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# Genesys Mobile Services API Reference

Callback Push Notifications for iOS

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# Callback Push Notifications for iOS

This article is for developers who wish to develop an iOS client application for Genesys Mobile Services (GMS) Callback Services.

GMS employs various mechanisms to achieve asynchronous messaging (push notifications). For iOS devices, Apple Push Notification service (APN) and Comet are used. For Android devices, FCM and Comet are used. This article describes how push notifications should be handled on iOS devices. The [Genesys Mobile Services iOS Sample](#) provides example code for the concepts discussed.

## Important

For Android devices, see [CallbackPushNotifications for Android](#).

## GMS Support

### Versions older than 8.5.228.02

For GMS versions older than 8.5.228.02, Genesys Mobile Services communicates with the Apple Push Notification Service over an asynchronous binary interface, that is no longer supported.

## Warning

The Apple Push Notification service (APNs) no longer supports the legacy binary protocol as of March 31, 2021. [Read more](#).

This means that the APN service is no longer be accessible for the legacy binary protocol. Genesys Mobiles Services stopped supporting the legacy binary protocol, which is the default protocol for Apple Push notifications. For further details, read [End of Genesys Support for Apple Push Notification service \(APNs\) - Legacy binary protocol](#).

Genesys recommends that you upgrade to the latest GMS version (8.5.228.02 or higher) or migrate to a supported notification type such as:

- [Firebase Cloud Notification](#)
- [Custom HTTP Notification](#)

### Version 8.5.228.02 and higher

In 8.5.228.02, GMS has been updated to use the HTTP/2 Apple Push Notification service API and now supports Apple Notifications.

For further configuration details, refer to [Mandatory iOS Device Settings](#).

## Push Notifications in iOS Applications

Push notifications are used for two purposes in GMS iOS applications:

- Chat
- Callback

### Chat

The GMS chat implementation uses Comet push notifications for the text message exchange. GMS implements a Comet server that the mobile client connects to when a chat session is opened.

The iOS sample code includes a Comet library. The library includes a Comet client class called `DDCometClient`. The iOS sample application `GMSChatViewController` class illustrates how to use `DDCometClient` to connect to the server and to send and receive chat messages. The default channel used for chat is `"/_genesys"`.

### Callback

The GMS Callback functions utilize APN for push notifications to iOS applications. The processing of APN notifications operates as follows:

1. Obtain the Service ID and Action identifier from the notification “message” component (the “message” component is in JSON format).
2. Issue an HTTP POST to GMS with specified action. The response includes further action data in JSON format.
3. Execute action using data provided by GMS.

The APN notification contains several components. The “aps” component specifies the confirmation dialog to display to the user. You can refer to Apple developer documentation for more information on this topic. The iOS sample application `GMSAppDelegate` `didReceiveRemoteNotification` method provides an example. The “message” component provides the data from GMS and has the following format:

```
{
  "_id": "$(_id)",
  "_action": "$(_action)",
}
```

The `_id` and `_action` parameters are extracted and used to construct a URL for a POST to GMS. The iOS sample application `GMSAppDelegate` `processAPN` method provides an example of this.

```
$(ServerURL)$(URLPath)$(_id)/$(_action)
such as
http://135.34.145.123:8080/genesys/1/service
/3SQI3S31693JL9L3R00506T40C000U73/get-dialog-start-chat
```

Identifier	Description	Example Values
\$(ServerURL)	URL to Genesys Mobile Services host	http://135.34.145.123:8080
\$(URLPath)	Path to Services API	/genesys/1/service/
\$( _id)	GMS-issued Service ID	3SQI3S31693JL9L3R0O5O6T4OC000U73
\$( _action)	Callback action to perform	get-dialog-user-confirmation-provide_code-true get-dialog-user-confirmation-provide_code-false get-dialog-start-chat connect-inbound connect-outbound wait-for-agent

The response of the HTTP POST request contains JSON data, which describes an action to perform and/or UI elements to display in the client application. Each of these requests will be referred to as Dialogs.

## Dialogs (REST)

The following are examples of JSON structures returned by the GMS Callback service to the client application. The contents of the JSON response depend on the Callback action performed (as described in the [Callback section](#)).

Refer to the [Genesys Mobile Services iOS Sample](#) for examples on how these JSON responses can be interpreted as actions (for example, Call agent, Display menu, Display dialog) and/or UI elements (for example, Confirmation dialogs or Menu items).

### get-dialog-user-confirmation-provide\_code-true

```
{
  "_dialog_id": "0",
  "_label": "Agent is available right now",
  "_user_action_url":
    "${ExtURLBase}/1/service/${ServiceID}/not-used",
  "_method": "POST",
  "_action": "DisplayMenu",
  "_expires": "${Date}",
  "_resource_url":
    "${ExtURLBase}/1/service/${ServiceID}/get-dialog-user-confirmation",
  "_content": [
    {
      "_group_name": "Are you ready?",
      "_group_content": [
        {
          "_dialog_id": "1",
          "_label": "Yes, I'm ready to talk",
          "_action": "MenuItem",
          "_user_action_url":
            "${ExtURLBase}/1/service/${ServiceID}/connect",
          "_method": "POST",
          "_id_to_jump_before": "exit://",
          "_confirmation_dialog": {
            "_text": "You will hear tones immediately
              after call is connected. This is normal."
          }
        }
      ]
    }
  ]
}
```

```

        "_dialog_type": "Notification",
        "_dismiss_timeout": 2
    }, {
        "_dialog_id": "2",
        "_label": "No, try again in 5 minutes",
        "_action": "MenuItem",
        "_user_action_url":
            "${ExtURLBase}/1/service/${ServiceID}/snooze",
        "_method": "POST",
        "_id_to_jump_before": "exit://"
    }, {
        "_dialog_id": "3",
        "_label": "Cancel, my problem has been solved",
        "_action": "MenuItem",
        "_user_action_url":
            "${ExtURLBase}/1/service/${ServiceID}/snooze",
        "_method": "POST",
        "_id_to_jump_before": "exit://"
    }
    ]
}
}
}
}

```

#### get-dialog-user-confirmation-provide\_code-false

```

{
    "_dialog_id": "0",
    "_label": "Agent is available right now",
    "_user_action_url":
        "${ExtURLBase}/1/service/${ServiceID}/not-used",
    "_method": "POST",
    "_action": "DisplayMenu",
    "_expires": "${Date}",
    "_resource_url":
        "${ExtURLBase}/1/service/${ServiceID}/get-dialog-user-confirmation",
    "_content": [
        {
            "_group_name": "Are you ready?",
            "_group_content": [
                {
                    "_dialog_id": "1",
                    "_label": "Yes, I'm ready to talk",
                    "_action": "MenuItem",
                    "_user_action_url":
                        "${ExtURLBase}/1/service/${ServiceID}/connect",
                    "_method": "POST",
                    "_id_to_jump_before": "exit://",
                }, {
                    "_dialog_id": "2",
                    "_label": "No, try again in 5 minutes",
                    "_action": "MenuItem",
                    "_user_action_url":
                        "${ExtURLBase}/1/service/${ServiceID}/snooze",
                    "_method": "POST",
                    "_id_to_jump_before": "exit://"
                }, {
                    "_dialog_id": "3",
                    "_label": "Cancel, my problem has been solved",
                    "_action": "MenuItem",
                    "_user_action_url":
                        "${ExtURLBase}/1/service/${ServiceID}/snooze",
                }
            ]
        }
    ]
}

```

```

        "_method": "POST",
        "_id_to_jump_before": "exit://"
    }
}
]
}
}
}

```

#### get-dialog-start-chat

```

{
  "_dialog_id": "1",
  "_action": "StartChat",
  "_label": "Start Chat",
  "_start_chat_url":
    "${ExtURLBase}/1/service/${ServiceID}/ixn/chat",
  "_comet_url": "${CometURL}",
  "_user_header": "${GMSUser}",
  "_id_to_jump_before": "exit://",
  "_chat_parameters": {
    "subject": "None"
  },
  "_id": "${ServiceID}"
}

```

#### connect-inbound

```

{
  "_dialog_id": "0",
  "_label": "Connecting ...",
  "_action": "DialNumber",
  "_tel_url": "n/a",
  "_access_code": "n/a",
  "_id": "${ServiceID}"
}

```

#### connect-outbound

```

{
  "_dialog_id": "0",
  "_action": "ConfirmationDialog",
  "_text": "You will receive the call shortly",
  "_ok_title": "Ok",
  "_id": "${ServiceID}"
}

```

#### wait-for-agent

```

{
  "_dialog_id": "0",
  "_action": "ConfirmationDialog",
  "_text": "We will notify you when agent is available",
  "_ok_title": "Ok",
  "_id": "${ServiceID}"
}

```

## Push Notifications

### Chat (Comet)

#### Message Receipt

```
{
  "data":{
    "message":{
      "startedAt":"2014-05-02T16:27:38Z",
      "chatIxnState":"TRANSCRIPT",
      "chatSessionId":"000FRa9NYM9A001K",
      "transcriptToShow":[["Message.Text","Stan","Hello.","8","CLIENT"]],
      "transcriptPosition":"2",
      "chatServiceMessage":"Chat service is available"
    },
    "id":"b2e607a0d21611e3000010932938a0ff",
    "tag":"service.chat.refresh.3SQIS3S1693JL9L3R00506T40C000UL4"
  },
  "channel":"/_genesys"
}
```

#### Party Joined/Left

```
{
  "data":{
    "message":{
      "startedAt":"2014-05-02T16:27:38Z",
      "chatIxnState":"TRANSCRIPT",
      "chatSessionId":"000FRa9NYM9A001K",
      "transcriptToShow":[["Notice.Joined","Kristi Sippola",
        "has joined the session","17","AGENT"]],
      "transcriptPosition":"3",
      "chatServiceMessage":"Chat service is available",
    },
    "id":"b7dd6460d21611e3000010932938a0ff",
    "tag":"service.chat.refresh.3SQIS3S1693JL9L3R00506T40C000UL4"
  },
  "channel":"/_genesys"
}
```

#### Typing Started/Stopped

```
{
  "data":{
    "message":{
      "startedAt":"2014-05-02T16:27:38Z",
      "chatIxnState":"TRANSCRIPT",
      "chatSessionId":"000FRa9NYM9A001K",
      "transcriptToShow":[["Notice.TypingStarted",
        "Kristi Sippola","is typing","20","AGENT"]],
      "transcriptPosition":"4",
      "chatServiceMessage":"Chat service is available",
    },
    "id":"b91bd7d0d21611e3000010932938a0ff",
    "tag":"service.chat.refresh.3SQIS3S1693JL9L3R00506T40C000UL4"
  },
  "channel":"/_genesys"
}
```



```
}
```

## Notes

Identifier	Description	Values
\$(TranscriptType)	Type of event to display in the chat log.	Message.Text Notice.TypingStarted Notice.TypingStopped Notice.Joined Notice.Left
\$(Timestamp)	UTC Time format	YYYY-MM-DDTHH:MM:SSZ
\$(TranscriptPosition)	Line Number	Some integer.
\$(ChatIxnState)	State of chat interaction.	TRANSCRIPT DISCONNECTED