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Using Amazon Connect

This guide covers how to get started with using Amazon Connect to make and receive calls, generate helpful metrics and reporting, manage user permissions and security profiles, create contact flows, and scale your contact center to match your business requirements.

Amazon Connect Concepts

The terminology and concepts described below are central to your understanding and use of Amazon Connect.

**instance**

A container for the resources and settings of your contact center, including user directory, data encryption and storage settings, and integration settings.

**Amazon Connect**

The management console where configuration and reporting are managed. Each instance has a separate management console.

**Contact Control Panel (CCP)**

The interface through which agents handle customer contacts.

**Outbound caller ID**

The name and number displayed to the recipient of a call as the ID of a caller.

When you create a queue, you can specify an **Outbound caller ID name** and **Outbound caller ID number** to use for the queue. However, the information displayed to the person you call may not always match the name or number registered with the carrier for Amazon Connect. In some cases, the caller ID information is provided by the carrier of the person you are calling. The information may not be up-to-date with that carrier, or the number may get passed differently between systems due to hardware or configuration differences. If that is the case, the person you call may not see the phone number, or may see the name of a previously registered owner of the number, instead of the name of the registered person from your organization.

**agent**

Users who handle contacts using Amazon Connect.

**users**

All users of the system and web application. Users can have different roles or permissions, for example, agent, manager, or system administrator.

**reports**

Real-time and historical reporting for an instance, including agent activity.

**status**

Metrics are gathered based on changes in agent status (available, offline, and so on).
Working with User Settings

There are several roles and permissions available on Amazon Connect. The varying levels of permission allow for protection of valuable data (such as call records), and the management of resources.

Permissions also dictate which users can see various parts of Amazon Connect. For example, an agent has view-only access and is only able to see the CCP. An administrator is able to see and access all the functionality in Amazon Connect.

Managing User Profiles and Permissions

You can manage user security, routing, reporting, and contact management settings with granulated permissions and profiles.

Security Profiles

Permissions are required for users to access, view, and edit certain administrative functionality and tools. Security profiles determine which users and roles can view and perform specific tasks. The following resource groups can be edited:

- **Routing**—Routing profiles, quick connects, hours of operation, queues.
- **Numbers and flows**—Prompts, contact flows, phone numbers.
- **Users and permissions**—Users, agent grouping, security profiles, agent status.
- **Contact Control Panel (CCP)**—CCP access, outbound calls.
- **Metrics and Quality**—Access metrics, manager listen in, call recordings, saved reports.
- **Historical Changes**—View historical changes.

Security permissions for each group are further granulated to allow for different levels of permission, from allowing full read-write access to **All** resources to only allowing a user to **View** resources.

There are four default security profiles:

- **Admin**—An admin can access and edit all available resources and actions.
- **Agent**—This profile only allows access to the CCP. No other actions are available.
- **CallCenterManager**—This profile allows access to user management, metrics, and routing settings.
- **QualityAnalyst**—This profile only allows access to metrics.

To create a security profile

1. Choose **Users, Security profiles, Add new security profile**.
2. Type a name and description, and choose the appropriate permissions for each group.
   
   **Note**
   In some cases, selecting a permission results in other permissions being included. For example, if you choose **Edit, View** is also included.
3. Choose **Save**.

To manage and edit security profiles

1. Choose **Users, Security profiles**, and select the profile to edit.
2. Select a category name to display the options available.
3. Select or deselect options as required.
4. Choose Save.

**To assign a security profile to a user**
1. Choose Users, User management.
2. Select a single user (or multiple users) and choose Edit.
3. Select the relevant profiles from the options provided.

   **Note**
   If you're editing multiple users, they are all assigned the chosen settings.
4. Choose Save.

### Routing Profiles

A routing profile is a collection of queues that determines how contacts are routed to agents. Routing profiles are used to prioritize contacts across specific queues and manage the priority in which contacts are handled based on the queues they are routed to. This can be used to ensure alignment with service SLAs. Routing profiles are managed and assigned to agents by the administrator. An agent can only be assigned a single routing profile at a time; however, they may serve multiple queues, based on rules defined in the routing profile.

**To create a routing profile**
1. Choose Users, Routing profiles, Add new profile.
2. Enter or choose the following information:
   - **Name**—A searchable display name.
   - **Description**—The routing profile's function.
   - **Routing profile queues**—A queue to associate with the routing profile. You can add multiple queues.
   - **Priority**—The order in which contacts are handled by the queue they are in. Set values in order of importance, with the lowest number equaling the highest priority. For example, a contact in a queue with a priority of 2 would be a lower priority than a contact in a queue with a priority of 1.
   - **Delay (in seconds)**—The minimum hold time before the call is routed to an agent with a matching queue/threshold combination.
   - **Default outbound queue**—Outbound calls must be associated with one of the associated queues.
3. Choose Add new profile.

Here's an example of a profile:

<table>
<thead>
<tr>
<th>Queue</th>
<th>Priority</th>
<th>Delay (in seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premium Support 1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Premium Support 2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Premium Support 3</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>Premium Support 4</td>
<td>3</td>
<td>80</td>
</tr>
</tbody>
</table>
Understanding Contact Flows

A contact flow defines each step of the experience customers have when they interact with your contact center.

You can create a contact flow using the contact flow templates provided. You can also create your own contact flow from scratch, using the Create contact flow editor.

The following template types are available:

- **Customer queue flow**—Manages what the customer experiences while in queue, before being joined to an agent. Customer queue flows are interruptible and can include actions such as an audio clip apologizing for a delay and offering an option to receive a callback, leveraging the Transfer to queue block.

- **Customer hold flow**—Manages what the customer experiences while the customer is on hold. With this flow, one or more audio prompts can be played to a customer using the Loop prompts block while waiting on hold.

- **Customer whisper flow**—Manages what the customer experiences as part of an inbound call immediately before being joined with an agent. The agent and customer whispers are played to completion, then the two are joined.

- **Outbound whisper flow**—Manages what the customer experiences as part of an outbound call before being connected with an agent. In this flow, the customer whisper is played to completion, then the two are joined. For example, this flow can be used to enable call recordings for outbound calls with the Set call recording behavior block.

- **Agent hold flow**—Manages what the agent experiences when on hold with a customer. With this flow, one or more audio prompts can be played to an agent using the Loop prompts block while the customer is on hold.

- **Agent whisper flow**—Manages what the agent experiences as part of an inbound call immediately before being joined with a customer. The agent and customer whispers are played to completion, then the two are joined.

- **Transfer to agent flow**—Manages what the agent experiences when transferring to another agent. This type of flow is associated with transfer to agent quick connects, and often plays messaging, then completes the transfer using the Transfer to agent block.

- **Transfer to queue flow**—Manages what the agent experiences when transferring to another queue. This type of flow is associated with transfer to queue quick connects, and often plays messaging, then completes the transfer using the Transfer to queue block.

Contact Block Definitions

Contact flows are created in the contact flow editor using action blocks arranged by dragging and dropping them onto a grid. The contact flow configuration is grouped into blocks. Each group represents a specific action, and each block has editable conditions related to the group's action or behavior.
**Note**
When you set **User Defined** or **External** values in dynamic attribute fields, ensure that you use only alphanumeric characters (A–Z, 0–9) and periods. No other characters can be used.

### Interact

<table>
<thead>
<tr>
<th>Block</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Play prompt</td>
<td>Plays audio.</td>
<td>Prompts can be an audio file, stored in the prompt library, or text-to-speech, which can optionally be specified in a flow via a contact attribute. If you use text-to-speech, you can use a maximum of 1,024 characters.</td>
</tr>
<tr>
<td>Get customer input</td>
<td>Branches based on customer intent.</td>
<td>Plays an interruptible audio prompt and branches based on DTMF or Amazon Lex intents. If you use text-to-speech, you can use a maximum of 1,024 characters.</td>
</tr>
<tr>
<td>Store customer input</td>
<td>Stores numerical input to contact attribute.</td>
<td>Plays an interruptible audio prompt and stores digits via DTMF as a contact attribute. To enable encryption, contact your system administrator to add a public signing key to the Contact flow security keys settings of your Amazon Connect instance.</td>
</tr>
<tr>
<td>Loop prompts</td>
<td>Loops a sequence of prompts while a customer or agent is on hold or in queue.</td>
<td>When Loop prompts is used in a queue flow, audio playback can be interrupted with a flow at preset times.</td>
</tr>
</tbody>
</table>
| Hold customer or agent | Places a customer or agent on or off hold. | Settings:  
Agent on hold / customer on call  
Customer on hold / agent on call  
Agent and customer on call |

### Integrate

<table>
<thead>
<tr>
<th>Block</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invoke AWS Lambda function</td>
<td>Makes a call to AWS Lambda, and optionally returns key-value pairs.</td>
<td>The returned key-value pairs can be used to set contact attributes.</td>
</tr>
</tbody>
</table>


## Set

<table>
<thead>
<tr>
<th>Block</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set queue</td>
<td>Specifies the queue to be used when Transfer to queue is invoked.</td>
<td>A queue must be specified before invoking Transfer to queue. It’s also the default queue for checking attributes, such as staffing, queue status, and hours of operation. To use a Set queue block to set the queue dynamically, such as with contact attributes, you must specify the ARN for the queue rather than the queue name. To find the ARN for a queue, open the queue in the queue editor. The ARN is included as the last part of the URL displayed in the browser address bar after / queue. For example, .../queue/76f149bd-9edb-4128-b969-347f083d1501.</td>
</tr>
<tr>
<td>Set call recording behavior</td>
<td>Sets options for call recordings.</td>
<td>Enables or disables call recording for the agent, customer, or both.</td>
</tr>
<tr>
<td>Set contact attributes</td>
<td>Stores key-value pairs as contact attributes.</td>
<td>Contact attributes are accessible by other areas of Amazon Connect, such as the CCP and CTRs.</td>
</tr>
<tr>
<td>Change queue priority/routing age</td>
<td>Alters the priority of the contact in queue.</td>
<td>Routing age alters the time in queue for the contact, which determines its priority in comparison to when other contacts are received. Queue priority sets the contact to a high priority that can be compared to other contacts that have a priority set (typically between 1 and 1000).</td>
</tr>
<tr>
<td>Set hold flow</td>
<td>Links from one contact flow type to another.</td>
<td>Specifies the flow to invoke when a customer or agent is put on hold.</td>
</tr>
<tr>
<td>Set whisper flow</td>
<td>Overrides the default whisper by linking to a whisper flow.</td>
<td>Specifies the whisper to be played to customer on an outbound call, or to the customer or agent when the call is joined.</td>
</tr>
</tbody>
</table>
### Contact Block Definitions

<table>
<thead>
<tr>
<th>Block</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set callback number</td>
<td>Sets a callback number.</td>
<td>Specifies the number to be used to call the customer back in the CCP, or when Transfer to queue is invoked with the callback option. When specifying a phone number in Amazon Connect, the number must be in E.164 format. Numbers in E.164 format do not include the leading zeroes you would dial for a local or regional call within the same country when dialing the number from a phone. For example, if you usually dial 0400xxxxxx to place a call in Australia, the number in E.164 format includes the country code of 61 and removes the leading zero for the number. The number to use in Amazon Connect is +61400xxxxxx.</td>
</tr>
<tr>
<td>Set agent status</td>
<td>This allows for the setting of an agent status via a contact flow.</td>
<td>For example, you can use this with Store customer input to set the agent status to On hold so they don’t hear the input from the customer during credit card entry.</td>
</tr>
<tr>
<td>Set voice</td>
<td>Sets the voice.</td>
<td>Sets the voice to interact with the customer, and optionally the voice if using text-to-speech (TTS).</td>
</tr>
<tr>
<td>Set customer queue flow</td>
<td>Set queue flow.</td>
<td>Specifies the flow to invoke when a customer is transferred to a queue.</td>
</tr>
</tbody>
</table>

### Branch

<table>
<thead>
<tr>
<th>Block</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check queue status</td>
<td>Checks the status of the queue based on specified parameters.</td>
<td>Branches based on the number of contacts, oldest contact in queue, or if the queue is at capacity.</td>
</tr>
<tr>
<td>Check staffing</td>
<td>Checks based on whether agents are available, staffed, or online.</td>
<td>Branches based on whether agents are available, staffed (available, on call, and after call work), or online.</td>
</tr>
</tbody>
</table>
### Contact Block Definitions

<table>
<thead>
<tr>
<th>Block</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Important</td>
<td></td>
<td>You must set a queue before using a Check staffing block in your contact flow. If a queue is not set, the block always proceeds through the error branch. You can use a Set queue block to set the queue. When a contact is transferred from one flow to another, the queue that is set in a contact flow is passed from that flow to the next one.</td>
</tr>
<tr>
<td>Check hours of operation</td>
<td>Checks to see whether the contact is within or outside of business defined hours.</td>
<td>Branches based on specified hours of operation, either directly or as associated to a queue that is within open hours.</td>
</tr>
<tr>
<td>Check contact attributes</td>
<td>User-based comparison checks.</td>
<td>Branches based on a comparison to the value of a contact attribute. Examples of supported comparisons include: Equals, Is Greater Than, Is Less Than, Starts With, Contains.</td>
</tr>
<tr>
<td>Distribute by percentage</td>
<td>Routes customers randomly based on a percentage.</td>
<td>Like flipping a coin, contacts are distributed randomly, which doesn't guarantee exact percentage splits.</td>
</tr>
</tbody>
</table>

### Terminate/Transfer

<table>
<thead>
<tr>
<th>Block</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disconnect / hang up</td>
<td>Terminates a customer contact.</td>
<td>Disconnects the customer's call.</td>
</tr>
<tr>
<td>Transfer to queue</td>
<td>Ends the current contact flow and places the customer in queue.</td>
<td>A queue must be specified, using Set queue, before invoking Transfer to queue. Optionally, the contact can be placed in queue to receive a callback, if Set customer callback number has been invoked.</td>
</tr>
<tr>
<td>Transfer to phone number</td>
<td>Transfers the customer.</td>
<td>Ends the current contact flow and transfers the customer to a phone number.</td>
</tr>
</tbody>
</table>
### Creating Contact Flows

You can create a variety of contact flows in Amazon Connect, such as transfer flows and interruptible flows. The starting point for all contact flows is the contact flow editor. You can make your contact flows as simple or complex as necessary.

**To create a new contact flow in Amazon Connect using the editor**

1. Choose **Routing, Contact flows, Create contact flow**.
2. Type a name and a description for your contact flow.
3. Search for a block using the **Search** bar, or expand the relevant group to locate the block.
4. Drag and drop blocks onto the canvas. They don't have to be added in a specific order or sequence, as connections between the elements do not have to be strictly linear.
5. Select the block title to access the settings and editing menu.

**To create connections between blocks**

1. Select the originating group.
2. Select the circle for the action to perform.
3. Drag the arrow to the connector of the group that performs the next action.

**Note**

For groups that support multiple branches, drag the connector to the appropriate action.

---

<table>
<thead>
<tr>
<th>Block</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfer to agent</td>
<td>Transfers the customer to an agent.</td>
<td>Ends the current contact flow and transfers the customer to an agent. If the agent is on a call, the contact is disconnected.</td>
</tr>
<tr>
<td>Transfer to flow</td>
<td>Transfers the customer to another flow.</td>
<td>Ends the current contact flow and transfers the customer to a flow of the same type, such as customer queue flow, customer hold flow, customer whisper flow, agent hold flow, agent whisper flow, transfer to agent flow, and transfer to queue flow.</td>
</tr>
<tr>
<td>End flow/return from</td>
<td>Ends the current flow without disconnecting</td>
<td>This can be used to return to Loop prompts when it has been interrupted.</td>
</tr>
<tr>
<td>interruption</td>
<td>the caller.</td>
<td>When <strong>End flow/return from interruption</strong> is invoked, the customer remains connected to the system.</td>
</tr>
</tbody>
</table>
4. Repeat the steps to create a contact flow that meets your requirements.
5. Choose **Save** to save a draft of the flow. Choose **Publish** to activate the flow immediately.

   **Note**
   All connectors must be connected to a block in order to successfully publish your contact flow.

A saved contact flow cannot be assigned to a number until it is published.

**Contact Flow Logs**

Amazon Connect contact flow logs provide you with real-time details about events in your contact flows as customers interact with them. You can use contact flow logs to help debug your contact flows as you are creating them. After you publish your contact flows, you can view the logs to gain insight into what happens during complex contact flows, and quickly identify errors that your customers encounter when they connect to your contact center.

Contact flow logs are stored in Amazon CloudWatch, in the same region as your Amazon Connect instance. A log entry added as each block in your contact flow is triggered. You can configure CloudWatch to send alerts when unexpected events occur during active contact flows. As a contact center manager, you can aggregate data from contact flow logs to analyze performance of contact flows to optimize the experience you provide for your customers. For more information about CloudWatch Logs, see the Amazon CloudWatch Logs User Guide.

**Enabling Contact Flow Logs**

To start generating contact flow logs, enable contact flow logs for your Amazon Connect instance. After you enable logs for your instance, logs are generated only for contact flows that include a **Set logging behavior** block with logging set to enabled. You can control which flows, or parts of flows, logs are generated for by including multiple **Set logging behavior** blocks and setting logging to enabled or disabled as desired. When you use a **Set logging behavior** block to enable or disable logging for a flow, logging is also enabled or disabled for any subsequent flow that a contact is transferred to, even if the flow does not include a **Set logging behavior** block. To avoid having logging settings persist between flows, you should include a **Set logging behavior** block in the flow with logging enabled or disabled as desired for that specific flow.

When you create a new Amazon Connect instance, you can enable Contact flow logs when you configure Data Storage settings. If you already have an Amazon Connect instance, you can enable or disable Contact flow logs for your instance in the Amazon Connect console under **Contact flow** settings. You are not charged for generating contact flow logs, but are charged for using CloudWatch for generating and storing the logs. Free tier customers are charged only for usage that exceeds service limits. For details about Amazon CloudWatch pricing, see Amazon CloudWatch Pricing.

**To enable contact flow logs for your Amazon Connect instance**

1. Open the Amazon Connect console.
2. Choose the instance alias for the instance for which to enable contact flow logs.
3. Choose **Contact flows**.
4. Select **Enable Contact flow logs** and choose **Apply**.

After you enable contact flow logs for your instance, you can enable logging for a flow by adding a **Set logging behavior** block.

**To enable or disable contact flow logs for a contact flow**

1. Add a **Set logging behavior** block and connect it to another block in the flow.
2. Open the settings for the block, and under **Logging behavior** do one of the following:

   Select **Enable** to turn on logging for the flow.
   
   Select **Disable** to turn off logging for the flow.

3. Choose **Save**.

4. If you add a **Set logging behavior** block to a contact flow that is already published, you must publish it again to start generating logs for it.

### Data Captured in Contact Flow Logs

Log entries for contact flows include details about the block associated with the log entry, the contact ID, and the action taken after the steps in the block were completed. Any contact interaction that occurs outside of the contact flow is not logged, such as time spent in a queue or interactions with an agent. You can control which data is captured in contact flow logs by including a **Set logging behavior** block in your contact flow. You can set the properties of the block to disable logging during the parts of your contact flow that interact with or capture sensitive data or customers' personal information.

If you use Amazon Lex or AWS Lambda in your contact flows, the logs show the entry and exit of the contact flow going to them, and include any information about the interaction that is sent or received during entry or exit.

Because the logs also include the contact flow ID, and the contact flow ID stays the same when you change a contact flow, you can use the logs to compare the interactions with different versions of the contact flow.

The following example log entry shows a Set queue block of a customer queue flow.

```json
{
   "Timestamp": "2017-11-09T12:17:89Z",
   "ContactId": "f0b21968-952b-47ba-b764-f29a57b57626",
   "ContactFlowId": "arn:aws:connect:us-east-2:0123456789012:instance/d-92673ef055/contact-flow/b1d791c5-1264-42e3-9a73-62cbcb3c9a49",
   "ContactFlowModuleType": "SetQueue",
   "Events": {
     "Queue": [
       "arn:aws:connect:us-east-2:670047220557:instance/d-92673ef044/queue/f0300e43-9547-477c-b8ba-0bb7a72f7fa1"
     ]
   }
}
```

### Tracking Customers Between Contact Flows

In many cases, customer contacts interact with multiple contact flows in your call center, being passed from one contact flow to another to appropriately assist them with their specific issue. Contact flow logs help you track customers between different contact flows, by including the ID of the contact in each log entry. When a customer is transferred to a different contact flow, the ID for the contact associated with their interaction is included with the log for the new flow. You can query the logs for the contact ID to trace the customer interaction through each contact flow. In larger, high-volume contact centers, there can be multiple streams for contact flow logs. If a contact is transferred to a different contact flow, the log may be in a different stream. To make sure that you are finding all of the log data for a specific contact, you should search for the contact ID in the entire CloudWatch log group instead of in a specific log stream.
Create Alerts for Contact Flow Log Events

You can configure CloudWatch to define a filter pattern that looks for specific events in your contact flow logs and then creates an alert when an entry for that event is added to the log. For example, you can set an alert for when a contact flow block goes down an error path as a customer interacts with the flow. Log entries are typically available in CloudWatch within a short time, giving you near real-time notification of events in contact flows.

Analyzing Contact Flow Logs with Amazon Kinesis

To perform analysis on your contact flow logs, you can set up an Amazon Kinesis stream to stream your contact flow log data from CloudWatch to a data warehouse service, such as Amazon Redshift. You can combine the contact flow log data with other Amazon Connect data in your warehouse, or run queries to identify trends or common issues with a contact flow.

Contact Flow Import/Export

You can export contact flows from and import contact flows into your Amazon Connect instance. You can use exported contact flows to create backup copies and manage version control of your contact flows. This lets you easily restore a previous version in case you encounter an error with a published contact flow. You can easily copy contact flows from one Amazon Connect instance to another, for example from a test environment to a production environment, or from one region to another as you expand your customer service organization.

Note
The Contact Flow Import/Export feature is currently in Beta status. Updates and improvements that we make could result in issues in future releases importing contact flows that are exported during the beta phase.

Because Amazon Connect contact flows are not tied to a specific instance or account, exported flows could also be imported into instances created by other customers, allowing Amazon Connect partners to create custom contact flow solutions that can be used by Amazon Connect customers.

When you export a contact flow, the most recently saved version of the flow you currently have open in the Contact Flow editor is exported as a UTF-8 encoded JSON document. Each block of your contact flow is included in the JSON document as a separate section. To import a contact flow, either one that you previously exported, or that was exported from a different Amazon Connect instance, you just select the JSON file and import it. The imported flow replaces the contact flow currently open in the editor. The imported contact flow is not added to your Amazon Connect instance until you save it after importing.

Resolving Resources in Imported Contact Flows

When you create a contact flow, the resources you include in the contact flow, such as queues and voice prompts, are referenced within the contact flow using the name of the resource and the Amazon Resource Name (ARN). The ARN is a unique identifier for a resource that is specific to the service and region in which the resource is created. When you export a contact flow, the name and ARN for each resource referenced in the contact flow is included in the exported contact flow.

When you import a contact flow, Amazon Connect attempts to resolve the references to the Amazon Connect resources used in the contact flow, such as queues, by using the ARN for the resource. When you import a contact flow into the same Amazon Connect instance that you exported it from, the resources used in the contact flow will resolve to the existing resources in that instance. If you delete a resource, or change the permissions for a resource, Amazon Connect may not be able to resolve the resource when you import the contact flow. When a resource cannot be found using the ARN, Amazon Connect attempts to resolve the resource by finding a resource with the same name as the one used in the contact flow. If no resource with the same name is found, a warning is displayed on the block that contains a reference to the unresolved resource.
If you import a contact flow into a different Amazon Connect instance than the one it was exported from, the ARNs for the resources used are different. If you create resources in the instance with the same name as the resource in the instance where the contact flow was exported from, the resources can be resolved by name. You can also open the blocks that contain unresolved resources, or resources that were resolved by name, and change the resource to another one in the Amazon Connect instance. You can save a contact flow with unresolved or missing resources, but you cannot publish it until the resources are resolved or removed.

Exporting Contact Flows

When you export a contact flow, the JSON document created for the flow includes a section for each block in the flow. The name used for a specific block, parameter, or other element of the contact flow may be different than the label used for it in the user interface (UI).

By default, contact flow export files are created without a file name extension, and saved to the default location set for your browser. We suggest saving your exported contact flows to folder that contains only exported contact flows.

**Important**

When you attempt to import or export a large or complex contact flow, the export may fail if the contact flow contains a large amount of blocks and resources. It may also fail if the file size for the exported contact flow exceeds 1 MB in size. An notification message is displayed when this occurs.

**To export a contact flow**

1. Log in to your Amazon Connect instance using an account that is assigned a security profile that includes view permissions for contact flows.
2. Choose **Routing, Contact flows**.
3. Open the contact flow to export.
4. Choose **Save, Export flow**.
5. Provide a name for the exported file, and choose **Export**.

**To import a contact flow**

1. Log in to your Amazon Connect instance. The account must be assigned a security profile that includes edit permissions for contact flows.
2. Choose **Routing, Contact flows**.
3. Do one of the following:
   - To replace an existing contact flow with the one you are importing, open the contact flow to replace.
   - Create a new contact flow of the same type as the one you are importing.
4. Choose **Save, Import flow**.
5. Select the file to import, and choose **Import**.
6. Review and update any resolved or unresolved references as necessary.
7. To save the imported flow, choose **Save**. To publish, choose **Save and Publish**.

Using Text-to-Speech with Amazon Connect

Amazon Connect supports text-to-speech, including SSML or plaintext with (or without) dynamic attributes. You can enter text-to-speech prompts in any of the contact flow blocks that support prompt
entry, such as **Play prompt** and **Get customer input**. The text-to-speech voice is selected in the **Set voice** contact block. You can also use SSML in Amazon Lex bots to modify the voice used by a chat bot when interacting with your customers. For more information about using SSML in Amazon Lex bots, see *Managing Messages* and *Managing Conversation Context* in the Amazon Lex Developer Guide.

Amazon Connect uses Amazon Polly, a service that converts text into lifelike speech using Speech Synthesis Markup Language (SSML). For more information, see *Using SSML* in the Amazon Polly Developer Guide.

SSML-enhanced input text gives you more control over how Amazon Connect generates speech from the text you provide. You can customize and control aspects of speech such as pronunciation, volume, and speed. Amazon Polly provides this level of control using a subset of the SSML markup tags as defined by *Speech Synthesis Markup Language (SSML) Version 1.1, W3C Recommendation*.

## Modify a Prompt using SSML

When you add a prompt to a contact flow, you can use SSML tags to provide a more personalized experience for your customers. The default setting in a contact flow block for interpreting text to speech is **Text**. To use SSML for text to speech in your contact flow blocks, set the **Interpret as** field to **SSML** as shown in the following image.

![SSML Prompt](image)

The following SSML tags are supported in Amazon Connect:

- speak
- break
- lang
- mark
- p
- phoneme
- prosody
- s
Configuring Interactive Voice Response Workflows

You can ensure effective customer contact handling with interactive voice response (IVR) workflows, using queues, contact flows, and quick connects. These workflows provide a seamless customer experience, funneling contacts to the correct agents, and ensuring SLA adherence.

Claiming Phone Numbers

You can claim a phone number when you first create an instance, from the Dashboard, or you can claim one from the Manage phone numbers screen. You can also release a number that you no longer use.

Note
There is a limit of 10 numbers per contact center. If you reach your limit and no longer need a number, you can release it to make space for a new number. To do this, choose Release, Release. You cannot claim the same number again.

To claim a number for your contact center

1. Choose Routing, Phone numbers.
2. Choose Claim a number in the top-right corner of the screen. You can choose a Toll free or a DID (Direct Inward Dialing) number.

Note
If you want to select a number from a country, but there are no numbers displayed for that country when you select it, you can request additional numbers for that country using the Amazon Connect service limits increase form. If you want to keep a phone number you already have, you can port the phone number and use it with Amazon Connect. To learn more, see Port Your Current Phone Number.
3. Enter a description for the number and, if required, attach it to a contact flow in Contact flow / IVR.
4. Choose Save.

You can repeat this process until you have claimed all your required numbers.

You can add or edit descriptions, assign queues, and attach call flows to the numbers. You can also define an IVR workflow, which includes prompts, to support customer self-service.

To associate a phone number with a contact flow

1. Choose Routing, Phone numbers.
2. You can search for a specific number, filter your search by queue, or select a number from the list provided (if applicable).
3. Select the number to edit, expand Contact flow / IVR, and select the contact flow.
4. Choose Save.
Making International Calls

Amazon Connect uses the E.164 format for international dialing. This formatting is pre-configured in the CCP.

Creating Prompts

Prompts are audio files played in call flows. Only 8 KHz .wav files that are less than 50 MB are supported for prompts. You can upload a pre-recorded .wav file to use for your prompt, or record one in the web application. Prompts and routing policies should be aligned with each other to ensure a smooth call flow for customers.

To create a prompt
1. Choose Routing, Prompts.
2. On the Manage voice prompts screen, choose +Create new prompt.
3. You can choose the following actions:
   - Upload—Choose the file to upload.
   - Record—Choose the red circle to begin recording. Use the red square to stop. You can choose Crop to cut the recorded prompt or Discard to record a new prompt.
4. For Step 2: Input basic information, enter the name of the file, and then choose Create.

To manage recorded prompts
1. Choose Routing, Prompts.
2. On the Manage voice prompts screen, select the appropriate prompt.
3. You can choose Play, Download, Edit, or Delete.
4. Choose Save.

Creating Hours of Operation

Hours of operation define when a queue is available, and may be referenced in contact flows. Hours of operation are a required component when setting up queues, and must be completed first.

To add hours of operation in the console
1. Choose Routing, Hours of operation.
2. To create a template, choose Add new hours and enter a name and a description.
3. For Time zone, select a value.
4. For Add new, set new hours.
5. Choose Save.

Managing Queues

A queue is list of incoming contacts to be serviced by agents. You can use a single queue to handle all incoming contacts, or you can set up queues mapped to agents with specific skill sets.

Amazon Connect uses an automatic call distributor (ACD) to distribute incoming contacts to specific resources or agents within the call center, based on the selections made within the IVR. If an agent with a skill set matching the selection is not available the customer is placed in a pre-defined queue.
Calls in a queue are automatically prioritized and forwarded to the next available agent. Customers are placed on hold if there are no available agents. The order in which they are serviced is determined by their time in queue, on a first-come, first-served basis. If multiple resources are available, the call is routed to the agent who has had the Available status for the longest time.

**Note**
Routing profiles may create an exception where one queue takes priority over another, but the priority within the queue is always set by the order the contact was received. For more information, see [Configuring Interactive Voice Response Workflows](#) (p. 15).

Accurate queue management and configuration ensures that an accurate spread of resources, and minimizes customer hold time. It also ensures that resources can be effectively rerouted during busy periods. You can have unlimited concurrent active queues.

Queue metrics can be monitored and reviewed using both real-time and historical metrics. Metrics include **Service Level**, **Average Handle Time**, **Average Abandon Time**, and **Average Hold Time**.

**To create a new queue**
1. Choose **Routing, Queues, Add new queue**.
2. Add the appropriate information about your queue and choose **Add new queue**.

**Important**
When you create a queue, you can specify an **Outbound caller ID name** and **Outbound caller ID number**. You can also provide a phone number in a **Set callback number** block in a contact flow. The callback name and number is sent as the origination party when Amazon Connect initiates the call to the destination. However, the information displayed to the person called may not always match the name or number set during call initiation. In some cases, the callback name is provided by the carrier of the person you are calling. The information may not be up-to-date with that carrier, or the number may get passed differently between systems due to hardware or configuration differences. If this is the case, the person that you call may not see the phone number, or may see the name of a previously registered owner of the number, instead of the name of the registered person from your organization.

When you create a queue, it is automatically active and can be assigned to a routing profile. Users with the proper permissions can deactivate the queue, which puts it in an offline mode and makes it unavailable to assign to a routing profile.

**To disable an active queue**
1. Choose **Routing, Queues**.
2. Hover over the name of the queue to edit and choose the power icon.
3. Choose **Disable**.

To reactivate a queue, follow the same steps as above.

**To edit a queue**
1. Choose **Routing, Queues**, and select the queue to edit.
2. Edit the queue details as required.
3. Choose **Save**.

**Creating Quick Connects**

Calls can be transferred to an agent, a queue, or an external number.
• **External**—Calls are transferred to an external number (such as an on-call pager).
• **Agent**—Calls are transferred to a specific agent as part of a contact flow.
• **Queue**—Calls are transferred to a queue as part of a contact flow.

**To add a quick connect**

1. Choose **Routing, Quick connects, Add a new destination**.
2. Enter a name for the item, and select a type, destination, contact flow (if applicable), and description.
   
   **Important**
   A description is required when you create a quick connect. An error is returned if you do not add a description.
3. To add more rows, choose **Add a new destination**.
4. Choose **Save**.

To see your quick connects in the contact list in CCP, add them to **Queues**. Agent and queue quick connects only appear when an agent transfers a call.

**Working with Hierarchies**

You can manage and load-balance customer contacts using agent hierarchy organization and agent status management. These tools provide filtering and agent availability management per queue, skill set, and routing profiles.

Hierarchies do not determine agent permissions or security settings. They define the organizational structure of agent groups for effective reporting.

**Understanding Agent Hierarchy**

Agents and teams can be organized into groupings based on their location and their skill sets. Hierarchies can be configured with up to five levels and allow you to segment agents or teams. You can create large groups, such as all agents who work on a specific continent, or smaller groups such as all agents working in a specific department. The hierarchies are reflected in reports and historical metrics to allow for granulated reporting. Removing agents from a level affects historical reporting until a new reporting cycle for that level has been completed.

Permissions can be set to restrict the visibility of data and ability to create hierarchies.

**To configure a new agent hierarchy**

1. Choose **Contact management, Agent hierarchy**.
2. Enter a name and choose + to create the first level of your hierarchy.
3. Choose + to add more levels to your hierarchy.
4. Choose **Save** to apply the changes, or **Cancel** to undo them.

When a hierarchy has been created, you can add groups, teams, and agents from the top down.

**To add groupings to a hierarchy**

1. Select the top level of the hierarchy.
2. Choose x to add groupings to each level.
3. Choose the check icon to save the name, choose the pencil icon to edit the name.
4. Choose Save.

Choose View historical changes to view the change history. You can filter changes by date (between two dates) or by user name. If you cannot see the link, ensure that you have the proper permissions to view these changes.

Managing Agent Status

Agent status is used for reporting and metrics, as well as resource management. Amazon Connect provides default editable states, but custom status values can be added. Customized agent status values are auxiliary by default. For more information, see Working with Reporting and Metrics (p. 19).

To add a new agent status
1. Choose Contact management, Agent status, Add new agent status.
2. Enter a status name, description, and type, and select whether the status should be enabled in the CCP.
3. Choose Save.

To edit a status
1. Choose Contact management, Agent status.
2. Hover over the status name and choose the pencil icon.
3. Enter the new information, and choose Save to apply the changes.

Choose View Historical Changes to view the change history. You can filter changes by date (between two dates) or by user name. If you cannot see the View historical changes link, ensure that you have the proper permissions to view these changes.

Working with Reporting and Metrics

Amazon Connect reporting can be generated in several ways, using a wide range of parameters. Reports can be viewed in real time, or generated using historical data.

Topics
- Working with Report Parameters (p. 19)
- Generating Real-Time Metrics (p. 20)
- Understanding Historical Metrics Grouping (p. 22)
- Creating Contact Search Reports (p. 24)

Working with Report Parameters

The following parameters can be adjusted for all real-time report types.
- Filters—Specify deeper filters, such as phone numbers, queue names, and routing profiles.
- Metrics—Depending on the origin group of the report, some metrics are pre-selected. You can switch between metrics, and also maintain the default metrics list with additional parameters added.
The following parameters can be adjusted for all report types.

- **Interval & Time range**—This is the overall period of time and interval that the report refers to. The options are:
  - **Interval**—The period of time within which the report is being run.
  - **Time zone**—The time zone used to calculate midnight for the start and end dates. The default setting is **UTC**. Other time zones are provided in the list.
  - **Time range**—The time range can range from **Today (since 12am)** to a custom range (for example, the past three days). The time range can only span a period of one month.

- **Groupings**—The group that you selected for this report is listed in the **Selected groupings** column. You can drag and drop additional groupings from the left-hand column, to add additional parameters to your report.

- **Filters**—Specify deeper filters, such as phone numbers, queue names, and routing profiles.

- **Metrics**—Depending on the origin group of the report, some metrics are pre-selected. You can switch between metrics, and also maintain the default metrics list with additional parameters added.

Reports can be saved and accessed by users with the correct permissions. Saved reports can be downloaded, or they can be viewed in the Amazon Connect web application in **Saved reports**.

### Auditing Changes and Updates

You can track changes made to resources and users in **Historical changes**. This information provides insight into who made changes in the Amazon Connect configuration, when the changes were made, and a reason why they were made.

### Saving and Sharing Reports

You can save **Real time** and **Historical** reports and view them in **Saved reports**.

**To share a saved report**

1. In **Saved reports**, choose the share icon next to the report's name.
2. Copy the link address and choose **Save**.

### Generating Real-Time Metrics

Real-time metric reports are grouped into **Queues**, **Agents**, and **Routing profiles** templates. Within each of the reporting template groups, more filters and metrics can be added to the reports.

When you select a report template, it's added to the real-time metrics table and updates automatically. You can select more report templates by choosing **New table** and selecting a new template. This template is added to the page and doesn't replace the previous report. You can also have multiple instances of the same report template running at the same time. They don't overwrite each other; changing the filters and metric settings on one table does not affect the second instance of that table.

### Real-Time Metrics Definitions

Real-time metrics are grouped by **Agents**, **Queues**, and **Routing profiles**. The groups share a common list of metrics to describe activity in each group.

**Agent**

- **Online**—Count of agents in a status other than **Offline**.
- **On call**—Count of agents active on a contact.
• **Aux**—Count of agents in non-productive statuses.
• **After contact work (ACW)**—Count of agents in after-contact work.
• **Error**—Count of agents in the **Error** status.
• **Available**—Count of agents available for contacts.
• **Staffed**—Count of agents **Available, On call, or in ACW**.

**Phone**
• **Active**—1 if the agent is active on a contact; otherwise, 0.
• **Contact state**—Status of the contact last handled or being handled by an agent.
• **Availability**—1 if the agent is available to handle a contact; otherwise, 0.
• **Queue**—Name of the queue associated with the contact being handled.

**Performance**
• **In queue**—Count of customers waiting in the queue.
• **Oldest**—Age of the contact that has been in the queue the longest.
• **Scheduled**—Count of customers scheduled for callback.
• **Handled**—Count of contacts handled by an agent.
• **Abandoned**—Count of customers that disconnected while in queue.
• **Average handle time (AHT)**—The average time that an agent takes to handle a call from start to finish.
• **SL x**—Number of contacts that were in the queue for under x seconds (range 15–600).
• **Agent hung up first**—Count of contacts when the agent disconnected before the customer.
• **Handled in**—Total number of incoming contacts handled by an agent.
• **Handled out**—Total number of outgoing contacts handled by an agent.
• **Hold abandons**—Count of contacts disconnected while the customer was on hold.
• **Consult**—Count of contacts when an agent consulted with a third party.
• **Max queued**—Maximum number of contacts queued in the reporting interval. This includes abandoned contacts and contacts queued before being joined with an agent.
• **Missed**—Count of the number of contacts that agents did not answer successfully. A single contact can be missed multiple times, but ultimately successfully answered.
• **Avg abandon time**—The average amount of time that contacts spent in a queue before abandoning the call.
• **Avg answer time**—The average amount of time that contacts spent in the queue before being connected to an agent. Anything before the time that the contact is put into the queue is not included.
• **Avg hold time**—The average amount of time that customers spent on hold.
• **Avg interaction time**—The average amount of time that agents and customers interacted on contacts.
• **Avg interaction and hold time**—The average of the sum of agent interaction and customer hold time.
• **Transferred in**—Count of contacts transferred to a queue.
• **Transferred out**—Count of contacts transferred out of a queue.
• **Queued**—Number of contacts placed into the queue.
• **Occ 1**—Occupancy computed as Agent Handle Time/(Agent Handle Time + Agent Idle Time).

**To create a routing profiles report with additional metrics for hold time and consult**
1. Choose **Metrics and quality, Real-time metrics, Queues**.
2. To open the **Table settings** menu, select the cog icon.
To display other types of reports, choose New Table and select the type of report to see. To remove a report, choose x on the top-right corner of the report.

Understanding Historical Metrics Grouping

Historical metric reports are grouped into Queues, Agents, and Phone numbers templates, which are pre-populated with basic filters to fit the report type. Within each of the reporting template groups, additional filters and metrics can be added to the reports.

Creating Reports Using Groupings

Groups can be combined or analyzed individually. The following procedures describe how to group by hierarchy levels with additional metrics for hold time and occupancy, generate a phone numbers report with default groupings and additional filters for service levels per agent, and generate an agent activity audit.

To create a grouped contact queue report
1. Choose Metrics and Quality, Historical metrics.
2. Select the arrow next to Queues and choose Contact metrics.
3. To open the Table settings menu, select the cog icon.
4. Choose Groupings, the + sign, and Metrics.
5. For Hold time and Occupancy, select the metrics options.
6. Choose Apply.

To create a phone numbers report with default groupings and additional filters for service levels per agent
1. Choose Metrics and quality, Historical metrics, Phone numbers.
2. To open the Table settings menu, select the cog icon.
3. Choose Groupings and drag the Agent label to the Selected groupings column.
5. Select the additional service-level metrics options from the list provided.
6. Choose Save.

To generate an agent activity audit
Agent activity audits provide an overview of an agent's activity throughout their shift. This includes their status changes, and data linked to call status listings. Agent activity audit reports apply to a single day's activity only. You can search for activity up to two months old.

1. Choose Metrics and Quality, Historical metrics.
2. Choose Agents and Agent activity audit.
3. Enter the agent's login and choose Generate Report.

   Note
   Enter the exact login; partial and wildcard searches are not supported.

4. To edit the report, choose the + in the top left corner of the table.
5. To save a copy of the report to your computer, choose **Download CSV report**.

To schedule a report to run at a specific time, choose **Schedule** from the drop-down menu and enter a name for your report. If this is a new report, publish it to your organization first. Choose **New Schedule** and edit the **Recurrence** and **Delivery Options** tabs.

Choose a prefix for the report to make it easy to locate and choose **Create**.

**Historical Metrics Definitions**

Historical metrics are defined by groups. Each group has pre-selected metrics that are relevant to that group. Additional metrics per group can be selected.

Metrics are divided into **Contact metrics** and **Agent metrics**. Only one option can be selected at a time and relevant metrics are pre-selected per view. Additional metrics per view can be selected.

The definitions below are the complete list of available metrics across all the historical metrics groups and both views.

- **Agent idle time**—Sum of time that an agent spent in a productive state, but not handling contacts.
- **Average customer hold time**—Average time that customers spent on hold, divided by the number of calls taken.
- **Average agent interaction time**—Average amount of time that agents and customers interacted on contacts.
- **After contact work time**—Sum of time spent in **After contact work**.
- **Agent on contact time**—Sum of time that an agent spent with active contacts.
- **Nonproductive time**—Sum of time spent in a nonproductive state, excluding **Error** and **Offline**.
- **Average after contact work time**—Average time that an agent spent in **After contact work time**.
- **Average handle time**—Average of **Contact handle time**.
- **Average queue abandon time**—Average amount of time that customers spent in a queue before abandoning the call.
- **Average agent interaction and customer hold time**—Average of the sum of agent interaction and customer hold time.
- **Average agent interaction time**—Average amount of time that agents and customers interacted on contacts.
- **Average outbound agent interaction time**—Average of the time that agents interacted with customers on outbound calls.
- **Average outbound after contact work time**—Average time that agents spent in **After contact work time** for outbound contacts.
- **Contacts abandoned**—Number of contacts when the customer disconnected while in queue.
- **Contacts abandoned in x seconds**—Count of contacts when the customer disconnected while in the queue for x number of seconds (ranges 15–600 seconds).
- **Contacts agent hung up first**—Count of contacts when the agent disconnected before the customer.
- **Contacts consulted**—Count of contacts when an agent consulted with a third party.
- **Contacts handled**—Count of contacts handled by an agent.
- **Contacts handled incoming**—Count of incoming contacts handled by an agent.
- **Contacts handled outbound**—Count of outbound contacts handled by an agent.
- **Contacts hold customer disconnect**—Count of contacts disconnected by the customer while the customer was on hold.
- **Contacts put on hold**—Count of contacts put on hold by an agent at least one time.
- **Contacts hold agent disconnect**—Count of contacts disconnected by the agent while the customer was on hold.
• **Contacts hold disconnect**—Count of contacts disconnected while the customer was on hold.
• **Contacts joined in x seconds**—Count of contacts that were answered by an agent within x number of seconds (ranges 15–600 seconds).
• **Contacts queued**—Count of contacts placed into a queue.
• **Contacts transferred in**—Count of contacts transferred to a queue.
• **Contacts transferred out**—Count of contacts transferred out of a queue.
• **Error status time**—Sum of time that an agent spent in the **Error** status.
• **Customer hold time**—Sum of the time that customers spent on hold. This value does not include queue time.
• **Agent answer rate**—Percentage of contacts routed to an agent that were successfully answered.
• **Maximum queued time**—The longest amount of time that a customer spent in a queue.
• **Contacts missed**—Count of the number of contacts that agents did not answer successfully. A single contact can be missed multiple times, but eventually answered successfully.
• **Contact flow time**—Sum of the time that customers spent in contact flows.
• **Transfer out time**—Sum of the time spent after a customer was transferred out by an IVR or agent.
• **Contact handle time**—Sum of time that an agent spent on a call, including hold time and **After contact work time**.
• **Occupancy**—Agent Handle Time/(Agent Handle Time + Agent Idle Time).
• **Service level x seconds**—Percentage of contacts answered within x number of seconds (ranges 15–600 seconds).
• **Online time**—Sum of the time that an agent spent in states other than **Offline**.
• **Agent interaction and hold time**—Sum of the sums of agent interaction and customer hold time.
• **Agent interaction time**—Sum of the time that agents interacted with customers.

### Creating Contact Search Reports

Contact trace records (CTR) are the documents Amazon Connect maintains for each contact in the system. It summarizes important events and statistics about each call, and serves as the basis for historical and near-real-time statistics calculations.

The **Contact search** page contains filters with which to search through contact history. The results contain information about the call, as well as hosting the controls to enable live listening or call recording downloads. You can also view detailed information about each call, such as the direction of the call, queue time, recording status, and customer phone number.

**To generate a contact search report**

1. Choose **Metrics and quality, Contact search**.
2. Adjust the values for **Filters** as needed.
3. Choose **Additional fields**, select any additional fields to include in the report, then choose **Apply**.
4. Choose **Search** to generate the report. After the report is generated, choose **Download CSV** to download the report to your computer as a CSV file.

Contact search records have a 14-day time-range limit. It is not possible to share or save **Contact search** reports. However, you can download a CSV copy of generated reports. The following default filters are available:

• **Start date**—Calls connected no earlier than this date.
• **End date**—Calls disconnected no later than this date.
• **Time zone**—The time zone used to calculate midnight for the start and end dates. The default setting is UTC.
• **Initiation method**—Indicates how the contact was initiated.
• **Phone number**—The phone number that the customer called.
• **Queue**—The skill or queue of the call.
• **Agent login**—Finds calls for a specific agent, identified by the agent login. This search provides exact results.
• **Minimum talking seconds**—The minimum number of seconds of talk time between the customer and agent.
• **Maximum talking seconds**—The maximum number of seconds of talk time between the customer and agent.
• **Customer phone number**—The customer's phone number.
• **Contact ID**—An identifier for a contact. Specify a contact ID if you want to see results only for a specific contact.

**Additional fields**—The following additional filters are available:

• **Agent Name**—The agent's name displayed as Last name, First name.
• **Agent First Name**—The agent's first name.
• **Agent Last Name**—The agent's last name.
• **Routing Profile**—The routing profile of the agent who handled the call.
• **Connected to agent timestamp**—The date and time at which the customer was connected to an agent.
• **ACW start timestamp**—The time at which the agent began after call work (ACW).
• **ACW end timestamp**—The time at which the agent completed after call work.
• **Agent interaction duration**—The total time the agent and customer were connected, excluding hold periods.
• **Number of agent connection attempts**—The total number of times that the system attempted to connect the customer with an agent, including the last attempt if the call was handled.
• **Number of holds**—The number of times that this call was put on hold. The initial queuing period does not count as a hold.
• **Is transferred out**—Indicates if the call was transferred by the agent who handled this call.
• **Initial contact ID**—For transfers, this is the first customer media leg that arrived in the system.
• **Previous contact ID**—For transfers, the customer leg that preceded the current call leg.
• **Next contact ID**—The identifier of the next contact in an interaction sequence. Not set for single-contact interactions, or for the last contact in an interaction.

**Contact Search Report Field Definitions**

The contact search report is displayed as a table, with a row for each call that matches the specified filters.

The following definitions describe the fields, or columns, displayed in the report:

• **Contact ID**—The identifier for the contact associated with the record. Choose the link to view detailed information about this contact.
• **Initiation Timestamp**—When the call arrived in the system.
• **Phone Number**—The number that the customer dialed (inbound call).
• **Queue**—Queue to which the call was assigned.
Login/Logout Reports

The Login/Logout report displays the login and logout information for the agents in your Amazon Connect instance. For each agent session, the login and logout times are displayed as a row in the report. You can use the report to determine the time your agents were logged in to Amazon Connect. The report also displays the amount of time for each session that an agent was logged in to Amazon Connect.

**Important**
A Login/Logout report can contain up to 10,000 rows. When you generate a Login/Logout report that includes more than 10,000 rows, the report fails to complete. If you generate a report and view it on the Login/Logout report page, you receive an error if you attempt to display a page of the report beyond row 10,000. If you schedule a Login/Logout report that contains more than 10,000 rows, the report fails, no report output is saved to your S3 bucket, and you cannot view the report.

If you have a contact center with a lot of agents, and your reports fail to complete, you can specify a shorter time range to reduce the size of the report generated, or apply filters to the report, such as routing profile and agent hierarchy. You can then use other filters to capture all of the login / logout data for your instance. For more information, see Generate a Login/Logout Report (p. 27).

You can view the report in the Amazon Connect interface, download the report, or share it with other users. You can set a schedule for the days of the week to generate the report, and you can filter the report on agent, agent hierarchy, or routing profile to include only records for a specific set of agents in the report.

**Important**
- Only users that are assigned Login/Logout report permission see the Login/Logout report listed under Metrics and quality. Your Amazon Connect admin can grant or remove permissions.
- Closing the browser does not log the user out. The report does not show that a user has logged out until the user clicks the logout button. The user is shown as logged in from the previous login until the next time the user clicks the logout button.

Login/Logout Report Permissions

By default, only users assigned the Admin security profile for an Amazon Connect instance are granted permission to generate and view the Login/Logout reports. To allow other users to view a shared report, or to schedule or generate the report, your Amazon Connect admin must assign the Login/Logout report permission to a role assigned to that user. To enable other users in other roles to generate or view the reports, add the permission to the security role assigned to those users.

In Amazon Connect, permissions are assigned to security profiles. The permission a user has is determined by the security role assigned to the user account. Only users that are assigned a security
profile that has been granted the View permission for Login/Logout reports can view published reports. If you share a link with a specific user, that user can only view the report if his or her account has explicit permission to do so via their security profile. If you do not want to grant the permission to one of the security profiles included with Amazon Connect, you can create a custom security profile and assign permissions to that role. Users can be assigned more than one security profile, so you could make a profile that grants permissions only to Login/Logout reports and then assign specified users to that profile.

**To assign Login/Logout report permissions**

1. Open the Amazon Connect dashboard.
2. Choose **Users, Security profiles**.
3. Select the security profile for which to modify permissions.
4. Choose **Metrics and Quality**.
5. In the Login/Logout report row, select **All** to grant all permissions, or **View** to only grant permissions to view shared reports.
6. Choose **Save**.

**Generate a Login/Logout Report**

When you generate a Login/Logout report, it includes only login or logout actions by your agents that occurred during the specified time range. If an agent logged in during the time range and did not log out, the report shows a login time but not a logout time. If the agent logged in before the start of the time range, and then logged out during the time range, the report shows both the login and logout times even though the login occurred before the start of the time range. This is so you can view the duration of the agent session associated with the most recent logout.

When you create your report, you can filter the results in the report by **Agent, Agent hierarchy, Routing profile, or None (show all agents)**. For the time frame, you can select **Today (since 12 am), Last 24 hours, Yesterday, Last 2 days, Last 3 days, or Custom time range**.

**To generate a Login/Logout report**

1. Open your Amazon Connect dashboard.
2. Choose **Metrics and Quality, Login/Logout report**.
3. On the Login/Logout report page, choose the **Time range** for the records to include in the report.
4. Choose the **Time zone** to use for your report.
5. To filter data included in the report, for **Filter by**, choose a value.
6. Choose **Generate report, Save**.
7. Provide a name for the report, and choose **Save**.

**Edit a Saved Login/Logout Report**

After you save your report, you can edit it at any time. When you open a saved report, the time frame and date range displayed show the date and time defined when you saved the report.

**To edit a saved Login/Logout report**

1. Open your Amazon Connect dashboard.
2. Choose **Metrics and quality, Saved reports**.
3. Choose Login/Logout report and select the report to edit.
4. Update the **Time range, Time zone, and Filter by** settings.
Download a Login/Logout Report as a CSV File

When you have generated a report, you can download it as a comma-separated value (CSV) file so that you can use it other applications to work with the data, such as a spreadsheet or database.

To download a report as a CSV file

1. Open the report to download.
2. On the Login/Logout report page, at the top right corner, choose the Share report menu (arrow) next to Save.
3. Choose Download CSV. The file Login_Logout report.csv is downloaded to your computer.

Share a Login/Logout Report

To make the report available to other people in your organization, you can share a report. People can access the report only if they have appropriate permissions in Amazon Connect.

To share a Login/Logout report

1. On the Login/Logout report page, at the top right corner, choose the Share report menu (arrow) next to Save.
2. Choose Share report.
3. To copy the URL to the report, choose Copy link address. You can send the URL to others in your organization by pasting the link into an email or other document.
4. To publish the report to your organization, for Publish report to organization, move the toggle to On.
5. Choose Save.

Schedule a Login/Logout Report

To generate a report with the same settings on a regular basis, you can schedule the report to run daily or on specific days of the week. When you schedule a report, it is automatically published to your organization. Anyone with appropriate permissions can view the report. Users with all permissions for Login/Logout reports can also edit, schedule, or delete the report.

When you schedule your report, keep in mind that the report always runs at 12AM on the day you select, in the time zone that you choose. If you select Wednesday, the report runs at midnight Wednesday and does not include any data for Wednesday. Scheduled reports are saved as CSV files in your Amazon S3 bucket. The default time zone is UTC. To have your report run at 12AM in your local time, choose your time zone instead.

To schedule a Login/Logout report

1. If you already have a saved report to schedule open, skip to step 4. Otherwise, in the dashboard, choose Metrics and quality, Saved reports.
2. Choose Login/Logout report.
3. Hover the mouse pointer over the row containing the name of the report to schedule, and choose the Schedule report icon.
4. On the Schedule report page, under Recurrence, for Generate this report, choose whether to generate the report Daily or Weekly.
5. If you choose Weekly, select the day or days of the week on which to run the report.
6. Choose the Time zone.
7. To add a prefix to the S3 path to the saved report, choose Delivery Options and enter a value in the Prefix field. The prefix is added to the path between /Reports and the report name. For example: .../Reports/my-prefix/report-name-YYYY-MM-DD... 8. Choose Create.

After you schedule a report, you can change or delete the schedule for it at any time.

To edit or delete the schedule for a report
1. Follow the steps in the preceding section to open the Schedule report page.
2. To edit the schedule, choose Edit, update the Recurrence and Delivery Options as desired, and then choose Save.
3. To delete the schedule for the report, choose Delete, and then choose Delete again on the confirmation dialog.

Delete a Saved Login/Logout Report

Too many reports in your report library? If you no longer want to use a saved report, you can delete it. When you delete a report, you are only deleting the settings for the report, not any reports that have already been generated using those settings. No CSV files created from a scheduled report are removed from your S3 bucket.

To delete a saved Login/Logout report
1. Open your Amazon Connect dashboard.
2. Choose Metrics and quality, Saved reports.
3. Hover over the row for the report to delete, and choose the Delete icon.
4. Choose Delete again.

Agent Event Streams

Amazon Connect agent event streams are Amazon Kinesis data streams that provide you with near real-time reporting of agent activity within your Amazon Connect instance. The events published to the stream include agent login, agent logout, agent answers a call, and agent status change.

You can use the agent event streams to create dashboards that display agent information and events, integrate streams into workforce management (WFM) solutions, and configure alerting tools to trigger custom notifications of specific agent activity. Agent event streams help you manage agent staffing and efficiency.

Enabling Agent Event Streams

Agent event streams are not enabled by default. Before you can enable agent event streams in Amazon Connect, create a data stream in Amazon Kinesis Data Streams. Then, choose the Kinesis stream as
the stream to use for agent event streams. Though you can use the same stream for both agent event streams and contact trace records, managing and getting data from the stream is much easier when you use a separate stream for each. For more information, see the Amazon Kinesis Data Streams Developer Guide.

**Note**
If you enable server-side encryption for the Kinesis stream you select for agent event streams, Amazon Connect cannot publish to the stream because it does not have permission to kms:GenerateDataKey. No records are published to the stream.

**To enable agent event streams**
1. Open the Amazon Connect console at https://console.aws.amazon.com/connect/.
2. On the console, choose the name in the **Instance Alias** column of the instance for which to enable agent event streams.
3. Choose **Data streaming**, then select **Enable data streaming**.
4. Under **Agent Events**, select the Kinesis stream to use, and then choose **Save**.

**Agent Event Streams Data Model**

Agent event streams are created in JavaScript Object Notation (JSON) format. For each event type, a JSON blob is sent to the Kinesis data stream. The following event types are included in agent event streams:

- **LOGIN**—An agent login to the contact center.
- **LOGOUT**—An agent logout from the contact center.
- **STATE_CHANGE**—One of the following changed:
  - Agent configuration, such as profile or the assigned hierarchy group.
  - Agent state in the contact control panel, such as Available.
  - Agent conversation state, such as on hold.
- **HEART_BEAT**—This event is published every 120 seconds if there are no other events published during that interval.

Each agent event type blob includes the following data about the event.

**AgentEvent**

The **AgentEvent** object includes the following properties:

**AgentARN**

The Amazon Resource Name (ARN) for the agent. To find the ARN for an agent, open the user settings for the user in Amazon Connect. The ARN is displayed in the address bar.

Type: ARN

**AWSAccountId**

The 12-digit AWS account ID for the AWS account associated with the Amazon Connect instance.

Type: String

**CurrentAgentSnapshot**

Contains agent configuration, such as username, first name, last name, routing profile, hierarchy groups, contacts, and agent status.
Agent Event Streams Data Model

**EventId**
Universally unique identifier (UUID) for the event.
Type: String

**EventTimestamp**
A time stamp for the event, in ISO 8601 standard format.
Type: String (yyyy-mm-ddThh:mm:ssZ)

**EventType**
The type of event.
Valid values: STATE_CHANGE | HEART_BEAT | LOGIN | LOGOUT

**InstanceARN**
Amazon Resource Name for the Amazon Connect instance in which the agent's user account is created.
Type: ARN

**PreviousAgentSnapshot**
Contains agent configuration, such as username, first name, last name, routing profile, hierarchy groups), contacts, and agent status. Not applicable to LOGIN or LOGOUT events.
Type: AgentSnapshot object

**Version**
The version of the agent event stream in date format, such as 2017-10-10.
Type: String

**AgentSnapshot**
The AgentSnapshot object includes the following properties:

**AgentStatus**
Agent status data, including:
- AgentARN—the ARN for the agent.
- Name—the name of the status, such as Available or Offline.
Type: AgentStatus object

**Configuration**
Information about the agent, including:
- FirstName—the agent's first name.
- HierarchyGroups—the hierarchy group the agent is assigned to, if any.
- LastName—the agent's last name.
- RoutingProfile—the routing profile the agent is assigned to.
- Username—the agent's Amazon Connect user name.
Type: Configuration object
Contacts

List of contacts

Type: ContactList object

Configuration

The Configuration object includes the following properties:

FirstName

The first name entered in the agent's Amazon Connect account.

Type: String

Length: 1-100

AgentHierarchyGroups

The hierarchy group, up to five levels of grouping, for the agent associated with the event.

Type: AgentHierarchyGroups object

LastName

The last name entered in the agent's Amazon Connect account.

Type: String

Length: 1-100

RoutingProfile

The routing profile assigned to the agent associated with the event.

Type: RoutingProfile object

Username

The user name for the agent's Amazon Connect user account.

Type: String

Length: 1-100

Contact Object

The Contact object includes the following properties:

ContactId

UUID identifier for the contact

Type: String

Length: 1-256

InitialContactId

The ContactId of the original contact that was transferred.

Type: String
Length: 1-256

**Channel**

Enumeration of the method of communication, such as Voice.

Valid values: VOICE

**InitiationMethod**

How the contact was initiated.

Valid values: INBOUND | OUTBOUND | TRANSFER | CALLBACK | API

**State**

An enumeration of the state of the contact.

Valid values: INCOMING | PENDING | CONNECTING | CONNECTED | CONNECTED_ONHOLD | MISSED | ERROR | ENDED

**StateStartTimestamp**

A time stamp for the time at which the contact entered the State.

Type: String (yyyy-mm-ddThh:mm:ssZ)

**ConnectedToAgentTimestamp**

A time stamp for the time the contact was connected to an agent.

Type: String (yyyy-mm-ddThh:mm:ssZ)

**QueueTimestamp**

A time stamp for the time at which the contact was put into a queue.

Type: String (yyyy-mm-ddThh:mm:ssZ)

**Queue**

The queue the contact was placed in.

Type: Queue object

**HierarchyGroup Object**

The HierarchyGroup object includes the following properties:

**ARN**

The Amazon Resource Name for the agent hierarchy.

Type: String

**Name**

The name of the hierarchy group.

Type: String

**AgentHierarchyGroups Object**

The AgentHierarchyGroups object includes the following properties:
Level1
Includes details for Level1 of the hierarchy assigned to the agent.
Type: HierarchyGroup object

Level2
Includes details for Level2 of the hierarchy assigned to the agent.
Type: HierarchyGroup object

Level3
Includes details for Level3 of the hierarchy assigned to the agent.
Type: HierarchyGroup object

Level4
Includes details for Level4 of the hierarchy assigned to the agent.
Type: HierarchyGroup object

Level5
Includes details for Level5 of the hierarchy assigned to the agent.
Type: HierarchyGroup object

**Queue Object**

The `Queue` object includes the following properties:

ARN
- Amazon Resource Name for the queue.
  Type: String

Name
- The name of the queue.
  Type: String

**RoutingProfile Object**

The `RoutingProfile` object includes the following properties:

ARN
- Amazon Resource Name for the agent's routing profile.
  Type: String

Name
- The name of the routing profile.
  Type: String

InboundQueues
- A list of `Queue` objects associated with the agent's routing profile.
Type: List of `queue` object

DefaultOutboundQueue

The default outbound queue for the agent's routing profile.

Type: `queue` object
Using the Amazon Connect Contact Control Panel

The Amazon Connect Contact Control Panel (CCP) is used by agents to communicate with contacts. The CCP can be used with a softphone or a desktop phone. The phone number and configurations are managed in Amazon Connect.

Amazon Connect CCP Concepts

Amazon Connect provides a number of management and configuration options for your contact center. The terminology and concepts that are central to your understanding and use of Amazon Connect are described below.

agent

Users who handle contacts using Amazon Connect.

softphone

A browser-based telephony service that is not linked to a handset. It can be used remotely, provided that the agent is logged in to Amazon Connect.

desk phone/handset

A physical telephone requiring an agent to be in its proximity in order to make or receive calls.

status

Metrics are gathered based on changes in agent status (available, offline, and so on).

after contact work

A state where the agent is no longer on a call but has related work to complete before being able to accept or make other calls.

leave

Leave a multi-party call without disconnecting the other parties or hanging up the call.

Launch the Amazon Connect CCP

You can log in to the CCP using the link provided by the Amazon Connect administrator. We recommend that you bookmark the URL for easy access. After you are logged in, choose the phone icon to open the CCP.

Set up Users and Permissions

Before agents can use the CCP to take calls, you configure permissions. These permissions are edited in Amazon Connect, and cover a range of activities from generating reports to making calls. The
Make International Calls

Making international calls using Amazon Connect is possible and the CCP provides the correct formatting for this automatically.

E.164 defines a general format for international telephone numbers. Numbers are limited to a maximum of 15 digits, excluding the international call prefix. The presentation of a number is usually prefixed with the plus sign (+), indicating that the number includes the country calling code. When dialing, the number must typically be prefixed with the appropriate international call prefix (in place of the plus sign), which is a trunk code to reach an international circuit from within the country of call origination. Phone numbers that are not formatted in E.164 may work, but it depends on the phone or handset that is being used as well as the carrier from which the call is being originated.

To express a US phone number to E.164 format, add the ‘+’ prefix and the country code (1) in front of the number. In the UK and many other countries internationally, local dialing requires the addition of a 0 in front of the subscriber number. However, to use E.164 formatting, this 0 must be removed. A number such as 020 718 xxxxx in the UK would be formatted as +44 20 718 xxxxx.

Set up Softphones and Desk Phones

Before agents can use the CCP, check the following configurations:

- **Headset connectivity**—Check the settings in Device Management to ensure that your computer recognizes the headset and allows proper headset connectivity.
- **Set up headset**—You may need to adjust your browser settings to ensure correct peripheral selection.
- **Desktop notifications**—Ensure that the browser is not in incognito mode so that desktop notifications can be displayed.
- **Microphone**—Ensure that the microphone settings are always enabled.
- **Dialing**—In **Settings**, you can configure the softphone to dial a DID desk phone if required. When you choose a desk phone, enter the DID number to which calls go.

Agents can log in using the URL, user name, and password provided by their Amazon Connect administrator. Each agent has a unique user name and password.

If agents are using a softphone, the IP address used must be in the IP address range for the region where you created your Amazon Connect instance. The following table lists the supported IP address ranges for each region. You should allow access for all addresses in both of the ranges listed in the table.

For agents to use the CCP, you also need to allow access for the softphone signaling endpoints, which are hosted in Amazon EC2. For information about the IP ranges used by Amazon EC2, see [https://ip-ranges.amazonaws.com/ip-ranges.json](https://ip-ranges.amazonaws.com/ip-ranges.json).

<table>
<thead>
<tr>
<th>Region</th>
<th>IP Address</th>
<th>Port</th>
</tr>
</thead>
<tbody>
<tr>
<td>US-EAST-1</td>
<td>52.55.191.224/27</td>
<td>3478 (UDP)</td>
</tr>
<tr>
<td></td>
<td>18.233.213.128/25</td>
<td></td>
</tr>
</tbody>
</table>
Status Settings

The status settings are used for reporting purposes to ensure that system issues are resolved quickly and to manage resources.

The following settings are available:

- **Available**—Indicates that an agent is available to take calls.
- **Offline**—Logs agents out and removes them from the pool of available agents.

Work with Calls

Using the Contact Control Panel (CCP), you can perform the following actions on a softphone. When you opt for a desk phone, you have the same controls as softphone. The only difference is that there is no **Accept** button on a desk phone.

**Accepting incoming calls**

- To accept an incoming call, choose **Accept call**.
- To edit settings, choose **Settings**.
- To end a call, choose **End call**.
- To put a call on hold, choose **Hold**.

When a call is connected, a new set of options become available in the CCP.

**Transfers**

After an agent picks up a call, the agent can transfer the call by choosing the **Transfer** button and then choosing one of the available contacts. The contacts displayed are the quick connects defined in your Amazon Connect instance, which have been added to a queue in the agent’s routing profile and are associated with a contact flow that support call transfers.

Agents can also manually enter a phone number to transfer calls to by choosing **Dial number** after answering the call. The agent can enter a phone number using the keypad, and then choose **Transfer** to transfer the call. If agents regularly transfer calls to a specific phone number, you can create an **External** contact flow and use that phone number for the destination.

**To enable agent call transfers**

1. Create and publish a contact flow for the type of transfer to enable.
To enable transfers to another agent, create a **transfer to agent** contact flow.
To enable transfers to a queue, create a **transfer to queue** contact flow.
External transfers do not require a specific type of contact flow.

**Note**
You must publish your contact flows to make them active in your contact center.

2. Create a quick connect for the type of transfer to enable: **Agent**, **Queue**, or **External**.

When you create the **Agent** or **Queue** quick connect, select a contact flow that matches the type of transfer to enable. **External** quick connects require only a phone number, and do not allow you to set a queue or contact flow.

For more information about quick connects, see Creating Quick Connects (p. 17).

3. Add the quick connect that you created to any queue used in a contact flow for which to enable call transfer, such as the queue used in the contact flow for incoming calls. The queue must be in the routing profile assigned to the agent who should be able to transfer calls. The quick connects are displayed in the list of contacts when an agent tries to transfer an active call.

**To transfer calls to an agent or queue**

1. After accepting a call in the CCP, choose **Transfer**.
2. Select the contact to whom to transfer the call, and then choose **Dial**.

   The call is placed on hold during the transfer.
3. After the call is answered by an agent, or sent to a queue, choose **Leave call** to disconnect from the call.
4. To use conference, swap, or hold:

   - To begin a conference call, choose **Join** to perform a soft transfer. To drop out of the call, choose **Leave**.
   - Choose **Swap** to switch between talking to a customer and the person to whom you’re transferring the call.
   - Choose **Hold all** to put all parties on hold.

Some settings that are configured in Amazon Connect include setting agents to go into the **After call work** state after they are done with their call. Agents can also be configured to accept a call automatically, without having to choose **Accept**.

**Granting Microphone Access**

If you’re experiencing problems with your microphone, you may need to grant microphone access in your browser.

For Google Chrome steps, see Use your camera and microphone in Chrome.

For Mozilla Firefox steps, see Permissions Manager.

**Important**
A change introduced in Google Chrome version 64 may result in issues with receiving calls if you are using an embedded Contact Control Panel (CCP) softphone using the Amazon Connect Streams library. If you are experiencing issues with your microphone when using Chrome...
version 64, you can resolve the issue by building and deploying the latest version of the Amazon Connect Streams API, following the steps under Downloading Streams. You can also resolve the issue by using Firefox as your browser.

How to Enable Manager Listen-in

As a manager, you can listen in on active calls as your agents interact with your customers. Only users that are assigned the Enable permissions for Manager listen in can listen in on agent calls. The CallCenterManager security profile includes this permission, but not permission to access the CCP. You can add the permission for the CCP to the CallCenterManager profile, or also assign the Agent profile to an account that is already assigned the CallCenterManager profile.

Before you can use the listen-in feature, you need to enable call recording in your contact flows. The listen-in feature works only when call recording is enabled.

To enable manager listen-in

1. Log in to your Amazon Connect instance using an account that has permissions to edit contact flows.
2. Identify a call flow that handles customer contacts that you want to listen in on.
3. Choose Routing, Contact flows, and then choose the name of the contact flow to open it in the editor.
4. Add a Set call recording behavior block to the contact flow, select Agent and Customer under Record, and then choose Save.

   Call recording must be enabled before the call being connected to an agent.

   Important
   Make sure that the block has connections to the block before and after it in the contact flow.
5. Choose Save and Publish to publish the updated contact flow. Choose Save and Publish again to confirm that you want to overwrite the published version.

To listen in on agent calls

1. Log in to your Amazon Connect instance with a user account that is assigned the CallCenterManager security profile, or that is enabled for the Manager listen in permission.
2. Open the CCP by choosing the phone icon in the top-right corner of the screen.
3. Choose Metrics and quality, Real-time metrics.

   For any agent that is on a call, there is a headset icon next to the agent’s login name. Choose the icon to start listening to the call.

   When you are listening to call, the status in your contact control panel changes to Monitoring.
5. To stop listening to the call, choose End call.

   When the agent ends the call, monitoring stops automatically.
# Document History

The following table describes the important changes to the documentation since the last release of Amazon Connect.

- **Latest documentation update:** December 15, 2017

<table>
<thead>
<tr>
<th>Change</th>
<th>Description</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Updated the data model content for agent event streams.</td>
<td>Updated the agent event streams data model content to use a new format, and change HierarchyGroups to AgentHierarchyGroups. For more information, see [Agent Event Streams Data Model](p. 30).</td>
<td>April 20, 2018</td>
</tr>
<tr>
<td>Added additional IP ranges for softphones.</td>
<td>Updated the list of IP address ranges required for using the softphone in the CCP. For more information, see [Set up Softphones and Desk Phones](p. 37).</td>
<td>March 30, 2018</td>
</tr>
<tr>
<td>Added Manager listen-in</td>
<td>Added steps to configure and enable a manager to listen in on agent calls. For more information, see [How to Enable Manager Listen-in](p. 40).</td>
<td>December 10, 2017</td>
</tr>
<tr>
<td>Added information about using outbound caller ID</td>
<td>Added details about how outbound caller ID works, and why sometimes customers may not see the information that you provide. For more information, see [Amazon Connect Concepts](p. 1).</td>
<td>December 10, 2017</td>
</tr>
<tr>
<td>Added information about agent call transfer</td>
<td>Added details about how to enable call transfers from an agent to another agent, to a queue, or to an external number. For more information, see [Work with Calls](p. 38).</td>
<td>December 10, 2017</td>
</tr>
<tr>
<td>Added Contact Flow Logs</td>
<td>Added content for the new Contact Flow Logs. For more information, see [Contact Flow Logs](p. 10).</td>
<td>November 16, 2017</td>
</tr>
<tr>
<td>Added Contact Flow Import/Export</td>
<td>Added content for the new Contact Flow Import/Export. For more information, see [Contact Flow Import/Export](p. 12).</td>
<td>November 16, 2017</td>
</tr>
<tr>
<td>Change</td>
<td>Description</td>
<td>Date</td>
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<tr>
<td>-------------------------------------------------</td>
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<tr>
<td>Added Agent Event Streams</td>
<td>Added content for the new Agent Event Streams. For more information, see Agent Event Streams (p. 29).</td>
<td>November 16, 2017</td>
</tr>
<tr>
<td>Added Login/Logout Report</td>
<td>Added content about the new Login/Logout reports. For more information, see Login/Logout Reports (p. 26).</td>
<td>November 1, 2017</td>
</tr>
<tr>
<td>Removed the Loop block type from Branch group</td>
<td>Removed the information about the Loop block from the Branch group because the Loop block was removed from the service.</td>
<td>October 27, 2017</td>
</tr>
<tr>
<td>Added IP addresses for softphones</td>
<td>Added IP address and port information for connecting to each region using a softphone client. For more information, see Set up Softphones and Desk Phones (p. 37).</td>
<td>October 27, 2017</td>
</tr>
<tr>
<td>Initial release</td>
<td>Initial release of the Amazon Connect User Guide.</td>
<td>March 28, 2017</td>
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