



# Customer Virtual Assistant

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## Feature Overview

Customer Virtual Assistant (CVA) feature enables the IVR platform to integrate with cloud-based speech services. This feature supports human-like interactions that enable customers to resolve issues quickly and more efficiently within the IVR, thereby, reducing the calls directed towards agents.



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**Note** The Dialogflow ES GCP project trial version should not be used in a production environment.

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In a traditional IVR, customers can interact with the IVR in the following ways:

- **VVB Media Services-Based Interaction:** Prompts are played locally by VVB by downloading WAV files. User inputs are captured using DTMF grammar.
- **ASR-Based and TTS-Based Interactions:** Prompts are played by the external media server over MRCP Synthesis command for Text-to-Speech (TTS) functionality. The responses are recognized by external media server based on predefined grammar provided by Asynchronous Speech Recognition (ASR).

CVA-based IVR enables a new mechanism to leverage cloud-based-AI-enabled speech services. CVA provides the following speech services:

- **Text-to-Speech:** Integration with cloud-based TTS services in your application for Speech Synthesis operations. CVA currently supports [Google Text to Speech](#) service.
- **Speech-to-Text:** Integration with cloud-based ASR services in your application for Speech Recognition operations. CVA currently supports [Google Speech to Text](#) service.
- **Speech-to-Intent:** CVA provides capability of identifying the intent of customer utterances by processing the text received from Speech-to-Text operations. CVA offers this service by using cloud-based Natural Language Understanding (NLU) services. CVA currently supports [Google Dialogflow](#) service.

**Note**

- You can configure the Customer Virtual Assistant (CVA) feature of VVB 12.5(1) keeping the Unified CCE Controller in 12.0 version (as in multi-stage upgrade). However, in this case, the configuration user interface for CVA service account will not be available in the Unified CCE Administration. So, System Administrators can use the *Command Execution Pane* for such configurations.

For more information, see the *Command Execution Pane* 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>.

## Getting Started

This section explains the prerequisites and the documentation resources for CVA.

### Prerequisites

- CVP 12.5(1) and VVB 12.5(1).
- CVP/VVB configuration:
  - Enable access to cloud-based services from CVP and VVB directly or via proxy.

For details, see the *Cisco Unified Customer Voice Portal > Operations Console (NOAMP) > Integration > Cloud Connect > Configure CVP or VVB Devices for Cloud Connect* section in the *Administration Guide for Cisco Unified Customer Voice Portal* at <https://www.cisco.com/c/en/us/support/customer-collaboration/unified-customer-voice-portal/products-installation-and-configuration-guides-list.html>.

- Synchronize the date/time in CVP, VVB, and proxy with a common NTP server.
- Configure access to DNS server in CVP/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>.

- Non-OEM users must enable speech services and generate JSON key. To know more about enabling speech services, see [Enable Speech Services \(For Non-OEM Users\), on page 3](#). To know more about generating JSON key, see [Generate JSON Key \(for Non-OEM Users\), on page 3](#).
- OEM users must provision Google Contact Center AI (CCAI) for Cisco Contact Center Enterprise. To know more about provisioning Google CCAI, see [Provision Google CCAI with Unified Contact Center Enterprise \(for OEM Users\), on page 3](#).

## Enable Speech Services (For Non-OEM Users)

To enable speech services, follow these steps:

1. Log in to your Dialogflow account at <https://dialogflow.cloud.google.com/>.
2. Scroll down on the homepage and click **Project ID** of your Dialogflow agent.  
This takes you to the Google Cloud Platform (GCP) homepage.
3. Select **APIs & Services** from the left pane (through the hamburger menu).
4. Select the API services (such as Cloud Text-to-Speech, Cloud Speech-to-Text, and Dialogflow) to be enabled.
5. Click **Enable** to enable the selected API for the given Project ID.

## Generate JSON Key (for Non-OEM Users)

To generate the JSON key, follow these steps:

1. In the GCP homepage, select **IAM & Admin** from the left pane (through the hamburger menu).
2. Select **Service accounts** which shows the list of your enabled services.
3. Select the service for which the JSON key is to be generated.
4. Click the ellipsis menu on the right and click **+Create Key**.
5. Select JSON as **Key type** and then click **Create**.

The key is downloaded.

For best results:

- Migrate your Dialogflow Agent to Enterprise Essential (**Console Left Bar > Migrate from Standard to Enterprise Essential**).
- Enable the enhanced Speech Model in Dialogflow console (**Settings > Speech > Enable Enhanced Speech Model and Data Logging**).

If this option is enabled, speech recognition data is shared with Google. For more information see <https://cloud.google.com/speech-to-text/docs/enhanced-models>.

## Provision Google CCAI with Unified Contact Center Enterprise (for OEM Users)

To provision Google CCAI with Cisco Unified Contact Center Enterprise, follow these steps:

### Procedure

- Step 1** Log in to the Cisco Commerce Workspace (CCW) portal <https://apps.cisco.com/Commerce/> using your Cisco ID and place the order for Google CCAI.
- Step 2** Complete the [CCAI provisioning form](#) and submit to get a CCAI account with Cisco.

**Note** When the CCAI provisioning request is approved, an email (*CCAI Onboarding Provision Status Update*) is triggered to the user. This email includes the account details and the *CCAI Provisioning Document* which explains the steps to configure the CCAI account and services.

**Step 3** Configure the CCAI account and integrate the CCAI services with the Contact Center application by following the *CCAI Provisioning Document*. For any further assistance, contact the Cisco CCAI onboarding team or send an email to: [cisco-ccai-onboarding@cisico.com](mailto:cisco-ccai-onboarding@cisico.com).

The service account provided by Cisco allows the CCAI customers to leverage the following APIs to integrate with the Contact Center applications:

- Dialogflow API
- Text-to-Speech API
- Speech-to-Text API

## Documentation Resources

The following table lists the reference documents for CVA.

Information	Resource
Sample CVA Application	See <a href="https://github.com/CiscoDevNet/cvp-sample-code/tree/master/Customervirtualassistant">https://github.com/CiscoDevNet/cvp-sample-code/tree/master/Customervirtualassistant</a> .
Design Considerations	<i>Design Considerations for Integrated Features &gt; Customer Virtual Assistant Considerations</i> section in <i>Solution Design Guide</i> at <a href="https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-enterprise/products-implementation-design-guides-list.html">https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-enterprise/products-implementation-design-guides-list.html</a> .
CVA configuration in PCCE Deployment	<i>Customer Virtual Assistant</i> section in <i>PCCE Administration and Configuration Guide</i> at <a href="https://www.cisco.com/c/en/us/support/customer-collaboration/packaged-contact-center-enterprise/products-maintenance-guides-list.html">https://www.cisco.com/c/en/us/support/customer-collaboration/packaged-contact-center-enterprise/products-maintenance-guides-list.html</a> .
TTS Prompt Cache Management and proxy setting for Speech Server	<i>VVB Operations Guide</i> at <a href="https://www.cisco.com/c/en/us/support/customer-collaboration/virtualized-voice-browser/products-maintenance-guides-list.html">https://www.cisco.com/c/en/us/support/customer-collaboration/virtualized-voice-browser/products-maintenance-guides-list.html</a> .
Proxy settings for VXML Server	See the <i>VXML Server Configuration &gt; Proxy Settings in VXML Server for Customer Virtual Assistant</i> section in <i>CVP Configuration Guide</i> at <a href="https://www.cisco.com/c/en/us/support/customer-collaboration/unified-customer-voice-portal/products-installation-and-configuration-guides-list.html">https://www.cisco.com/c/en/us/support/customer-collaboration/unified-customer-voice-portal/products-installation-and-configuration-guides-list.html</a> .
Configuration of Call Studio elements for CVA	The following chapters in <i>CVP Element Specification Guide</i> at <a href="https://www.cisco.com/c/en/us/support/">https://www.cisco.com/c/en/us/support/</a>

Information	Resource
	<a href="https://developer.cisco.com/site/customer-voice-portal/products-programming-reference-guides-list.html">customer-collaboration/unified-customer-voice-portal/products-programming-reference-guides-list.html</a> : <ul style="list-style-type: none"> <li>• <i>Dialogflow Element</i></li> <li>• <i>DialogflowIntent Element</i></li> <li>• <i>DialogflowParam Element</i></li> <li>• <i>Transcribe Element</i></li> </ul>
CVA Speech Configuration APIs	See <i>CVA Speech Configuration</i> section in <i>VVB Developer Guide</i> at <a href="https://developer.cisco.com/site/customer-voice-portal/documents/virtual-voice-browser/">https://developer.cisco.com/site/customer-voice-portal/documents/virtual-voice-browser/</a> .

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