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June 25, 2019

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### Recommended Citation

Vashisht, Vikas, "SHARING CONVERSATION CONTEXT USING CALL TRANSCRIPTS IN REAL-TIME ACROSS TELEPHONY DEVICES", Technical Disclosure Commons, (June 25, 2019)  
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## SHARING CONVERSATION CONTEXT USING CALL TRANSCRIPTS IN REAL-TIME ACROSS TELEPHONY DEVICES

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### ABSTRACT

Techniques are described herein for providing telephony users with improved context of the conversation for calls in progress by providing a real-time call transcript as long as the device has access to the call Identifier (ID) / dialog ID of the session in which they are interested. The call ID / dialog ID is shared with other telephony devices for various telephony features such as shared line, barge, transfer, whisper coaching, etc. The call transcript may be passed to a transfer target as the call is transferred for further handling. Moreover, agent calls may be monitored or the transcript of a call may be quickly obtained for the purpose of whisper coaching even if the supervisor joins the conversation late. Also, in shared line use cases, a boss/administrator can examine the call transcript to gather call context, allowing the boss/administrator to understand the conversation thus far before resuming or barging in.

### DETAILED DESCRIPTION

With Speech-to-Text (STT) becoming a common service, it is becoming easier and more widely used to transcribe real-time communications such as a call. Given that call transcripts may be generated in real-time, it may be useful to pass the transcript to users who join or receive the call at a later time for them to effectively understand the context of the call and continue the conversation. Accordingly, described herein are mechanisms for sharing the call transcripts of a call on telephony devices that have access to the call/dialog Identifier (ID) in the enterprise telephony to enable monitoring or joining a call with better context. The call transcript of a call may be passed to users who can monitor join or receive a call that is already in progress.

This enables many use cases. One use case is a shared line for a boss and an administrator. The shared line feature enables the boss and the administrator to handoff the call between them (e.g., shared line hold/resume) or barge in to have a three-way

conference when talking to a third party. It may be useful and effective for the boss or administrator to look at the call transcript before resuming or barging in on the call.

There are also call transfer scenarios where the new party receiving the call may also obtain the transcript for the call thus far. The transfer feature allows a consult leg for the transferor to communicate to the transfer target before the transferor completes the transfer. Adding the ability for the transfer target to obtain access to the call transcript may be helpful to convey call context.

This solution may also be implemented in whisper coaching use cases. With the advent of bots, the supervisor need not always monitor all sessions and can be asked to step in on the call once a Machine Learning (ML) algorithm identifies a call that needs coaching. The supervisor may obtain the call transcript thus far to better understand the situation before whisper coaching the agent. For example, once a session is identified for supervision, the supervisor may obtain the call transcript on a telephony device to better understand the situation and advise the agent accordingly.

The techniques described herein may also be applied to any use case where the call/dialog ID is available to a party for any telephony feature enabling him to request the call transcript using the ID.

Given that the device can obtain a real-time call transcript by utilizing a STT service by streaming the audio media streams and be stored in the context of the call, any other telephony device that has access to the call ID may request the call transcripts and display the same to the user. This solution may be adapted to Session Initiation Protocol (SIP) or any other suitable call control protocols. It may even be applicable for cases where the transcript is held at a central server instead of the endpoint, provided the call ID can uniquely identify a session for this purpose.

Figure 1 below illustrates an example sequence diagram. David and Bob share a line and hence David's telephony device has access to the call ID of the ongoing call between Alice and Bob. Here, David's phone requests the transcript by sending a subscribe request with the event header indicating the request for call transcript and specific call ID.

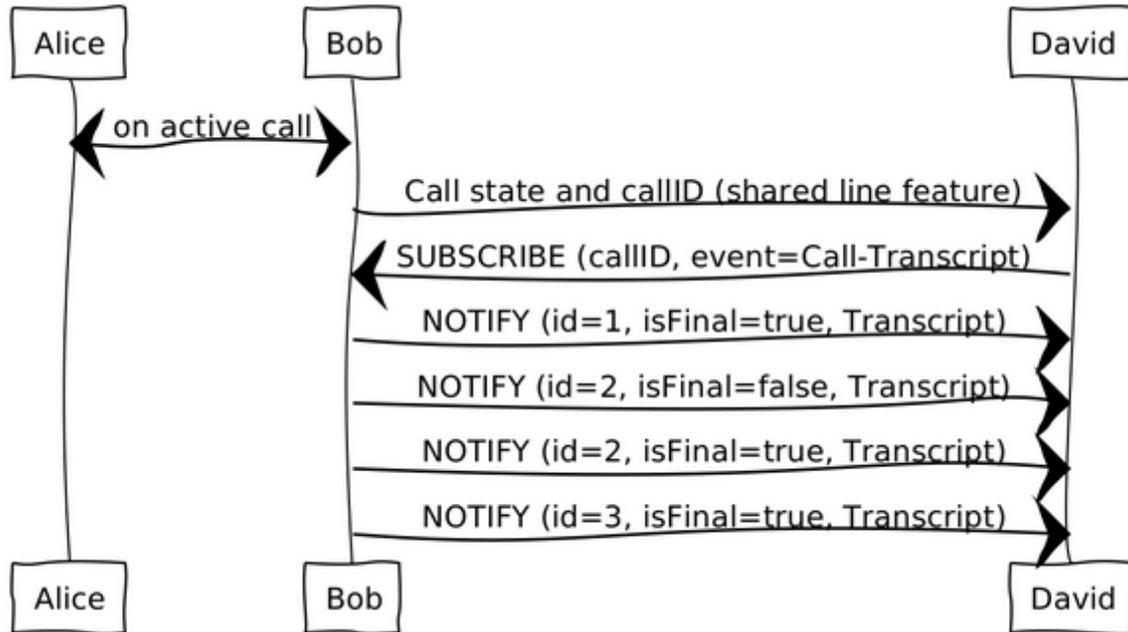


Figure 1

An example body of the request is provided as follows.

```

-----
SUBSCRIBE sip:bob@acme.com SIP/2.0
....
Event: transcript; call-id="sdfghdghrsF"; remote-tag="4234"; local-tag="42eqwrw"
....
Content-Type: application/transcript-request+xml
Content-Length: 254
<transcript-request version="1.0">
<duration>
<last>
<min>5</min>
</last>
</duration>
</transcript-request>
-----
    
```

The body of the subscribe request may contain additional parameters to indicate how far back in time the transcript is desired to reach (e.g., the most recent five minutes, the entire transcript, etc.). Upon receipt of the subscribe request, Bob's phone begins sending back notify messages with transcripts with the following body. Here, <id> is a number that increases for each new final transcript (partial transcripts may be updated with the same <id>). <final> indicates whether the transcript is final or partial from the STT service. <transcript> is the actual transcript. Using the <id> and other data, the receiving device may build and display the conversation transcript in real-time.

```

-----
NOTIFY sip:david@acme.com SIP/2.0
...
Event: transcript
....
Content-Type: application/transcript-response+xml
Content-Length: 359
<transcript-response version="1.0">
<id>1232</id>
<final>false</final>
<transcript>Hey can I get some information on</transcript>
</transcript-response>
-----

```

In summary, techniques are described herein for providing telephony users with improved context of the conversation for calls in progress in which they participate using various telephony features such as share line, barge, transfer, whisper coaching, etc. These techniques may be used to pass the call context to a transfer target as the call is transferred for further handling. Moreover, agent calls may be monitored or the context of a call may be quickly obtained for the purpose of whisper coaching even if the supervisor joins the conversation late. Also, in shared line use cases, a boss/administrator may carry context or monitor conversations, allowing the boss/administrator to barge as needed.