SIP Call Recording for Quantifiable Customer Experience

Does "your call may be recorded for training and quality assurance purposes" sound familiar? Ever wondered why calls are being recorded? Businesses record their communications with customers for a variety of reasons. Any, or all, of the seven reasons below apply to the majority of the call recording situations and are why call recording is an acceptable business practice.

1. **Training and Quality Assurance**
   Call center managers can listen in on recorded phone calls to ensure that agents are meeting quality standards to deliver the best possible customer experience. Call recording can help managers understand if agents need extra training and guidance.

2. **Ensuring Regulatory Compliance**
   Many businesses, specifically in the finance and medical fields, as well as contact centers, must abide by very specific regulatory compliance laws. Call recordings allow administrators to look into the exact interactions with customers to ensure that agents are following regulatory compliance laws.

3. **Resolving Disputes**
   Call recordings can help prevent disputes or prevent disputes from evolving into lengthy and costly legal battles by avoiding I-said/they-said scenarios.

4. **Enhancing Product or Service Offers**
   By listening to recordings of customer support phone calls, product development and marketing teams can gain an insight into customer issues and pain points, allowing them to improve product and service offers.

5. **Capturing customer success stories**
   When customers share their experiences using your product or service, things like why they chose it and how it's helped them are invaluable. This content (with the customer's approval) can be used to create great customer success stories.

6. **Creating a repository of customer experience**
   Voice recordings create a repository of customer interactions for the business. This is valuable information for modern analytics and machine learning platforms providing insight into customer preferences, problems and satisfaction levels. This information can be leveraged to tailor future product and service offers or to build out persona and demographic profiles for different customers and their preferences.

7. **Analyzing the customer experience in real-time**
   When a customer and agent conversation is unfolding, a duplicate audio stream can be fed in to an analytics platform, which can analyze the customer satisfaction in real-time. By providing feedback in real-time, customer satisfaction can be optimized.

How is VoIP call recording done?

There are several variations of call recording solutions, but any call recording solution involves two key components:

- Session Recording Client (SRC) - Entity providing copy of media and signaling to the recording device

- Session Recording server (SRS) - Entity storing and managing the media and signaling records

Initial VoIP call recording solutions leveraged simple mechanisms like 'port mirroring on an IP router' to fork a copy of media and signaling from a specific device port to the Recording Server. An alternative to port mirroring is to use a network tap to capture media and signaling packets and forward them to the Recording Server. Port mirroring and Taps are "passive recording" solutions that have the following limitations:

- No flexibility to dynamically invoke call recording for specific sessions, leading to the inefficient use of Recording Server resources and IP network bandwidth

- No way for an endpoint to communicate session details to the Recording Server, leading to loss of critical information.

To address these shortcomings, the IETF SIPRec Working Group analyzed these limitations and various recording use cases and produced a standardized SIP call recording solution popularly known as SIPRec. SIPRec provided many advantages over passive solutions and could be incorporated into session border controllers that were most likely already handling the media and signaling for VoIP traffic. Table 1 on the following page highlights the differences in the three solutions.

	SPAN (Port mirror)	TAP Devices	SBC (SIPRec enabled)
Richness of recorded session information	Low – Raw IP data on switch port is mirrored and sent to recorder.	Low - Raw IP data on physical cable is tapped and sent to recorder.	High – SBC sends recorded session details (e.g. Calling, Called Party numbers) and updates on any changes in the call (call hold, codec change, etc.)
Flexibility in recording criteria	Low - No flexibility to pick media streams to be recorded, all media on port is sent to recorder.	Low - No flexibility to pick media streams to be recorded, all media on the wire is sent to recorder.	High – Call recording criteria configured on SBC or SIP Application Server triggers recording of specific calls.
Reliability	Low – Switch will drop packets if monitored port is >50% loaded. Also, SPAN may cause switch CPU overload.	Medium - TAP devices offer better packet reliability than SPAN. Run risk service outage in case of power or TAP device failures.	High – SBC provides highly available call recording solution.
Recording encrypted calls	No	No	Yes. SBC can decrypt signaling and media of encrypted session and provide media stream to recorder.
Industry trend / Standardization	No	No	Yes. SIPRec is the standard for call recording and most recording solution vendors support it.
Load on Network	High – All IP packets on monitored port are relayed towards recorder.	High – All IP packets on the cable are relayed towards recorder.	Low – Only sessions to be recorded are sent to recorder.
Load on Recorders	High – Recorder sees all packets leading to higher server requirements.	High – Recorder sees all packets leading to higher server requirements.	Low – Only sessions to be recorded are sent to recorder.
Total cost of ownership	Low – Need additional port on the IP switch.	Medium - Need TAP device to put on cable for media forking.	Medium – Need to add license for SIPRec to an SBC to do media forking

Table 1 – VoIP Call Recording Solutions

As you can see, both port mirroring and network taps have many more limitations and no feature richness when compared to an SBC-based solution. While port mirroring is viable for lab environments and network taps can be used as a low-cost alternative, the flexibility, reliability, ability to handle encrypted traffic, and overall efficiency of using an SBC-based solution, clearly makes it a superior solution.
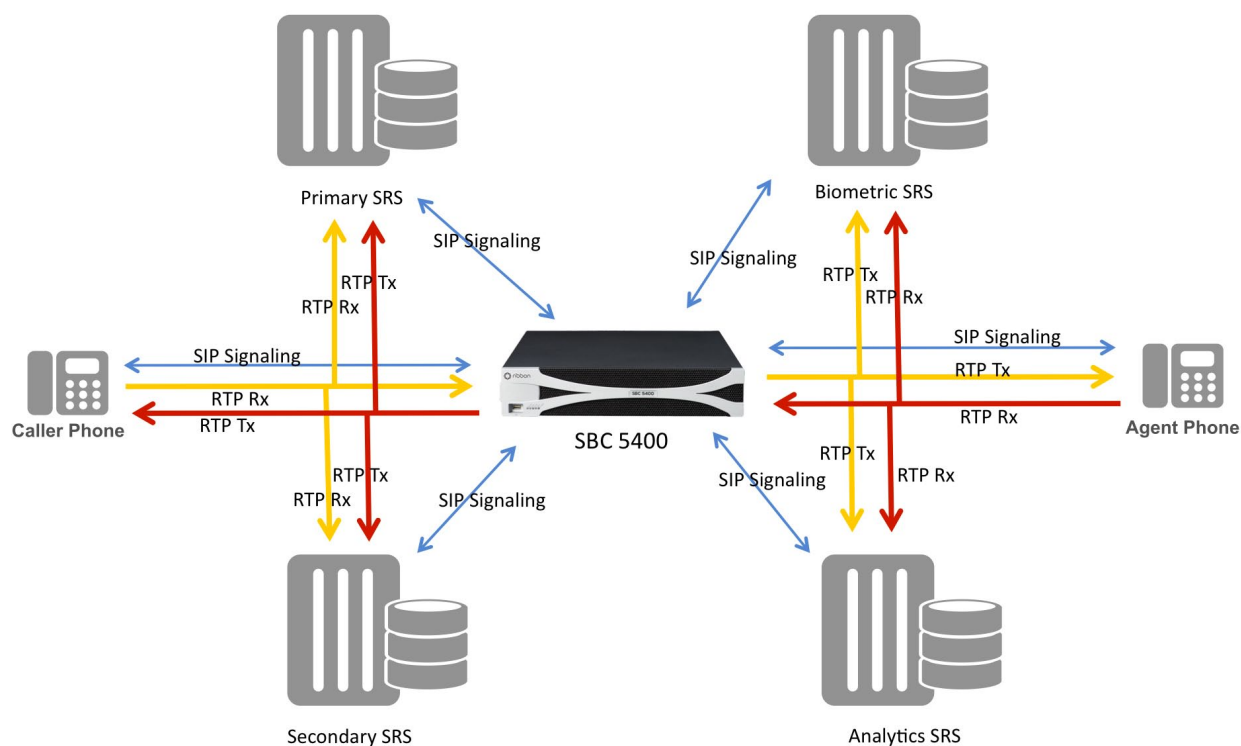
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Figure 1 – Ribbon SIPRec Solution

Ribbon SIPRec solutions

Ribbon's SBC Core is the best SBC platform if you are looking to do media forking for call recording and it has been interop tested with leading SIPRec recording solution vendors. The Ribbon solution is shown in Figure 1 above.

Ribbon's SBC Core platform, architected for high-scale media forking, offers a feature-rich, secure, and reliable solution.

- Analytics – features to enable analytics on recorded media stream and session data
  - Send rich metadata information to recorders

- Security
  - Record encrypted calls between users
  - If required, send signaling and media encrypted towards recorder

- Interoperability – flexibility to choose preferred recorder and analytics platform
  - Tested with leading recorder vendors. Configuration best practices are available
  - Extensive SIP Message Manipulation capability to ensure interoperability without code change with recorder of your choice

- High scale and unmatched reliability
  - Media forking offloaded to network processors allowing high number of simultaneous recording without any delay or any impact to ongoing calls
  - Two 10G interfaces to address high bandwidth requirements of recording
  - Forward media sessions to as many as 4 recorders simultaneously

Summary

In this solution brief we highlighted the use cases for why SIPRec is important and we analyzed the pros and cons of various methods for doing signaling and media forking for call recording. It is our opinion, from this analysis, SIPRec call recording is the optimal way to build a feature-rich and secure call recording solution.

Contact Us Contact us to learn more about Ribbon solutions.

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