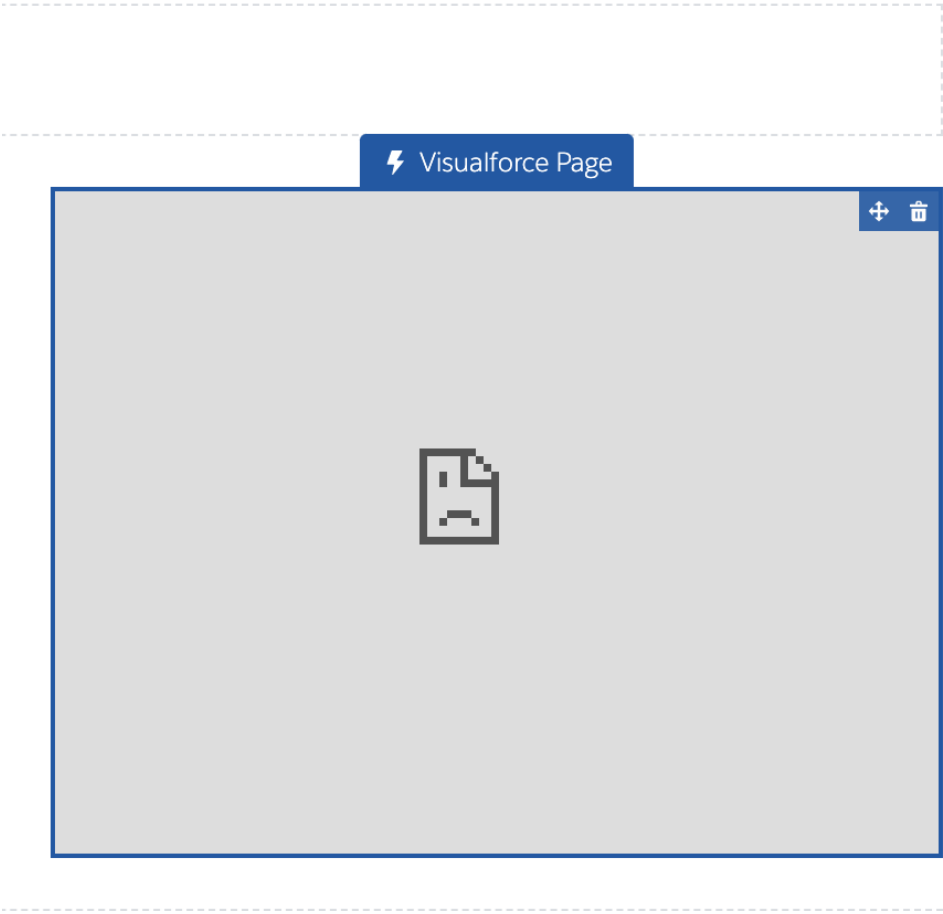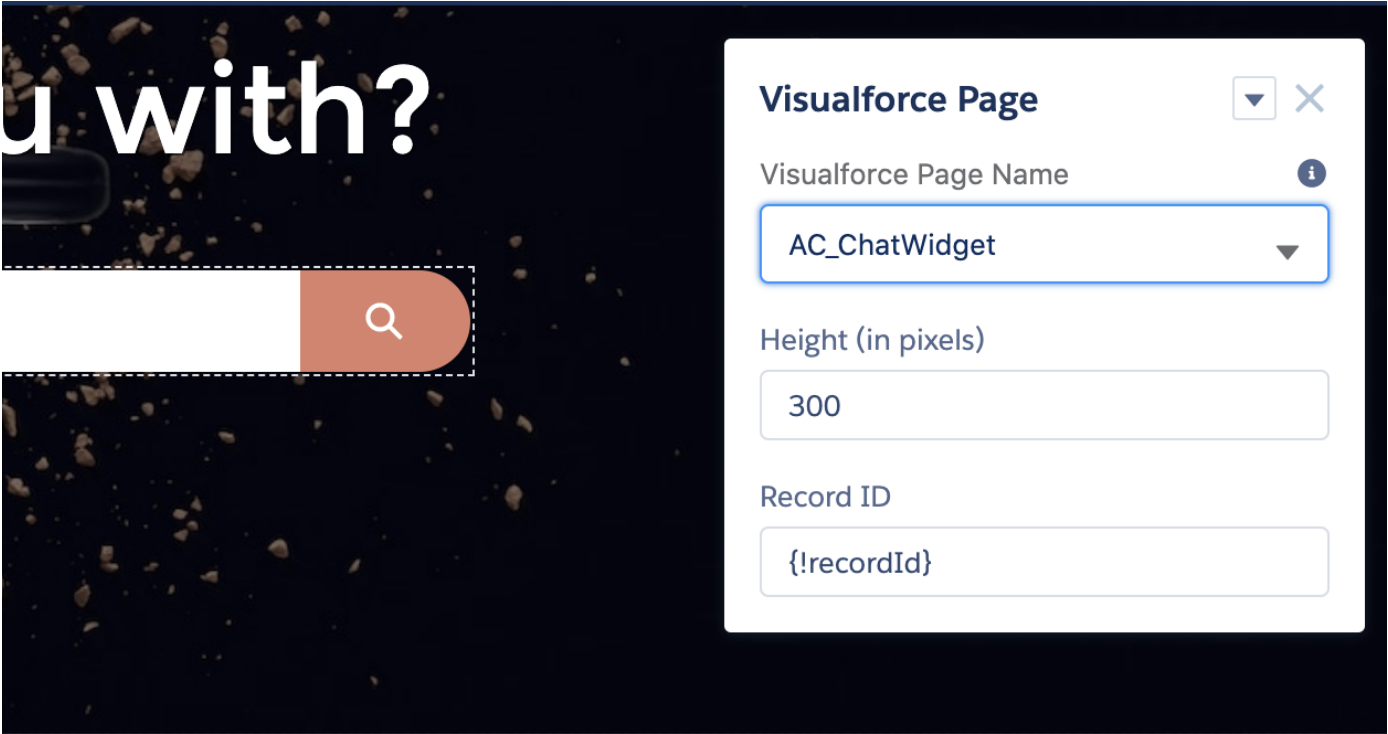
- Go to Settings→General→Guest User Profile and click in to the Guest User Profile

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 "AC_ChatWidget" (or "AC_ChatWidgetWithJWT" if you have enabled security for chat widget)

- Click Save
- Click Publish button on the top right to publish the website
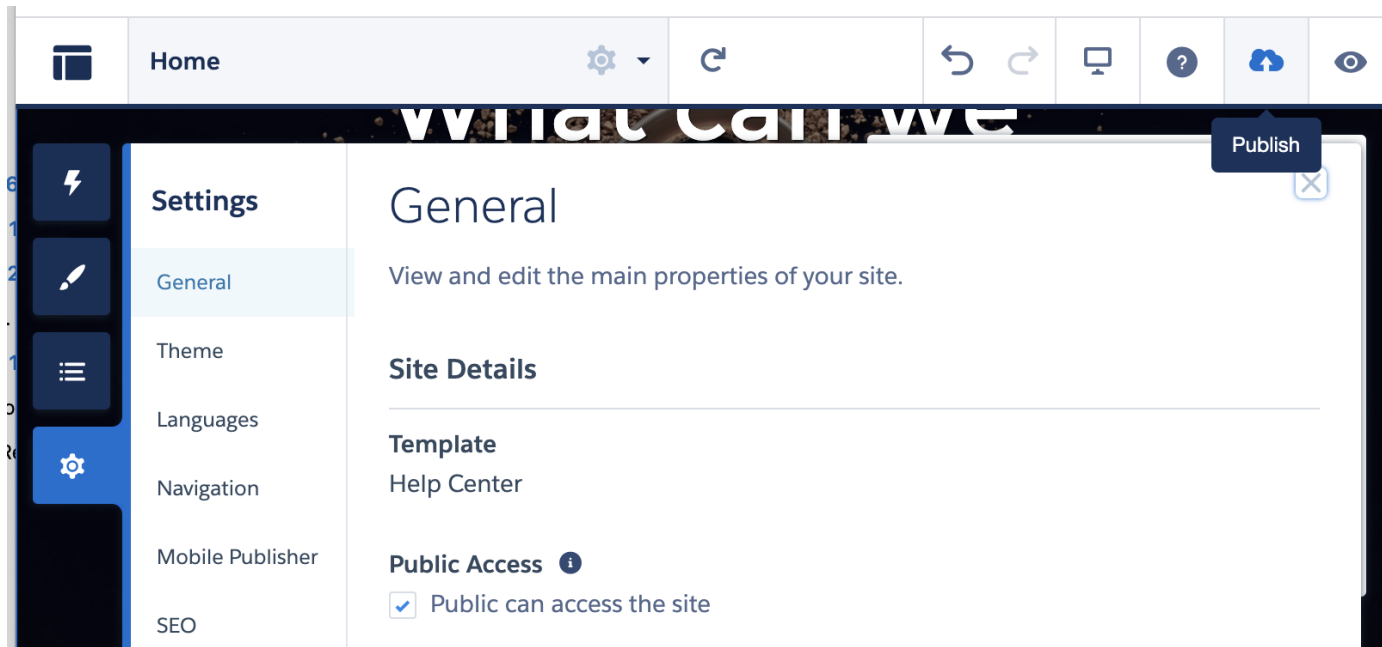
- Copy the published website URL in Settings→Published Status
- Go back to Amazon Connect Chat Widget website, add following url to the allow-list Domains:
  - The AC_ChatWidget visualforce page URL, remove everything after .com
  - The published website URL to chat widget allow-list origin, remove everything after .com
- 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

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.

- 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
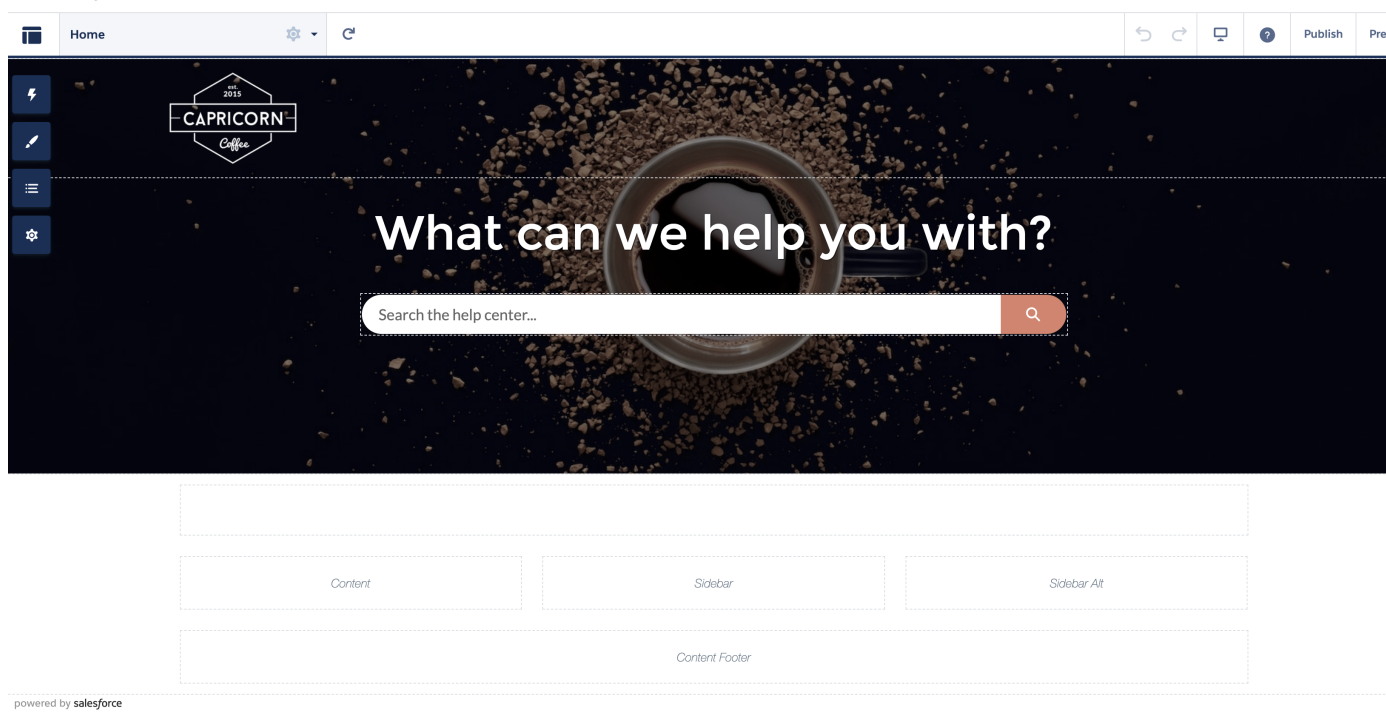
- Open Components

- 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

- Change Chat Widget URL to `<your-website-domain>/AC_ChatWidget` if you did not enable the security for the chat widget. If you have enabled security, change it to `<your-website-domain>/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/AC_ChatWidget`
    - If security enabled --> `demo-developer-edition.na111.force.com/testing/AC_ChatWidgetWithJWT`
- Go to Settings→General→Guest User Profile and click in to the Guest User Profile

- Inside Guest user profile, go to Enabled Visualforce Page Access

- Add 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.

| | Save | Cancel |

Available Visualforce Pages

```
AnswersHome
ChangePassword
IdeasHome
MyProfilePage
SiteTemplate
StdExceptionTemplate
Unauthorized
amazonconnect.ACSFCCP_CallLogging_View
amazonconnect.ACSFCCP_CallRecordingCase
amazonconnect.ACSFCCP_CallRecordingTask
amazonconnect.ACSFCCP_CallTask
amazonconnect.ACSFCCP_ObjectType
amazonconnect.ACSFCCP_PostCallUpdateTask
amazonconnect.AC_AgentStatusSessionEnd
```

Add ▶
Remove ◀

Enabled Visualforce Pages

```
AC_ChatWidget
BandwidthExceeded
CommunitiesLanding
CommunitiesLogin
CommunitiesSelfReg
CommunitiesSelfRegConfirm
CommunitiesTemplate
Exception
FileNotFound
ForgotPassword
ForgotPasswordConfirm
InMaintenance
MicrobatchSelfReg
SiteLogin
```

- Click Save
- Click Publish button on the top right to publish the website

Settings

General

General

View and edit the main properties of your site.

Theme

Site Details

Languages

Template
Help Center

Navigation

Mobile Publisher

Public Access ⓘ

SEO

☑ Public can access the site
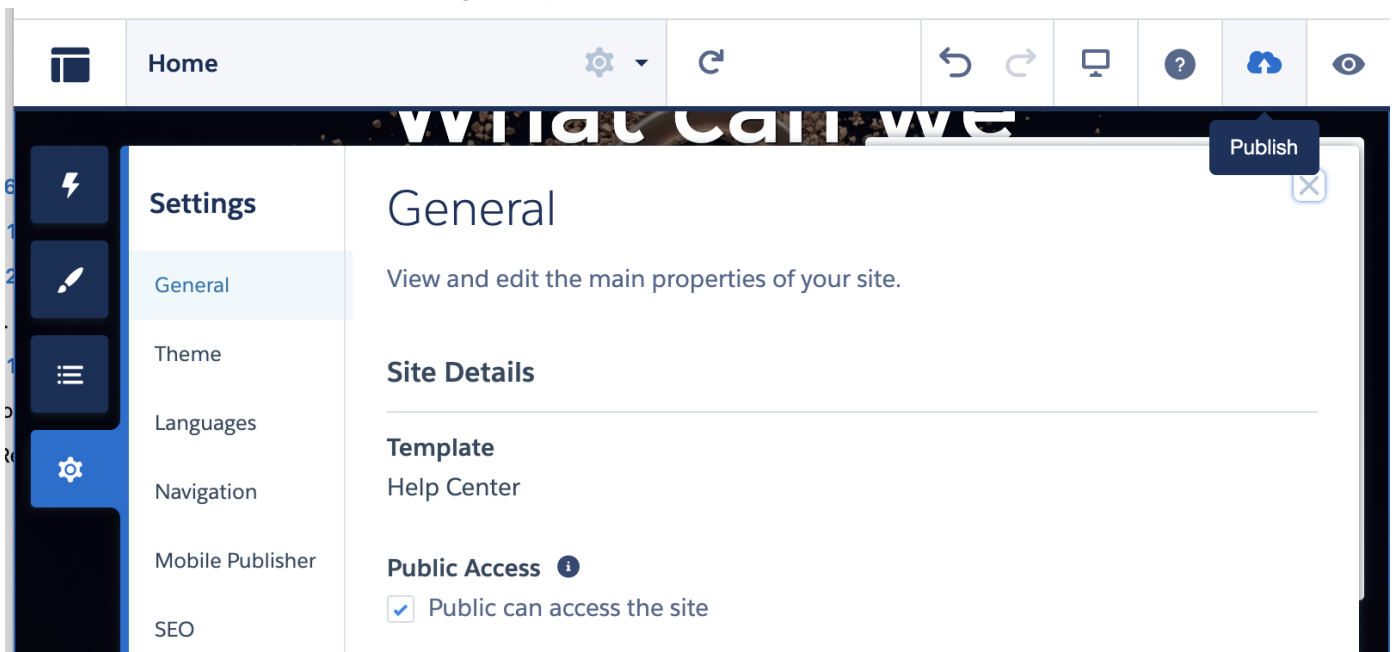
Publish

- 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
```

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

Wisdom Integration

The Amazon Connect CTI Adapter allows for integration with Amazon Connect Wisdom.
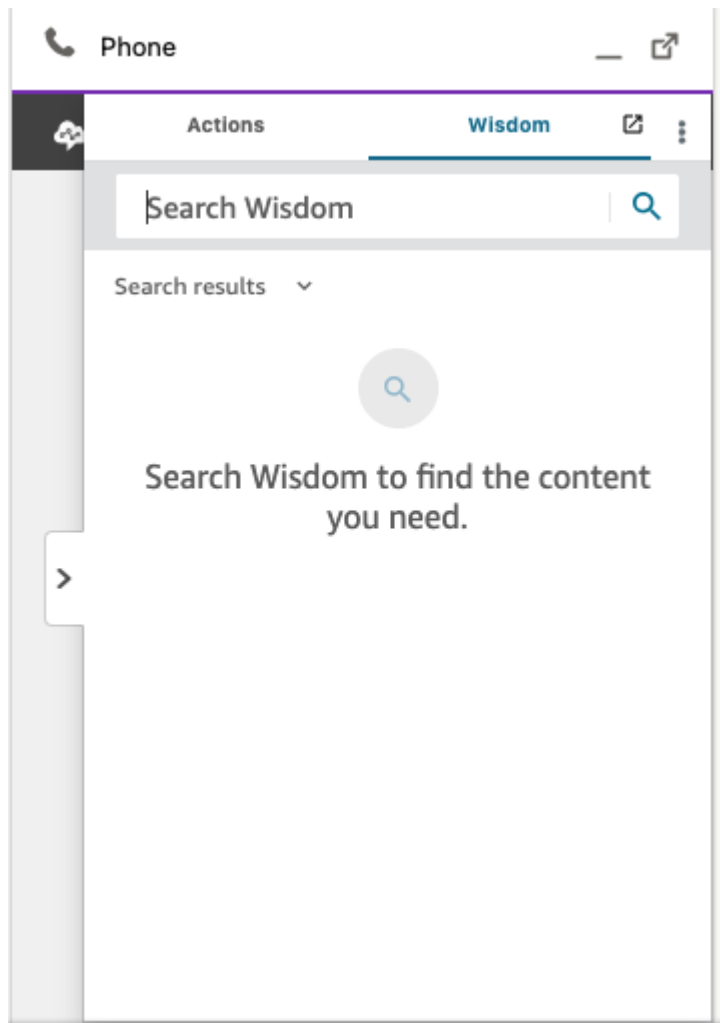
The integration between Wisdom and the CTI Adapter first requires that Wisdom is set up in the Amazon Connect instance that the CTI Adapter is integrated with. See here for full instructions.

Before proceeding with the below, please ensure that Wisdom articles are properly showing up in your Wisdom instance for the specific user you are testing.

Amazon Connect Wisdom Permission Sets:

Salesforce users accessing Amazon Connect Wisdom in Salesforce must belong to either the *AC_Wisdom* permission set, or the *AC_Administrator* permission set.

1. In *setup*, search for and select *permission sets*.
2. Select either the *AC_Wisdom* or the *AC_Administrator* permission set
3. Select *Manage Assignments*, and add all relevant users to the permission set of choice.

Setting up Amazon Connect Wisdom in the CCP Overlay:

1. Navigate to your CTI Adapter

2. Scroll down to the Features section and create a new feature

Features   New AC Feature

| Action | AC Feature Name |

3. Create a new feature with the following values:

```
– AC Feature Name – FEATURE_WISDOM_PANEL
– Value – Enabled: true
```

AC Feature Name | FEATURE_WISDOM_P/

Value | Enabled: true

Active ☑

CTI Adapter ACLightningAdapter

4. In addition, you can also include the `IgnorePermissionSet` setting to the value of the feature on a new line. This setting will show Wisdom if it is enabled regardless of whether the logged in user belongs to the *AC_Wisdom* or the *AC_Administrator* permission set. This setting is required if the logged in user has the `View Setup and Configuration` profile setting set to false.

```
– IgnorePermissionSet: true
```

AC Feature Name
FEATURE_WISDOM_PANEL

Value
Enabled: true
IgnorePermissionSet: true

5. Open the ccp, observe that there is a tab with Wisdom in the CCP Overlay.
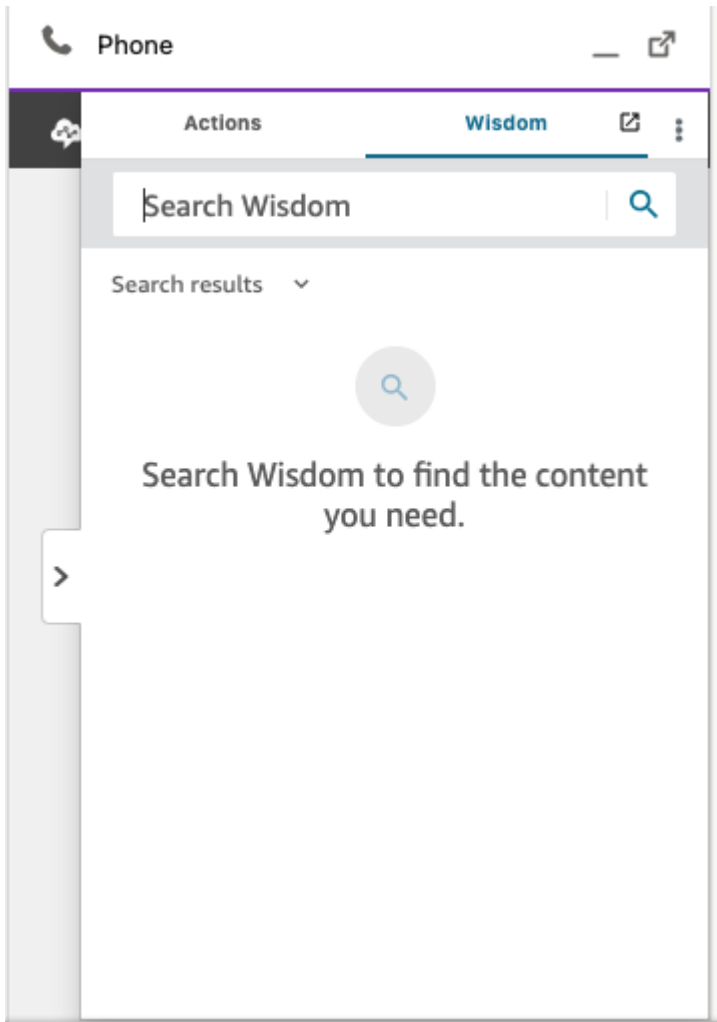
Wisdom can be popped out into a new window by pressing pop out button.
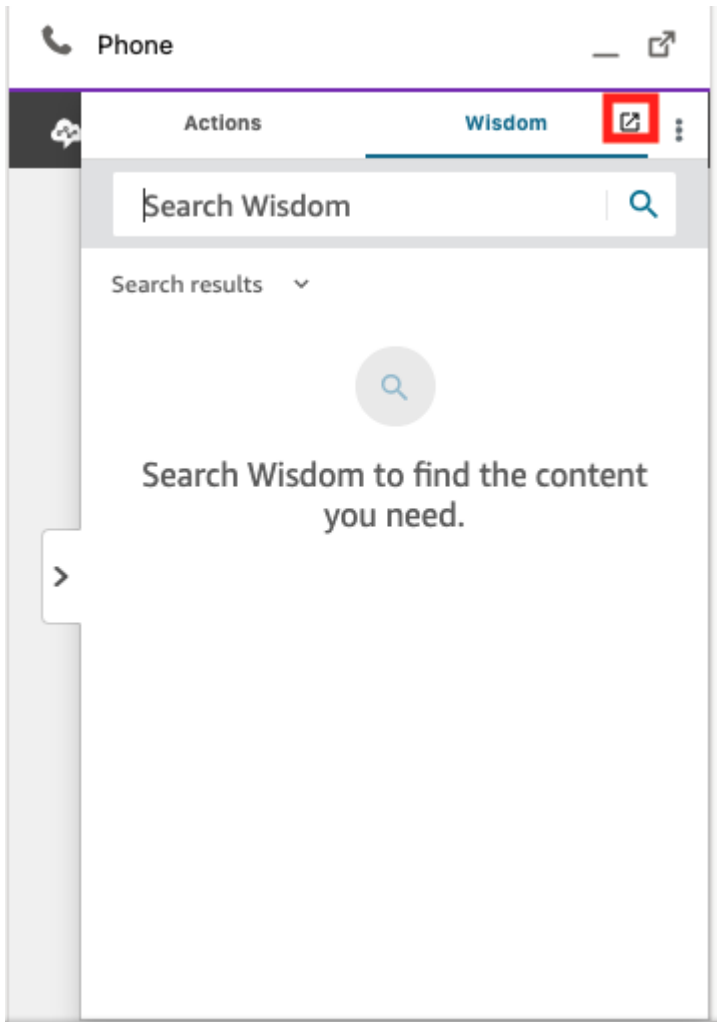
Accessing the Tabbed Version of Wisdom:

Wisdom is also accessible in Tabbed form.

Accessing the Component Version of Wisdom:

The final method of accessing Wisdom in Salesforce is through the Wisdom component.

1. Navigate to Object Manager in Setup in Lightning
2. Select either Task or Case (note: the Wisdom component is embeddable in other pages as well, but you may need to write custom classes in order to do so.)
3. Select *Page Layouts*
4. Select the appropriate layout

5. Select *Visualforce Pages* in the top component
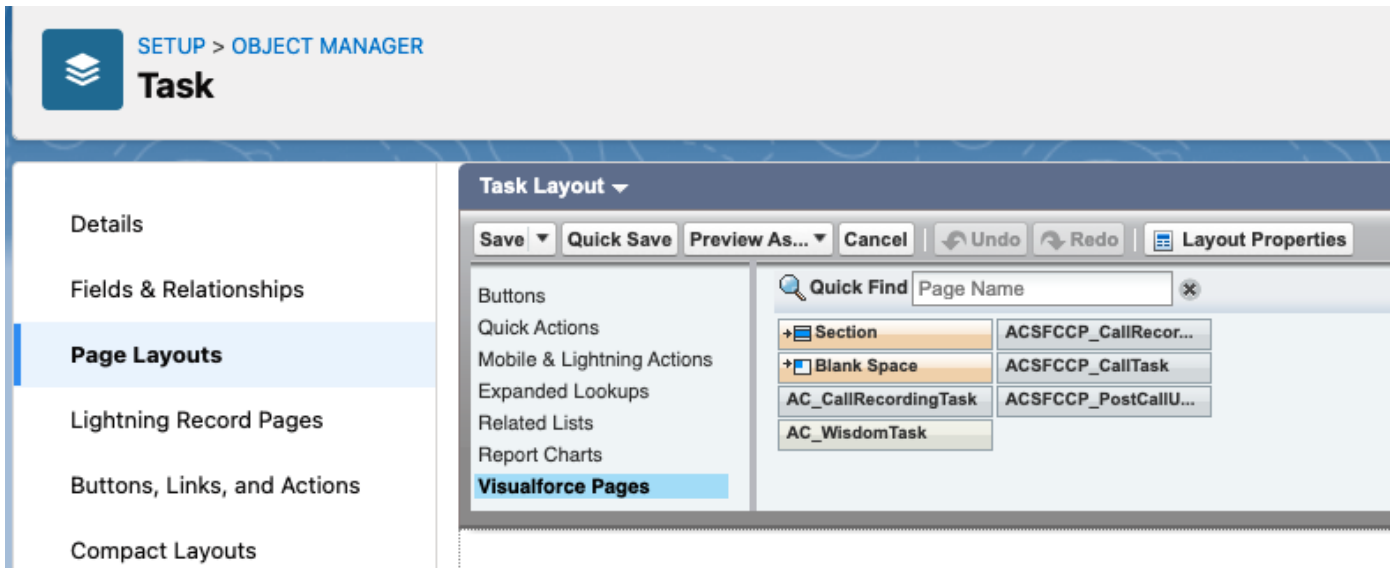
6. Click and drag the appropriate Wisdom visualforce page into the desired location

7. Save the layout

8. Navigate to a task page
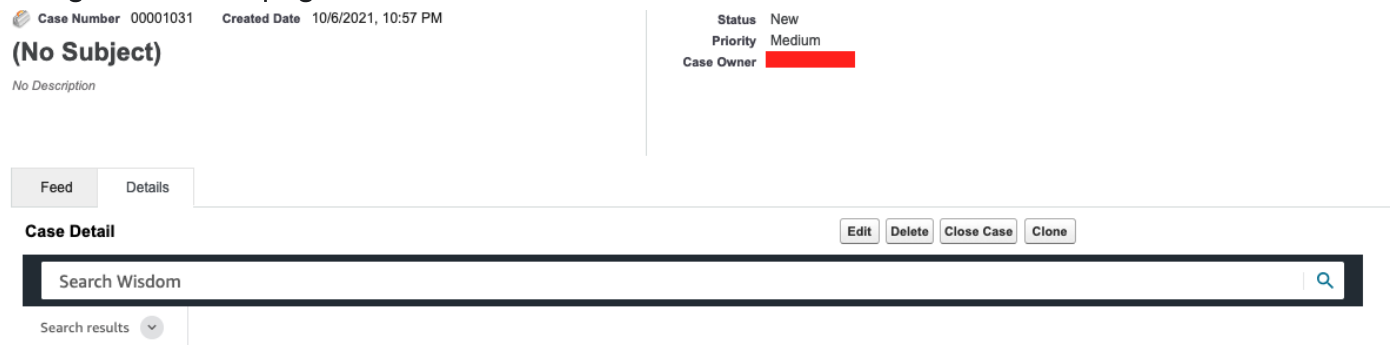
Voice Id

The Amazon Connect CTI Adapter allows for integration with Amazon Connect Voice Id.

The integration between Voice Id and the CTI Adapter first requires that Voice Id is set up in the Amazon Connect instance that the CTI Adapter is integrated with. See here for full instructions.

Before proceeding with the below, please ensure that Voice Id works as expected in a standalone CCP.

Enabling the Voice Id Trigger:

1. In Setup, search for Custom Settings.

2. Click on Custom Settings, and click Manage on the row with the `Toolkit for Amazon Connect` setting

3. Click into your setting (or create one if it doesn't exist)
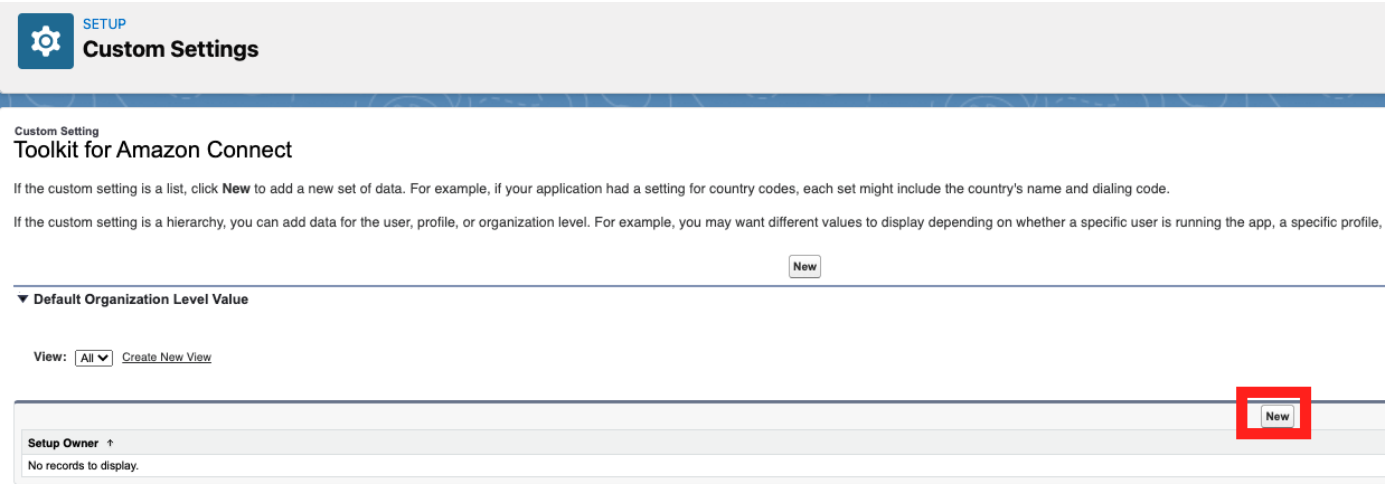
4. Search and assign the toolkit for either your profile or user, and then uncheck Disable the Voice Id Channel Trigger

5. Enter the domain of Amazon Connect instance in the Url field (if it doesn't exist already).

6. Click save.

After following the above steps, `AC_VoiceIdChannel__c` records will start to be created on calls where Voice Id is active. These records can be viewed in the AC Voice Id Channel tab:

All Tabs

Use the links below to quickly navigate to a tab. Alternatively, you can <u>add a tab</u> to your display to better suit the way you work.

View: [All Tabs ▾]

🟧 **AC Contact Channel Analytics**

📕 **AC Contact Trace Records**

🎨 **Account Brands**

📁 **Accounts**

🌐 **AC CTI Adapters**

✋ **AC Guided Setup**

🖥 **AC Real Time Queue Metrics**

🏷 **AC Voice Id Channel**

🎙 **AC Voicemail Drops**

🎚 **AC Wisdom**

📱 **App Launcher**

✏️ **Article Management**

📇 **Assets**

👤 **Authorization Form**

AC Voice Id Channel

AC Voice Id Channel   d Channel 000000000

« Back to List: Custom Object Definitions

AC Voice Id Channel Detail   Edit | Delete | Clone | Sharing

AC Voice Id Channel Name	Voice Id Channel 000000000
Contact Id	a6a6ef03-f073-4c96-ab6f-b9382ff3bc18
Customer Number	
Speaker Id	no_speaker_id_found
Speaker Status	no_speaker_id_found
Authentication Result Decision	Error
Authentication Result Score	0

Invoking the Amazon Connect Salesforce Lambda in a Contact Flow

The Amazon Connect Contact Flow defines the routing behaviour within Amazon Connect, allowing contact center administrators to customize call flow behaviour such as playing prompts, invoking Lambda functions for data lookup, and sending the call to different queues based on various conditions. As a result, Contact Flows are expected to be highly customized for each organization. While the Adapter package does not provide any Contact Flows, there are some best practices that are worth highlighting when utilizing the Adapter.

The key element that enables Contact Flow integration is the AWS Lambda function. A Lambda function is a serverless piece of code that is invoked by the Contact Flow. Typically, Lambda functions are used to update or retrieve information from databases or APIs, as well as integrating with other systems. Lambda function can return any data processed to the Contact Flow where it can be used for decision making.

Since Salesforce is highly customizable, the same Salesforce object in a different environment may have different fields associated with it. As a result, we can expect objects to have different requirements for how they are retrieved, updated and created. The CTI Adapter was built to be able to query Salesforce objects regardless of how they have been customized. The user of the Adapter must therefore ensure they are passing the appropriate parameters to the Lambda functions provided as part of the Adapter.

The Lambda function supports different operations, based on the mandatory input parameter "sf_operation".

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.

- "**sf_object**" parameter contains Salesforce Object, like Case, Contact etc.

- "**sf_fields**" parameter contains a set of fields to be returned in a result. For example, if we are querying Case, we might specify "Id, IsClosed, Subject", or if we are querying Contact, we might specify "Id, Name, Email"

- Specify a conditional parameter, for example "CaseNumber" or "homephone". Multiple values may be sent and they will be applied with "AND" operator.

In the Amazon Connect Contact Flow Designer, add *Integrate > Invoke AWS Lambda function* block. Set 'sfInvokeAPI' Lambda ARN and make sure you have granted Amazon Connect to invoke the Lambda Function.

Example for phone number lookup:

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

arn:aws:lambda:us-east-1:680944752362:function:aws-ser

Function input parameters

● **Use text** ✕

Destination key

sf_operation

Value

lookup

● **Use text** ✕

Destination key

sf_object

Value

Contact

A result example:

```
"ExternalResults": {
    "Id": "0031r000026MVPIAA4",
    "sf_count": "1",
    "Name": "Milos Cosic"
}
```

Example for Case lookup:

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

2362:function:aws-serverless-repository-AmazonConnec-s

Function input parameters

Use text

Destination key

sf_operation

Value

lookup

Use text

Destination key

sf_object

Value

Case

A result example:

```
"ExternalResults": {
    "Id": "5001r000023QcAcAAK",
    "IsClosed": "true",
    "sf_count": "1",
    "Subject": "Amazon Connect Case"
}
```

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.

- "**sf_object**" parameter contains Salesforce to be created, like Case.

- 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 Amazon Connect Contact Flow Designer, add *Integrate > Invoke AWS Lambda function* block. Set 'sfInvokeAPI' Lambda ARN and make sure you have granted Amazon Connect to invoke the Lambda Function.

An example for Case creation:

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

erless-repository-AmazonConnec-sfInvokeAPI-2R3T34AMG

Function input parameters

● **Use text**   ✕

Destination key

sf_operation

Value

create

● **Use text**   ✕

Destination key

sf_object

Value

Case

● **Use text**   ✕

Destination key

Origin

Value

Phone

Use text   ✕

Destination key

Status

Value

New

Use text   ✕

Use attribute

Destination key

ContactId

Type

External   ⬍

Attribute

Id

Contact Id is usually received as a result of a previous phone lookup, but it can be also stored as an Attribute (i.e. sf_contact_id)

Use text   ✕

Destination key

Subject

Value

Amazon Connect Case

Use text   ✕

Destination key

Priority

Value

Low

A result example (providing the newly created Case Id):

```
"ExternalResults": {
    "Id": "5001r000023QfhPAAS"
},
```

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.

- **"sf_object"** parameter contains Salesforce to be updated, like Case.

- Specify additional parameters for the Salesforce object to be created. Parameters must include `sf_object` and `sf_id`.

In the Amazon Connect Contact Flow Designer, add *Integrate > Invoke AWS Lambda function* block. Set 'sfInvokeAPI' Lambda ARN and make sure you have granted Amazon Connect to invoke the Lambda Function.

An example for Case update:

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

752362:function:aws-serverless-repository-AmazonConnec

Function input parameters

● Use text   ✕

Destination key

sf_operation

Value

update

● Use text   ✕

Destination key

sf_object

Value

Case

● Use attribute

Destination key

sf_id

Type
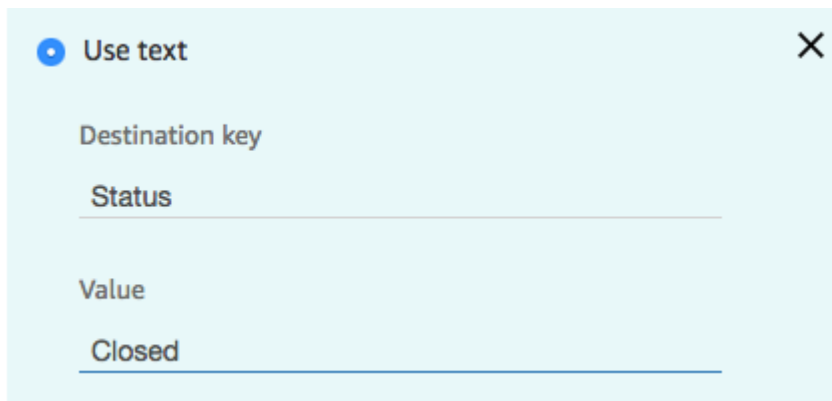
External   ⬍

Attribute

Id

Case Id is usually received as a result of a previous case lookup, but it can be also stored as an Attribute (i.e. sf_case_id)

A result example (HTTP Status Code):

```
"ExternalResults": {
    "Status": "204"
```

204 is "No Content" success code

Salesforce Phone Lookup

This operation is invoked by setting "sf_operation" to "phoneLookup". In this case, the Lambda function queries Salesforce for Contacts based on the parameter passed to it.

It uses the 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.

- "**sf_phone**" parameter contains the phone number to search.

- "**sf_fields**" parameter contains a set of fields to be returned in a result. As it searches for Contacts, we might specify "Id, Name, Email"

In the Amazon Connect Contact Flow Designer, add *Integrate > Invoke AWS Lambda function* block. Set 'sfInvokeAPI' Lambda ARN and make sure you have granted Amazon Connect to invoke the Lambda Function.

Example for phone number lookup:

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

erless-repository-AmazonConnec-sfInvokeAPI-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 ⬍

A result example:

```
"ExternalResults": {
    "Id": "0031r000026MVPIAA4",
    "sf_count": "1",
    "Name": "Milos Cosic"
}
```

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.

- "**query**" parameter contains the 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".

Function input parameters

In the contact flow example below, we look for a customer by phone number.

○ Use text   ✕

◉ Use attribute

Destination key

number

Type

System   ⌄

Attribute

Customer Number   ⌄

(full text of the value is "select Id from Contact where Phone LIKE \'%number%\'")

◉ Use text   ✕

Destination key

query

Value

select Id from Contact where Phone LIKE '%num|

○ Use attribute

This operation returns a response of:

```json
{
    "sf_records_0_Id": "00303000001RZfIAAW",
    "sf_count": 1
}
```

Note that `sf_count` is the count of records matched and not the count of fields in the response. This means all fields that start with `sf_records_i_` count as one record. If the query above returned the Name as well as the Id and matched more than one record, the response will be:

```json
{
    "sf_records_0_Id": "00303000001RZfIAAW",
    "sf_records_0_Name": "Name0",
    "sf_records_1_Id": "00303000001RZfIAAE",
    "sf_records_1_Name": "Name1",
    "sf_count": 2
}
```

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**" parameter contains the 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   ✕

Destination key

sf_operation

Value

query

○ Use attribute

(full text of the value is "select Id from Contact where Phone LIKE \'%number%\'")

◉ **Use text**   ✕

> Destination key
>
> query
>
> Value
>
> select Id from Contact where Phone LIKE '%num|

○ **Use attribute**

○ **Use text**   ✕

◉ **Use attribute**

> Destination key
>
> number
>
> Type
>
> System   ⌄
>
> Attribute
>
> Customer Number   ⌄

This operation returns a response of:

```json
{
    "sf_records": [
        {
```

```
            "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}}"

- caseId: 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**   ✕

Destination key

sf_subjectId

Value

00303000001RZfIAAW

○ Use attribute

◉ Use text   ✕

Destination key

sf_messageType

Value

Text

○ Use attribute

○ Use text   ✕

◉ Use attribute

Destination key

contactId

Type

System   ▾

Attribute

Contact id   ▾

◉ 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}}.")

The operation returns a response of:

```
{
    "Id": "0D503000000ILY5CAO"
}
```

apiuser

I had a problem during the call. My contact id is dda99fbf-6186-4125-ba59-c461d620fdbd.

Comment · Like · Today at 3:45 PM   via Amazon Connect Integration

the Subject:

Salesforce createChatterComment

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 }}"

- caseId: 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": "0D703000000ChhNCAS"
}
```

See the chatter post appear attached to the Subject:

apiuser

I had a problem during the call. My contact id is dda99fbf-6186-4125-ba59-c461d620fdbd.

Comment · Like · Today at 3:45 PM   via Amazon Connect Integration

apiuser

This concern has been addressed.

Like · Today at 3:53 PM via Amazon Connect Integration

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

See the below example:

○ Use text   ✕

Destination key

q

Value

test

○ Use attribute

59

○ Use text   ✕

Destination key

sf_object

Value

Case

○ Use attribute

60

◉ Use text   ✕

    Destination key

    sf_fields

    Value

    Subject, Status

○ Use attribute

61

◉ Use text   ✕

    Destination key

    overallLimit

    Value

    3

○ Use attribute

62

The operation returns a response of:

```
{
    "sf_records_0_Id": "50001000001B9e6AAG",
    "sf_records_0_Subject": "test subject",
    "sf_records_0_Status": "New",
    "sf_records_1_Id": "50001000001B9eWAAS",
    "sf_records_1_Subject": "test subject",
    "sf_records_1_Status": "New",
    "sf_records_2_Id": "50001000001BDgiAAG",
    "sf_records_2_Subject": "test subject",
    "sf_records_2_Status": "New",
    "sf_count": 3
}
```

Note that `sf_count` is the count of records matched and not the count of fields in the response. This means all fields that start with `sf_records_i_` count as one record.

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

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:

```json
{
    "Id": "50001000001BIn6AAG",
    "Subject": "test subject unique",
    "Status": "New",
    "sf_count": 1
}
```

Appendix A: CTI Flow Sources and Events

The following sources are defined in the adapter for use with CTI Scripts:

- 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 chat 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

Appendix B: Configuring Salesforce as Your Identity Provider

Amazon Connect supports Security Assertion Markup Language (SAML 2.0) to enable single sign on(SSO). Salesforce can act as a single sign on identity provider to service providers, allowing end users to easily and securely access many web and mobile applications with one login. By establishing the SSO integration between Amazon Connect and Salesforce, you will be able to seamlessly login to Salesforce and the same credentials will be used to auto-login to Amazon Connect.

Configuration

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.

4. Choose **Download Metadata** and save the file to your computer.

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**

4. Choose **Add Provider**

5. On the Configure Provider screen, select **SAML** as the 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

Select type of trusted entity

AWS service EC2, Lambda and others	**Another AWS account** Belonging to you or 3rd party	**Web identity** Cognito or any OpenID provider	**SAML 2.0 federation** Your corporate directory

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   SalesforceConnect ▼

Create new provider ☐   Refresh

○ Allow programmatic access only
● Allow programmatic and AWS Management Console access

Attribute   SAML:aud ▼

Value*   https://signin.aws.amazon.com/saml

Condition   ⊕ Add condition (optional)

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": [
                "**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.

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 **Apps** and select **Build->Create->Apps**

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

| | Save | Cancel |

Basic Information

Connected App Name	AmazonConnectSAML
API Name	AmazonConnectSAML
Contact Email	dougjaso+ctiadapterdemo@amazon.c
Contact Phone	
Logo Image URL	
	Upload logo image or Choose one of our sample logos
Icon URL	
	Choose one of our sample logos
Info URL	
Description	

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	
Enable SAML	☑
Entity Id	SalesforceConnect
ACS URL	https://signin.aws.amazon.com/saml
Enable Single Logout	☐
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	☐
Encrypt SAML Response	☐

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
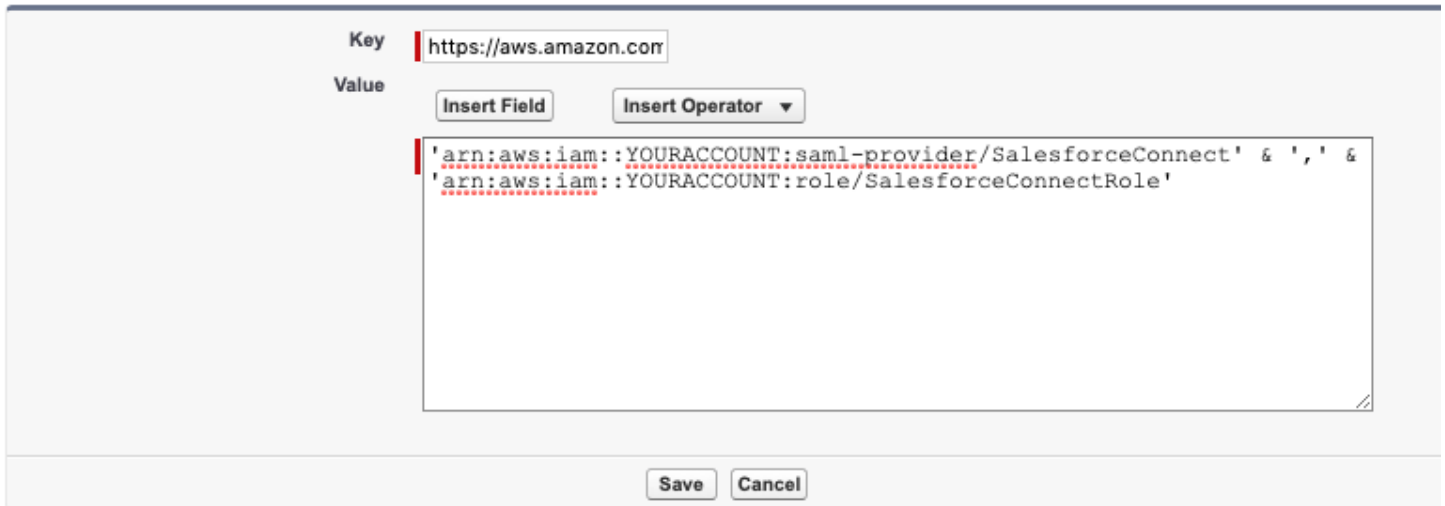
16. Select New again to configure another custom attribute

17. Set Key as **https://aws.amazon.com/SAML/Attributes/Role**

18. The Value is going to be a combination of the Indentity 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

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.
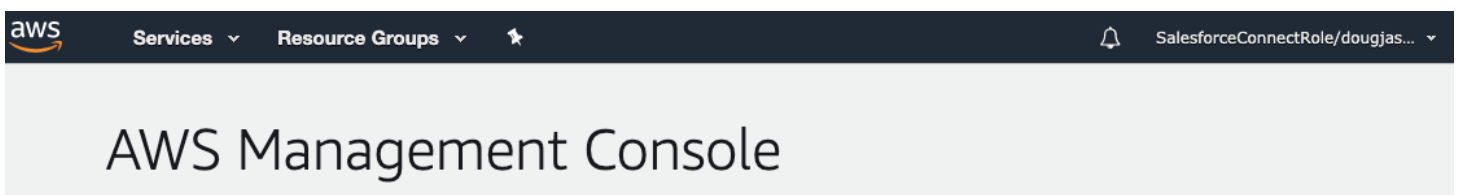
28. The Federated Login consists of the Role name and your Salesforce email address.

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 **Log in for emergency access**
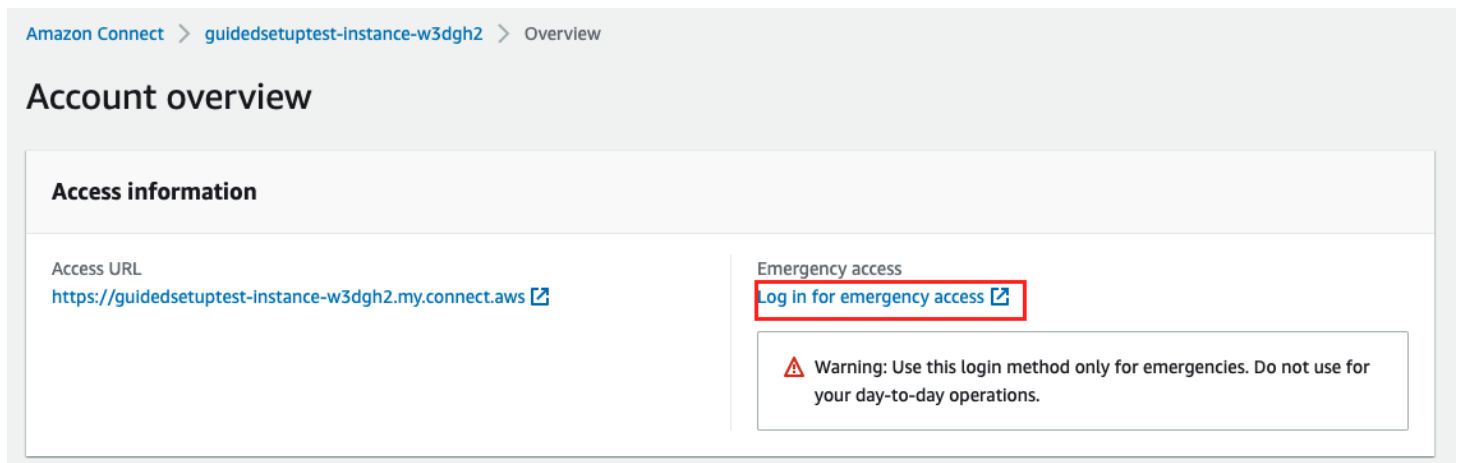
5. Within the Amazon Connect administration portal, select **Users** then choose **User Management**

6. Click **Add New Users**

7. Leave **Create and setup a new user** selected and choose **Next**

8. Complete the First and Last name fields as appropriate

9. Set the login name to match the **Email Address** of your Salesforce user

10. Set the **Routing Profile**. In this example, the default Basic Routing Profile is shown

11. Set the **Security Profile**. In this example, *Admin* is shown

12. Select **Save**

13. Select **Create Users**

14. 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 (replace `us-west-2` with the region you are using):

```
https://us-west-2.console.aws.amazon.com/connect/federate/InstanceId?
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

Distribution settings

Instance ARN

arn:aws:connect:us-west-2:YOUR-ACCOUNT-ID:instance/YOUR-INSTANCE-ID-XXX-XXXXXXXX

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=0sp0N000000Caid&RelayState=https://us-west-
2.console.aws.amazon.com/connect/federate/InstanceId?
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**.
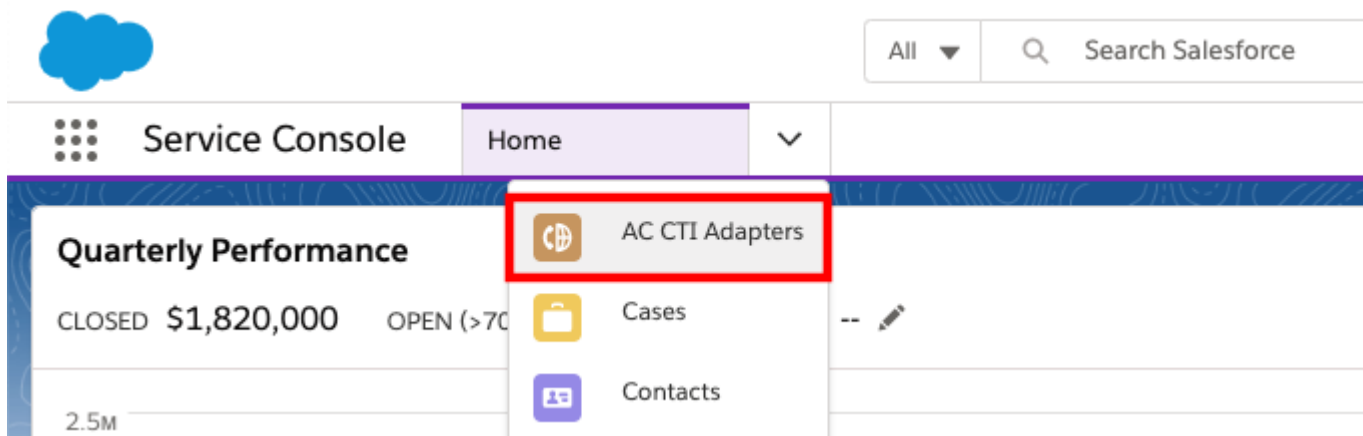
3. Select **ACLightningAdapter**

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

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://mXXXXXXrun-dev-ed.my.salesforce.com/idp/login?
app=0sp0N000000Caid&RelayState=https://us-west-
2.console.aws.amazon.com/connect/federate/<b>InstanceId</b>?
destination=%2Fconnect%2Fccp
```

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

7. For the SSO Relay State, copy everything AFTER the question mark (do not copy the question mark), for example:

```
https://mXXXXXXrun-dev-ed.my.salesforce.com/idp/login?
app=0sp0N000000Caid&RelayState=https://us-west-
2.console.aws.amazon.com/connect/federate/<b>InstanceId</b>?
destination=%2Fconnect%2Fccp
```

8. Paste this portion of the URL into the **SSO Relay State** field

Single SignOn (SSO)

SSO Url

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

SSO Relay State

app=0sp6g000000XZyd&RelayState=https://us-west-2.console.aws.amazon.com/connect/federate/YOUR-INSTANCE-ID?destination=%2Fconnect%2Fccp

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

Pop-ups blocked: ✕

- https://groomlake-...=%2Fconnect%2Fccp

◉ Always allow pop-ups and redirects from https://ctiadapterdemo-dev-ed.lightning.force.com

◯ Continue blocking

| Manage | Done |
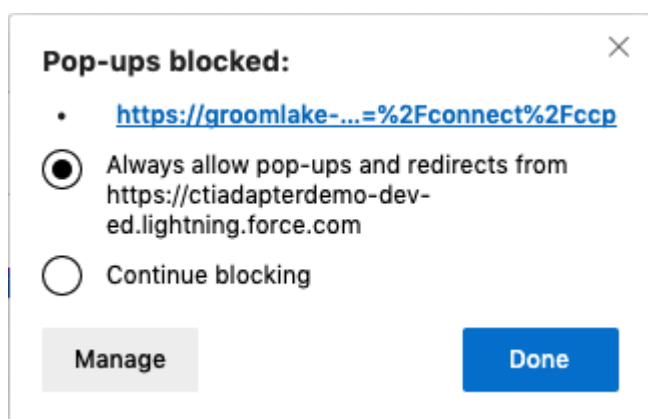
11. Select the **phone icon** in the console toolbar to open the CCP Note: You may also receive popups to allow notifications and microphone access. Please accept both.

12. Click the Sign into CCP button

13. You should now see the authenticated and logged in CCP

Configuration is complete

Appendix C: CTI Flow Examples

This appendix includes samples scripts that provide different functionality depending on the event source.

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

Create a Task (Call Activity) and Pop That Task using CTI Actions

Source: CTI Action

Event: N/A

More details

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.

Download

Appendix D: 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 consued 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 consued with "Screenpop Search."

Run Apex

The command to run an apex function.

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 Reference Urls

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 visibble 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 60 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 Reference Urls

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.

Destroy Agent Connection to Live Contact

Destroys destroy the agent's connection to any live contact that is currently being handled by the CTI Flow. This is being deprecated for contacts in ACW. Use the ClearContact block for Clear ACW functionality.

Clear Contact

Clears a contact that is no longer being worked on – i.e. it\'s one of ERROR, ACW, MISSED, REJECTED.