Virtual Agent–Voice for Dialogflow CX

Overview

Virtual Agent–Voice for Dialogflow CX leverages Google's Dialogflow CX service that allows designing virtual voice agents and creating and connecting complex IVR call flows.

Using Google Dialogflow CX, multiple agents can be created under the same Project ID and can be accessed and managed for different lines of business with a single Google account. For more information, refer to the Google Dialogflow CX documentation at https://cloud.google.com/dialogflow/cx/docs.

The DialogflowCX element of Cisco Unified Call Studio is used to engage Google's Dialogflow CX services.

Note
- Only U Law codec is supported.
- This feature is available with Cisco subscription services only.
- The DialogflowCX element works both with Cisco DTMF and Nuance ASR adaptors.

Prerequisites

For supported minimum versions, refer to the *Cisco Unified Customer Voice Portal > New Features > Virtual Agent–Voice for Dialogflow CX* section in the *Release Notes for Cisco Contact Center Enterprise Solutions Release 12.6(1)*.

To configure Google Dialogflow CX, you should have completed the following procedures:

- The customer's CX Agent ID and GCP Project ID is created. For more information, refer to Google documentation at https://dialogflow.cloud.google.com/cx/projects.
- Assessment to Quality (A2Q) process for Contact Center AI (CCAI) is completed and Cisco subscription Flex SKU for CX is procured.

- Customer's GCP project ID and Cisco's GCP partner projects are mapped.

- Control Hub credentials and Hybrid Org are generated.

For assistance, you can contact the Cisco TAC team.

- CX conversational profile ID is created using credentials provided by Cisco via email. For details, see Create a Conversation Profile using Google Cloud SDK, on page 3.

  This conversation profile URL is to be used for creating the CCAI configuration.

- Cisco Unified CVP and Cisco VVB are configured:

  - Date and time in CVP, VVB, and proxy are synchronized with a common NTP server.

  - Access to DNS server is configured in CVP and VVB.

  For more information on NTP and DNS server configurations in CVP, refer to the Microsoft Windows platform documentation.

  For more information on NTP and DNS server configurations in VVB, refer to the *Command Line Interface Reference Guide for Cisco Unified Communications Solutions* at https://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-maintenance-guides-list.html.

- Port 443 and HTTP/2 are enabled in the proxy and firewall.

- The new Cisco Unified Call Studio application with the *DialogflowCX* element and *Virtual Agent Voice* element is deployed. You can download and install the latest patch from https://software.cisco.com/download/specialrelease/c359e375005563ceec2081c9151b482e.

  For details of the *DialogflowCX* element and *Virtual Agent Voice* element, refer to the *Element Specifications for Cisco Unified CVP VXML Server and Call Studio, Release 12.6(1)* guide at https://www.cisco.com/c/en/us/support/customer-collaboration/unified-customer-voice-portal/products-programming-reference-guides-list.html.

What to do next

- Configure Google Dialogflow CX Agent with Cisco Unified CCE solution.

Configuration Task Flow

Task flow for configuring Google Dialogflow CX Agent with Cisco Unified CCE solution.

Procedure

Step 1   Ensure that the Cloud Connect publisher and subscriber nodes are installed.

For more information, see the *Create VM for Cloud Connect Publisher* and *Create VM for Cloud Connect Subscriber* sections in *Cisco Packaged Contact Center Enterprise Installation and Upgrade Guide* at https://www.cisco.com/c/en/us/support/customer-collaboration/packaged-contact-center-enterprise/products-installation-guides-list.html.

Step 2 Register Cloud Connect in the Unified CCE Administration console to establish a secure and trusted communication channel between the Cisco Contact Center on-premises deployment and cloud services.

For details, see the *Cloud Connect Administration* section in the *Cisco Packaged Contact Center Enterprise Administration and Configuration Guide* https://www.cisco.com/c/en/us/support/customer-collaboration/packaged-contact-center-enterprise/products-maintenance-guides-list.html..

Step 3 Configure Cloud Connect with CVP and VVB devices in Unified CCE Administration. For details, see *Configure Cloud Connect* section in the *Cisco Packaged Contact Center Enterprise Administration and Configuration Guide* at https://www.cisco.com/c/en/us/support/customer-collaboration/packaged-contact-center-enterprise/products-maintenance-guides-list.html.

Step 4 Create Contact Center AI (CCAI) configuration in Cisco Webex Control Hub at https://admin.webex.com. A CCAI configuration leverages CCAI Connectors to invoke the CCAI services.

For detailed steps to set up Integration Connectors, see the *Set Up Integration Connectors for Contact Center solutions* article.

For detailed steps to create CCAI configuration, see the *Create a Contact Center AI configuration* article. This default config can be used for accessing multiple AI services on multiple devices.

Step 5 View the default CCAI configuration (created in step 1). Sync, if required in Unified CCE Administration.

For details, see the *Manage Features > Contact Center AI Configuration* section in the *Cisco Packaged Contact Center Enterprise Administration and Configuration Guide* at https://www.cisco.com/c/en/us/support/customer-collaboration/packaged-contact-center-enterprise/products-maintenance-guides-list.html.

Step 6 Design Google Dialogflow CX Agents. For more information, refer to Google documentation at https://dialogflow.cloud.google.com/cx/projects.

Step 7 Configure a welcome event for all Google Dialogflow CX Agents. For details, see Create a Welcome Event, on page 6.

| **Note** | • To override the default welcome event, provide the element data *event_name* in the DialogflowCX element. The same name must be configured at the CX Agent to start the flow. |
| | • For further assistance, contact the Cisco TAC team. |

Create a Conversation Profile using Google Cloud SDK

| **Note** | The steps in the following procedure are for reference only. For more details, refer to Google Documentation. |

Procedure

Step 1 Get the agent ID:

   a. Open https://dialogflow.cloud.google.com/cx/projects.

    b. Select the appropriate project. The list of configured agents is displayed.

    c. Note the agent ID to be configured. If no new agents are created, you can select a preconfigured agent.

Step 2 Create a user via Google IAM (Identity and Access Management) and add the following roles: Dialogflow API admin, Service Account Token Creator, and Service Account user .

For more information, see https://cloud.google.com/iam/docs/creating-managing-service-accounts.

Step 3 Install and configure the Google SDK on your system.

For more information, see https://cloud.google.com/sdk/docs/quickstart.

Step 4 When you are asked to log in during the installation of Google SDK, log in using the ID of the agent for whom you want to create the conversation profile.

    Note You can also log in using the same ID to the GCP CLI with the command `gcloud auth login` after installing the Google SDK.

Step 5 Run the following command: `gcloud auth print-access-token --impersonate-service-account=Service Account ID`

For more information, see https://cloud.google.com/iam/docs/impersonating-service-accounts.

Step 6 Create the conversation profile using REST API for Dialogflow by using Postman:

    a) In the Postman workspace, select the method as **POST**.

    b) In the URL field, add the address in the following format after replacing the *regionId* and *projectId* appropriately:

```
https://<regionId>-dialogflow.googleapis.com/v2beta1/projects/<projectId>/locations/<regionId>/conversationProfiles
```

    c) Under the **Headers** section, add the following key values for Authorization and Content-type:

        • Authorization: *Bearer <token generated with the Google command>*

        • Content-type: *application/json*

    d) Under the **Body** section, select **raw**. From the last dropdown, select **JSON**.

    e) In the code space, enter the following code (after replacing the *regionId*, *projectId*, and *agentId* in the **agent** tag with actual values):

```
{
"name": "TACCXTest",
"automatedAgentConfig": {
    "agent": "projects/<projectId>/locations/<regionId>/agents/<agentId>"
    },
"displayName": "TACCXTest",
"humanAgentAssistantConfig": {
    "messageAnalysisConfig": {
        "enableEntityExtraction": true,
        "enableSentimentAnalysis": true
        }
    }
}
```

    f) Click **Send** to run the command.

Example response:

```
{
"name":
"projects/projectrtp2020/locations/us-central1/conversationProfiles/QlO36mwSUa3cjg",
```

```
"displayName": "TACCXTest",
"automatedAgentConfig": {
"agent":
"projects/projectrtp2020/locations/us-central1/agents/40d0-aa2a-1bf453d9bf5c/environments/draft"

    },
"humanAgentAssistantConfig": {
"notificationConfig": {},
"messageAnalysisConfig": {
"enableEntityExtraction": true,
"enableSentimentAnalysis": true
        }
    },
"languageCode": "en-US"
}
```

In the above example response, the following conversation profile is obtained:
projects/projectrtp2020/locations/us-central1/conversationProfiles/dQlO36mwSUa3cjg.

You can use this profile while creating the Control Hub configuration.

For more information, see https://cloud.google.com/sdk/gcloud/reference.

Step 7 Create the conversation profile using REST API for Dialogflow by using Postman:

a) Add headers: Content-type Application/json.

b) Authorization: Bearer - add the token generated with the Google command.

c) Add the method as POST.

d) In the URL section, add the address after replacing the regionId and the projectId appropriately. The address is in the following format:
https://<regionId>-dialogflow.googleapis.com/v2beta1/projects/<projectId>/locations/<regionId>/conversationProfiles

e) In the body section, choose RAW and JSON.

f) In the **Agent** tag, use the appropriate regionId, projectId, and agentId.

```
{
"name": "TACCXTest",
"automatedAgentConfig": {
"agent": "projects/<projectId>/locations/<regionId>/agents/<agentId>"
},
"displayName": "TACCXTest",
"humanAgentAssistantConfig": {
"messageAnalysisConfig": {
"enableEntityExtraction": true,
"enableSentimentAnalysis": true
}
}
}
```

Example response:

```
{
"name":
"projects/tacprojectrtp2020/locations/us-central1/conversationProfiles/dCv4lC1uQlO36mwSUa3cjg",
"displayName": "TACCXTest",
"automatedAgentConfig": {
"agent":
"projects/tacprojectrtp2020/locations/us-central1/agents/5cca975a-bbb3-40d0-aa2a-1bf453d9bf5c/environments/draft"

    },
"humanAgentAssistantConfig": {
"notificationConfig": {},
"messageAnalysisConfig": {
```

```
"enableEntityExtraction": true,
"enableSentimentAnalysis": true
        }
    },
"languageCode": "en-US"
}
```

This is the conversation profile that you obtain in the example. *projects/tacprojectrtp2020/locations/us-central1/conversationProfiles/dCv4lC1uQlO36mwSUa3cjg.* You can use this profile while creating the Control Hub configuration.

For more information, see https://cloud.google.com/sdk/gcloud/reference.

Step 8   In a new browser tab, open https://agentassist.cloud.google.com/ and select the appropriate project. The list of profiles is displayed.

Step 9   Click the copy icon next to the profile ID to be used. Copy the profile URL in the following format: *projects/<project_ID>/locations/<location>/conversationProfiles/<profile ID>.*

You can use this profile URL while creating the Control Hub configuration.

Create a Welcome Event

Create a welcome event to be played to the caller when a call is initiated.

Procedure

Step 1   Open https://dialogflow.cloud.google.com/cx/projects.

Step 2   Select the project and agent for which the welcome event is to be configured.

Step 3   In the Google Dialogflow CX Agent screen, click **Default Start Flow** in the left panel.

Step 4   Click **Start** > **Event handlers**.

Step 5   In the right panel, click **Add event handler**.

Step 6   Check the **Use custom event** checkbox.

Step 7   In the **Custom Event** textbox, type **welcome_event**.

Step 8   In the **Agent says** textbox, type the welcome message to be played.

Step 9   Save the changes.

> **Note**   To override the default welcome event, provide the element data *event_name* in the DialogflowCX element. The same name must be configured in the CX Agent to start the flow.