

# Outreach Platform APIs for Voice Extensibility

## Version History

Release	Comments
1.0	Release to initial partners
1.1	Release for Public Beta. Terminology updated and support for Chrome events to initiate new calls added.
3.0	Release for GA.

## Table of Contents

[Version History](#)

[Table of Contents](#)

[Introduction](#)

[Getting Platform API Access](#)

[Solution Overview](#)

[Outreach User Experience](#)

[Configuring Outreach to use an Integrated Voice Service](#)

[Developer Guide](#)

[Terminology](#)

[OAuth](#) The app needs to complete the OAuth flow described here so that it can create and update calls on behalf of an Outreach user.

[Interactions with Outreach for voice scenarios](#)

[Call Flows](#)

[Outbound calls](#)

[Inbound calls](#)

[Call updates](#)

[Call states](#)



[Recording/Voicemail URL](#)

[Requirements](#)

[Initiating New Calls](#)

[The tel URI](#)

[Additional parameters](#)

[Phone extension](#)

[Examples](#)

[Using Custom Events in Chrome](#)

[Example `content-script.js`](#)

[Event interface](#)

[Production `manifest.json`](#)

[API Endpoint\(s\)](#)

[Create a new call](#)

[Attributes](#)

[Update an existing call](#)

[Endpoint](#)

[Attributes](#)

[Notes](#)

[References](#)

## Introduction

This document describes how developers can integrate external voice services with Outreach. Through this extensibility model developers can build an integrated calling, and call logging, experience between Outreach and an external Voice Service.

This extensibility model supports configuring Outreach to initiate calls by passing phone numbers to a Chrome extension or Desktop app. This extension/app can then call the external voice service telephony APIs to make calls. New Outreach Platform APIs allow the integrated voice service to create a call record for completed calls. The call record is then combined with information the user completes in Outreach to log the call and advance their workflow.

## Getting Platform API Access

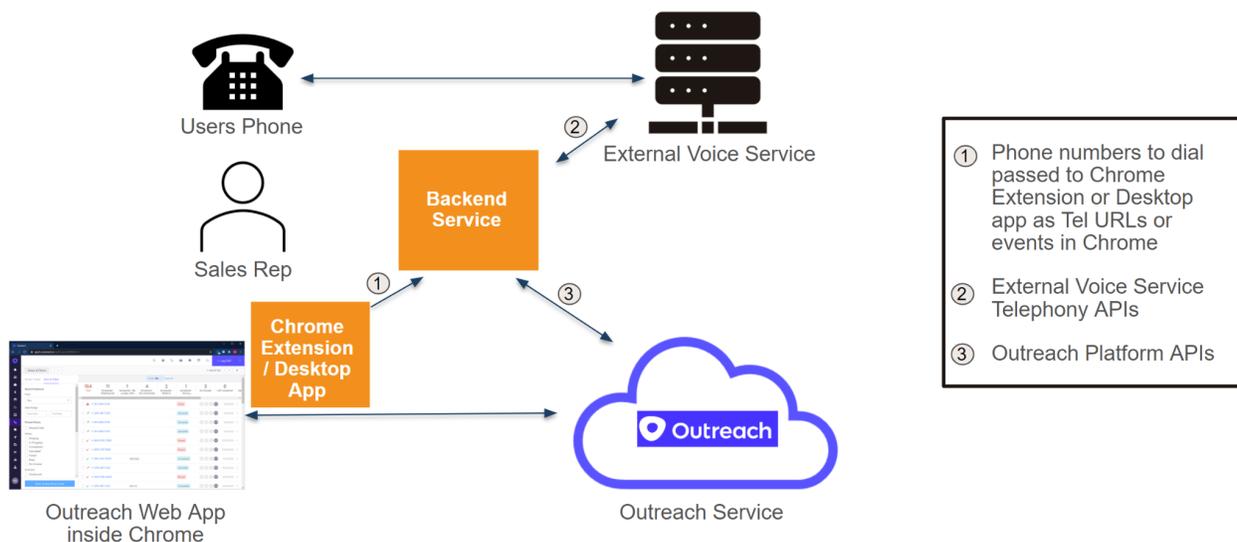
To request API access to the Outreach Platform APIs please [here](#). This document augments the [Outreach Platform API documentation](#) with new functionality for Voice Extensibility. Please identify your use case as an integration with an external voice service when requesting access.



If you have any additional questions, feedback or bug reports, please contact [platform@outreach.io](mailto:platform@outreach.io).

## Solution Overview

The end to end solution for an integrated calling experience in Outreach using an external voice service is shown conceptually below.



To integrate an external voice solution with Outreach developers need to build:

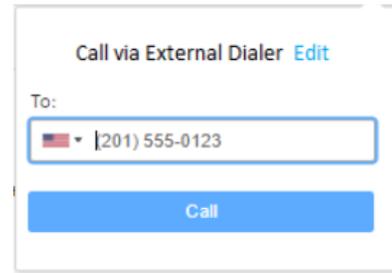
- A Chrome extension, or desktop application, that can receive Tel URLs or is registered to listen for a custom event from Outreach in Chrome to initiate outbound calls.
- A backend service that can:
  - a) Invoke call control requests, and receive call progress events, from the external voice service.
  - b) Use Outreach Platform APIs to provide Call Records. Updating Call Records on behalf of an Outreach user requires OAuth authorization by the end user.

## Outreach User Experience

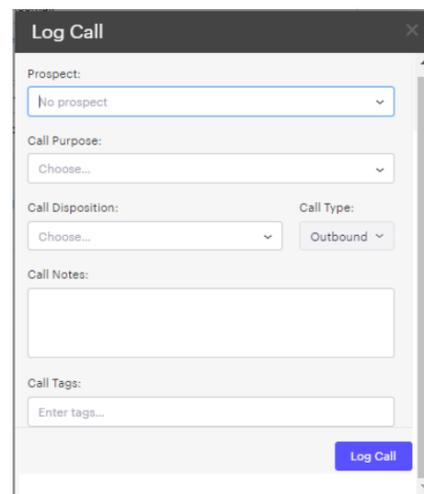
The following section describes the user experience from the perspective of the Outreach application when using an integrated external party voice service for calling.

Description	Example UI
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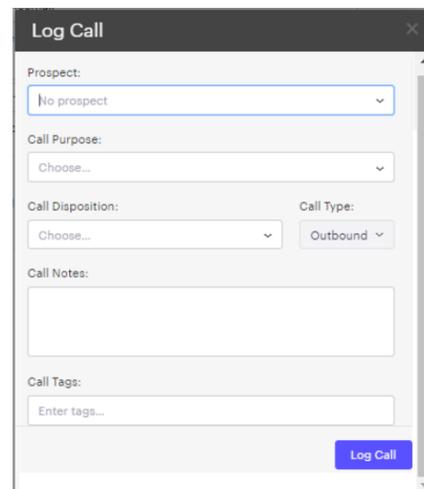
**Making Outbound Calls** - In Outreach clicking on "Call" initiates a call via the external voice service.



**Logging Outbound Calls** - The integration backend service creates a call record in Outreach via platform APIs based on events from the external voice service. After the call is completed users log the outcome of the call inside Outreach to complete their task and advance the workflow.



**Answered Incoming calls with Outreach App Running** - When the Outreach app is running the integration backend service uses the Outreach Platform APIs to report the call, which in turn triggers a Chrome desktop notification by Outreach for call to log. Clicking on the notification opens Outreach in a new tab showing the log Call edit page.





**Answered Incoming Calls with Outreach App Not Running** - If a user is not running Outreach when the call is completed the call record creates an entry in the Outreach Calls list that the user can edit to log the call when they later open the Outreach app.

232	2	5	0	7	1	1	0	4	212
Total	Answered	Not Answered	Referral	Voice mail drop	Wrong Contact	Call Back Later	Bad Number	Leave me alone	Not Logged
<input type="checkbox"/> +1206-734-2564	(00:03)	Missed							3:20 pm
<input type="checkbox"/> +1206-734-2564	(00:06)	Completed							
<input type="checkbox"/> +1206-734-2456		Cancelled							
<input type="checkbox"/> +1206-734-2564	(00:06)	Completed							
<input type="checkbox"/> +1206-734-2564	(00:06)	Completed							
<input type="checkbox"/> +1206-734-2564		Cancelled							

**Unanswered Incoming Calls - Missed calls reported to Outreach by the backend integration service are shown in the Outreach Calls list.**

232	2	5	0	7	1	1	0	4	212
Total	Answered	Not Answered	Referral	Voice mail drop	Wrong Contact	Call Back Later	Bad Number	Leave me alone	Not Logged
<input type="checkbox"/> +1206-734-2564	(00:03)	Missed							3:20 pm
<input type="checkbox"/> +1206-734-2564	(00:06)	Completed							
<input type="checkbox"/> +1206-734-2456		Cancelled							
<input type="checkbox"/> +1206-734-2564	(00:06)	Completed							
<input type="checkbox"/> +1206-734-2564	(00:06)	Completed							
<input type="checkbox"/> +1206-734-2564		Cancelled							

## Configuring Outreach to use an Integrated Voice Service

In order to use an integrated voice service an Outreach Admin needs to configure Outreach to use the external voice service for calling. If Outreach Voice is currently being used for voice calling it will be disabled. Ten days after being disabled any phone numbers acquired in Outreach Voice will be permanently removed.



# Developer Guide

## Terminology

Term	Description
Voice Extension APIs	The APIs defined by Outreach for a Voice Extension App to update on-going calls.
Voice Extension Framework	The APIs and components provided by Outreach to enable voice integration.
Voice Extension App	The app, which includes a component registered for handling the tel: URL or custom events from Outreach (e.g. a Chrome extension or desktop app) and a backend service that invokes the external voice service APIs to update calls. In this document, these two components are collectively referenced as a “Voice Extension App”.

**OAuth** The app needs to complete the **OAuth** flow described [here](#) so that it can create and update calls on behalf of **an** Outreach user.

## Interactions with Outreach for voice scenarios

The Voice Extension App interacts with Outreach in the two ways, via protocol launch or custom events in Chrome and the Outreach platform API.

- The Voice Extension App needs to be registered as the protocol handler for the “tel” URI, or custom Outreach events in Chrome, so that it can receive outbound call requests from the Outreach client.
- The Voice Extension App invokes the Outreach platform API to update calls (state, time, recording url etc.) as well as creating inbound calls.

## Call Flows

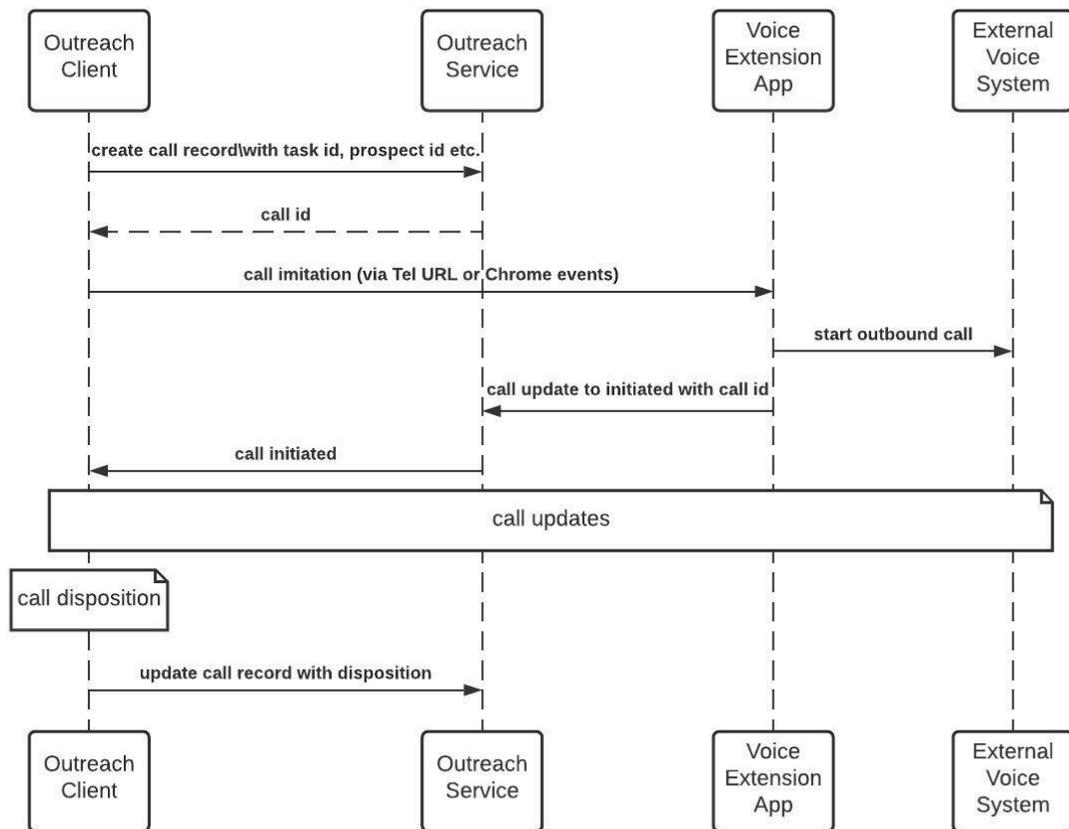
The following sections describe the call flows among various services including the Voice Extension App for the main calling scenarios.



## Outbound calls

Outbound calls are always initiated by users inside the Outreach client. Before invoking the Voice Extension App, the Outreach client talks to Outreach service to create an outbound call. The client includes the returned call ID as a custom parameter when initiating a new call via Tel URL or custom events in Chrome. The Voice Extension App needs to save the call ID and use it to update the call via the update call API.

Once a call starts, the Outreach client will show the call disposition form.



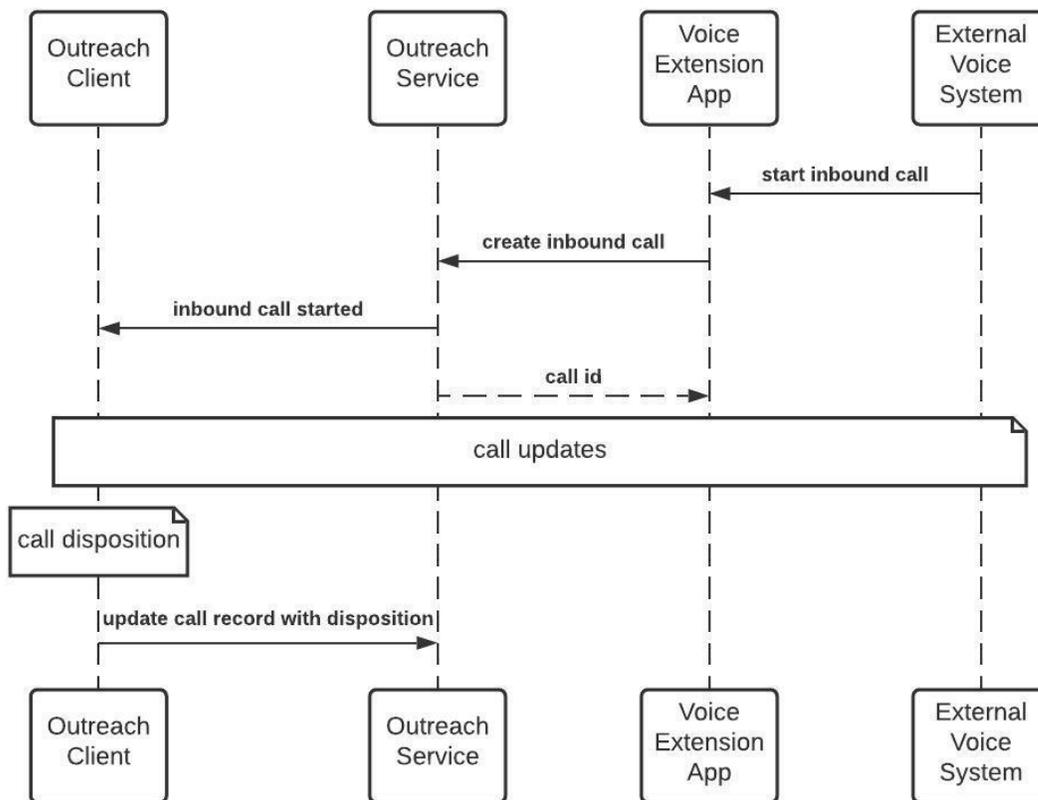
## Inbound calls

Inbound call setup is handled by the external voice service and call event updates are delivered to Outreach by the Voice Extension App. In order to update an inbound call, the Voice Extension



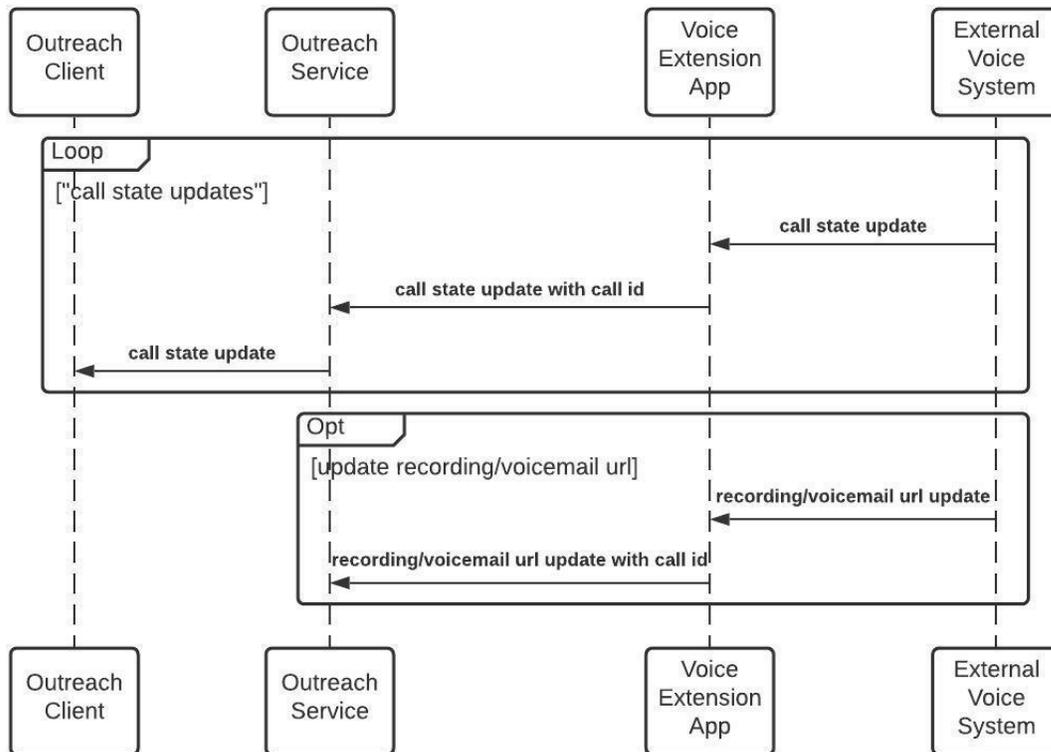
App needs to first invoke the create call API to create a call record and save the returned call ID. The Voice Extension App then updates the call using the call ID via the update call API.

When the call ends, the Outreach client takes the call disposition from the user and saves it to the Outreach service.



## Call updates

The Voice Extension App needs to invoke the update call API using the call ID when the call's state changes or when the recording/voicemail url is available.



## Call states

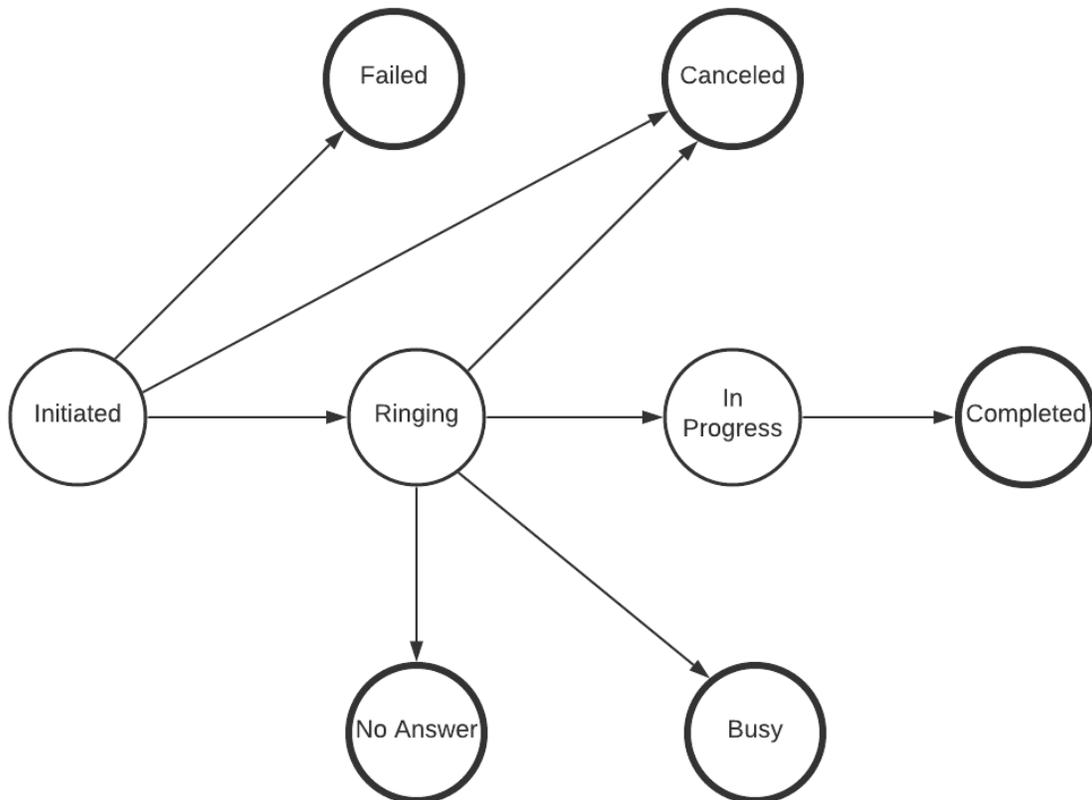
The valid call states are “initiated”, “ringing”, “in progress”, “completed”, “failed”, “no answer”, “busy”, and “canceled”. The final call state is one of the states “completed”, “failed”, “no answer”, “busy”, and “canceled”.

Following table shows what the final state shall be in different scenarios.

Direction	Result	Final state
outbound/inbound	A call is answered by the callee.	completed
outbound/inbound	The caller cancels the call before the callee or voicemail picks up.	canceled
outbound/inbound	The call fails to set up (SIP 480 etc.).	failed
inbound	The user rejects the call.	busy

inbound	The user rejects the call and voicemail picks up.	busy
inbound	A call times out.	no answer
inbound	A call times out and voicemail picks up.	no answer
outbound	The callee rejects the call.	busy
outbound	The callee rejects the call and voicemail picks up.	completed
outbound	A call times out.	no answer
outbound	A call times out and voicemail picks up.	completed

The following figure shows the state transition.



The call state updates must be in order shown in the figure. Once a call reaches one of the final states, its state cannot be updated again. The Outreach service will return an error if a call



update request tries to update a call to a state that is prior to the current state or the current state is a final state. Following are two examples where an error will be returned.

- The current state of a call is “in progress”, an error is returned if a call update request updates the state to “ringing”.
- The current state of a call is “busy”, an error is returned if a call update request updates the state to “completed”.

## Recording/Voicemail URL

- The recording/voicemail url is a link to a location that a user can click and listen to the recording or voicemail. We will not do auth on behalf of the user to access the URL.
- A voicemail URL shall only be provided for an inbound call whose final state is either “busy” or “no answer”.
- A recording URL shall only be provided for calls whose final state is “completed”. A single URL shall be provided even if recording was started/stopped multiple times during the call.

## Requirements

- For outbound calls, the Voice Extension App must update the call state to “initiated” within 5s after the “tel” protocol launch. If Outreach doesn’t get the initiated state update, the outbound call is treated as failed.
- The recording/Voicemail URL, if applicable, must be updated within 1 hour after a call ends. Otherwise, the URL may not be saved with the call record.
- The recording/Voicemail URL, if applicable, must be updated even if the user turns off the computer after the call ends.
- The timestamp at which the call state changed must be provided for call state updates.
- Errors will be returned for call updates 1 hour after a call is ended.

## Initiating New Calls

There are two options for initiating new calls. Developers can register to handle Tel URLs executed when a user clicks to make a call in Outreach or they can register a Chrome Extension that will listen for, and respond to custom events.

## The tel URI

The URI passed via the “tel” URI protocol launch uses the format defined in [RFC 3966](#).



## Additional parameters

The Outreach client will include the following additional parameters in the tel URI.

- source
  - The value of the parameter is always “outreach”, which can be used for the Voice Extension App to determine whether the protocol launch is initiated by Outreach or not.
- call-id
  - The value of the parameter is a string that identifies a call in Outreach. The Voice Extension App uses this call ID to update the call in Outreach.

## Phone extension

When a phone extension is included in the tel URI, the Voice Extension App shall dial the extension automatically after the call is connected.

## Examples

Following are a few examples of the tel URI.

*tel:+1-234-555-6789;source=outreach;call-id=91FCF82E-9817-4C73-959F-4CF4A0DB334D*

*tel:+1-234-555-6789;ext=1234;source=outreach;call-id=91FCF82E-9817-4C73-959F-4CF4A0DB334D*

## Using Custom Events in Chrome

The Chrome extension will need a `content-script.js`, which will listen for the `'outreach-external-dial-init'` event, and then acknowledge the response by sending back `'outreach-external-dial-ack'`. This is done via `window.addEventListener('message', ..)` and `window.postMessage('message', ..)`.

### Example `content-script.js`

```
window.addEventListener('message', (event) => {
  if (event.data.type !== 'outreach-external-dial-init') {
    return;
  }

  const { callId, phoneNumber } = event.data;

  // Let Outreach know that you've acknowledged the message.
  window.postMessage({
    type: 'outreach-external-dial-ack',
```



```
        // Include the same call ID so that Outreach can match your `-ack`
messages.
        callId
    });

    // Your custom logic.
    await fetch(...);
});
```

## Event interface

`event.data` has the following Typescript definitions, depending on message type (`-init` or `-ack`):

```
// Sent by Outreach
interface DialInitMessageData {
    type: 'outreach-external-dial-init';

    // Indicates that this message came from Outreach, constant value.
    source: 'outreach';

    // A uuid for the call
    callId: string;

    phoneNumber: string;

    // Outreach will include the phone extension if the phone is configured with
    one.
    ext?: string;
}

// Sent by your `content-script.js`, to acknowledge the dial attempt.
interface DialAckMessageData {
    type: 'outreach-external-dial-ack';

    // This should have the same value as what was received from the `-init`
    message.
    callId: string;
}
```

## Production `manifest.json`

Make sure your `content\_scripts` section includes the following:



```
// Allows the content-script to run for Outreach domains.  
"matches": ["https://*.outreach.io/*"],  
  
// Allows the content-script to run in iframes; Outreach currently embeds the  
Outreach Dialer inside an iframe.  
"all_frames": true
```

## API Endpoint(s)

### Create a new call

All outbound calls shall be created by the Outreach client. A Voice Extension App creates inbound calls using the following [API](#).

*POST* <https://api.outreach.io/api/v2/calls>

### Attributes

The following attributes must be specified when creating an inbound call. The requirements are specific to the external voice service integration scenarios.

Attribute Name	Value Type	Description
direction	string	The call's direction from the user's point of view. It must be "inbound".
externalVendor	string	The voice provider of the call. It must be "VoiceExtension".
vendorCallId	string	The call ID as recorded by the voice provider. Can be blank.
from	string	The phone number used to place the call.
to	string	The phone number that the call is placed to.
outcome	string	The call's outcome. It must be blank because the call is ongoing.



## Update an existing call

The following endpoint is used by Voice Extension Apps to update an ongoing call. An ongoing call is defined as a call that is still active or ended within 1 hour, and during this time a recording/voicemail URL can be updated.

### Endpoint

*PATCH* <https://api.outreach.io/api/v2/calls/{:id}>

{:id} is the call ID that the Voice Extension Apps contains from the tel: URL protocol launch/Chrome events or the API to create an inbound call.

### Attributes

Only the attributes specified below can be updated via the new API.

Attribute Name	Value Type	Description
state	string	The call's current state. The allowed values are "initiated", "ringing", "in progress", "completed", "failed", "no answer", "busy", and "canceled". It cannot be empty unless recordingUrl or voicemailUrl is provided.
stateChangedAt	date-time	The data and time the call's state last changed. If it's not provided, the time on which the API is invoked will be used as the last state update time.
recordingUrl	string	The URL of the call's audio recording. A user shall be able to play the recording by visiting the URL. This is only applicable for answered calls.
voicemailUrl	string	The URL of the call's voicemail recording. A user shall be able to play the recording by visiting the URL. This is only applicable for inbound calls that are not answered.
vendorCallId	string	The call ID as recorded by the voice provider. Can be blank.



## Notes

1. Only calls created for an integrated external voice solution can be updated. This method is not allowed for native Outreach Voice calls.

## References

- 1) [Outreach API OAuth](#)
- 2) [Calls APIv2](#)
- 3) [Outreach Galaxy Integration Guide](#)
- 4) [The tel URI for Telephone Numbers](#)