API Developers Guide
Version 1.5

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Contents

Introduction

This document covers the web services that constitute the Application Programming Interface (API) to Vonage Business Solutions' cloud-based business communications service. This API is designed to allow the developers of our customers to integrate existing systems and applications with the Vonage Business Solutions service. Systems and Applications such as Click to Call, Account Directory, Extension Information, Call History, Live Status, Call Recording, Conference Bridge Information, and Call Queue Information.

Familiarity with the calling services offered by Vonage Business Solutions is assumed and will be necessary for successful use of Vonage Business Solutions Click to Call API.

The Vonage Business Solutions' API is a set of RESTful web services that are simple to implement. Use of this API is limited to existing Vonage Business Solutions service customers and partners, and is subject to applicable service fees.

For additional ways to integrate your web site or business applications with Vonage Business Solutions, check the Vonage Business Solutions web site for information on our browser plug-ins, web site widgets, and Desktop with Plug-Ins.

Authentication

All Vonage Business Solutions web services are accessed via HTTPS. They require an active session, which you can establish by providing your valid Vonage username and password on an HTTPS GET request to the target Vonage web service or to the user web service at **https://my.vonagebusiness.com/appserver/rest/user/null**. The username and password can be passed either as URL parameters or in the HTTPS header. Below are some examples of authentication.

Example URL authentication:

https://my.vonagebusiness.com/appserver/rest/user/null?htmlLogin=xxx&htmlPassword=yyy

Example C# authentication:

```
String url = "https://my.vonagebusiness.com/appserver/rest/user/null;
WebRequest myReq = WebRequest.Create(url);
String username = "xxx";
String password = "yyy";
    myReq.Headers.Add("login", username);
    myReq.Headers.Add("password", password);

WebResponse wr = myReq.GetResponse();
Stream receiveStream = wr.GetResponseStream();
StreamReader reader = new StreamReader(receiveStream, Encoding.UTF8);
string content = reader.ReadToEnd();
```

Once the user is authenticated, a session is established and the session information will be returned in **HDAP-ID** and/or **JSESSIONID** cookies. The caller should return the cookies on subsequent requests to reuse the existing session. If the cookies are not presented, or if the session times out after a period of time, then the caller must authenticate again. If this occurs the user will receive a 403 error code.

Click to Call Web Service

This web service initiates a call from an extension. Invoking this web service will cause the user's current default extension to ring, and once the user answers then the **[phonenumber]** will be dialed as if the user had dialed that number directly. One of the phone numbers, or in some cases both, may be a phone number assigned to a Vonage Business Solutions account. The phone call will be billed to the account associated with the credentials given for authentication of this API call.

Example

1. Internal user with Vonage extension clicks on phone number in application to make a call.
2. Application invokes API, which authenticates the user.
3. User's active extension rings.
4. User picks up extension, hears "Please wait while I connect your call" followed by ringing.
5. Targeted outside phone number receives phone call from the user.

https://my.vonagebusiness.com/presence/rest/clicktocall/[phonenumber]

When calling this web service, replace **[phonenumber]** with a valid account extension or external phone number. Whether or not the **[phonenumber]** can be dialed will be subject to whatever limitations or controls are in place for the current user's extension, for example, the ability to dial internationally.

Invoking API for Click to Call
https://my.vonagebusiness.com/presence/rest/clicktocall/**<phone number>**
Examples: https://my.vonagebusiness.com/presence/rest/clicktocall/6788079084 https://my.vonagebusiness.com/presence/rest/clicktocall/16788079084 https://my.vonagebusiness.com/presence/rest/clicktocall/0114488079084

Parameters	Description
Phone Number	This is the phone number that will be dialed for establishing a call from the Vonage Business Solution user's extension. The validation of the phone number is as follows: - Can be a Vonage Business Solutions account extension. - If not an extension, must be at least 6 digits, or 9 digits if the number starts with 011. - Should be all numbers, though the API removes non-numbers before evaluating. - A domestic number is any number that is 10 digits, or 11 digits if it starts with a 1. - An international number is any number that is not covered by the domestic case.

Below are the possible response codes:

Response Code	Response Text	Description
200	OK	The phone call should arrive, unless there is an issue outside of Vonage Business Solutions' control.
400	BAD USER PHONE	Invalid phone number format.
403	USER NOT LOGGED IN	User session not established or user authentication failed.
403	INTERNATIONAL BLOCKED	The phone number to dial is an international number and the Vonage account has international dialing blocked.
404	USER HAS NO EXTENSIONS	The authenticated Vonage user must have at least one extension assigned. This web service will direct to the user's "default" extension if there is one, otherwise it will direct to the lowest-numbered extension the user has assigned.
404	ACCOUNT INACTIVE	The user's Vonage account is not active.
500	ERROR	A system error was detected.

Account Directory Web Service

This web service returns JSON data that identifies all the conference bridges, call queues, and extensions on the Vonage Business Solutions account (of which the current user is a member) as well as status data for each.

https://my.vonagebusiness.com/presence/rest/directory

Example return data:
```
{
 "conferences" : {
    "8991" : {
    "name" : "Main Conference",
    "calls" : 1
  },
 },
 "queues" : {
  "9013" : {
    "queueId" : "3421",
    "name" : "Billing Queue",
    "calls" : 0
  }
 },
 "extensions" : {
  "301" : {
    "status" : "busy",
    "name" : "John Doe",
    "loginName" : "jdoe"
  },
  "309" : {
    "status" : "available",
    "name" : "David Smith",
    "loginName" : "dsmith"
  },
  "310" : {
    "status" : "dnd",
    "name" : "Sarah Roberts",
    "loginName" : "sroberts"
  }
 }
}
```

Extension Information Web Service

This web service returns current information about the specified extension in JSON data format.

https://my.vonagebusiness.com/presence/rest/extension/[extension-number]

When invoking the web service, provide the **[extension-number]** for which information should be retrieved (you can lookup extensions for specific users by examining the data returned from the Account Directory web service). If the extension has an active call in process, then information about that phone call is also returned. The absence of call ("presence") information data indicates that the extension has no active calls. Note that it's possible for an extension to have multiple calls active at one time.

Invoking API for Extension Information
https://my.vonagebusiness.com/presence/rest/extension/[extension-number]
Examples: https://my.vonagebusiness.com/presence/rest/extension/30 https://my.vonagebusiness.com/presence/rest/extension/501 https://my.vonagebusiness.com/presence/rest/extension/7020

Parameters	Description
Extension Number	This is the extension number that you wish to pull data for. The validation of the extension number is as follows: - An extension number currently on your Vonage Business Solutions account. - 2 to 6 digits long. - Should be all numbers, though the API removes non-numbers before evaluating.

The key top-level field details object in the JSON data contains these fields:

Field	Type and Possible Values	Notes
presence	JSON object	Information about active calls
name	String	User name associated with the extension
extensionNumber	Int	The extension number
loginName	String	User's login name

The presence object in the JSON data contains the following fields for every phone call:

Field	Type and Possible Values	Notes
status	String, outbound, inbound, intrapbx, call queue, or blank	Status of the current call, or blank if no call is ongoing
duration	Number, -1 to infinity	Number of milliseconds call has been connected.
onCallWith	Dial String (0-9, *, +) or blank	Caller ID number of caller extension is connected with
onCallWithName	String	Caller ID name for inbound calls
isRecorded	String, true or false	Indicates calls that are recorded
startedWithClickToCall	String, true or false	Indicates calls that are initiated by Click to Call
presenceCallId	Number	For recorded calls, append this ID to "http://my.vonagebusiness.com/ui/recordingsplayer/" to construct URL to access recordings after call complete
customTag	String	Custom tag associated with the call

Example return data:

```
{
 "details" : {
  "presence" : {
          "status" : "outbound",
          "duration" : 10325,
          "onCallWith" : "15557852675",
          "onCallWithName" : "Jane Doe",
          "isRecorded" : "true",
       "startedWithClickToCall" : "false",
          "presenceCallId" : "4182737411359658008242",
          "customTag" : "" }
 "name" : "Sarah Smith",
 "type" : "extension",
 "extensionNumber" : "301",
 "loginName" : "ssmith"
 }
```

Call History Web Service

This web service returns call history information for the extension(s) of the current authenticated user in JSON data format.

https://my.vonagebusiness.com/presence/rest/callhistory/[extension number][?parameter-list]

When invoking the web service, provide the **[extension-number]** for which Call History should be retrieved (you can lookup extensions for specific users by examining the data returned from the Account Directory web service).
The following parameters may be passed to this web service:

Parameter	Type and Possible Values	Notes
start	ISO 8061 datetime YYYY-MM-DDTHH:MM:SS	Start datetime for searching call history
end	ISO 8061 datetime YYYY-MM-DDTHH:MM:SS	End datetime for searching, if not provided then default end is "now"
from	Phone number, or any portion of a phone number	Matches all or portion of phone number for where a call originated from
to	Phone number, or any portion of a phone number	Matches all or portion of phone number that was the destination of a call
result	Comma-separated list (no spaces) may contain any of answered, unanswered, voicemail	Filters for calls with the given results
callerid	String to match, case insensitive	Filter for calls with callerID containing the provided string (partial or full)
customtag	String to match, case insensitive	Filter for calls with customtag that exactly match the provided string
minduration	Number of seconds	Filter for calls with duration

		exceeding the number of seconds provided
maxduration	Number of seconds	Filter for calls with duration less than the number of seconds provided
isrecorded	String, true or false	Explicit filter for calls that are recorded or not recorded

Invoking API for Call History
https://my.vonagebusiness.com/presence/rest/callhistory/[extension number][?parameter-list]
Examples: https://my.vonagebusiness.com/presence/rest/callhistory/301?start=2013-01-18T03:45:00&minduration=0000

The web service will return at most 100 call history records at a single time. The callerId information represents the caller ID of the other party and is blank if unknown. If the call was recorded, a URL to the call recording(s) will be provided, however any user will have to authenticate and must have permission to access the actual recording.

Example return data:
```
{
  callHistoryList : [
    {
      "timestamp"    : "1/18/2013 03:45:00 PM",
      "from"         : "17701234567",
      "to"           : "19902223333",
      "direction"    : "Inbound",
      "extension"    : "301",
      "customTag"    : "sales",
      "callerId"     : "John Doe",
      "duration"     : 325,
      "result"       : "Answered",
      "recordingUrl" : "https://my.vonagebusiness.com/recordingplayer/38723872582735"
    },
    {
```

```
        "timestamp"     : "1/18/2013 03:57:00 PM",
        "from"          : "19902223333",
        "to"            : "17701234567",
        "direction"     : "Outbound",
        "extension"     : "301",
        "customTag"     : "",
        "callerId"      : "John Doe",
        "duration"      : 410,
        "result"        : "Answered",
        "recordingUrl"  : ""
    },
  ]
}
```

Live Status Web Service

This web service returns JSON data for the specified extensions indicating the current "real-time" status of the extensions including information about currently active phone calls.

https://my.vonagebusiness.com/presence/dashui[?filterExtension=[extension-list]&firstRequest=true]

Use the **filterExtension** parameter (optional) to provide one or more extensions (separated by commas) as the target extensions (use the Account Directory web service to lookup extensions). If the **filterExtension** parameter is not provided, then the current data for all account extensions will be returned, subject to any "dashboard filter" settings that the user has established for themselves through the Vonage Business Solutions end-user applications. If **firstRequest=true** is specified, then this web service will return results immediately, otherwise it may take up to 30 seconds to return (the web service "blocks" in this case until a new status change is detected).

Note that the Live Status web service requires a pre-established session identified by one or more session cookies passed in the request (this web service will not perform authentication as part of the request). See the **Authentication** section of this document for more information (pg. #4).

Invoking API for Live Status
https://my.vonagebusiness.com/presence/dashui[?filterExtension=[extension-list]&firstRequest=true]
Examples: **https://my.vonagebusiness.com/presence/dashui?filterExtension=301,501,7022,30&firstRequest=true** **https://my.vonagebusiness.com/presence/dashui?filterExtension=30&firstRequest=true** **https://my.vonagebusiness.com/presence/dashui?filterExtension=7022&firstRequest=true** **https://my.vonagebusiness.com/presence/dashui?filterExtension=501&firstRequest=true**

Parameters	Description
Extension List	This is the list of extension numbers you wish to pull data for. The validation of the extension list is as follows: - 1 or more extension numbers currently on your Vonage account. - List of extension numbers must be separated by a comma - 2 to 6 digits long. - Should be all numbers, though the API removes non-numbers before evaluating.

Response Codes:

Response Code	Description
200	Extension status changed during the call.
304	No change and no other data is returned.
409	Error due to session being used by more than one API caller.
Other	Error, typically an authentication error.

The key top-level fields in the JSON data returned by the web service are:

Field	Type and Possible Values	Notes
availability	AVAILABLE, UNAVAILABLE, MIXED	If the logged in user's extensions are currently on Do Not Disturb or not (as configured via the UI); MIXED indicates that the user has more than one extension and the extensions are set differently
numAvailableExts	int, range is 0 to number of user's extensions	Number of extensions belonging to this user that are currently available for making or receiving phone calls
numUnavailableExts	int, range is 0 to number of user's extensions	Number of extensions belonging to this user that are currently set to DND via the UI
extensions	Array of Extension objects	List of all extensions included in the response

The extensions object in the JSON data contains the following key fields for each extension:

Field	Type and Possible Values	Notes
name	String	Display name associated with this extension
status	String, outbound, inbound, intrapbx, call queue, or blank	Status of the current call, or blank if no call is ongoing
extension	Dial String (0-9, *)	Extension number
duration	Number, -1 to infinity	Number of milliseconds call has been connected.
phoneNumbers	Array of DIDs	List of all DIDs associated to the extension. This field starts with the country code
onCallWith	Dial String (0-9, *, +) or blank	Caller ID number of caller extension is connected with
statusItems	Array of name/value pairs	More detailed information about currently active calls

The statusItems object in the JSON data contains the following key fields for every phone call:

Field	Type and Possible Values	Notes
callername	String	Caller ID name for the call
isRecorded	String, true or false	Indicates calls that are recorded
onCallWithName	String	Caller ID name for inbound calls
callStatus	String, ringing, connected, or disconnected	Current state of the phone call
StartTime	Number	GMT datetime marking start of call given in number of seconds since 1/1/1970

startedWithClickToCall	String, true or false	Indicates calls that are initiated by Click to Call
presenceCallId	Number	For recorded calls, append this ID to "http://my.vonagebusiness.com/ui/recordingsplayer/" to construct URL to access recordings after call complete
customTag	String	Custom tag associated with the call

Example return data:
```
{
  "availability":"AVAILABLE",
  "numAvailableExts" : 1,
  "numUnavailableExts" : 0,
  "extensions" : [ {
        "name" : "John Doe",
        "status" : "outbound",
        "extension" : "302",
        "duration" : 10325,
        "phoneNumbers" : [ "15557852675" ],
        "onCallWith" : "15556205255",
        "statusItems" : {
                "uid" : "3485262741359658008391-19905551019",
                "accountId" : "99999",
                "lastCallTime" : "1359658045357",
                "isRecorded" : "true",
                "isRecordingCCR" : "false",
                "callername" : "Jane Doe",
                "isRecordingODCR" : "true",
            "numberOriginallyDialed" : "",
                "onCallWithName" : "Jane Doe",
                "userId" : "68005",
                "tapSessionId" : "",
                "callStatus" : "Disconnected",
                "StartTime" : "1359658008601",
                "loginName" : "jdoe",
            "startedWithClickToCall" : "false",
```

```
                "available" : "true",
                "presenceCallId" : "4182737411359658008242",
                "customTag" : "",
                "contactE" : "jdoe@fakecompany.com"
        }
    }
  ]
}
```

Call Recording Web Service

This web service returns the call recording (MP3 file) for a call recording (if more than one call recording was made for a call this web service will only return one).

https://my.vonagebusiness.com/presence/rest/callrecording/[presenceCallId]

When invoking the web service, provide the **[presenceCallId]** which is the call ID indicator (you obtain the presenceCallId by using either the Extension Information or Live Status web service or by parsing it from the end of a recordingURL returned by the Call History web service). Note that the authenticated Vonage Business Solutions user must have permission to access the recording (account administrators will have access to all recordings) and that call recordings may not be available for download immediately after a call is completed.

Invoking API for Call Recording
https://my.vonagebusiness.com/presence/rest/callrecording/[presenceCallId]
Examples: https://my.vonagebusiness.com/presence/rest/callrecording/4182737411359658008242

Parameters	Description
Presence Call ID	This is the Call Recording ID. The validation of the recording ID is as follows: - Must be pulled from either the Extension Information API, Live Status API, or the end of a Recording URL

If successful, the call recording file is returned in the HTTP GET response.

Below are the possible response codes:

Response Code	Response Text	Description
200	FOUND	Recording found and returned
400	ILLEGAL CALL ID	The presence call ID was not passed or is incorrectly formatted

403	USER NOT PERMITTED	Recording found but the user does not have permission to access.
404	RECORDING NOT FOUND	Recording matching the presence call ID was not found.
500	ERROR	A system error was detected.

Conference Bridge Information Web Service

This web service returns information about the specified conference bridge in JSON data format.

https://my.vonagebusiness.com/presence/rest/conference/[extension-number]

When invoking the web service, provide the **[extension-number]** which is the extension number of the conference bridge for which information should be retrieved (you can lookup conference bridges and obtain their extension numbers by examining the data returned from the Account Directory web service). If the conference bridge has an active call in process, then information about the active participants on that call will be returned. The absence of call information data indicates that the conference bridge has no active calls.

Invoking API for Conference Bridge Information
https://my.vonagebusiness.com/presence/rest/conference/[extension-number]
Examples: **https://my.vonagebusiness.com/presence/rest/conference/30**   **https://my.vonagebusiness.com/presence/rest/conference/501**   **https://my.vonagebusiness.com/presence/rest/conference/7022**

Parameters	Description
Extension Number	This is the extension number of the Conference Bridge that you wish to pull data for. The validation of the Conference Bridge extension number is as follows: - An extension number of a Conference Bridge currently on your Vonage Business Solutions account. - 2 to 6 digits long. - Should be all numbers, though the API removes non-numbers before evaluating.

Example return data:

```
{
  "details" : {
    "participants" : [
            "301",
            "302",
            "15551234567"
     ]
   },
   "name" : "Sales Conference ",
   "type" : "conference",
   "extensionNumber" : "199"
}
```

Call Queue Information Web Service

This web service returns information about the specified call queue in JSON data format.

https://my.vonagebusiness.com/presence/rest/queue/[extension-number]

When invoking the web service, provide the **[extension-number]** which is the extension number of the call queue for which information should be retrieved (you can look up call queues and obtain their extension numbers by examining the data returned from the Account Directory web service).

Invoking API for Call Queue Information
https://my.vonagebusiness.com/presence/rest/queue/[extension-number]
Examples: **https://my.vonagebusiness.com/presence/rest/queue/30** **https://my.vonagebusiness.com/presence/rest/queue/501** **https://my.vonagebusiness.com/presence/rest/queue/7022**

Parameters	Description
Extension Number	This is the extension number of the Call Queue that you wish to pull data for. The validation of the Call Queue extension number is as follows: - An extension number of a Call Queue currently on your Vonage Business Solutions account. - 2 to 6 digits long. - Should be all numbers, though the API removes non-numbers before evaluating.

Example return data:
```
{
  "details" : {
    "numberOfCalls" : "1",
    "callersOnHold" : "0",
    "averageWaitTime" : "0",
    "agentsAvailable" : "5",
    "callersWaiting" : "0",
```

```
    "agentsBusy" : "1",
     "agentsLoggedIn" : "6"
  },
  "queueId" : "1234",
  "name" : "Sales Queue",
  "type" : "queue",
  "extensionNumber" : "9004"
 }
```