Avaya Workforce Engagement

ACR Advanced Recorder Call Flow Guide

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Revision 1.10

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Contents

About this guide

The *Call Flow Guide* describes the contacts (and the interactions of which they are comprised) that result from various call flow scenarios for Recording. Please refer to the *Recorder Configuration and Administration Guide* for complete configuration instructions for the Recorder.

Intended audience

This section describes the type of user who would benefit from this guide.

This guide is designed for:

- Anyone responsible for planning and setting up systems.
- Anyone responsible for system administration and maintenance.
- Anyone using the product

Document revision history

Revision	Description of changes
1.10	Minor revisions.
1.09	Minor revisions.
1.08	Updated the *Call Recording Overlay* topic with a note stating that the end overlay does *not* apply to Gateway Correlation Pool recording.
1.07	• Updated call flows for 15.2. • In the "Call Recording Overlay" topic, the definition of "Record Start/End Overlay" is expanded. • In the "Key Terms" topic, the definition of "Interaction Duration" is changed. • In the "Key Terms" topic, "V15.1" is removed from the definition of "Interaction Start Time." • In the "Viewing Interactions" topic, references to "V15.1" are changed to "V15.x."
1.06	Avaya renaming.
1.05 (HFR7)	Avaya rebranding.
1.04	Added Dialer section to "Call Flows for the Recorder."
1.03	Revised Session Auditing Policy to describe behavior for interception calls with unanswered ringtones or busy signals, as well as inactive calls.
1.02	Revised section "Interactions, Contacts, and Recording Segments." Updated Start and End Overlay diagrams.
1.01	Added details to Pause/Resume around how pause commands are tracked.
1.00	Initial version.

Chapter 1

About Call Flows

Call Flows trace how the Recorder and Recorder Integration Service (RIS) handle calls, from when they enter the system to when they stop.

Topics

Contacts, interactions, and recording segments

In recording, the recorder tracks each call that an agent makes or receives as an *interaction* or a *session*. The interaction in the standard mode (not back-office) tracks everything from when the agent picks up the phone until he hangs up as a single interaction.

A *contact* is a grouping of related agent interactions for a specific customer experience. Each interaction contains a portion of the call conducted by a single agent and recorded. In call centers, agents commonly transfer calls, conduct conference calls, or put a customer on hold. The recording system tracks the calls made by the agents involved and associates calls together based on configuration. By default, if a customer is transferred from one agent to another, and then transferred to a supervisor, the contact consists of three recorded interactions.

Inside an interaction, the recording system can stop and restart recordings for various reasons (such as codec changes, or the call being on hold).

- Each of these *recording segments* (also called INUMs internally) is matched to the respective agent interaction. For trunk and gateway audio, the recording segment is for a specific call, not a specific device, and can match more than one agent interaction.
- Each content type (audio, screen, and video) recorded for the agent also is a separate recording segment.

During playback, these audio recording segments are dynamically stitched together as a single continuous media stream.

There are two ways in which agent interactions are captured:

- Follow-the-call interactions. The system creates an interaction when an agent starts or receives a call. It ends the interaction when the agent is idle and no longer associated with any call. All calls that the agent makes or receives that overlap with the call that started the interaction are tracked as one interaction. Unless otherwise specified, this guide is predicated on the default behavior of the system.
- Back-office recording, which creates interactions based on CTI calls. If one agent is on two calls at the same time (a customer call and a consultation call), the system creates two interactions in separate contacts. This behavior is more commonly used in non-call center environments.

This document describes the contacts that result from various recording call flow scenarios.

> Back-office recording interactions depend on the calls created by the specific switch with which the recorder is integrated. This document describes the most common scenarios, but some switches or call flows may behave differently. For example, some switches can provide the same Call ID for both a customer call and a consultation, which results in only one interaction (rather than two as described earlier).

Stitching of Audio INUMs

The Recorder Integration Service only supports stitching of recording INUMs within a CTI interaction. Recordings that are not part of a CTI interaction are treated as VOX and are not stitched together. Each VOX recording segment is a separate contact or session. This limitation affects

scenarios such as transfers, conferences, and calls that IP Capture breaks up as a result of a long timeout.

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Key Terms

The following table describes how the start time, end time, and duration of contacts and interactions are arrived at, and other attributes used in recording and across the system.

Attribute	Definition
Interaction Start Time	The start time of the interaction. Interaction start time and CTI start time are the same. Sometimes, if audio starts before the CTI, the audio portion can have negative timestamps.
Interaction Duration	The duration of the interaction. The Interaction Duration is based on the start and stop time from CTI, as determined by the Recorder Integration Service. The tracked duration value is rounded up or down to the nearest whole second. For example, if the start time is 13:21:00 and the end time is 13:22:10, the duration is 70 seconds. The CTI duration is the time from connected or off-hook—whichever is first—to disconnected or on-hook, whichever is later. After call work or wrap-up time is not included in the Interaction Duration.
Interaction End Time	The time that the interaction ended. Interaction end time and CTI time are the same.
Contact Start Time	The time the contact started. The **Contact Start** Time depends on the **Interaction Start Time** for the first interaction of the contact.

Attribute	Definition
Contact Duration	The duration of the contact. The Contact Duration is calculated by subtracting the Contact Start Time from the Contact End Time. For example, if the start time is 13:21:00, and the end time is 13:22:10, the duration is 1 minute and 10 seconds. If Enterprise Cradle to Grave is enabled (under License Management in Enterprise Manager), the **Contact Duration** is calculated by subtracting the First grouped **Contact Start Time** from the last grouped **Contact End Time**.
Contact End Time	The end time for the contact. The **Contact End** Time is determined by the **Interaction End Time** for the last interaction of the contact. If Enterprise Cradle to Grave is enabled, the **Contact End Time** of the last grouped Contact is used.
Content Duration	Duration of the recorded audio content for the interaction. This value appears in the Playback waveform area.

Attribute	Definition
Interaction ANI and Interaction DNIS	The **Interaction ANI** is the Automatic number identification (ANI) or Caller ID associated to the first recorded interaction of a contact. ANI is derived from CTI and is specific to the switch and call scenario. The **Interaction DNIS** is the dialed number identification service (DNIS) associated to the first recorded interaction of a call. DNIS identifies the number that the caller dialed, useful in call centers to which calls to multiple numbers can be directed. The ANI/DNIS may not match the ANI/DNIS of the initial call into the call center. ANI/DNIS is derived from the first recorded interaction of the call. For example, if a first recorded interaction starts on a consult, then the consultation call's ANI/DNIS is considered the ANI/DNIS value for the interaction. Other examples where the ANI/DNIS may not match the ANI/DNIS of the initial call into the call center are call park or automatic transfers. Some CTI integrations (such as Cisco JTAPI), do not provide a specific ANI/DNIS field. In these cases calling/called party information is used as a best alternative. Some CTI integrations provide pre-routed/translated ANI/DNIS values or otherwise present manipulated ANI/DNIS values. The manipulated ANI/DNIS value is used if that is all that is available. Some CTI integrations (such as Genesys and Cisco ICM) provide explicit ANI/DNIS information and are used explicitly, with no additional logic applied. Each interaction's ANI/DNIS value is stored separately within the interaction, and ANI/DNIS values are not overwritten with values from previous interactions.
Call Direction	The interaction **Call Direction** is marked with the direction of the call that started the interaction. Interactions involving the recording of calls where unmonitored devices are participating can have **Call Direction** show up as inbound for an outbound call, or outbound for an inbound call.
Switch Call ID	A unique call identifier for the interaction. This value is typically received through CTI or from signaling. Only call identifiers that are received for the recorded interactions of the call are available for tagging with the recording. Some integrations do not have a proper call ID, in which case the Recorder Integration Service generates one.

Call Flows for the Recorder

The contacts and interactions that the recorder creates depends on the call flow. This chapter outlines the behavior in each scenario.

Topics

Before You Begin

The sections in this chapter describe the supported call flows for the recorder and the participants that are included in each portion of the interaction. Before you begin, review the following considerations and limitations.

Viewing Interactions

You can view interactions in applications such as Quality Monitoring within the portal.

Interactions in a contact are finalized upon closure. For example, in a transfer scenario, if Agent 1 transfers a customer call to Agent 2, Agent 1's interaction appears in the portal shortly thereafter. The closure of the Agent 1's interaction is not dependent upon the customer interaction with Agent 2 ending.

Recordings performed with end-of-life 11.1 or 15.1 recorders may finalize only when the contact is complete.

For example, assuming a new interaction starts after the current interaction ends:

If we have the following interactions occurring in succession:

- Interaction 1, with 11.1-only recordings — Finalized when the contact is complete.
- Interaction 2, with 15.x-only recordings - Finalized on closure
- Interaction 3 - 15.x-only recordings - Finalized on closure
- Interaction 4 - 11.1-only recordings - Finalized on closure (because by this time the contact as a whole contains 15.x recordings within it).

Then Interaction 1 is finalized when the contact ends.

Limitations

The following are the limitations:

- Multiple versions of the same XML file are not archived.
- Archiving of tagging can be incomplete in certain scenarios. When information for a Interaction (I2) is stored in an INUM (In1) that is not part of that same Interaction (I2), depending on whether the Interaction to which this INUM (In1) belongs (I1) is already archived or not, some tagging for the Interaction I2 may not be archived.

Tagging Events

Events are tagged in the manner in which they are received from the switch. For example, a case in which a consultative conference includes a momentary hold event is tagged as such, and the hold appears as part of the call flow in the events portal.

> After an interaction is marked to the database, updated tagging to that interaction will only be available in the portal when the contact is complete.

Interaction Event List

The Recorder Integration Service tags each interaction in a contact with the call flow events that happen during the lifetime of the interaction. Possible events include "Connected," "Disconnected," "Held," "Retrieved," "Transferred," and "Conferenced."

The RIS always attempts to report these events as-received from the switch, but since different switches behave differently, the list of tagged events for the same call flow can be different from one switch to the next.

For example, usually the switch handles a “Retrieved” event by sending "Retrieved." However, there are cases in which the switch sends a "Connected" event for both retrieval and establishment of the call. In an instance such as this, the RIS cannot distinguish between the two types of events.

Switches can also send duplicate events, or events that are not useful to the understanding of a call flow. Here, the Recorder Integration Service attempts to remove the unnecessary events (though it may not always be possible to do so).

Additional Considerations

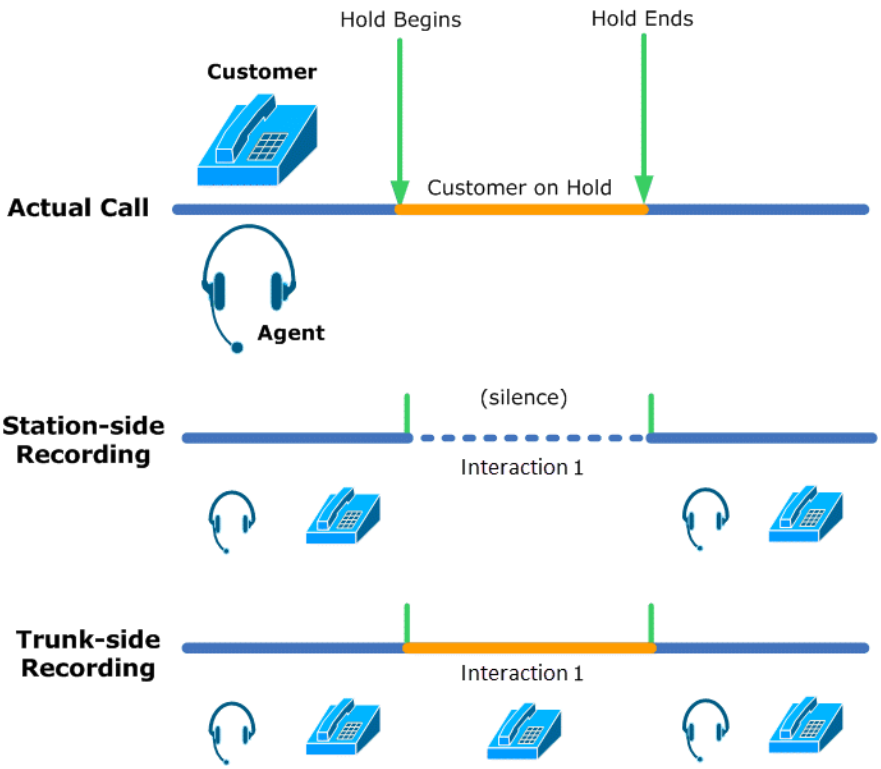
You must also review the sections Trunk-side with Internal Calls (page 21) and Delete/Block Calls (page 32), to understand how these two recording features affect call flows.

Holds

If a customer is put on hold, there can be one interaction in the contact, just as there would be for any single inbound call. This applies to both station-side and trunk-side recording. The portion of the call in which the customer is put on hold is not part of this interaction. Many environments incorporate music-on-hold servers or other components that can interfere with analytics of the recorded call. Any audio recorded during the hold period is discarded from the agent interaction. For recording environments under direct control by the CTI (for example, Avaya DMCC SSC), recording stops during the hold period.

For any type of hold or consult (including consult, consultative transfer, and consultative conference):

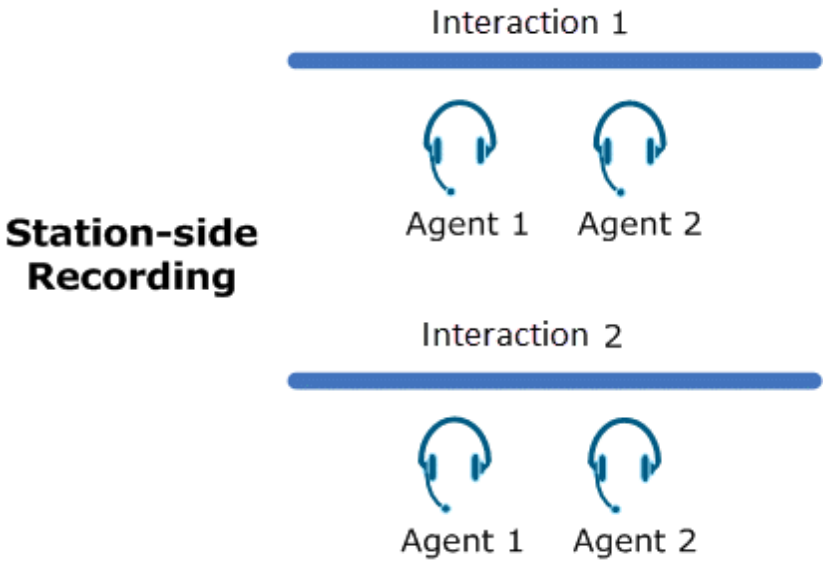
- For TDM station-side with agent recording, the interaction includes the agent's voice in all cases when the phone is actively on another call, for example, a consultation. Usually, if the agent is not active on any call, the interaction contains silence, though some switches provide the agent's voice.
- For TDM station-side with back-office recording, the interaction contains the agent's voice when the agent is active on that particular call. If the agent goes on another call, for example, a consultation, the agent's voice for that call is recorded in its own interaction. Usually, if the agent is not active on any call, all interactions record silence.
- In VoIP environments, the recorded portion is the same as for station-side and trunk-side, depending on where the audio is tapped. VoIP Delivery for stations (for example, Cisco DMS, Avaya DMCC) is typically the same as station-side. VoIP Delivery for gateway environments (for example, SBC SIPREC) is typically the same as trunk-side.



Agent-to-Agent

An agent-to-agent call will produce two interactions, each containing all voice for the contact. This applies to station-side recording only. In this scenario, one contact is created.

> The interactions produced for agent and back-office will be the same for agent-to-agent scenarios.



Basic Consultation

A consultation is an inbound or outbound call. During the call, a customer is placed on hold so that an agent can consult with another internal party. In this scenario, a customer is placed on hold so that an agent can consult with another internal party. Then, the agent returns to speak with the customer.

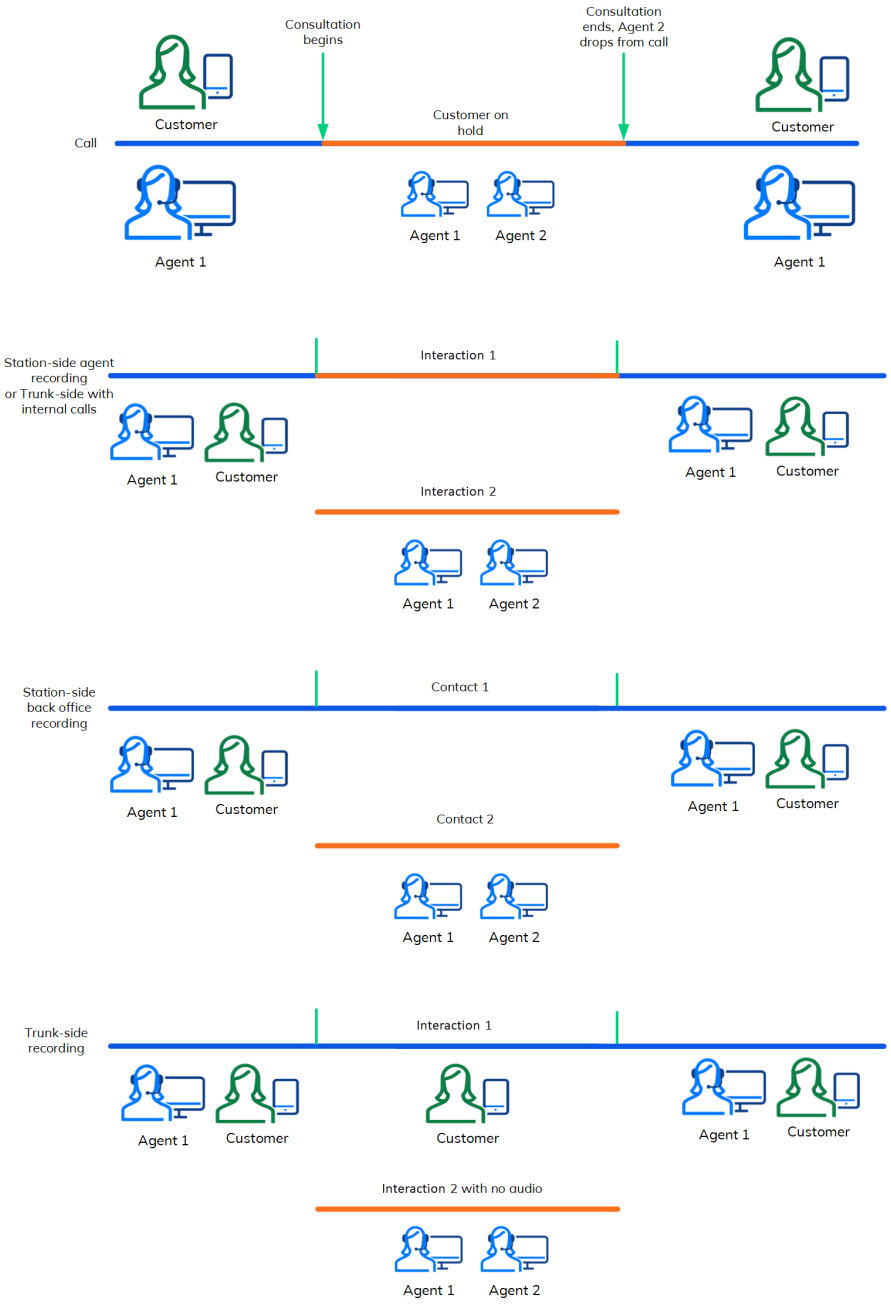
For station-side agent recording, a basic consultation contains two interactions: one interaction that contains all voice for the call, and one interaction that only contains voice for the consultation.

Station-side back-office recording generates two contacts: one contact for the customer and the first agent, and one contact for the internal consultation.

For trunk-side recording, the capture system tracks the interaction of agent 2, and can record screens or audit the interaction. Audio is not captured. Call flows for trunk-side recording are the same in both agent and back-office recording.

In trunk-side-with-internal calls, the consultation is captured, and looks the same as station-side.

Basic Consultation



Transfers

The following are the types of transfers:

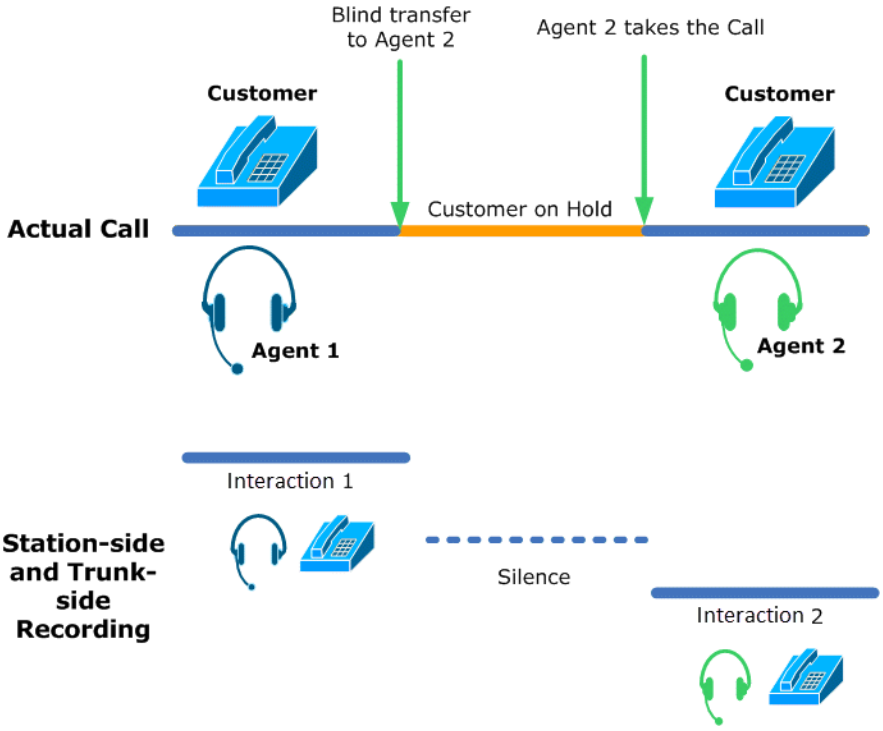
- Blind Transfer (page 19)
- Consultative Transfer (page 20)
- Trunk-side with Internal Calls (page 21)
- Unmonitored to Monitored Phone Transfer (page 21)

> Trunk-side with internal calls is supported only for Avaya, for more information, refer to the *Avaya Integration Guide.*

Blind Transfer

A blind transfer refers to an agent transferring a caller to another agent or supervisor without waiting for them to pick up. An agent uses the transfer button or a second line for the same. Usually, the interactions produced are same for both agent and back office for blind transfer scenarios.

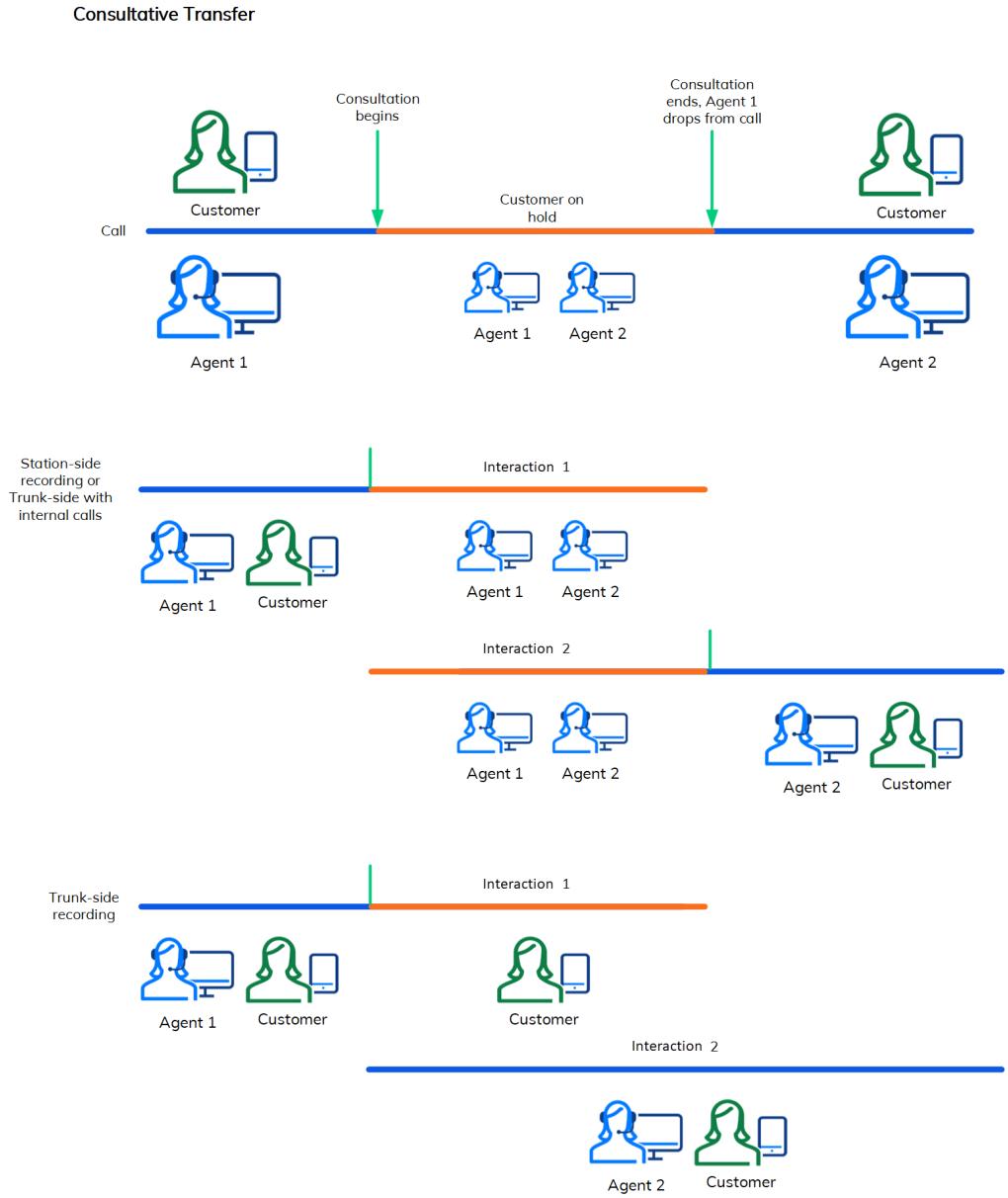
In both station-side and trunk-side recording, this type of contact includes two interactions. One interaction contains all voice for the call between Agent 1 and the customer. The other interaction contains all voice for the call between Agent 2 and the customer. Usually, for regular agent calls, only one contact is expected, and this contact can contain the two interactions. However, in most back-office scenarios, one contact per interaction is expected (that is, two contacts, each containing one interaction).



Consultative Transfer

A consultative transfer occurs when one agent (Agent 1) transfers a caller to another agent. But first, Agent 1 consults with the second agent (Agent 2) to ensure they are able to take the call.

For station-side recording, a consultative transfer contains two interactions. One interaction contains all voice for the call between Agent 1 and the customer, and also the voice for the consultation call. The other interaction contains voice for the consultation call, and all voice for the call between Agent 2 and customer. Only one contact is created.



Trunk-side recording also contains two interactions in this scenario. One interaction contains all voice for the call between Agent 1 and the customer. The interaction also contains the audio of the

customer on hold while the two agents are talking. The other interaction contains all voice for the call between Agent 2 and the customer. Only one contact is created. Agent 2 is tracked when the consultation begins. This tracking means that screens can be recorded during the consultation and stitched as part of the entire interaction.

> Calls are not tracked across data sources, and therefore are not tracked across different switches. As a result, if a call is transferred between switches it will not be tracked from one switch to the next, and will therefore be considered two separate calls.

Trunk-side with Internal Calls

The recording system automatically pulls relevant audio from either the dedicated trunk-side recorders. Or dynamically engages a station-side resource, based on the call flow. See the diagrams for basic consultations and consultative transfers in the other relevant sections. In these diagrams, the blue portions of the contacts illustrated represent the trunk audio, while the orange represents the station audio.

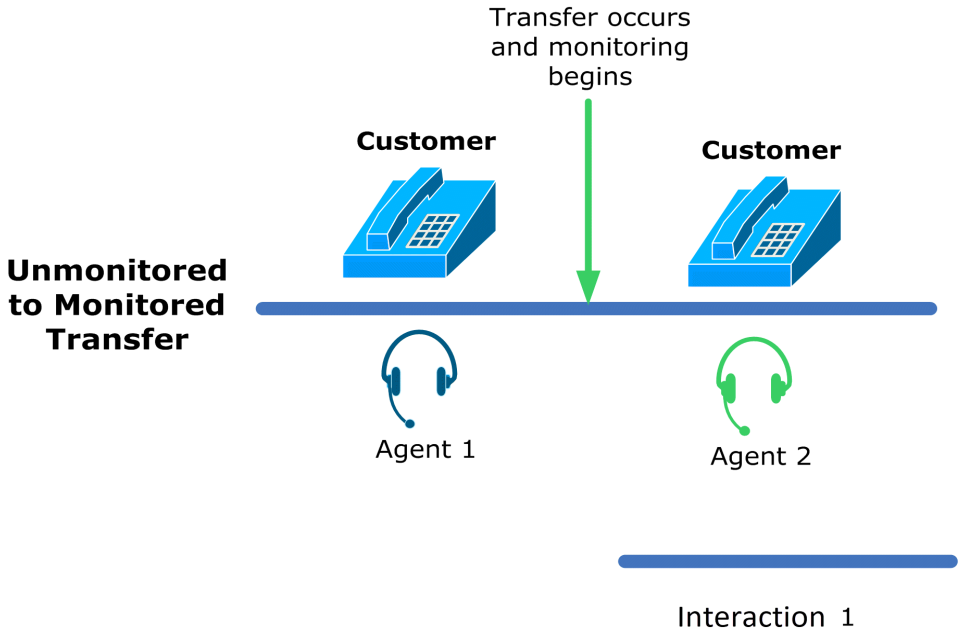
> Trunk-side with internal calls is supported only for Avaya.

Unmonitored to Monitored Phone Transfer

When a call is unmonitored, then transferred and monitored, the portion before the transfer is not recorded. Only one contact is created.

> Based on CTI, one of the interactions may not be marked as part of a transfer.

The following example diagram illustrates the interaction created in an unmonitored-to-monitored call transfer.



Conference

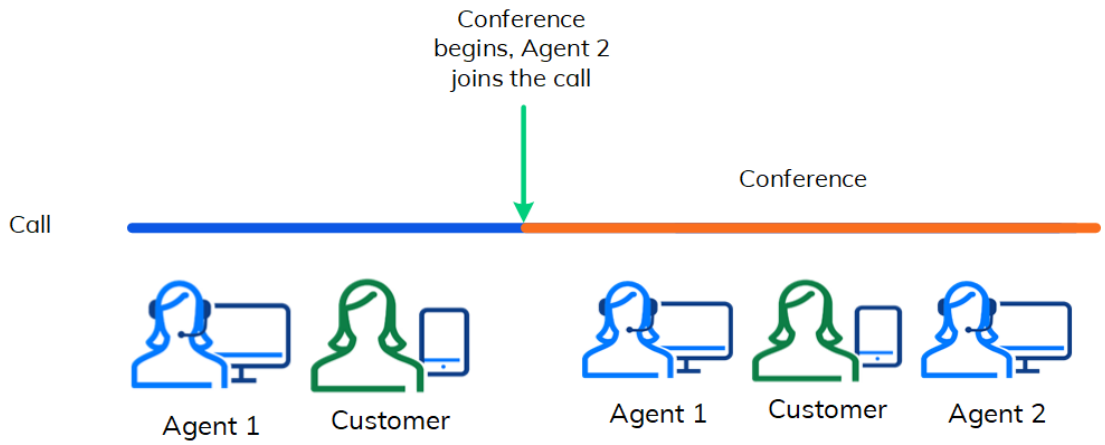
The section describes the following types of conference calls:

- Blind Conference (page 23)
- Consultative Conference (page 24)

Blind Conference

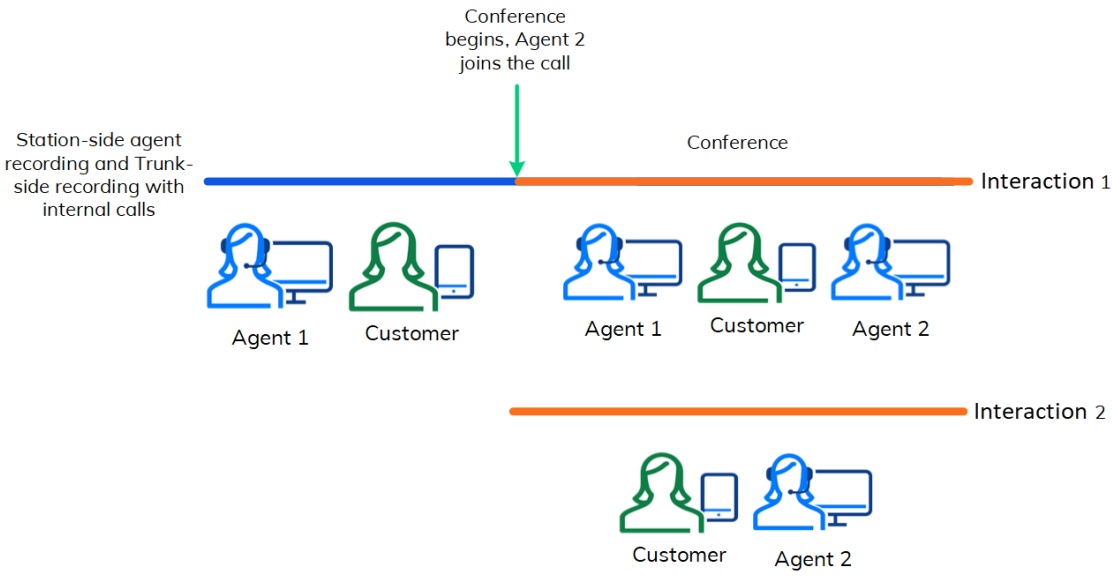
Agents use a blind conference when they want to conference in a second agent to a current customer call. In this scenario, the agent does not need to first speak with the second agent. The agent can use the conference key or a second line to do so. When Agent 2 is in a conference call, a separate interaction is created for that agent. In trunk-side, this interaction is pulled from the same trunk-side audio. In all the following scenarios, only one contact is created.

Blind Conference



The use of a conference key versus a second line does not affect the interactions produced, but whether recording is station-side or trunk-side does.

In both station-side and trunk-side recording, if Agent 1 creates a blind conference between a customer and Agent 2 using either the conference key or a second line, it creates two interactions. As illustrated here, one interaction contains all voice for the call between Agent 1 and the customer. The interaction also contains all voice for Agents 1 and 2 on the conference. The other interaction contains all voice for Agent 2 on the conference.



In station-side and trunk-with-internal-call-recording, if the far-end customer hangs up, recording continues for the conversation between the two agents.

In straight trunk-side recording, if the far-end customer hangs up, audio stops recording. However, screen recording continues until the respective agent is released from the call.

Consultative Conference

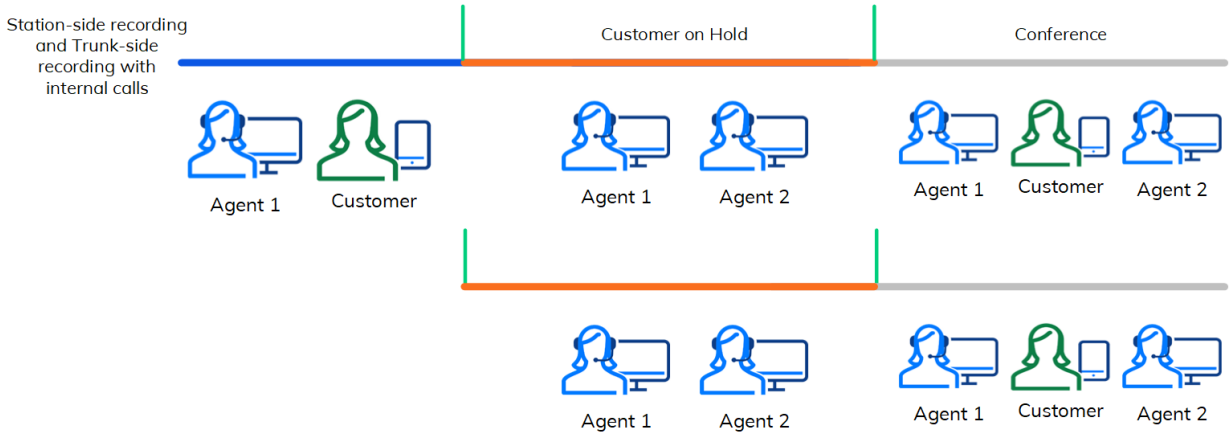
Agents use a consultative conference when they want to conference in a second agent to a current customer call. Before conferencing in the second agent, the agent first needs to speak with the second agent. The agent can use the conference key or a second line to do so. In both cases, the number of interactions produced is the same.

The following diagram illustrates a consultative conference. In each consultative conference scenario, only one contact is created.

Consultative Conference

In both station-side recording and trunk-side recording with internal calls, a consultative conference using either the conference key or a second line produces two interactions, as illustrated below. One

interaction contains all voice for the call between Agent 1 and the customer, voice for the consultation call, and all voice for Agent 1 on the conference. The other interaction contains voice for the consultation call and all voice for Agents 1 and 2 on the conference.



In station-side and trunk-side recording with internal calls, if the far-end customer hangs up, recording continues for the conversation between the two agents recorded.

In straight trunk-side recording, the far-end customer audio stops recording. However, screen recording continues until the respective agent is released from the call. Agent 2 is tracked during the consultation. This tracking allows screen recording or auditing to take place.

Dialers

Many automated dialers that call centers use establish a dedicated call with the agent and internally bridging, or conferencing, that agent call with dialed customer. These dedicated call legs to the agent are also called nail up calls. Nail up calls last during the agent shift, so the Recorder breaks up this call into individual interactions based on the events received from the dialer integration. The system discards the portions of the nail up call that occur between dialer calls. The Recorder has three ways to identify a call as a nail up:

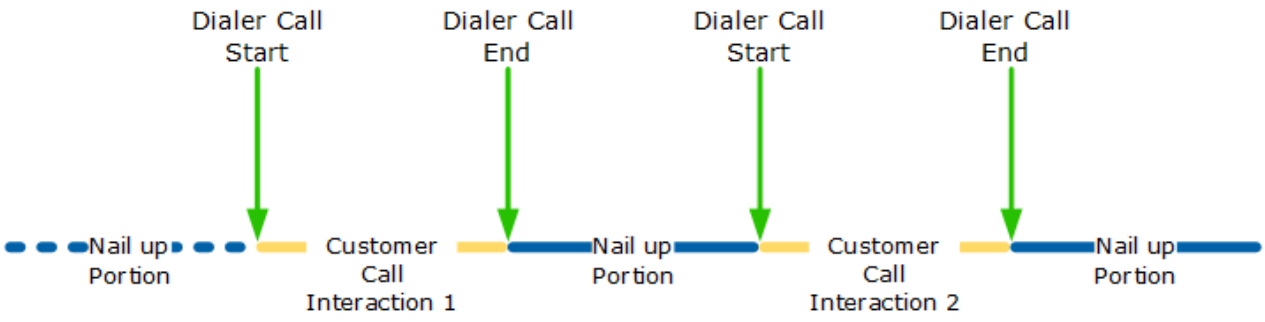
- Dynamically driven from the dialer events
- Dedicated trunk tie-line configuration
- Dedicated calling number identifier

Dialer Events

By default, the Recorder identifies switch calls automatically when dialer events are received. When the dialer indicates that an agent or device is active on a customer call, the Recorder system looks for an active switch call for the associated device. The expectation is that there will be only one switch call for the device, and that call is flagged as the nail up call. Once identified as a nail up, the system discards any recordings for that nail up call from the identification point forward. If the recording system is in control of the recording (for example, in CTI-controlled interception or DMCC SSC), the system stops the audio recording entirely to reduce the recording load. When the dialer notifies the Recorder about an active customer context on the nail up call, the Recorder reactivates recording on the nail up call, and the recordings are matched to the dialer interaction.

Because this mechanism dynamically identifies the nail up call from the dialer events, there may be a portion of the call that was recorded before the identification. The Recorder can optionally keep this portion of the call. If the duration of the call is greater than the defined threshold, then the portion of the call that was recorded before the call was identified as a nail up is kept. If the duration of the call is less than the threshold, then the portion of the call that was recorded is discarded.

The diagram below depicts how a nail up call is broken up into discrete interactions for the dialer calls. The dashed nail up line at the beginning of the call can be kept or discarded as per a configured threshold at the Recorder Integration Service role level. If the threshold is zero (0) or greater than the duration of the dashed portion, then that portion of the nail up call is discarded. If the duration of the dashed portion is greater than the threshold, then the dashed portion is kept. The solid nails up portions are discarded automatically.



Dedicated Call Identifiers

You can optionally configure the Recorder with specific trunk information to be dedicated to the dialer. The Recorder can identify calls coming from these trunks based on the CTI event stream. This allows the Recorder to identify a nail up call immediately upon delivery to the agent. In this scenario, the same condition applies, that recordings for the nail up call are not kept once the call is identified as a nail up. A similar behavior can be achieved using calling party identifiers. Refer to the appropriate integration guide for more information on these configurations.

Dialer Behavior in Failover

In the event of dialer disconnection, the Integration Service stops recording and closes all dialer calls associated with the disconnected dialer. Audio recording of calls that occur during dialer disconnection will be possible if:

- The relevant member group is configured with a Recorder Fallback Type of Always (Liability) or On CTI Disconnection (Performance), and
- VOX interactions are detected by the Recorder.

Since, at the time of dialer disconnection, the Integration Service does not have events from the dialer (such as Call Started/Call Ended), all recorded audio interactions for the dialer's agent will be grouped into one interaction per agent, with multiple recording segments. The duration of the interaction is configured in the Long Call Duration parameter of the Phone data source.

When dialer CTI fails, you can expect basic VOX tagging to occur. CTI tagging from the original nailed up switch call, for example, ANI/DNIS, may be tagged as well, but is not guaranteed.

Screen recording will not take place during failover, except in some edge cases in which recording may continue for some time.

Call Flow Behavior with Recording Features

Certain Recorder features can impact the call flow behavior described in Chapter 3 “Call Flows for the Recorder”.

Topics

Do Not Record

A variation of the call scenarios described in Chapter 3 "Call Flows for the Recorder" occurs when an extension marked with the recording mode **Do Not Record** joins a call. (You can set recording modes in Enterprise Manager—see the *Recorder Configuration and Administration Guide*.) Interaction creation for the call follows the specific call scenario as described in the preceding sections, but no recording interactions are started or kept for the *Do Not Record* extension's interaction. While the *Do Not Record* interaction is not recorded or kept, other interactions on the call are unaffected, and may record and keep audio for the call.

The following sections describe the interactions and recording interactions created for specific types of calls when Do Not Record is in effect on an extension.

Basic Inbound/Outbound Call

One interaction is created for the contact, but is discarded at the end of the call. No recording segments are started or kept for the call.

Holds

One interaction is created for the contact, but is discarded at the end of the call. No recording segments started or kept for the call.

Agent-to-Agent

An Agent-to-Agent call creates two interactions within the contact. If only one agent is on a *Do Not Record* extension, then one interaction contains all voice for the contact and the other has no interactions. If both agents are set to *Do Not Record*, then neither interactions have any recording segments.

Basic Consultation

For IP and station-side agent recording, two interactions are created for the contact. If *Record* Agent 1 is consulting with *Do Not Record* Agent 2, then Agent 1's interaction contains all the voice for the call, including the customer and the consultation. If *Do Not Record* Agent 2 is consulting with *Record* Agent 1, then Agent 1's interaction contains only the voice for the consultation.

For IP and station-side back-office recording, three interactions are created for the contact. If *Record* Agent 1 is consulting with *Do Not Record* Agent 2, then Agent 1's interaction contains all the voice for the call, including the customer and consultation. If *Do Not Record* Agent 2 is consulting with *Record* Agent 1, then Agent 1's interaction contains only the voice for the consultation.

For trunk-side recording, one interaction is created for the contact. If *Record* Agent 1 is consulting with *Do Not Record* Agent 2, then Agent 1's interaction contains only the voice for the customer call. If *Do Not Record* Agent 2 is consulting with *Record* Agent 1, no voice is recorded for the call.

Transfers

A blind transfer between agents creates two interactions for the contact. Voice will only be recorded for the agent that is not set to *Do Not Record*. The agent set to *Do Not Record* will not start or keep any interactions of the call.

A consultative transfer follows similar logic as a basic consultation call. For IP or station-side recording, the agent not set to *Do Not Record* will record voice for the consultation and his portion of the customer interaction. For trunk-side recording, the agent not set to *Do Not Record* will record voice only for his portion of the customer interaction. The agent set to *Do Not Record* will not start or keep any interactions of the call.

Conference

In a blind conference call scenario using IP or station-side recording, the agent not set to *Do Not Record* will record voice for the portion of the call in which that agent participates. The agent set to *Do Not Record* will not start or keep any interactions of the call. In trunk-side recording, voice is recorded if the primary agent is not set to *Do Not Record*. If *Do Not Record* Agent 2 conferences in *Record* Agent 1 onto a trunk call, voice will not be recorded until Agent 2 drops off the call. Likewise, if *Record* Agent 1 conferences in *Do Not Record* Agent 2, voice stops recording if Agent 1 drops off the call.

In a consultative conference call scenario using IP or station-side recording, the agent not set to *Do Not Record* will record voice for the portion of the call in which that agent participates, including the consultation and customer interaction. The agent set to *Do Not Record* will not start or keep any interactions of the call. Trunk-side recording will not record the consultative portion of the call, so the recording logic is identical to a blind conference.

Delete/Block Calls

It is possible to delete/block contacts using the Exec Delete button on a phone. Blocking is a one-way street; once blocked, a contact cannot become unblocked. The Delete/Block behavior can be applied to a contact in one of four ways (see "Configure Delete/Block Behavior" the *Recorder Configuration and Administration Guide* for configuration instructions):

- Entire contact is deleted.
- All interactions are deleted.
- All future interactions are deleted.
- All future recordings in currently active interactions are deleted.

Entire Contact

When set to delete an entire blocked contact, all past, present, and future recording interactions associated with the contact are marked for deletion.

Active Interactions

When set to delete active interaction on a blocked contact, only the active interactions at the time the block was applied to the contact are affected; closed interactions before the block and interactions created after the block are unaffected. Affected interactions are marked for deletion and their associated recording interactions are stopped, if applicable, and marked for deletion.

For call scenarios that only have a single interaction (basic calls, holds, and certain trunk scenarios) this setting effectively deletes the entire contact.

For call scenarios that have multiple interactions, only the active interactions at the time of the block are affected. In a blind transfer scenario from Agent 1 to Agent 2, if the block is triggered in the call with Agent 1, then Agent 2's portion of the call is recorded. Likewise, if the block is triggered in the call with Agent 2, any previously kept voice involving Agent 1 is unaffected.

Future Recordings

When set to delete all future recordings in a blocked contact, only the active and future segments at the time of the block are affected; closed segments before the block are unaffected. Any active recording segments on the contact are stopped. No new recording segments are started and future recording segments assigned to the contact are marked for deletion.

Future Recordings in Active Sessions

Recordings of all currently active interactions will be deleted after the trigger point. Any recordings up to that point are kept. Future interactions' recordings are kept.

Session Auditing for Contentless Interactions

Contentless interactions consist solely of available metadata. Customers who require a higher level of call auditing can use a Session Auditing Policy to specify, for a particular data source, that these interactions be marked and stored in the database, making them searchable using applications such as Interactions.

You can use one of two Session Auditing Policy settings to achieve this:

- "Missed Recordings" marks calls that should have been recorded but were not.
- "Full Switch" marks all interactions for which we receive CTI without recording. This allows you to capture, for example, calls that were blocked, or interception calls that were met with a busy tone or unanswered ringtone.

Also, "Full Switch" has a specific behavior when marking Interactions that involve calls that never go active. If the inactive Interaction has an audio recording associated with it (for example, the ringtone of a call captured using VoIP interception), the auditing logic uses the recorded audio for marking the Interaction, instead of deleting the audio and generating a contentless INUM. If no audio recording has been matched, the auditing logic generates a contentless INUM as needed for marking the Interaction metadata.

> If the Session Auditing Policy is not enabled, these types of recordings are not retained. For there to be any record of a contentless interaction, a functioning Recorder must be online and associated in some way with the call in question.

Load balancing for contentless interactions

Load balancing of auditing files for contentless interactions occurs in a round robin fashion across the associated Recorder Roles for the device in question. Contentless interactions are supported in 1+1 and N+N scenarios.

Extension Recording Mode

Each phone associated with a Phone data source has a primary extension, and optional secondary extensions. Each extension has a default recording mode that determines the recording behavior for that extension.

> ⚠ Block Business Rules and Block commands by means of AIM, eQuality Connect and other third-party APIs cause the interaction or contact not to be recorded, regardless of the extension recording mode, recording rules or other third-party API commands.

Available recording modes are as follows:

- **Record**—Record all calls on this extension.
- **Do Not Record**—Do not actively record this extension. Other extensions on the same call follow their respective Recording Mode, and can record audio for this extension. External API commands or recording rules do not override this setting. (A keep or start record command will be ignored in these cases as a decision to delete or not to retain a recording always takes precedence over a recording decision.)
- **Application Controlled**—Record every call, and then delete it. At any time during a call, a Recording Rule or external API command can cause the recorder to keep the call.
- **Start on Trigger**—Do not record calls on this extension until a Recording Rule is triggered or an external API command starts recording. If the recorder is set to recorder controlled, recording will start whenever the recorder starts, but audio prior to the recording trigger will be deleted; the interaction will start there, and continue to the end of the call.
- **Recording Resource—**Only for soft phones. Use with a Service Observe or Single-Step Conferencing Recorder Control Type.

Call Recording Overlay

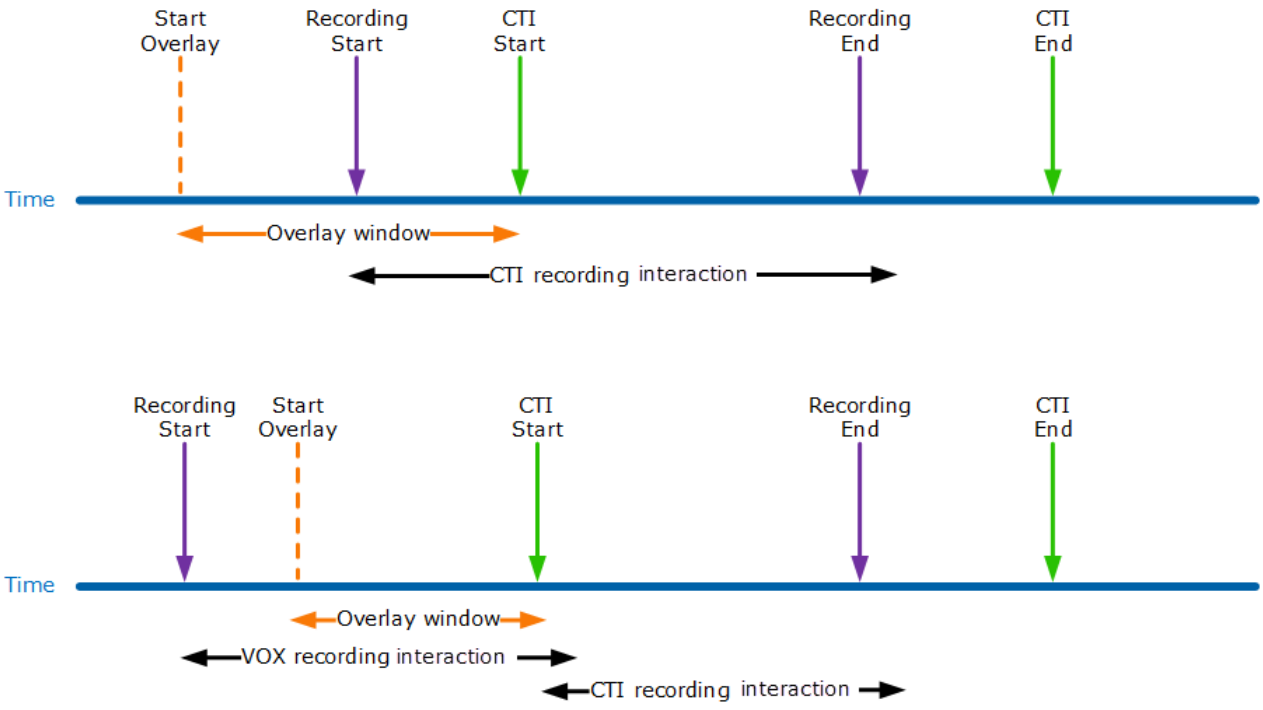
Recorder Start/End Overlay allows you to match only relevant audio portions to the real-time CTI contexts. You can specify an overlay period in Enterprise Manager when creating a phone or dialer data source.

The start overlay defines how many milliseconds early a recording can start before the CTI context and still be considered a valid match. If a recording starts earlier than this threshold, the system requests to stop the current recording, and to create a new recording at the current time stamp. The end overlay defines how many milliseconds late a recording can end after the CTI context and still be considered a valid match. If a recording continues beyond this threshold, the system requests to stop the current recording, and to create a new recording.

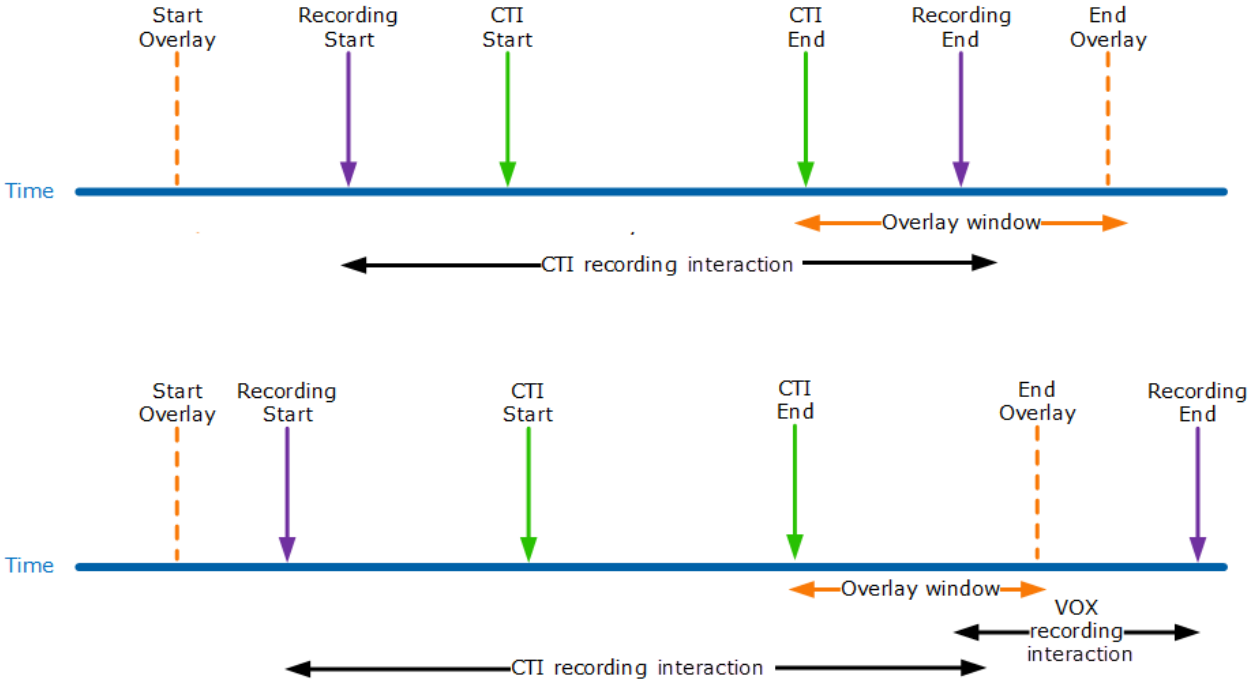
> In Gateway-side Correlation environments, only the start overlay is applied. Instead of an end overlay, the system immediately requests to stop any on-going recording and to start a new recording.

The following diagrams illustrate the recording behavior for scenarios in which start or end overlay is enabled.

Start Overlay



End Overlay



> The end overlay does *not* apply to Gateway Correlation Pool recording. The system applies a zero (0) millisecond end overlay for gateway correlation recordings, breaking the recordings immediately as the CTI ends.

- Application mode — Only CTI recording interactions are recorded and kept.
- Performance mode — Both CTI and VOX recording interactions are recorded, but only CTI recording interactions are kept.
- Liability mode — Both CTI and VOX recording interactions are recorded and kept.

Application, Liability, and Performance Modes

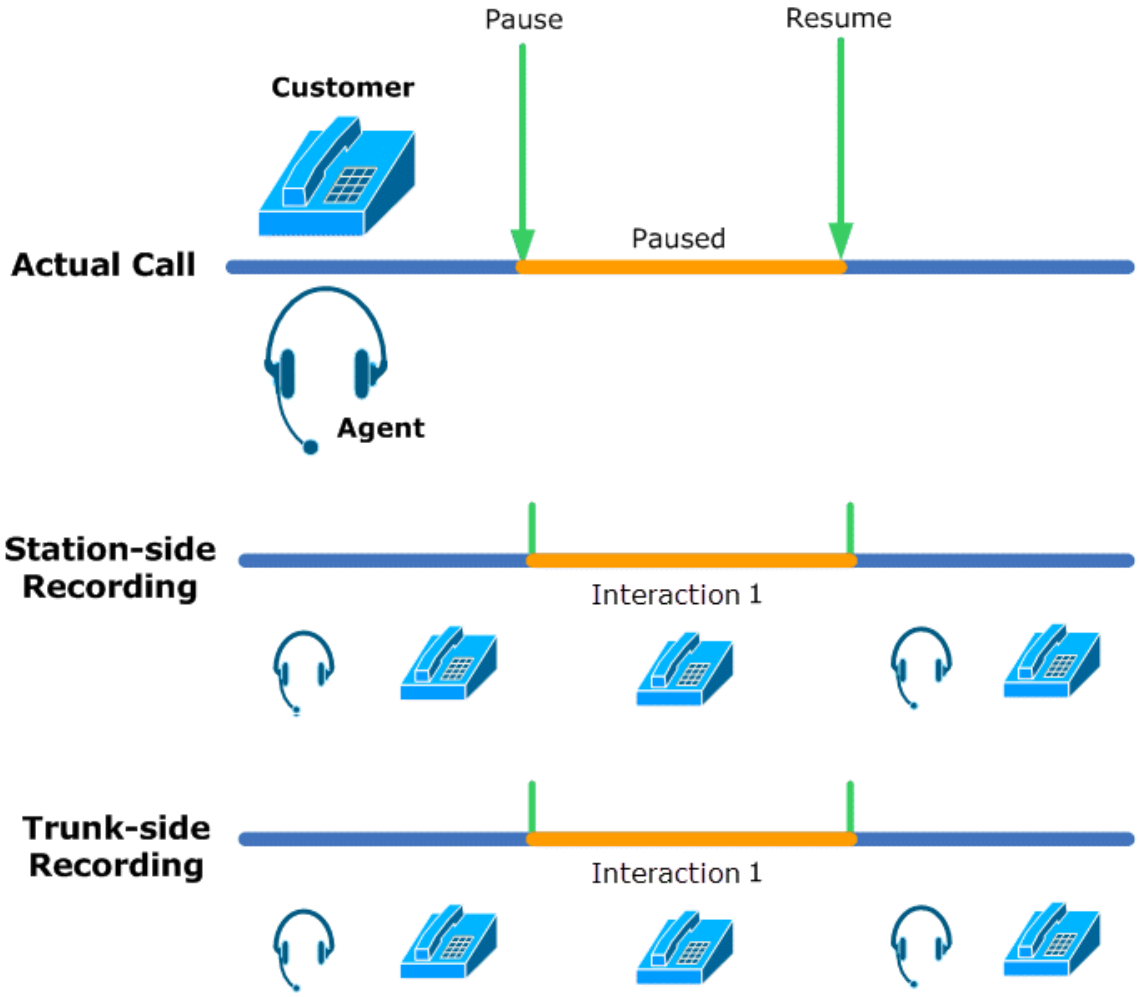
The following sections describe some basic call scenarios for Application, Liability, and Performance fallback modes.

In Performance and Liability modes, RTP detection is enabled to prevent audio loss. The Integration Service monitors the current recording after it receives a CTI end event. The Start Overlay and End Overlay settings (for the Phone data source) are used to coordinate the decisions of the Recorder and the Integration Service so that there is only one recording for a specified call. If the current recording is not stopped within the specified End Overlay time (six seconds by default), it issues a break call command to restart the recording. Any recording after a break call command is treated as a separate recording segment.

Pause/Resume

The following diagram illustrates the interactions for a call that is paused, then resumed. During a pause, nothing is recorded, but an audible tone indicates the paused state.

If an agent pauses a call during screen recording, playback shows a black screen for the duration, until the call is resumed.



Pause and resume activation occurs at the contact level. Depending on the environment, different results can be produced during a pause:

- When the customer's audio is on a *different* interaction than the agent's, as in trunk side recording, the customer's audio remains paused during the time in which an agent sets up a consultation (that is, from the time, the agent initiates a hold until the time the agent initiates the consultation call). During the consultation itself, however, the customer's audio may be recorded.

- When the customer's audio is on the *same* interaction as the agent's, as in Avaya DMCC/SSC, the customer's audio remains paused throughout the duration of the hold, including the consultation.

> **Pause and resume are CTI-driven. Therefore, in application mode, there is no chance that data are accidentally recorded if CTI goes down and pause/resume messages do not work. In performance mode, customers must have manual procedures in place to mitigate this risk, such as performing a review of calls recorded when CTI was down and deleting calls recorded during this period to ensure that no sensitive data is retained.**

The pause commands are tracked per device within the Contact, and persist until either:

- The device drops from the Contact.

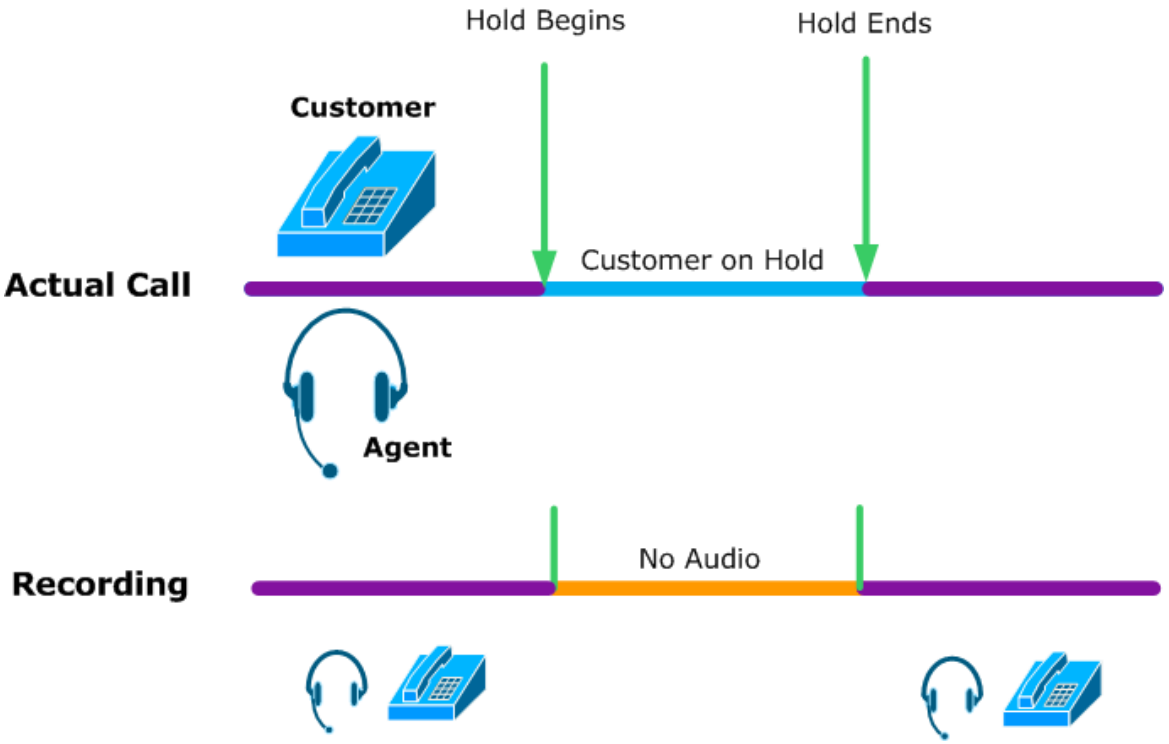
  or

- The device has been resumed.

For example, if User 1 issues a pause, the Contact is paused until User 1 drops from the call or issues a resume. If User 1 issues a pause then User 2 cannot issue a resume. The system provides more fidelity for multiple, overlapping pause context for a single user by means of API commands. Refer to the *SDK Programmer's Guide* for more information on the available API commands.

Pause Recording on Hold

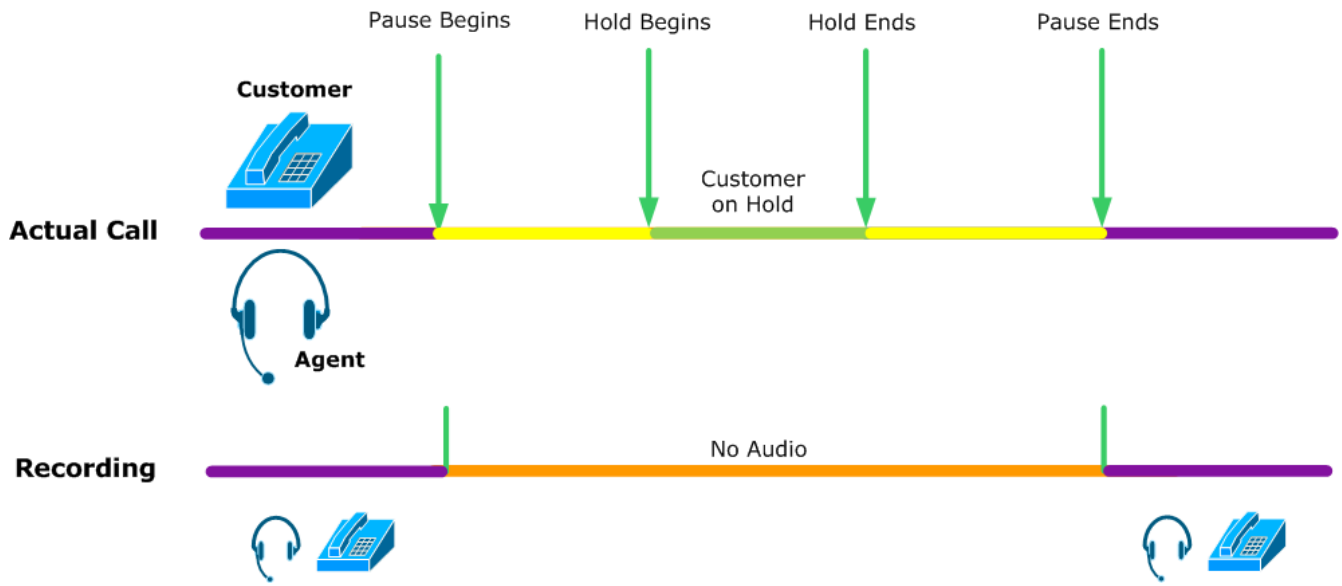
You can stop the caller's side of a call from being recorded during a hold by using the Pause Recording on Hold feature. See "Configure Pause Recording on Hold" in the *Recorder Configuration and Administration Guide* for configuration instructions. With this feature enabled, when a hold event is received from an agent, audio is masked until the agent returns to the call.



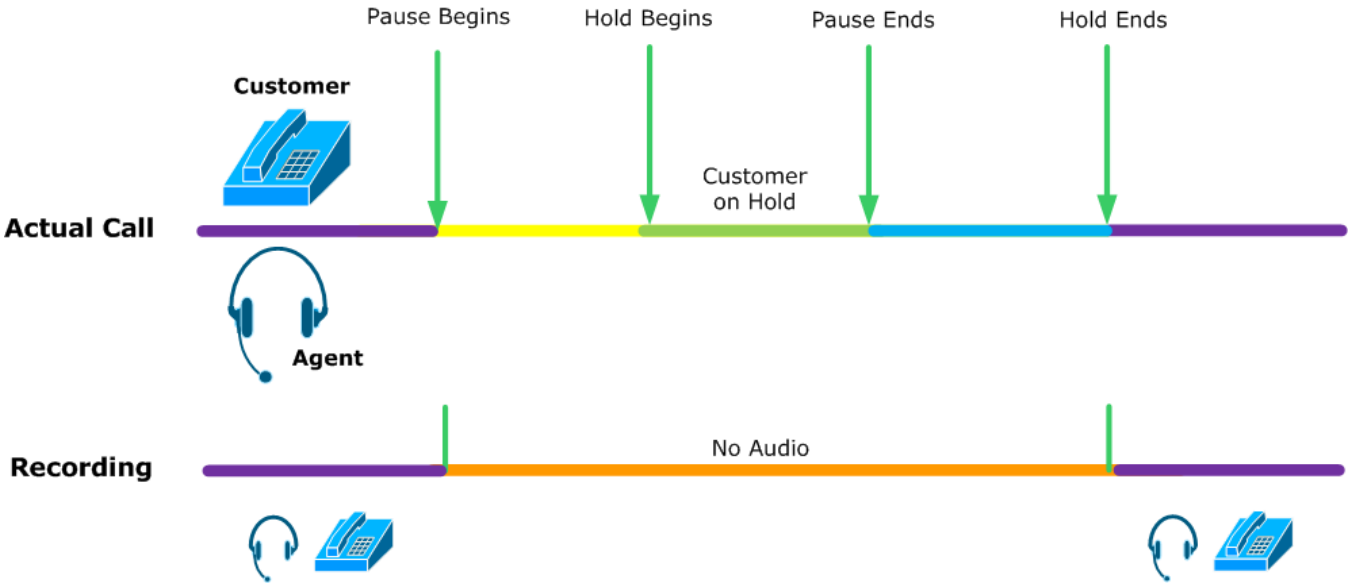
This feature relies on the ability of the integration service to act upon hold events received from the switch in use; if a hold event is not received for whatever reason, recording can still continue.

In certain scenarios, the sequence of actions may result in the customer being recorded while on hold, even if this feature is enabled. For example, if Agent A places a caller on hold, recording will stop. If Agent A then calls a second agent, Agent B, places all parties in conference with the caller, and then places the conference on hold, the caller's side at that point will be recorded through Agent B.

If Application Event Triggering is set up in Desktop and Process Analytics (DPA), the monitoring party can pause recording, put the call on hold, take the call off hold, and finally, by means of DPA unpause the call. This scenario would produce a call in which the portions of the call before and after the pause is recorded. But, everything in between (including the hold) the call is not, as shown in the following diagram:



In the following scenario, the “pause” effectively continues even though there has been an ‘unpause’ request from DPA, because a hold is still in place.



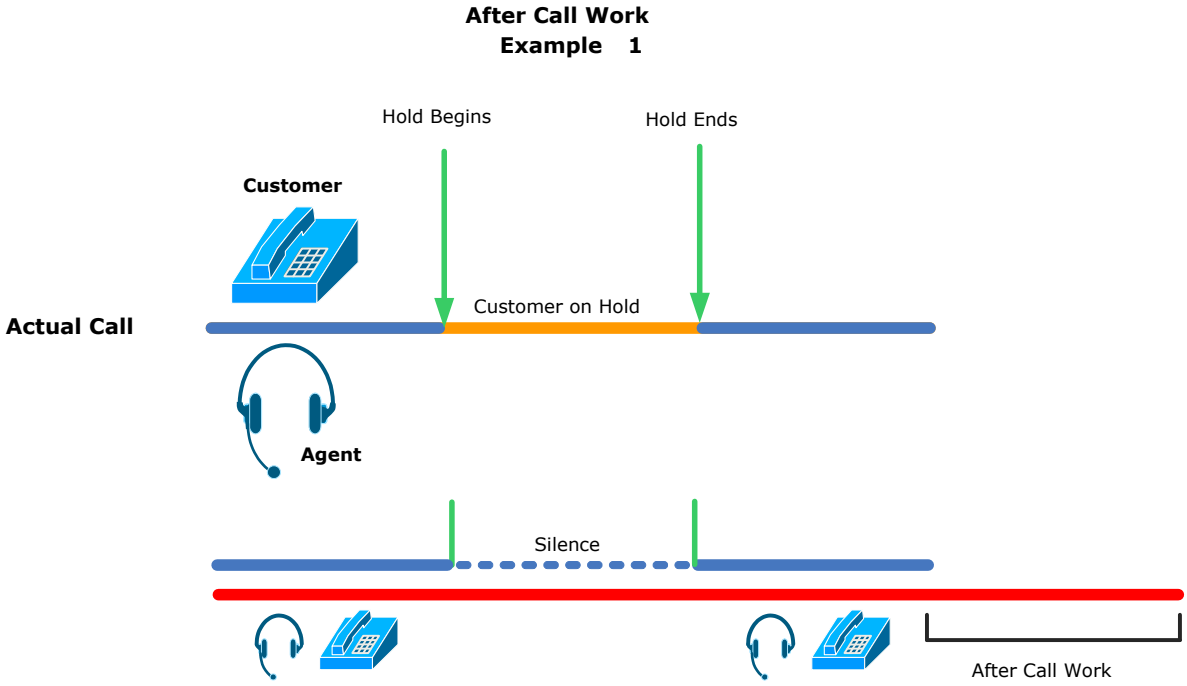
After Call Work

The after call work (ACW) refers to agent activity that occurs after a call ends. You can specify that this work be recorded within the Recording Rules Settings in Enterprise Manager.

The After Call Work feature:

- Tags the call with an attribute (Wrap up Time) that indicates how much time that the agent spent doing after call work. (Even if there is no recording.)
- Records after call screen activity after the call terminates, if screens were being recorded.

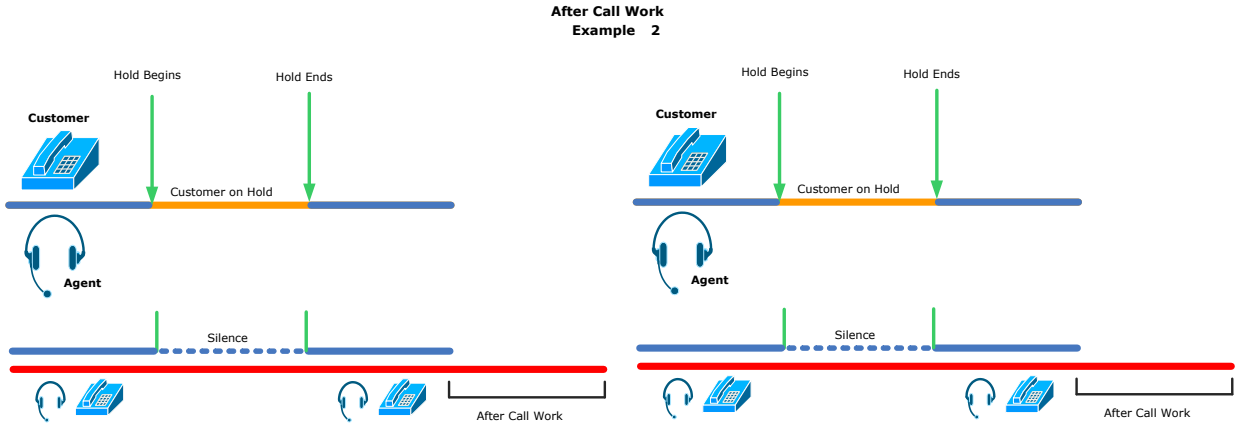
In the first example, blue represents audio, and red represents video. By enabling the After Call Work setting in your Recording Rules (see "Create Rules" in the *Recorder Configuration and Administration Guide*), you will capture an extra portion of agent screen activity after the call ends, as illustrated as follows.



Recording of After Call Work ends in one of the three scenarios:

- Timer—Recording ends once the timeout specified in the associated Recording Rule elapses.
- Event Based—Some adapters support ACW based on CTI events (as defined in a Recording Rule). The audio for any recorded interaction ends based on CTI, and screen recording continues for the configured timer length, or until the agent receives an event indicating that they are no longer in an After Call Work state.
- Next Call—Recording ends when the agent receives a new call.

In example 2, below, we see the behavior of the After Call Work feature over the course of two successive calls: when the second call starts, after call work ends (illustrating the “Next Call” scenario).



Certain features are not supported while an interaction is in After Call Work. These include Recording Rules, blocking/deleting the interaction, or commands from the recording control API or AIM (start record, stop record, pause record, resume record, and block record).

Recording Rules

Attributes are evaluated for Recording Rules based on a collection of values received for interactions and contacts. Even though the portal only shows a single value for the interaction (typically the first value), for different attributes (such as ANI, DNIS, and Custom Data), the Recording Rule takes into account all the values it receives during the life of the interaction or contact.

Example:

Say you have a Recording Rule set up to block anything with DNIS 410022. The Block behavior for the Recorder Integration Service is set to *Delete active sessions completely*.

In the call scenario, a customer 7702545332 calls Agent 1 with extension 410021, we get a interaction tagged with ANI = 7702545332 and DNIS = 410021 (customer calling Agent 1). If Agent 1 then performs a transfer to Agent 2 with extension 410022, we get a second interaction with ANI = 410021 and DNIS = 410022 (Agent 1 calling Agent 2). However, both interactions are deleted, as the DNIS values 410021 and 410022 both apply to the first interaction (for Agent 1).

The reason for this is that although Agent 1 originally received a call with DNIS = 410021, a consultation call was made with Agent 2 (with DNIS = 410022). In this particular case, DNIS = 410022 is seen in both the original interaction and new interaction, as the DNIS of the consultation call is included in the first interaction and the interaction created when the call is transferred. The behavior is switch/CTI dependent and may not be valid for all switch/CTI applications.

Supervisor Dashboard Real-Time Monitor

The Recorder Integration Service provides information about open calls to the Monitoring Event Service (MAS) component, including call status, and agent states such as Agent Login, Agent Logout.

When Real Time Monitoring is started from the Supervisor Dashboard, if MAS is not working, an error message appears, however, the absence of audio from the RIS does not create any kind of error message. If there is audio, but no screen recording, Supervisor Dashboard Real-Time Monitor displays a blank screen.

Limitations

The following are the limitations:

- In trunk-side solutions, the status on the Supervisor dashboard during interactions where the agent is not recorded (for example, consultations) appears as "On Call." If a monitor is initiated, the audio received is the trunk audio.
- Desktop interactions and screen-only agent interactions do not appear as calls on the dashboard. Supervisors can monitor the agent screen at any time by the dashboard.

SIP Trunk Recording

The call flows described in the preceding chapter are mostly the same when SIP Trunk Recording is in use.

In the following exception:

- A customer calls an agent (Agent 1) recording audio and screen over a SIP Trunk
- Agent 1 conferences in a second agent (Agent 2)
- The customer hangs up the call first, leaving the two agents in the call

It might be expected that there is no screen or audio recording, since the internal, conferenced call does not go through the SIP Trunk. However, the screens of Agent 2 are recorded, even though the trunk call has ended.