

Configure Dialogflow CX Virtual Agent

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Introduction

This document describes how to configure the Dialogflow CX Virtual Agent.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Webex Contact Center (WxCC) 2.0
- Webex Contact Center Administrator access to the tenant
- Google Dialogflow CX

Components Used

The information in this document is based on these software versions:

- WxCC 2.0

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

Addresses and Credentials

- [Webex Control Hub](#)
- [Webex Contact Center Management Portal](#)
- [Google Cloud Portal Console](#)
- [Google Dialogflow CX](#)

Introduction to Webex Contact Center with Google CCAI

The Webex Contact Center with Google CCAI is the integration that allows the use of Google Text-To-Speech, Natural Language Understanding and **Virtual Agent** technologies with Webex Contact Center.

Dialogflow CX is designed for building complex, multi-turn conversations that involve multiple steps and decision points. It provides tools for creating conversational flows, managing context, handling user intents and entities, and integrating with other applications. Think of conversations that have many turns and where you want to track the interaction content very deeply. These types of conversations typically happen on the phone line to a Contact Center where people ask all types of questions, and the **Virtual Agent** needs to listen in and provide the answers. It does not mean that you cannot build complex flow using Dialogflow Essentials, which is another version of Dialogflow, but you would need to use a lot of code around it to build a whole framework to achieve complicated logic. But with Dialogflow CX flow builder interface it is no longer the case as the graphical interface lets developers design and build conversational AI applications without requiring extensive coding skills.

Webex Contact Center now supports **Dialogflow CX** integration and using this article, you can configure and test the solution.

The integration requires you to do configuration in multiple portals: Google Cloud Platform and **Google Dialogflow CX**, Webex Control Hub, and Webex Contract Center.

Provisioning

Objectives

The objective of this section is to introduce you to Provisioning process which would require to obtain Google CCAI licence for Webex Contact Center.

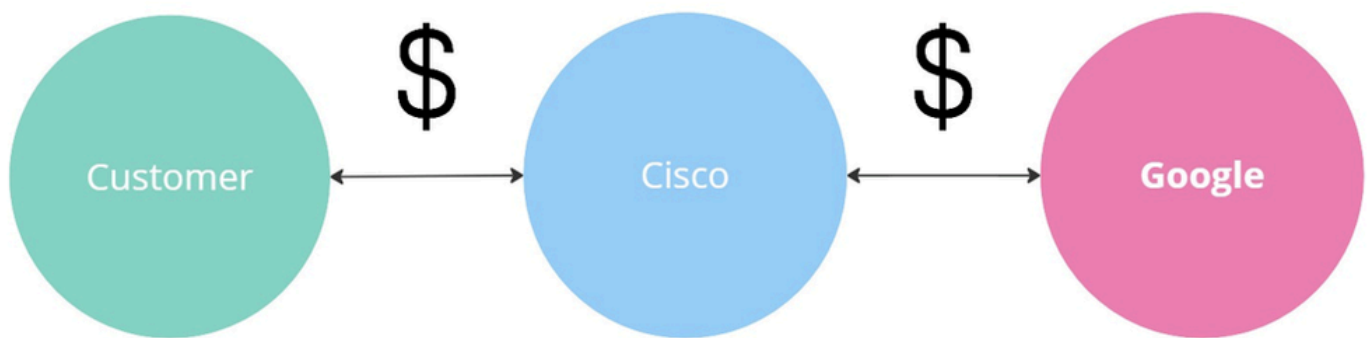
Introduction to Provisioning

For billing purposes, you need to provision Webex Contact Center with Google CCAI.

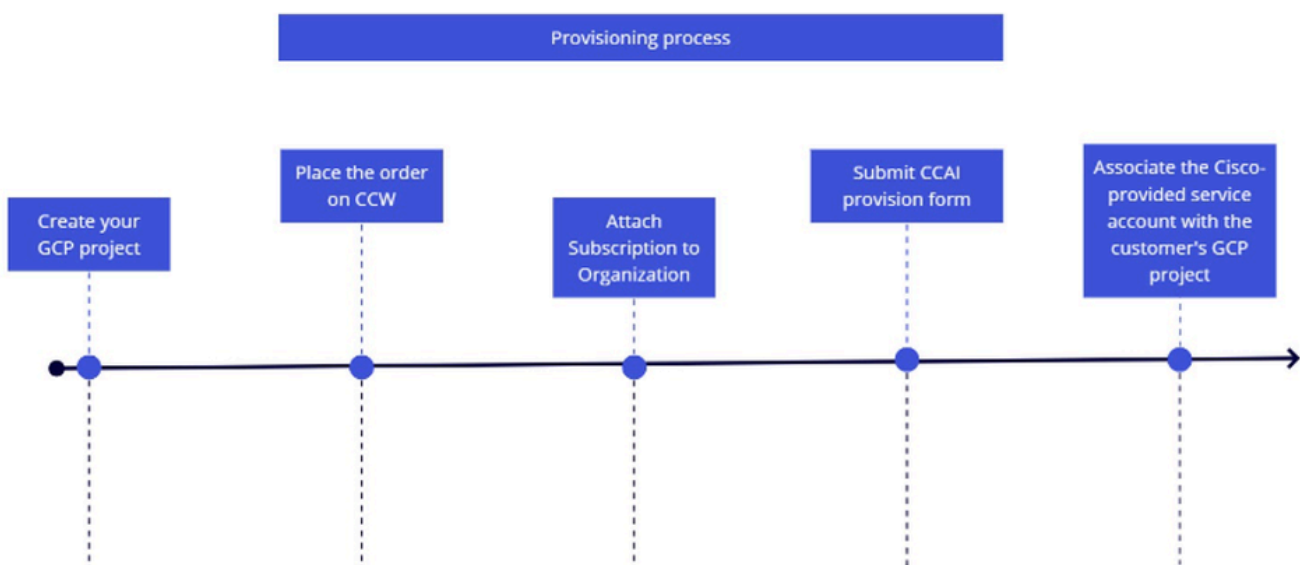
Google provides these APIs for integration of Dialogflow Virtual Agent and Text-to-Speech technologies:

- Dialogflow API
- Cloud Speech-to-Text API
- Cloud Natural Language API
- Cloud Text-to-Speech API

These APIs are not necessarily free and can require a billing account on Google Cloud Portal. The main reason of the Provisioning process is to create the billing account between Cisco and Google for the user, so all user billing goes directly through the Cisco Accounting team. It means the user pays to Cisco and Cisco pays to Google.



The process takes a couple of days, so you are not going to complete the Provisioning process in this section. For your information in the next screenshot, you can see the high-level diagram with the required steps to complete the **Provisioning**.



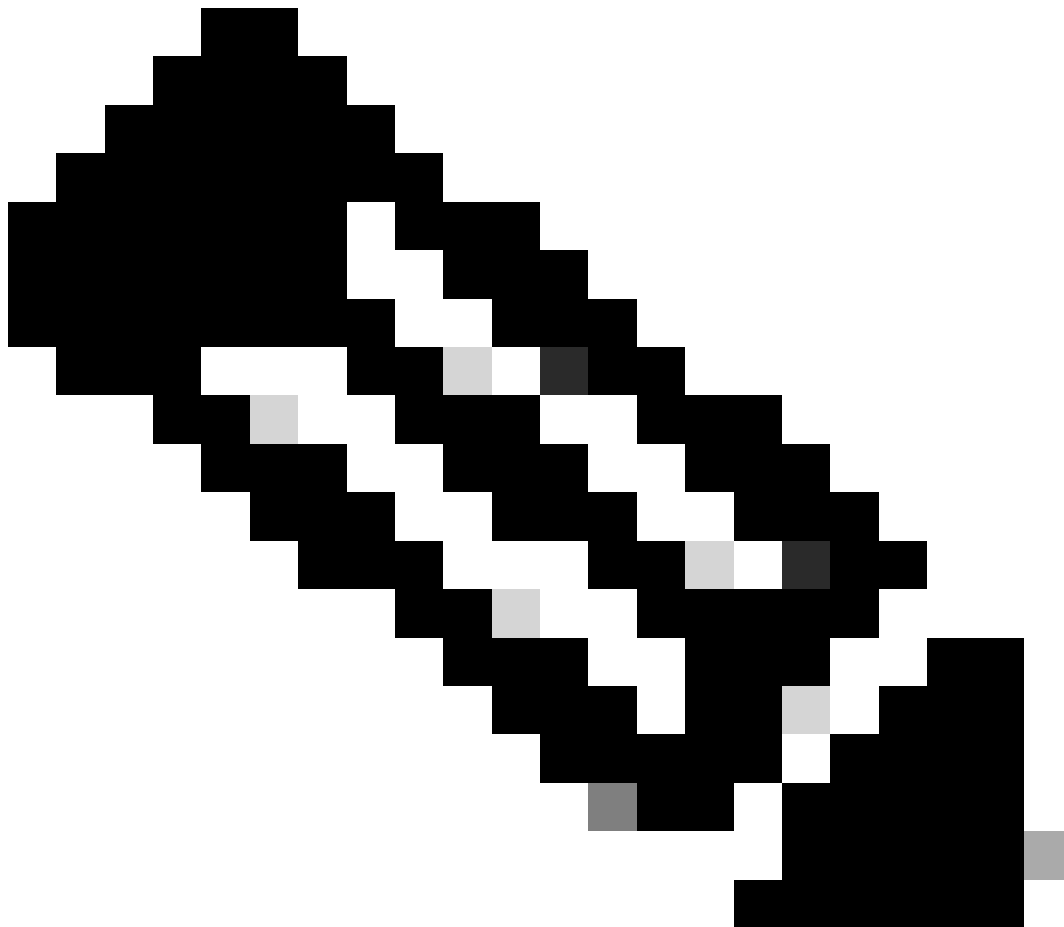
If you would like to read more about the Provisioning process, refer to [Provision Google CCAI for WxCC](#).

Create Dialogflow CX Virtual Agent

Objectives

This section describes how to navigate Dialogflow CX and Webex Control Hub portals to create a new agent and bind the agent to the Webex environment by creating a new **Contact Center AI Config**.

Task 1. Create new Virtual Agent

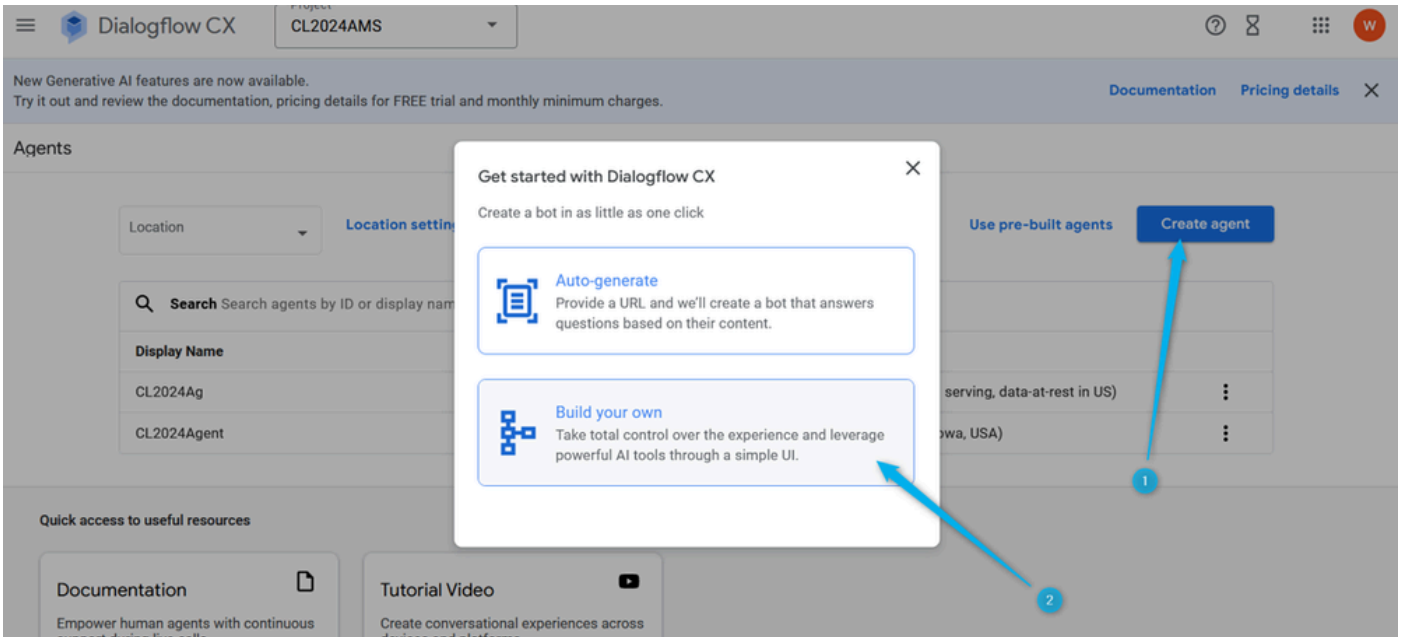


Note: The **Virtual Agent** in the Dialogflow CX is a conversational agent that can interact with users through natural language conversations. It can be designed and customized to handle a wide variety of tasks and use cases, including user support, sales, and lead generation. It can help businesses automate their user service and support operations, reduce response times, and improve user satisfaction.

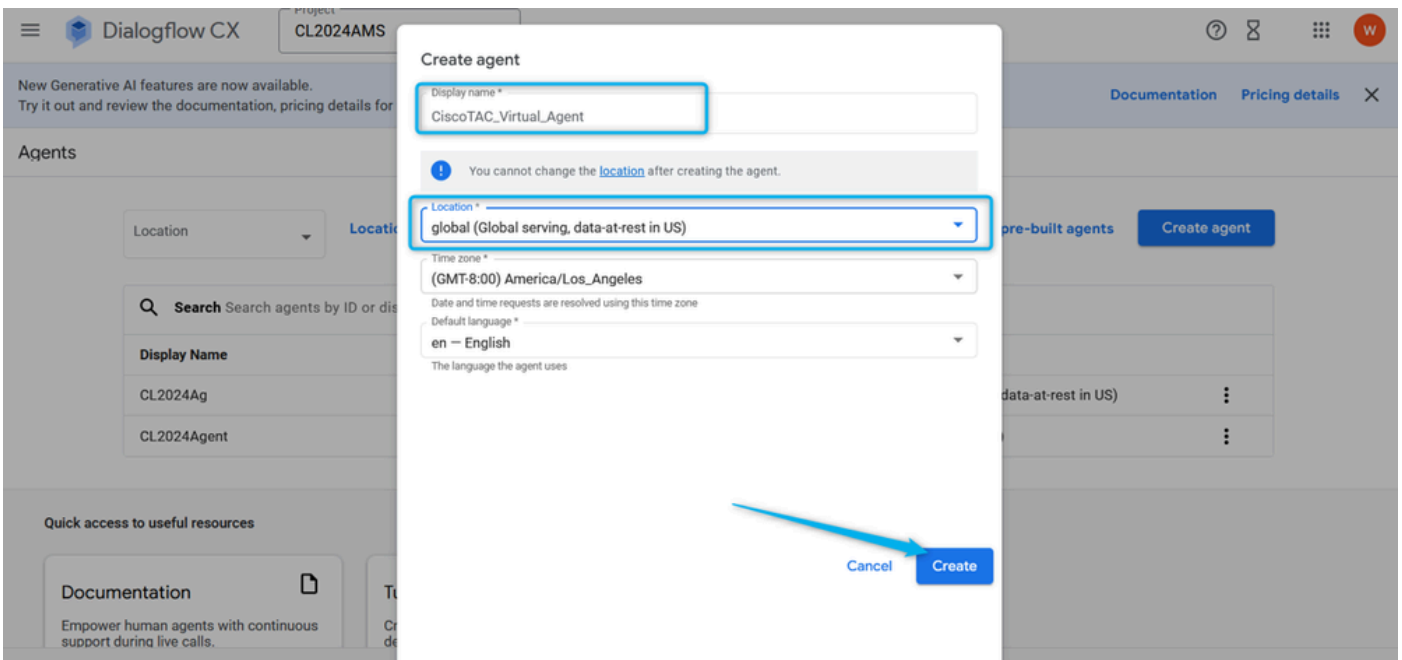
Step 1. Log into [Dialogflow CX portal](#) using your user account and password. Select project CL2024AMS.

(If you experience any difficulties with logging in please clear the cache and cookies on the browser you use.)

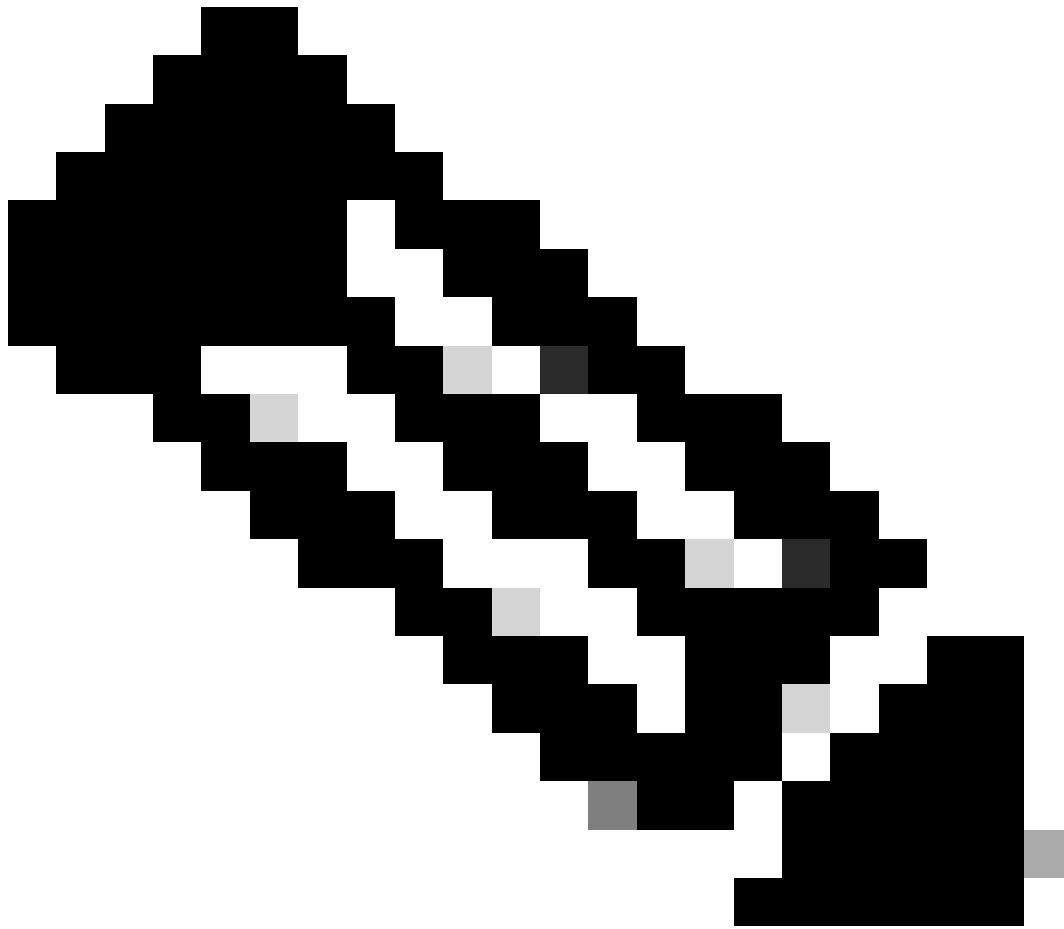
Step 2. Click **Create Agent**. Then select **Build your own**.



Step 3. Provide the name for the new agent using this format: **{Your Name}_Virtual_Agent** . Select location global (**Global serving, data-at-rest in US**).

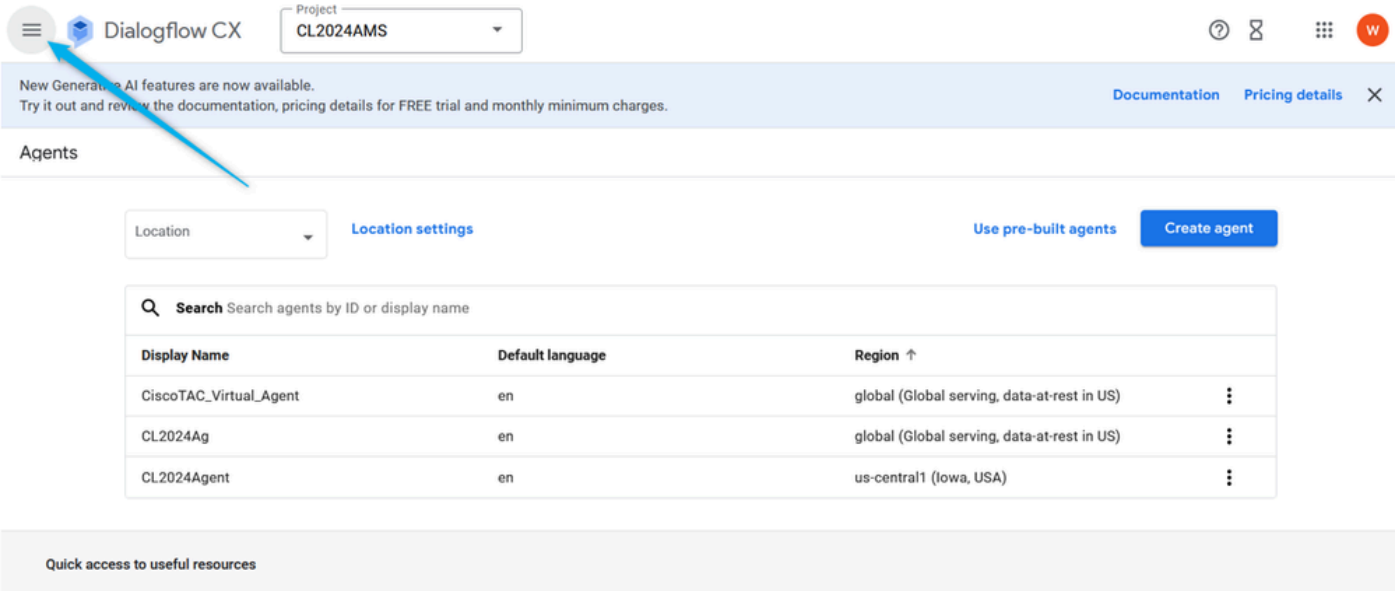


Task 2. Assign the agent that you created for the Conversational profile.

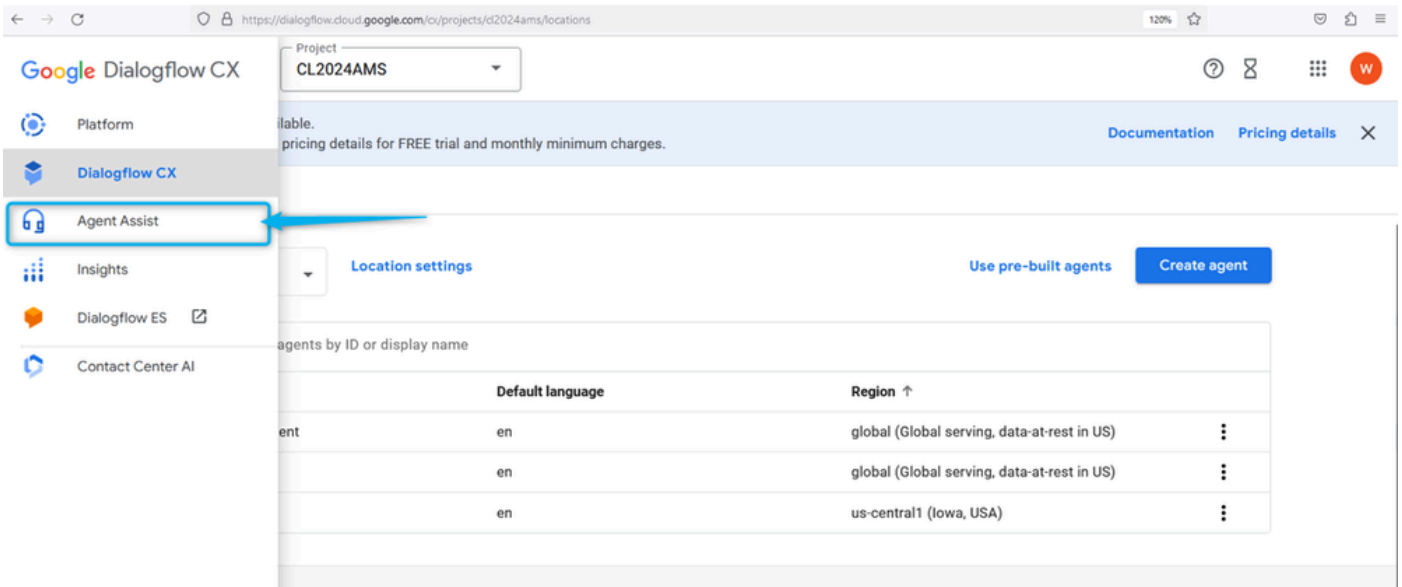


Note: A Dialogflow **Conversation profile** is a set of configuration settings that define the behavior of the virtual agent in a conversation with a user.

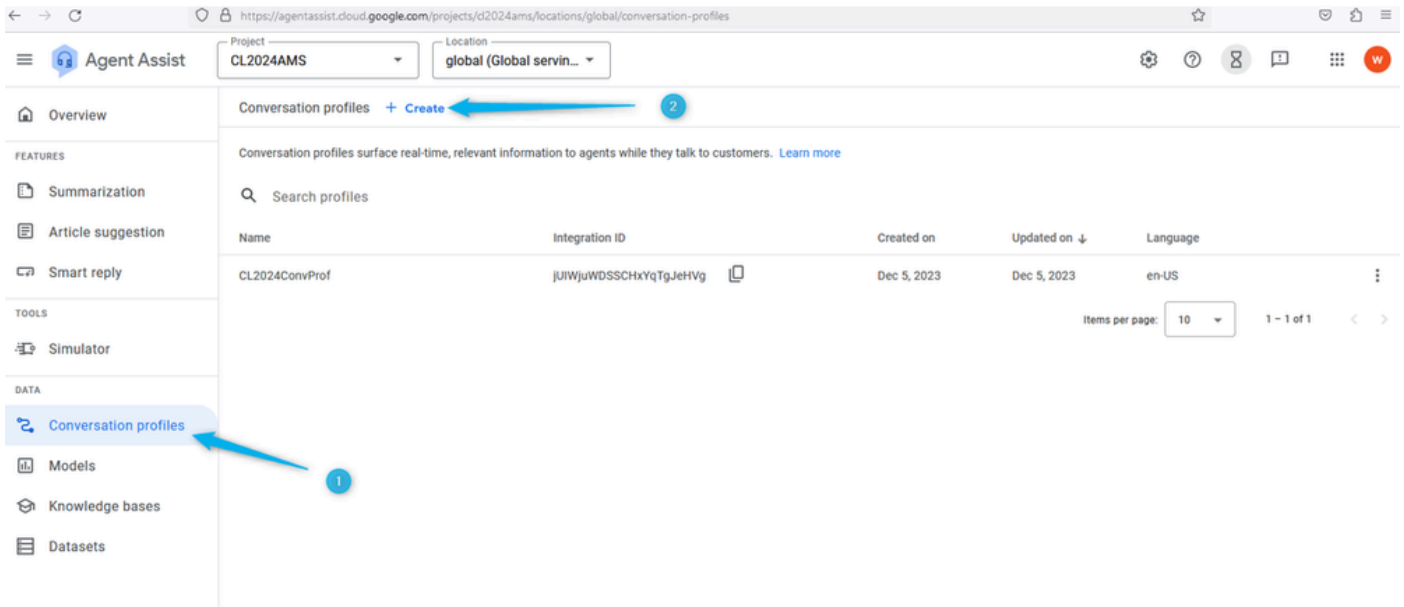
Step 1. On the left top corner click **Menu** icon.



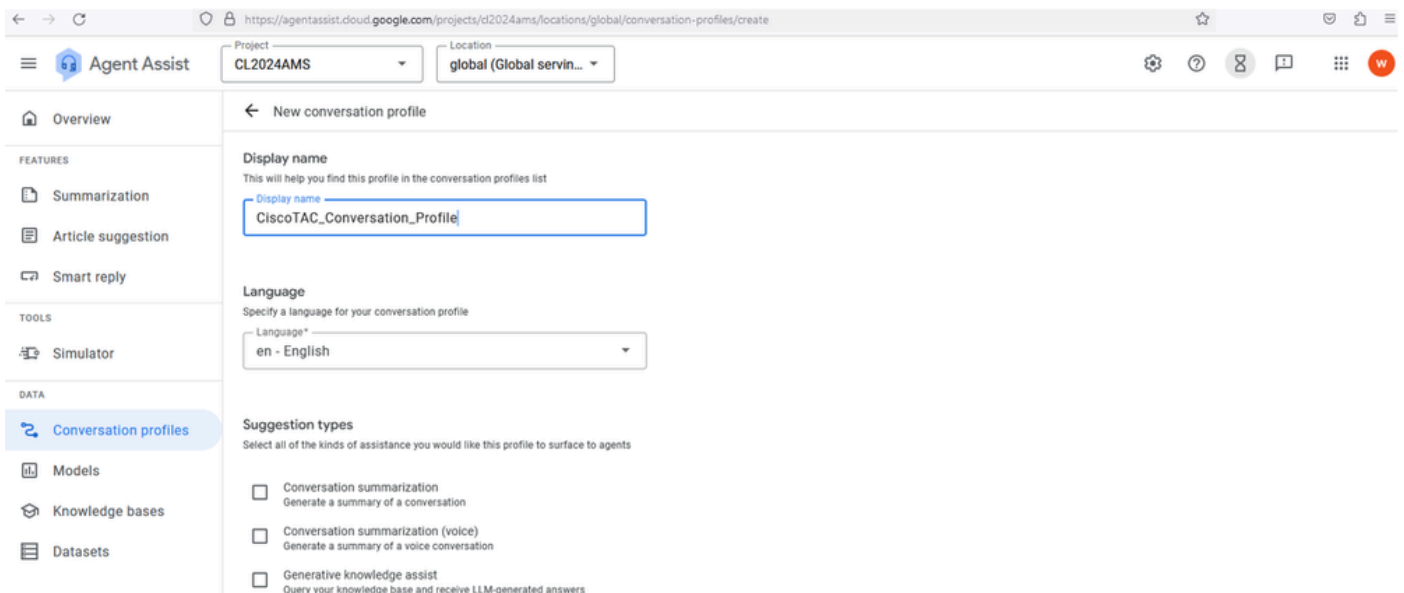
Step 2. From the **Menu** options, select **Agent Assist**.



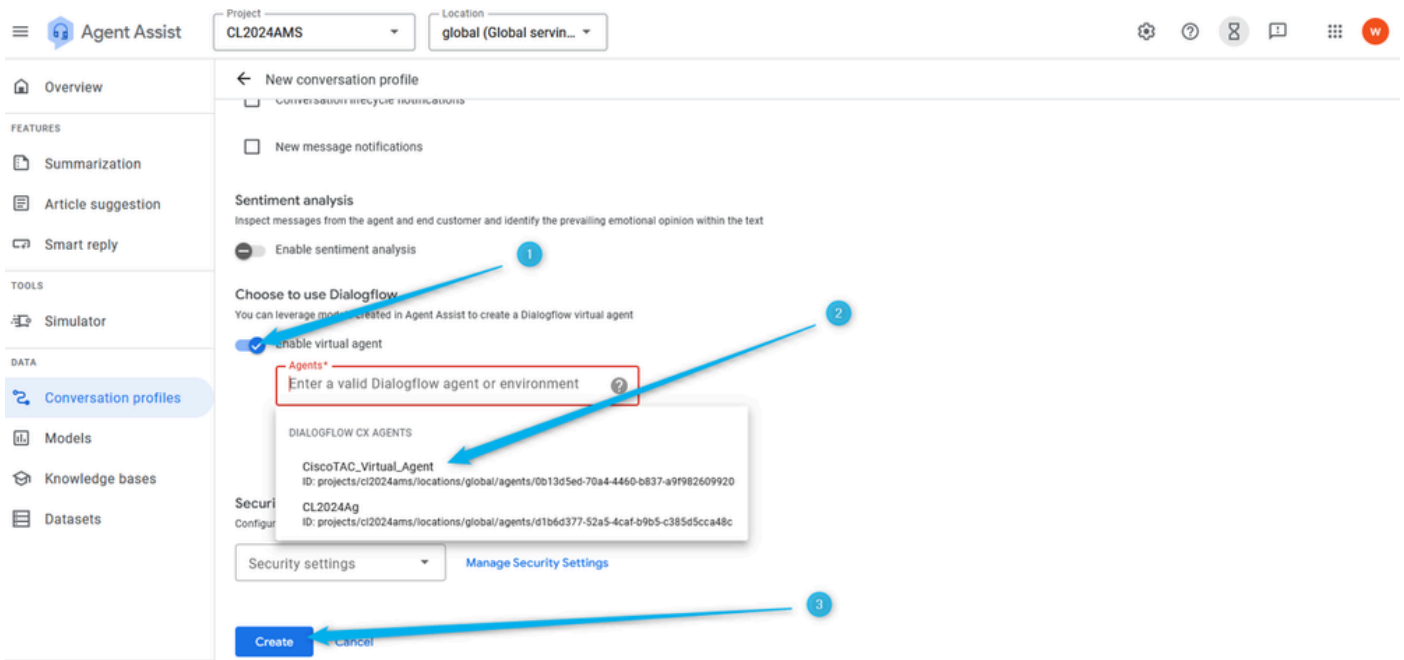
Step 3. In the next window click on the **Conversation profile** under the **DATA** section. Now create a new Conversation profile for your section.



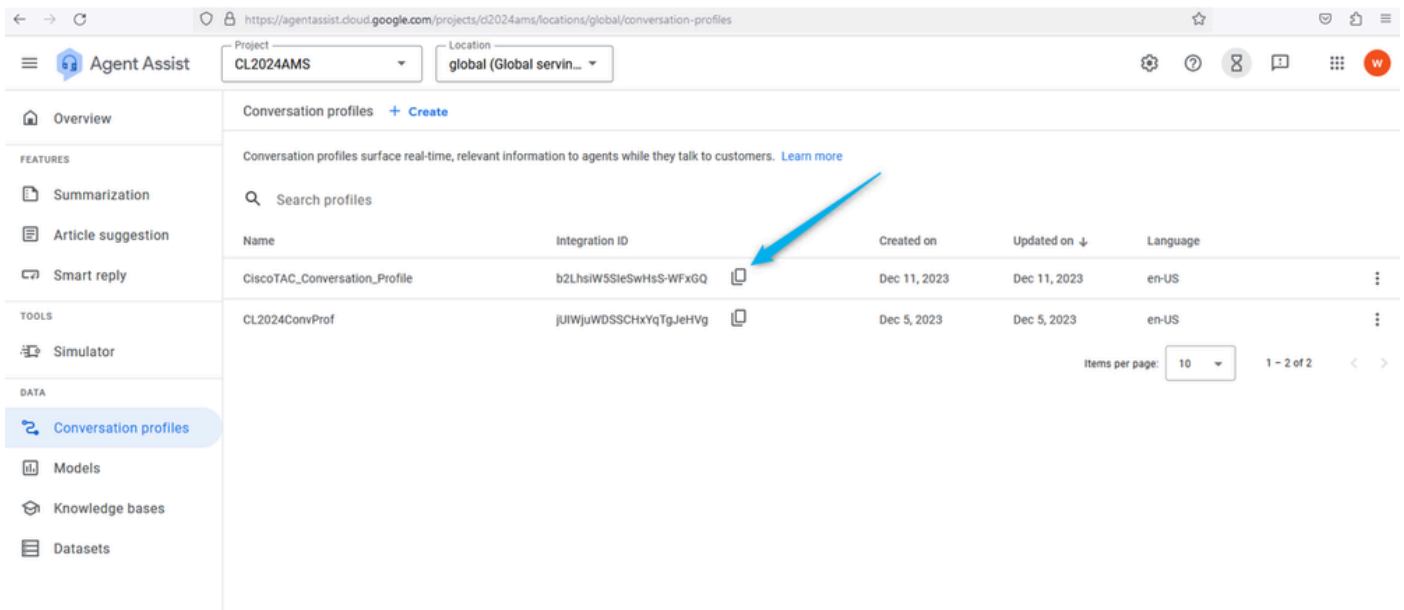
Step 4. Create the name for your **Conversation profile** using this format: **{Your Name}_Conversational_Profile** .



Step 5. Scroll down and enable the virtual agent for this **Conversation profile**. Click on the **Agents** field and select the agent that you created in the previous task and then click **Create**.



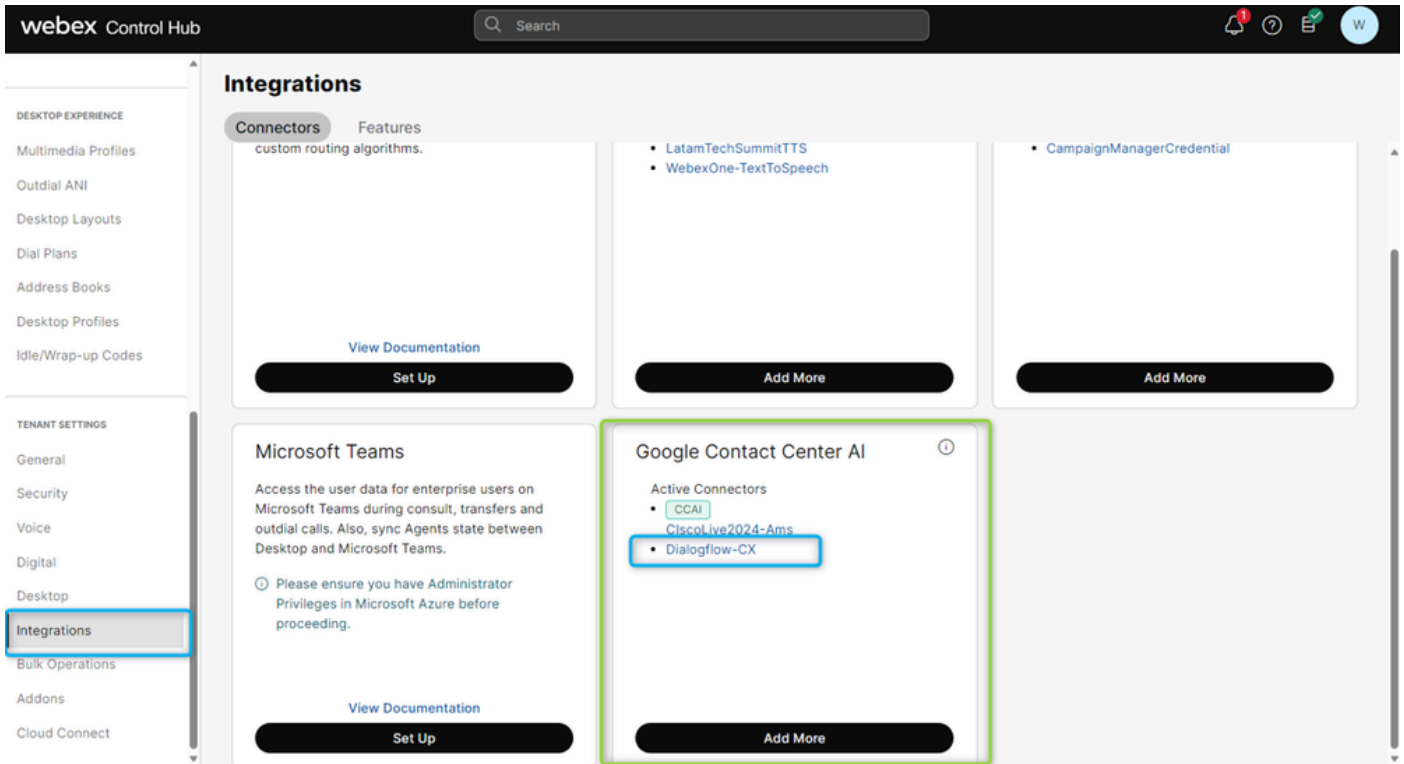
Step 6. Once the **Conversation profile** is created, copy the profile ID past it to a notepad, or just know that this is the place where you can get the **Conversation Profile ID** as you need it the Task 4 of this section when configuring the AI config in Webex Control Hub.



Task 3. Configure Google Contact Center AI connector

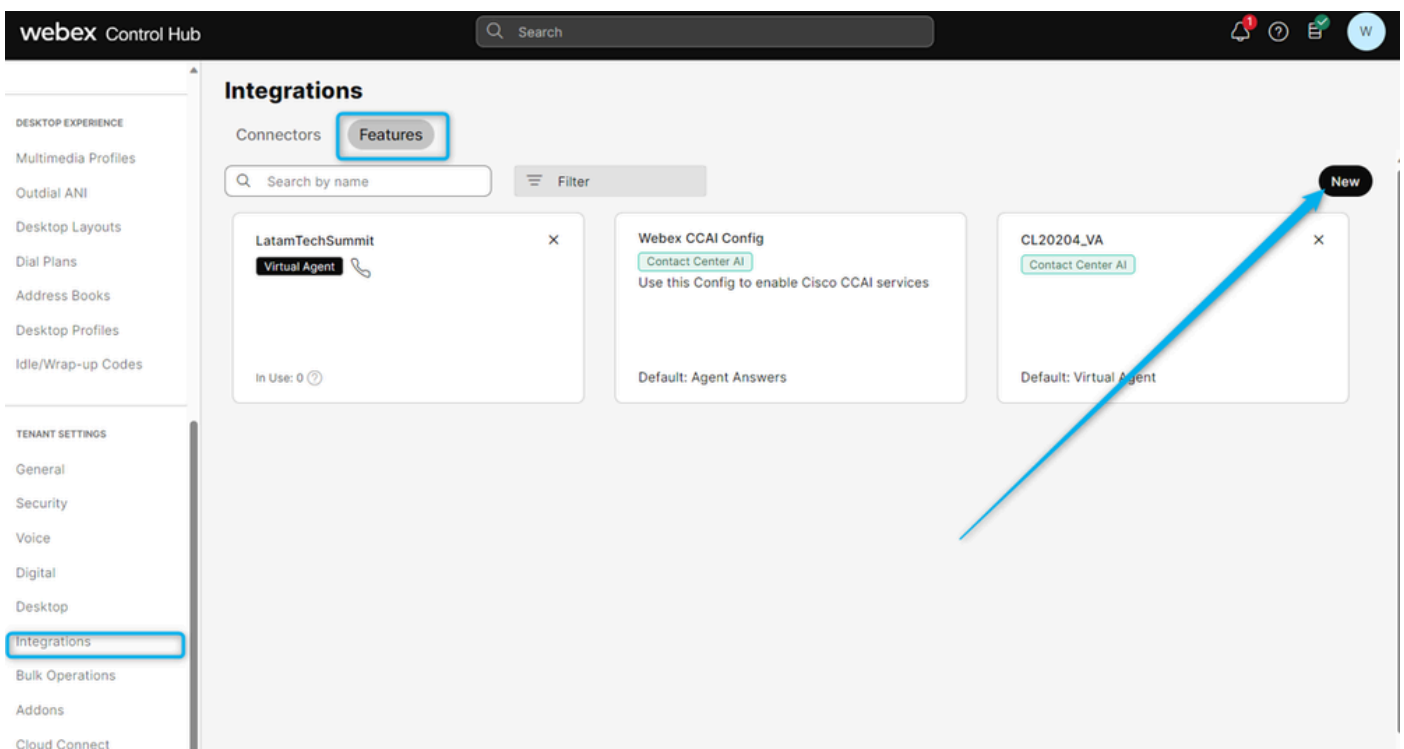
(This Task is information only)

Log into [Webex Control Hub](#) using your user account, select **Contact Center** service and open **Connectors**. You can see the **Google Contact Center AI** card. This connector is used specifically for Dialogflow CX agents. Only users with permissions to Cisco Project can create this connector. For security reasons, the users for this section do not have such permission so this connector is preconfigured for you. For the demo purposes Dialogflow-CX connector can be used.

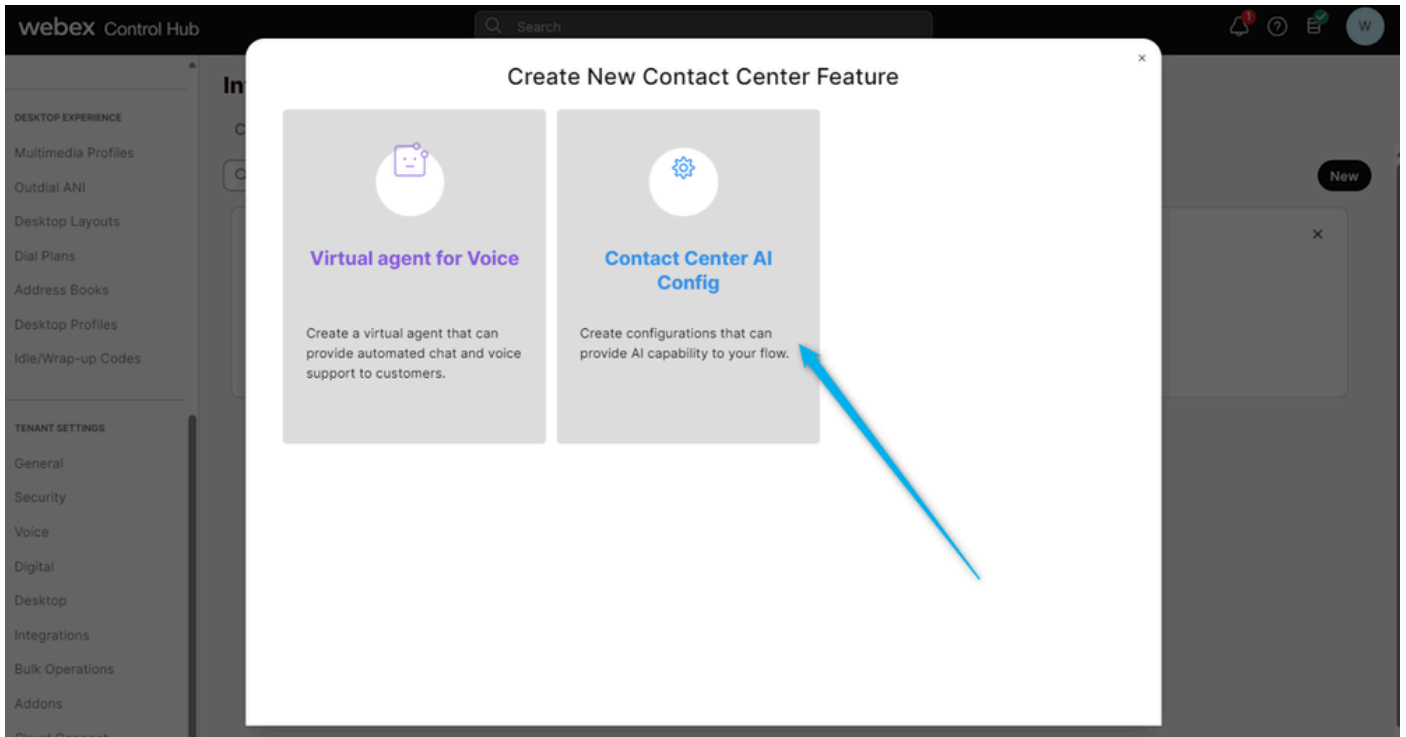


Task 4. Create Contact Center AI config

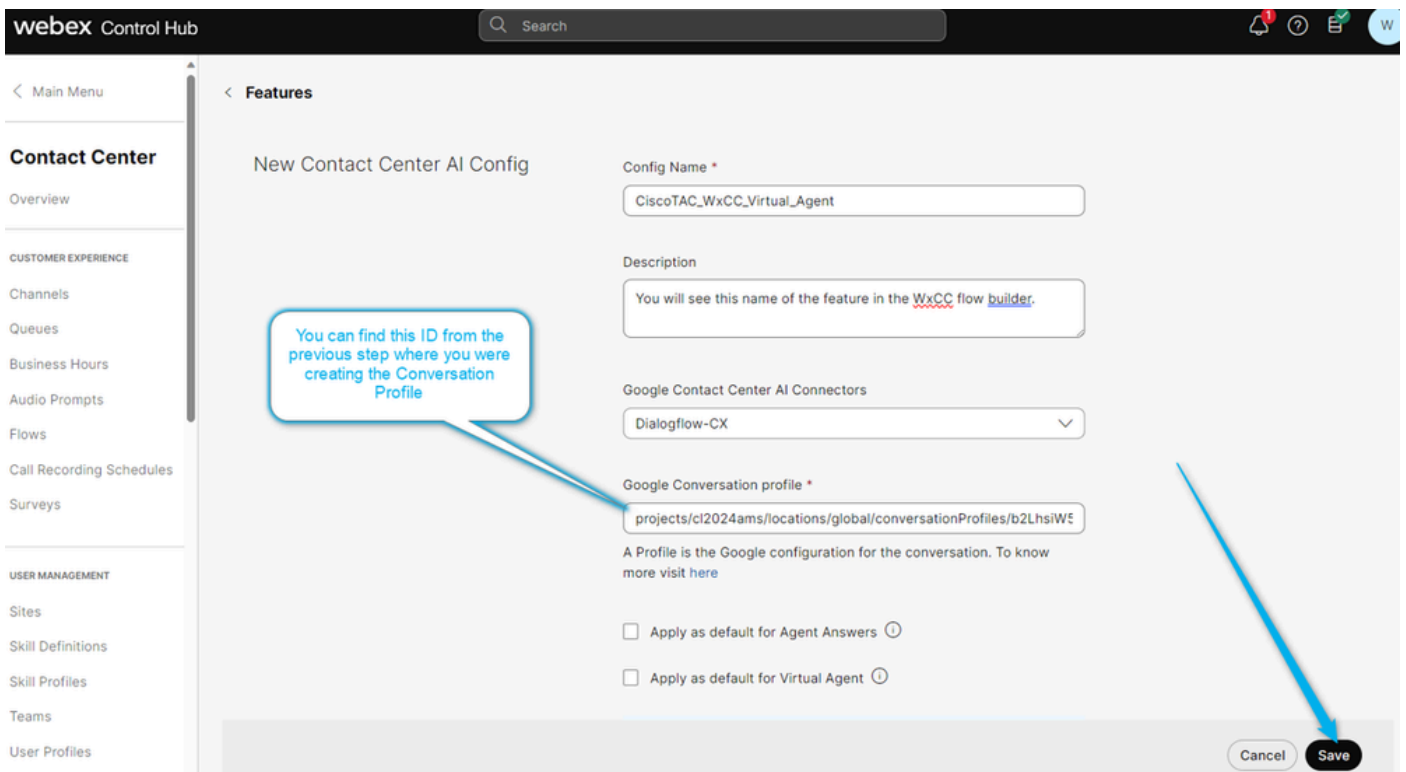
Step 1. In [Webex Control Hub](#), go to the **Contact Center** service, select **Feature**, and click **New**.



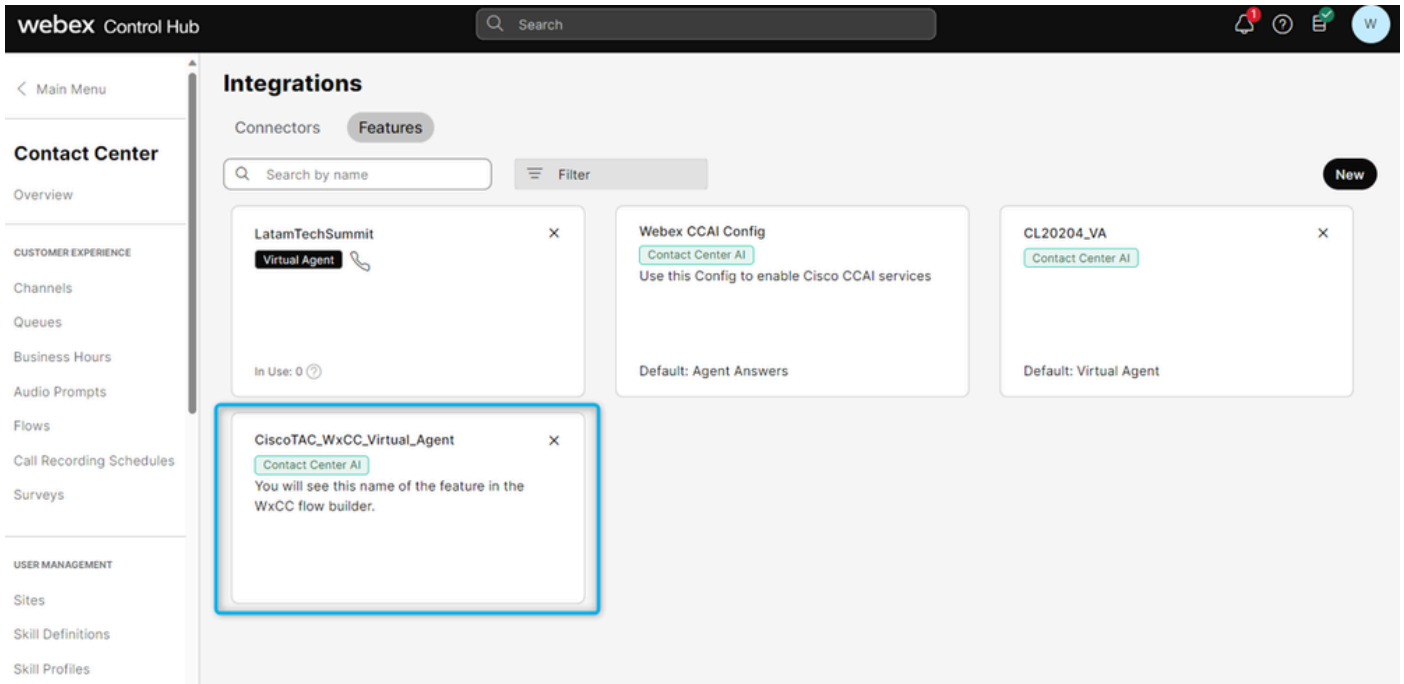
Step 2. On the next window, select **Contact Center AI Config**.



Step 3. Give the name for the feature using this format: **{Your Name}_WxCC__Virtual_Agent**. Select Dialogflow CX as the **Google Contact Center AI Connector** and post the **Conversation profile ID** that you had previously in Task 2.



Step 4. You can now see the **Feature** was created.

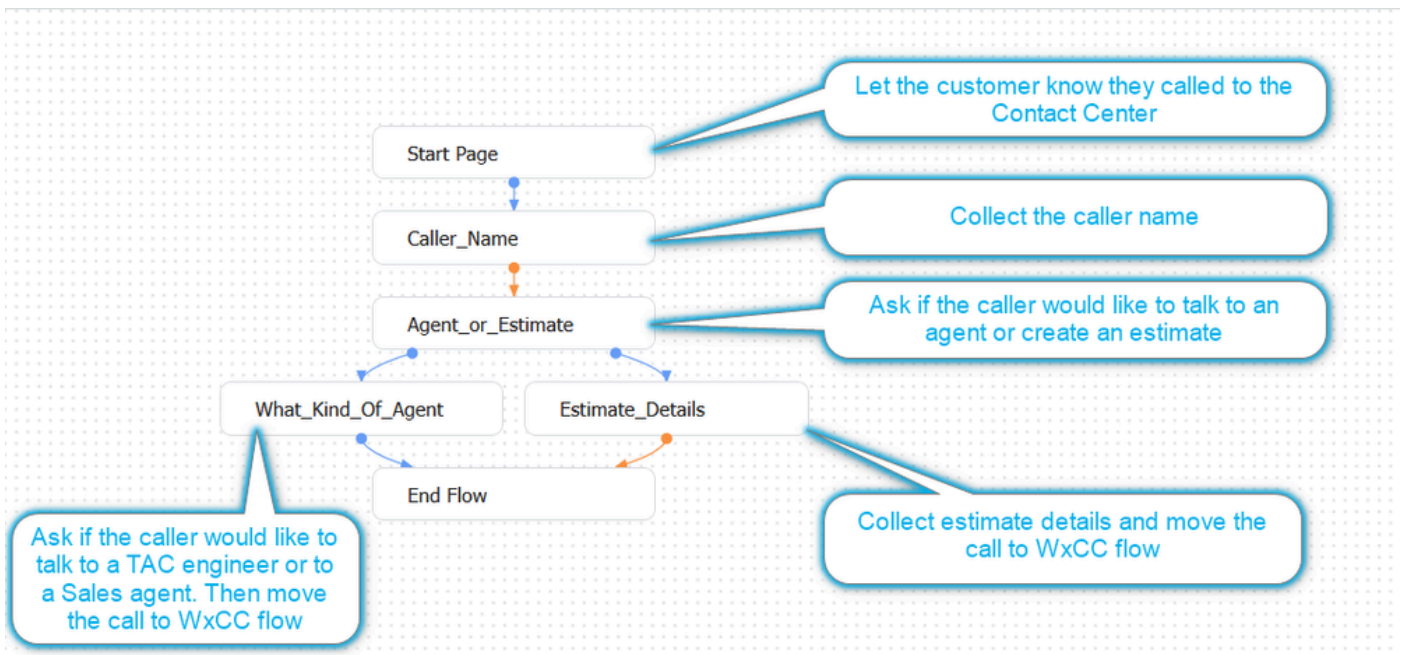


Configure Dialogflow CX Virtual Agent

Objectives

This section describes how to configure the **Virtual Agent** to have a conversation with a caller and decide whether to send the call directly to the queue with human agents or collect estimate information and send the data to the **Analyzer** report.

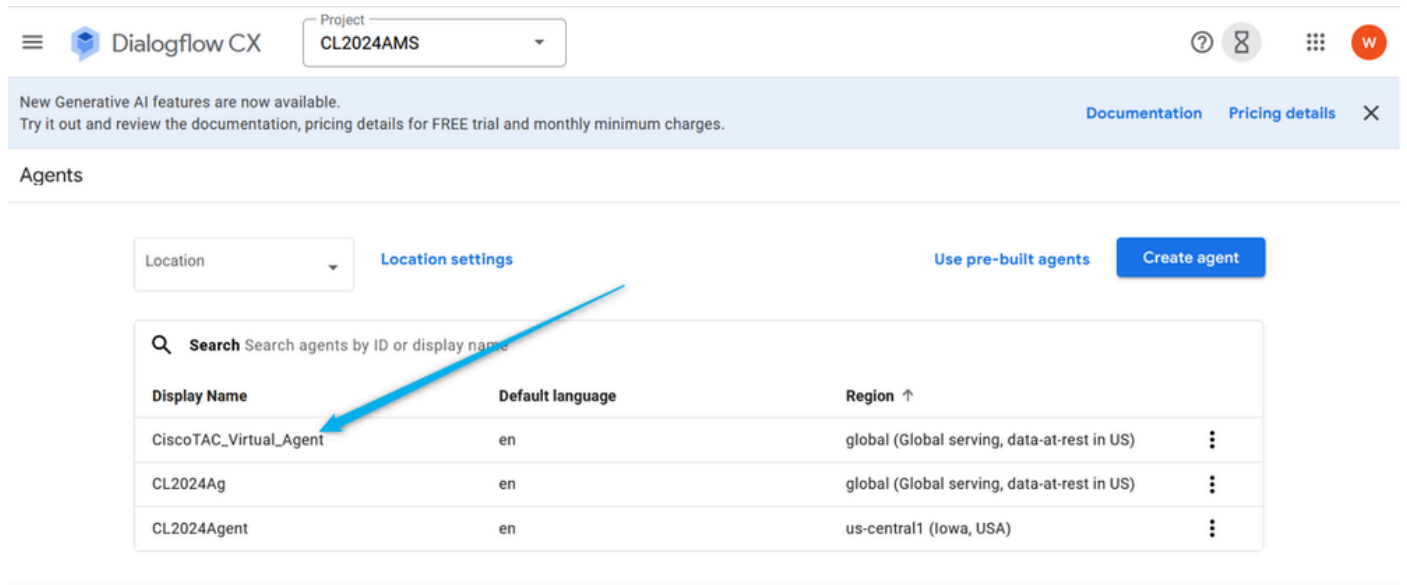
In the next screenshot, you can see a functional diagram of the flow for this section.



Task 1. Navigate to Dialogflow CX Agent flow builder and customize the initial greeting.

Step 1. Log in to [Dialogflow CX](#) portal using your user account and password. Select project **CL2024AMS**.

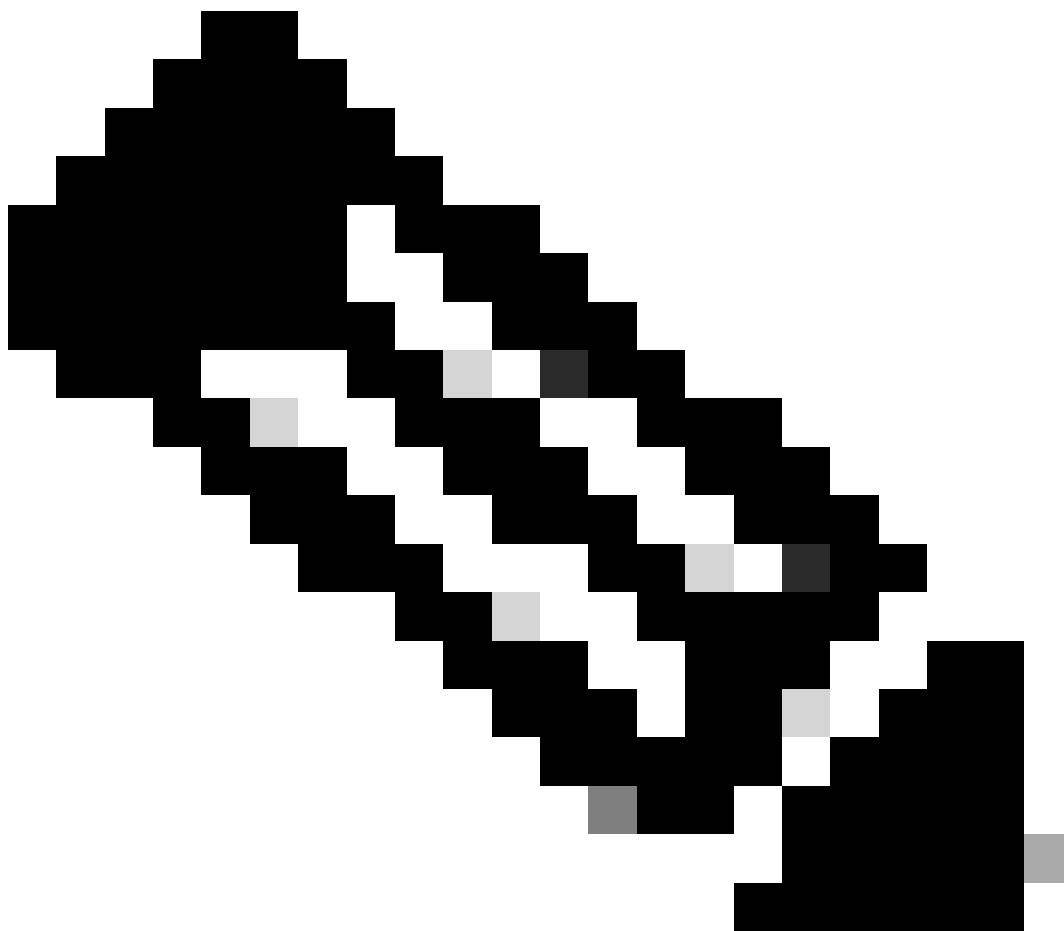
Step 2. Select the **Virtual Agent** that you created earlier.



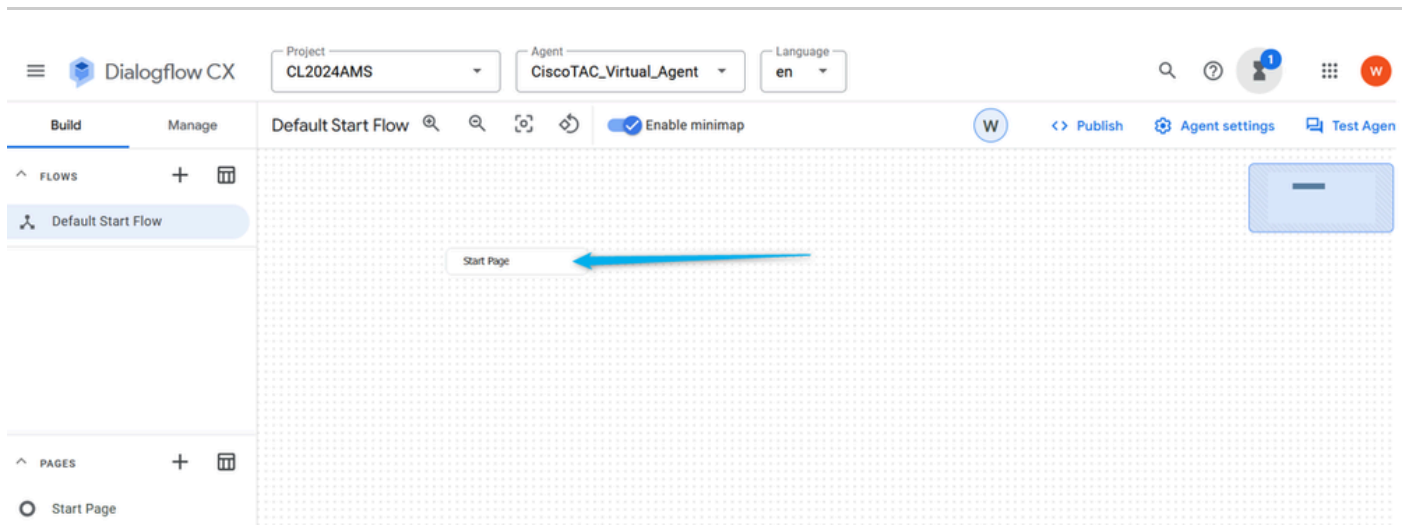
The screenshot shows the Dialogflow CX interface. At the top, there is a navigation bar with the Dialogflow CX logo, a project dropdown menu set to 'Project CL2024AMS', and utility icons. Below the navigation bar is a blue banner with the text: 'New Generative AI features are now available. Try it out and review the documentation, pricing details for FREE trial and monthly minimum charges.' with links for 'Documentation' and 'Pricing details'. The main section is titled 'Agents' and contains a 'Location' dropdown, 'Location settings' link, 'Use pre-built agents' link, and a 'Create agent' button. Below this is a search bar with the text 'Search Search agents by ID or display name'. A table lists the agents:

Display Name	Default language	Region ↑	
CiscoTAC_Virtual_Agent	en	global (Global serving, data-at-rest in US)	⋮
CL2024Ag	en	global (Global serving, data-at-rest in US)	⋮
CL2024Agent	en	us-central1 (Iowa, USA)	⋮

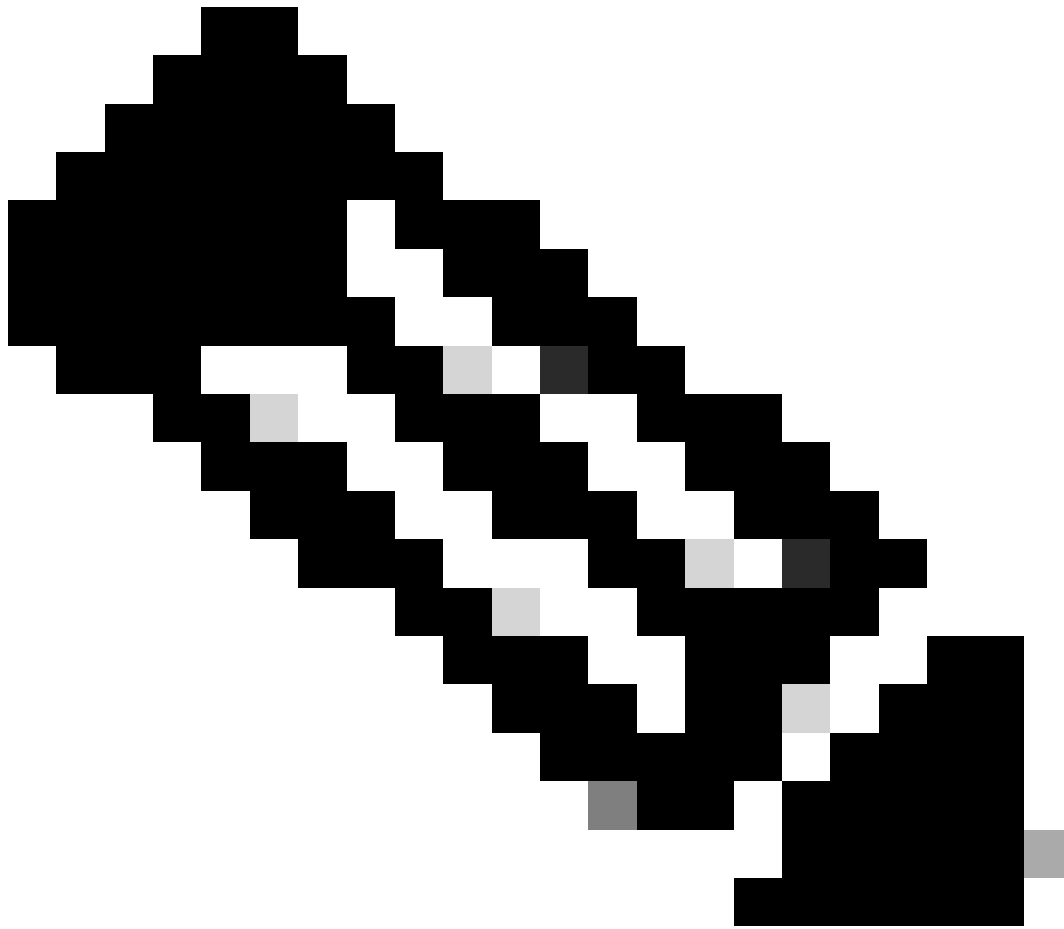
Step 3. In the Dialogflow CX builder click on the Start page.



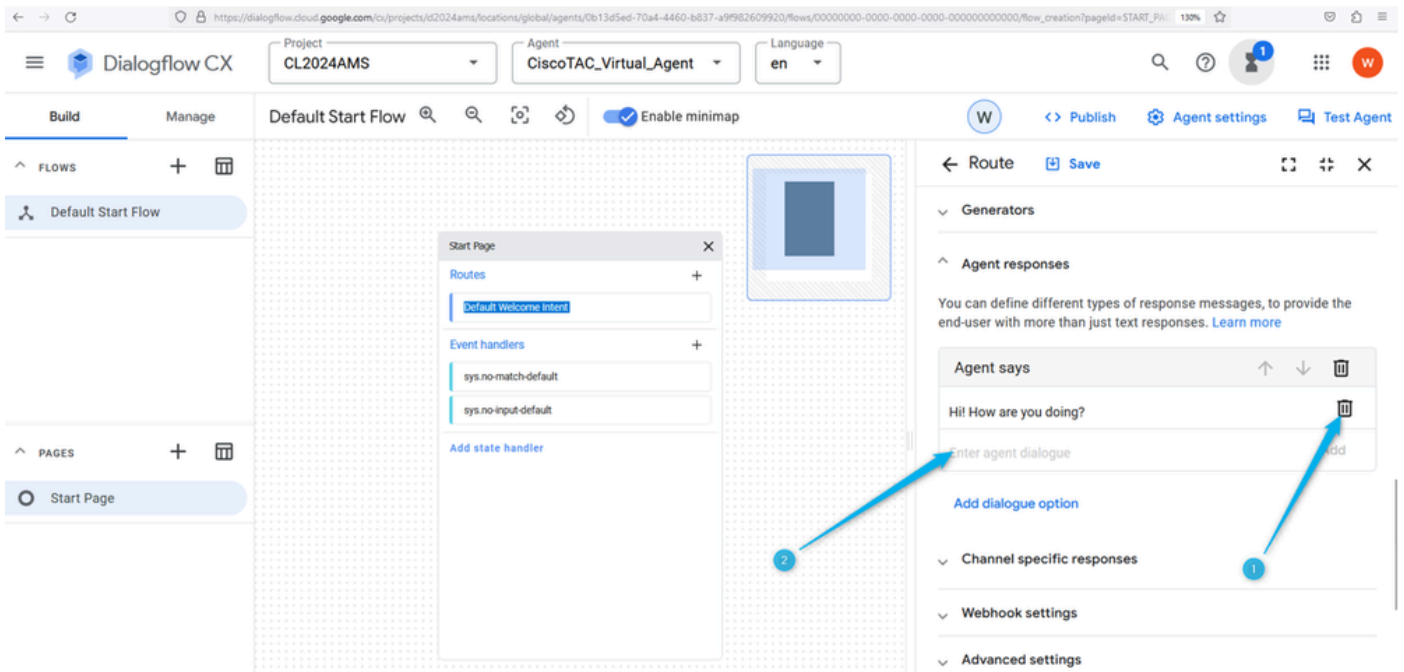
Note: In Dialogflow CX, a page is a set of instructions that holds one or more related conversational turns. It represents a single step in a conversation flow, and it can contain various types of content, including text responses, prompts for user input, fulfillment actions, and more. Pages are connected together to create a conversation flow that guides the user through a conversation with the Dialogflow CX agent.



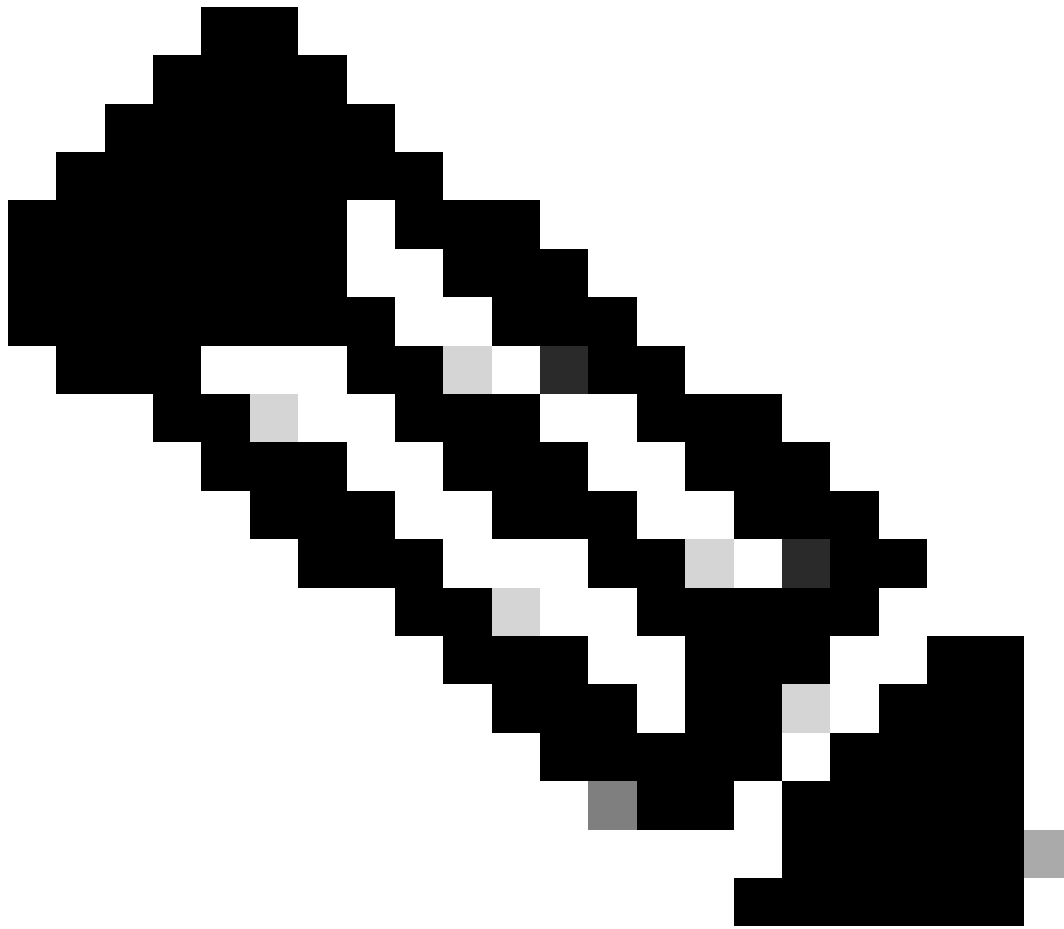
Step 4. In the **Start** page click on **Default Welcome Intent Route**. On the right window, scroll down, delete all the default Agent responses, and click on the field to **Enter** agent dialog.



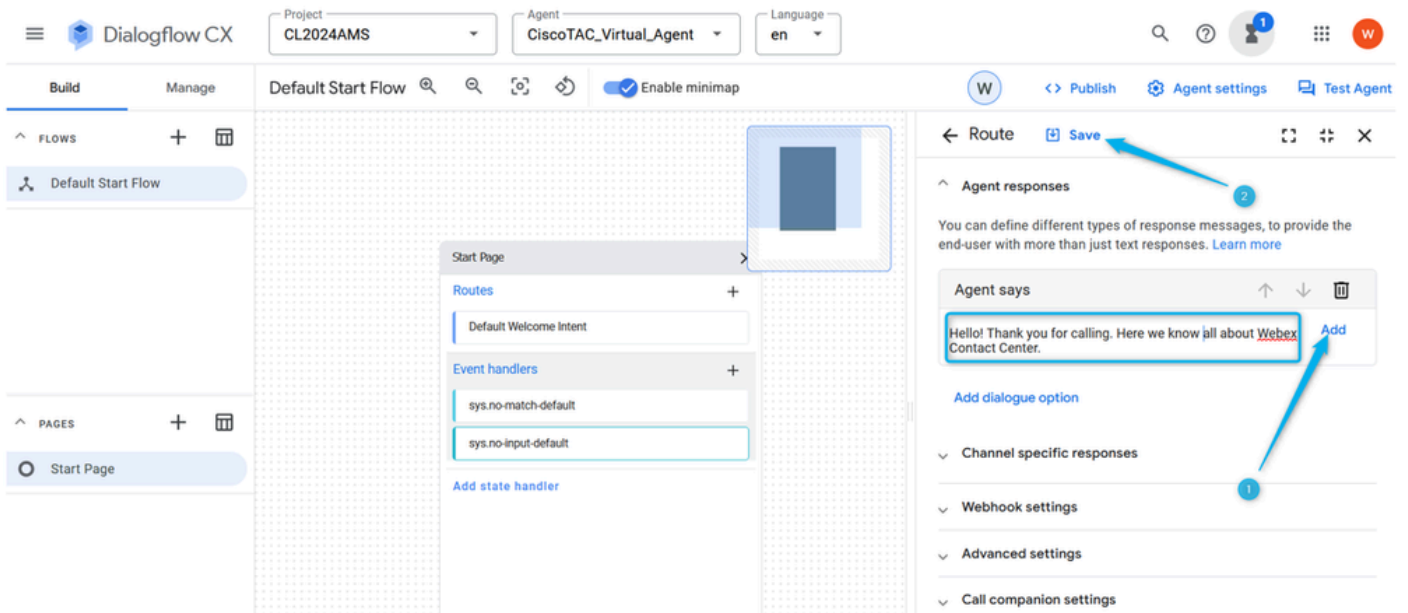
Note: A route is a mapping between an intent and a specific page or flow within a conversation. Routes define how a conversation can flow based on the user input and the intent that is matched.



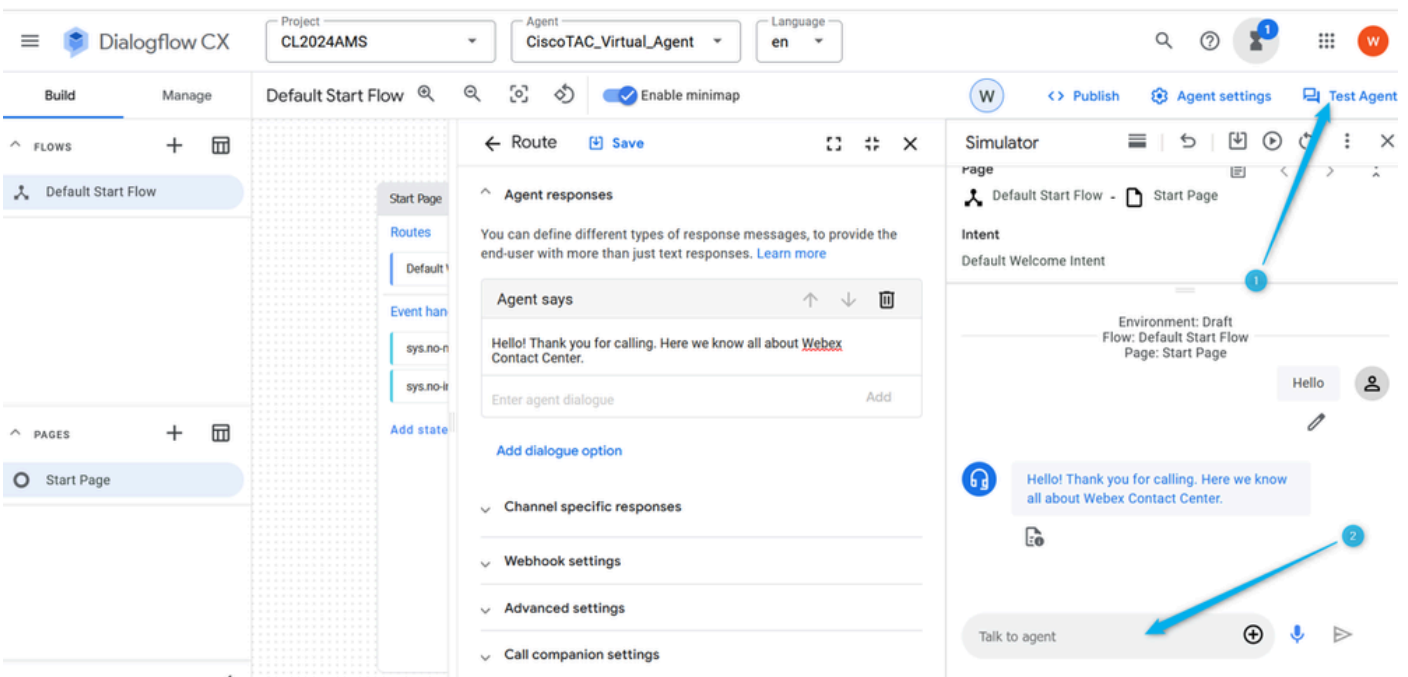
Step 5. Provide your customized message to let the caller know that they reached an organization that provides sales services of Webex Contact Center. You can type something like: Hello! Thank you for calling. Here you know all about Webex Contact Center. In Dialogflow CX, the changes are not saved automatically, so you need to save the page every time you make a change.



Note: Agent responses are the messages or actions that an agent sends back to the user or caller during a conversation. When a user or caller sends a message or makes a request to a Dialogflow CX agent, the agent analyses the input and determines the appropriate response to send back.

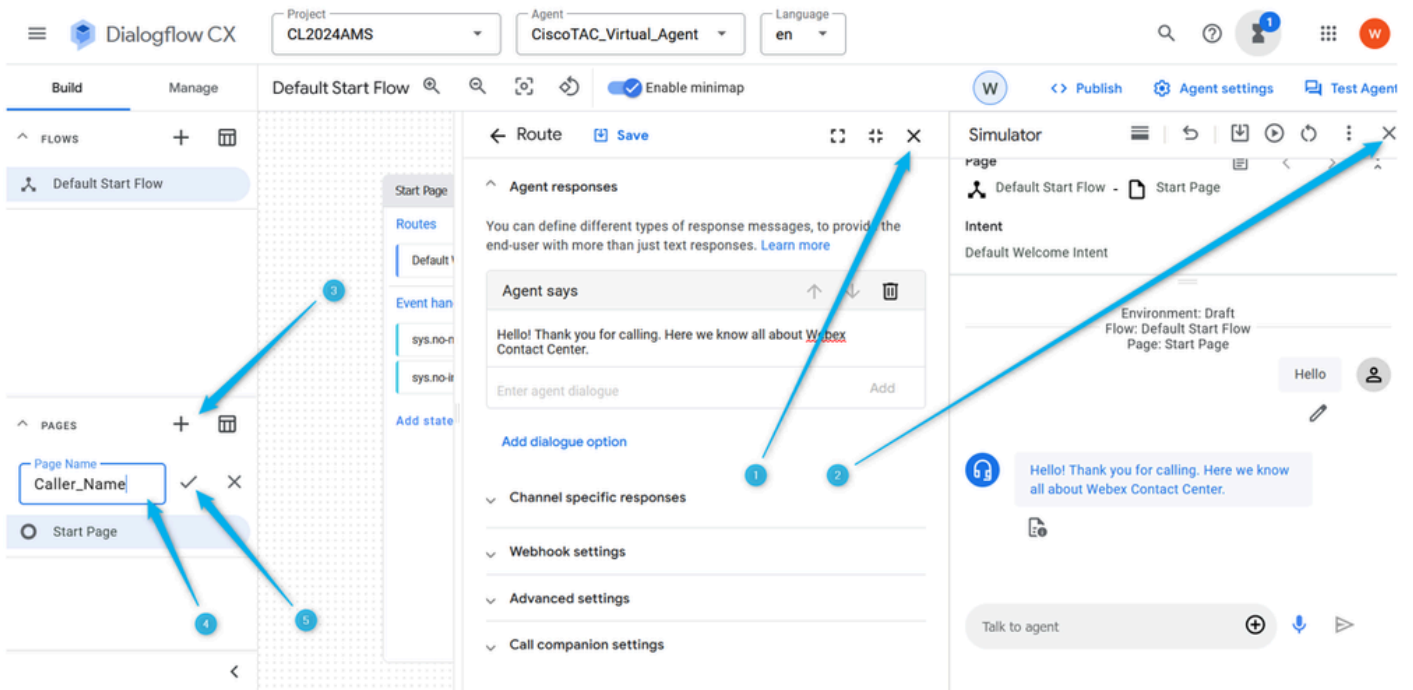


Step 6. Test the agent response that you just created. Click **Test Agent** and type a greeting message such as Hello.

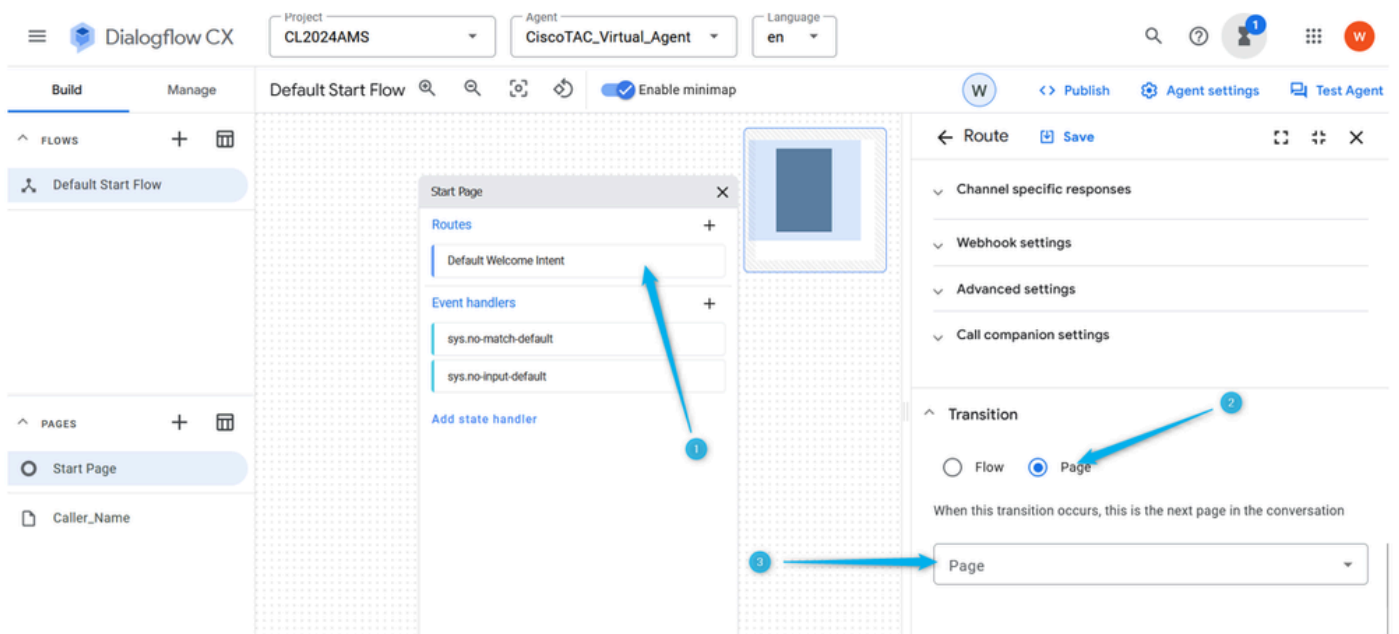


Task 2. Create new page to collect the caller name

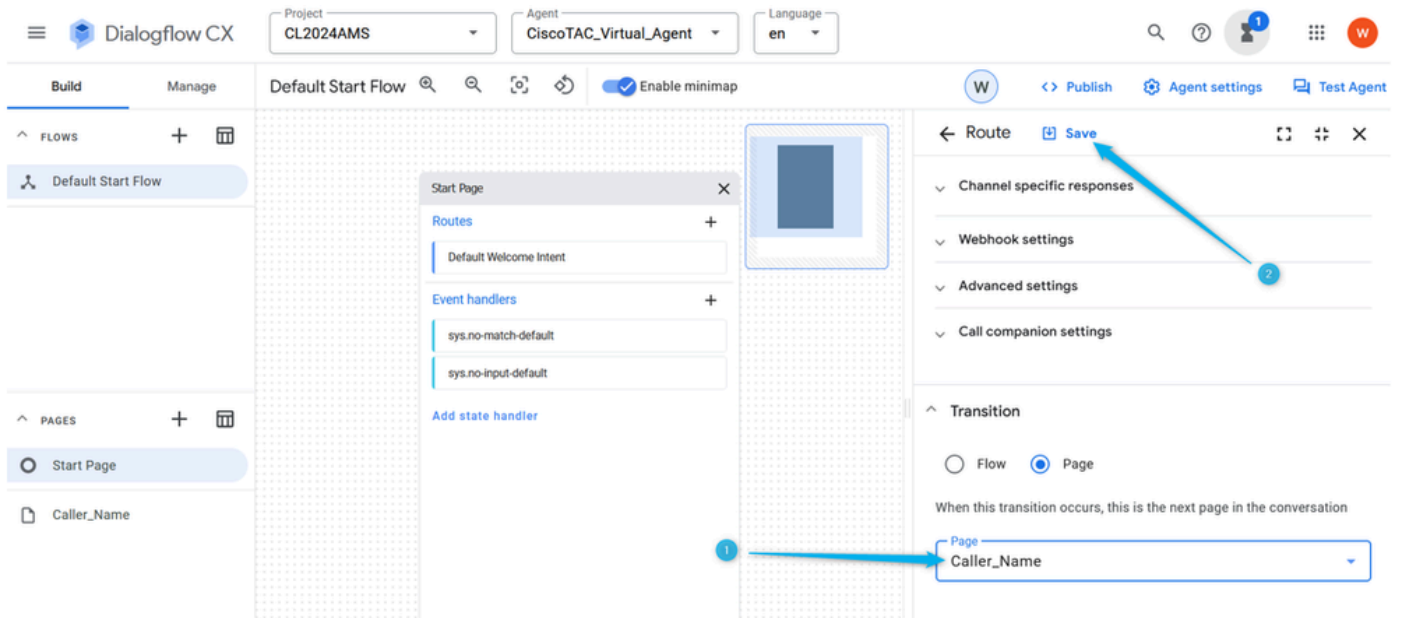
Step 1. Close the **Start** page and **Test Agent** windows and click the plus icon (+) to create a new page. Name the page **Caller_Name** and confirm the creation.



Step 2. Connect the **Start** page and **Caller_Name** page. For this, click the **Default Welcome Intent** route on the **Start** page. Scroll down on the right side and select that you would like the conversation to go to the next page.



Step 3. From the drop-down list, select **Caller_Name** page. Do not forget to **Save** the change.



Step 4. Configure the **Caller_Name** page to collect the name from the caller and store it in the parameter. In the **Caller_Name** page click **Entry Fulfillment** and type message in which you ask the caller name. Click **Add** and **Save** the change.



Note: Entry Fulfillment is needed to provide a message to the caller once the call is moved to a new page to let the caller know where they are in the conversation and set the right expectations.

The screenshot displays the Dialogflow CX interface for configuring a page. The top navigation bar shows the project 'CL2024AMS' and agent 'CiscoTAC_Virtual_Agent'. The left sidebar has 'Build' and 'Manage' tabs. The main workspace is titled 'Default Start Flow' and contains a 'Caller_Name' page. The 'Caller_Name' page configuration is shown in the center, with a 'Parameters' field highlighted by a red box and a red arrow labeled '1'. The 'Fulfillment' panel on the right shows an 'Agent says' response with the text 'Please let me know what is your name.' and an 'Add' button, also highlighted by a red arrow labeled '3'. A red arrow labeled '2' points to the 'Parameters' field in the editor, and another red arrow labeled '4' points to the 'Save' button in the fulfillment panel.

Step 5. While on the **Caller_Name** page, click on **Parameters**, type **Name** as the parameter's name, select **sys.any** from the list of preconfigured Entities, and click on **Save**.



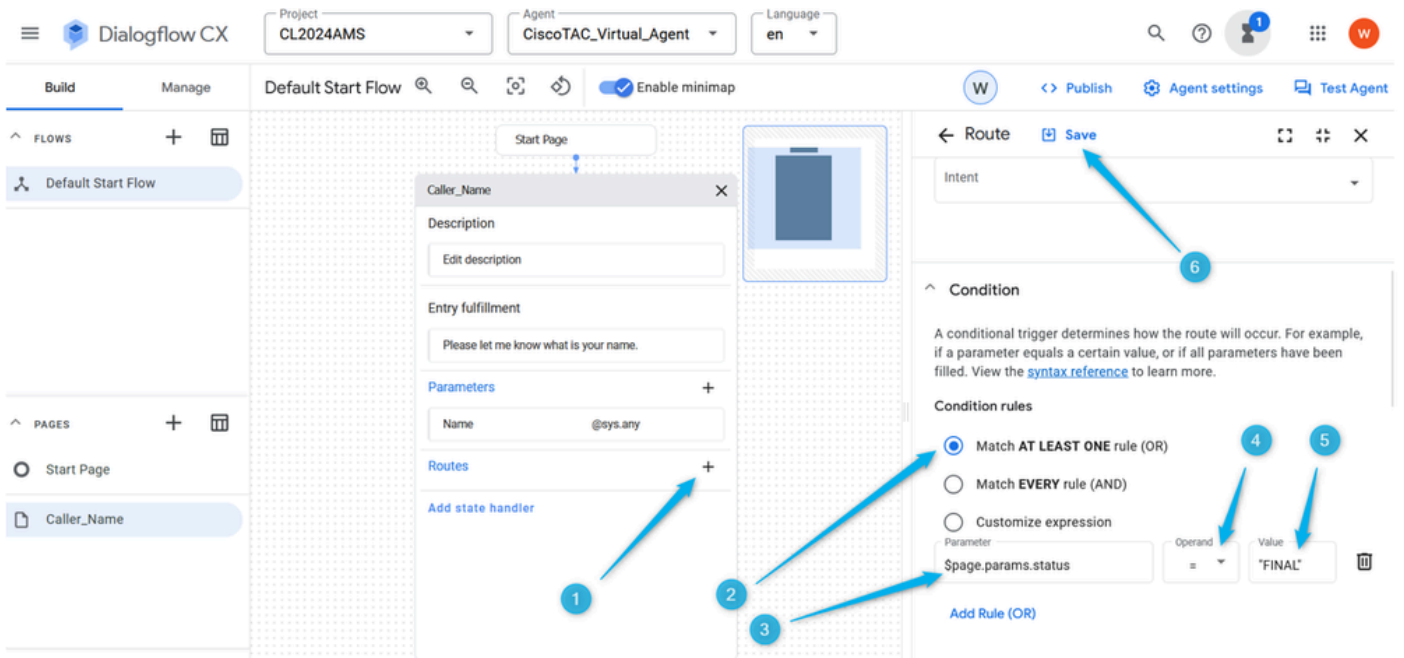
Note: A **Parameter** is a named entity or value that is extracted from user input during a conversation. Parameters can be used to store information that is relevant to the user request, such as their name, date of birth, or preferred language. Parameters can also be used to pass data to other parts of your application such as Contact Center.

The screenshot shows the Dialogflow CX interface for configuring a parameter. The top navigation bar includes the project name 'CL2024AMS', the agent 'CiscoTAC_Virtual_Agent', and the language 'en'. The main workspace is divided into three sections: a left sidebar with 'Default Start Flow' and 'Caller_Name' pages, a central canvas showing the 'Caller_Name' page with a 'Start Page' and a 'Name' parameter, and a right-hand configuration panel for the 'Name' parameter. The configuration panel includes fields for 'Name', 'Entity type' (set to '@sys.any'), and 'Required' (checked). A 'Save' button is visible at the top of the configuration panel. Four blue arrows with numbers 1, 2, 3, and 4 point to the 'Parameters' section, the 'Name' field, the 'Entity type' dropdown, and the 'Save' button respectively.

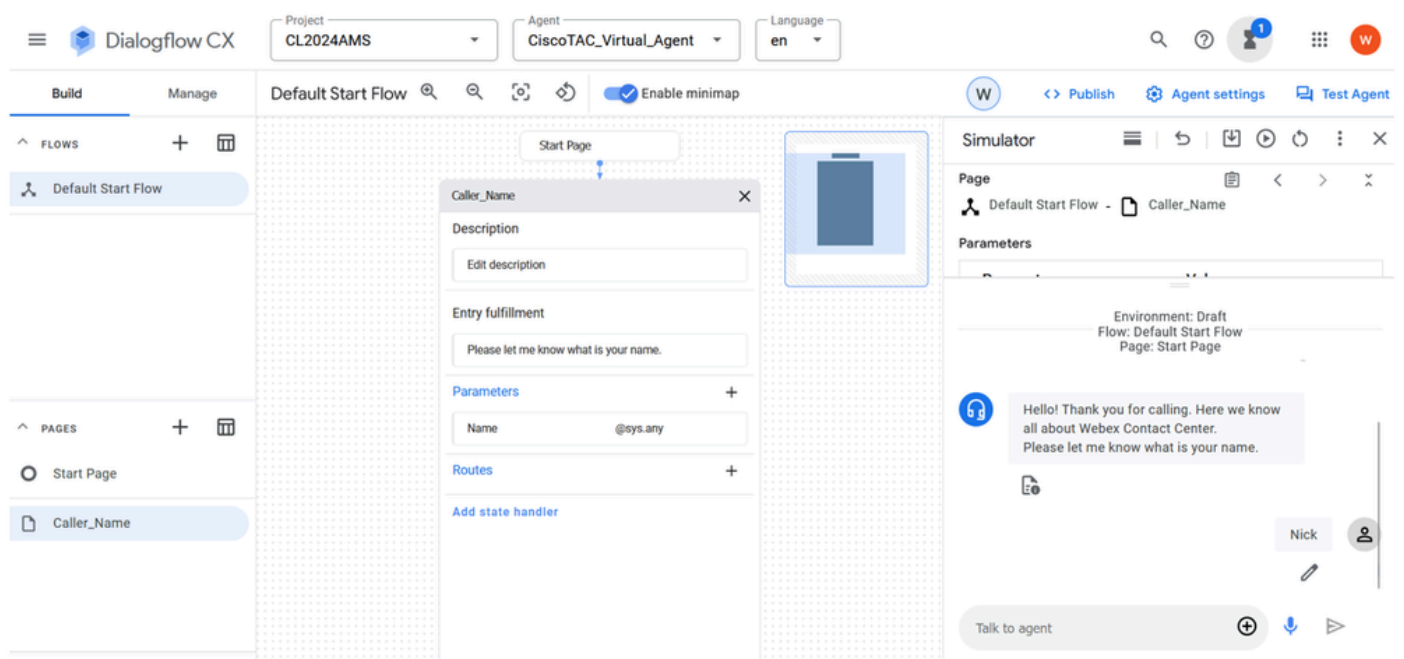
Step 6. Configure **Routes** in the **Caller_Name** page. Click **Route**, on the right window scroll down to **Condition** and set the condition `$page.params.status = "FINAL"`. Click **Save**. By setting this condition, you can expect the call to move to the next page once the **Name** parameter which you created in the previous step is filled with a value. For example, if the caller says Nick then the call can move forward.



Note: A **Condition** in the Dialogflow Routes configuration is a rule or set of rules that define when the route must be triggered. The **Condition** can be based on various factors such as user input, context, parameters, and session data.

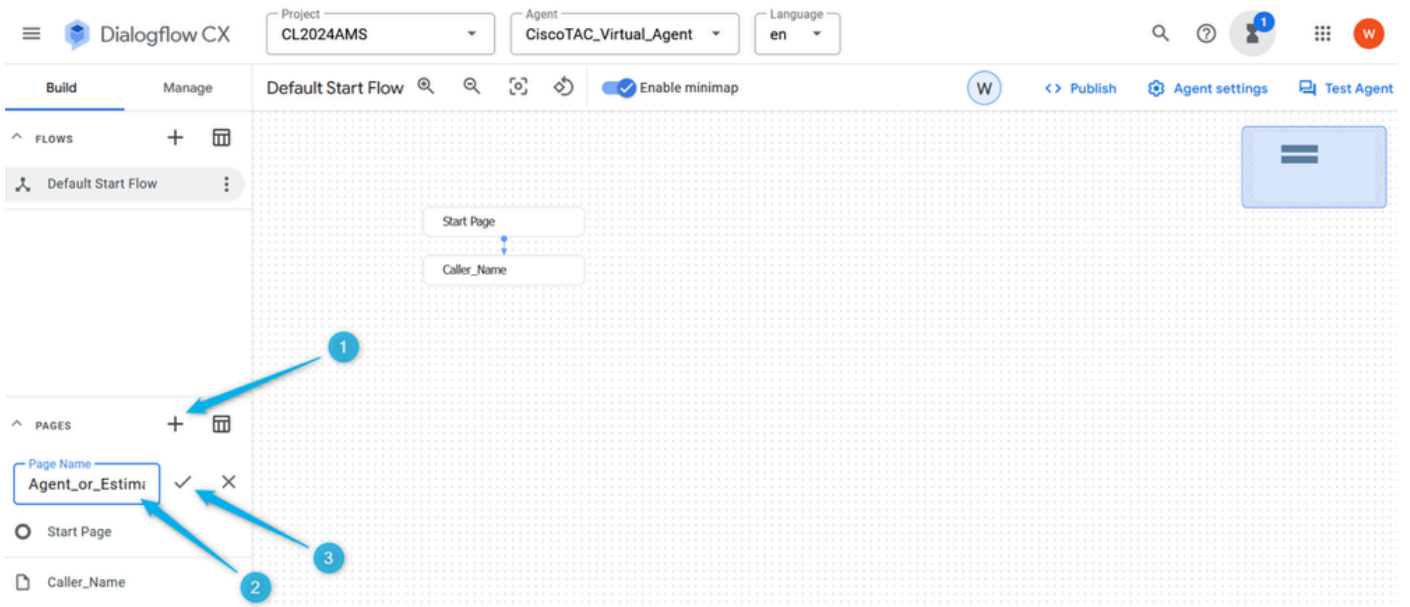


Step 7. Using the **Test Agent** option on the right top side, test if the flow is working as designed at this point.



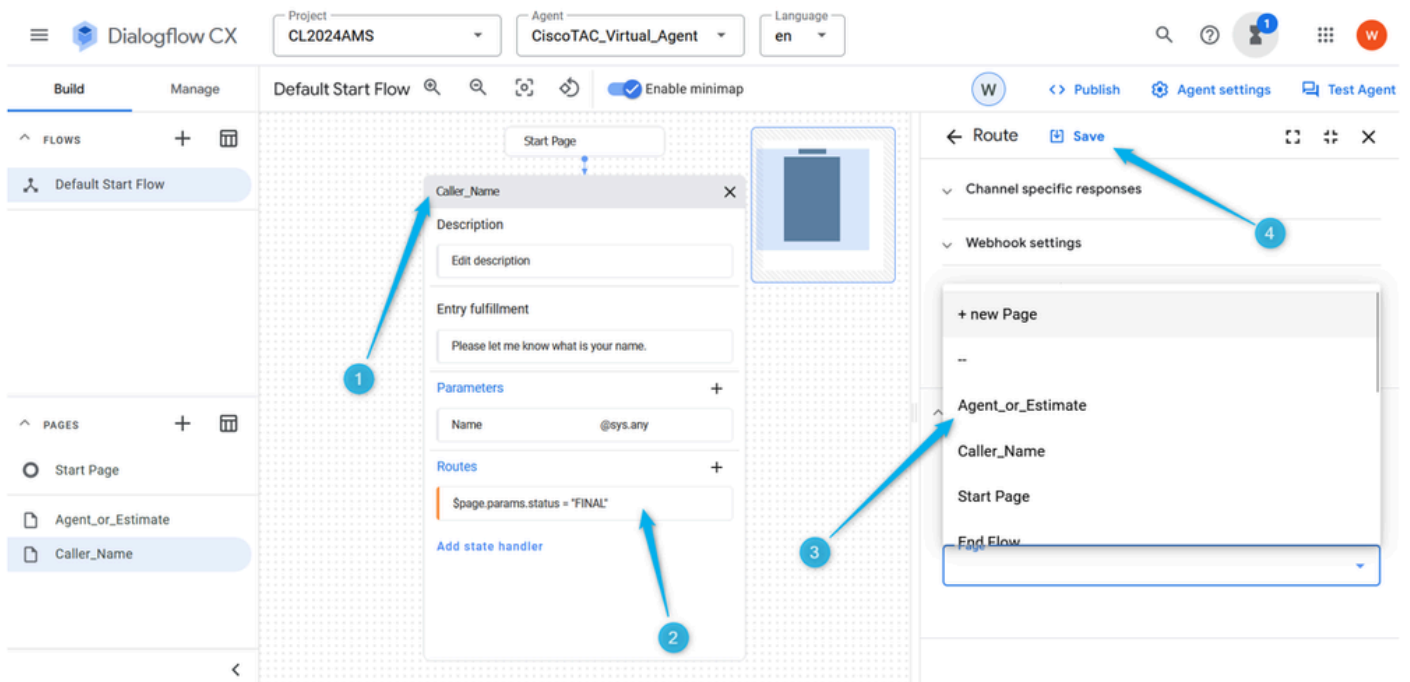
Task 3. Create new page **Agent_or_Estimate** and connect it with the **Caller_Name** page.

Step 1. On the left bottom side, click to add a new page, name it **Agent_or_Estimate**, and confirm the creation.



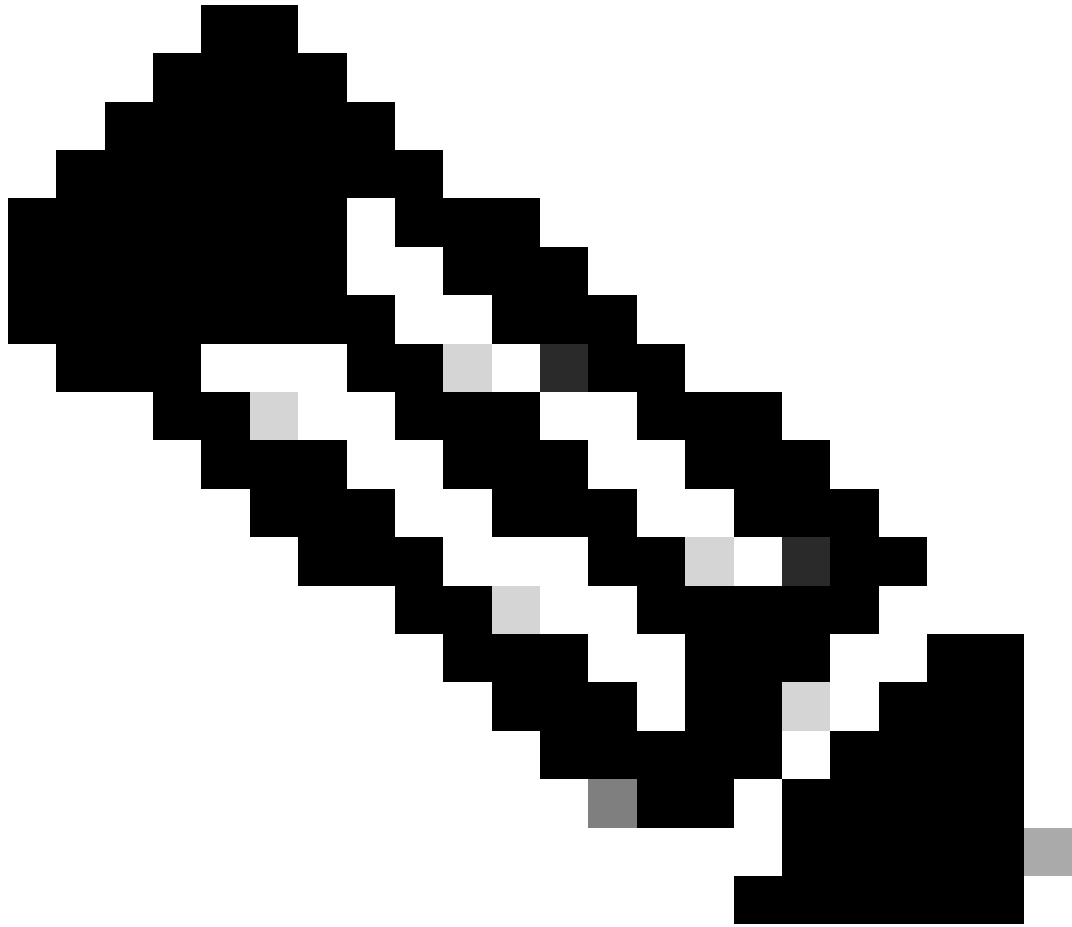
Step 2. Connect **Caller_Name** and **Agent_or_Estimate** pages. Open the **Caller_Name** page, and select the route that you created in the previous step, on the right side scroll down and select the page **Agent_or_Estimate**. Do not forget to **Save** the change.

Remember in Task 2 of this section you configured the condition that once the parameter is filled it triggers an action. By selecting the next page you specify what action it is, in this example the call moves to the page **Agent_or_Estimate**.

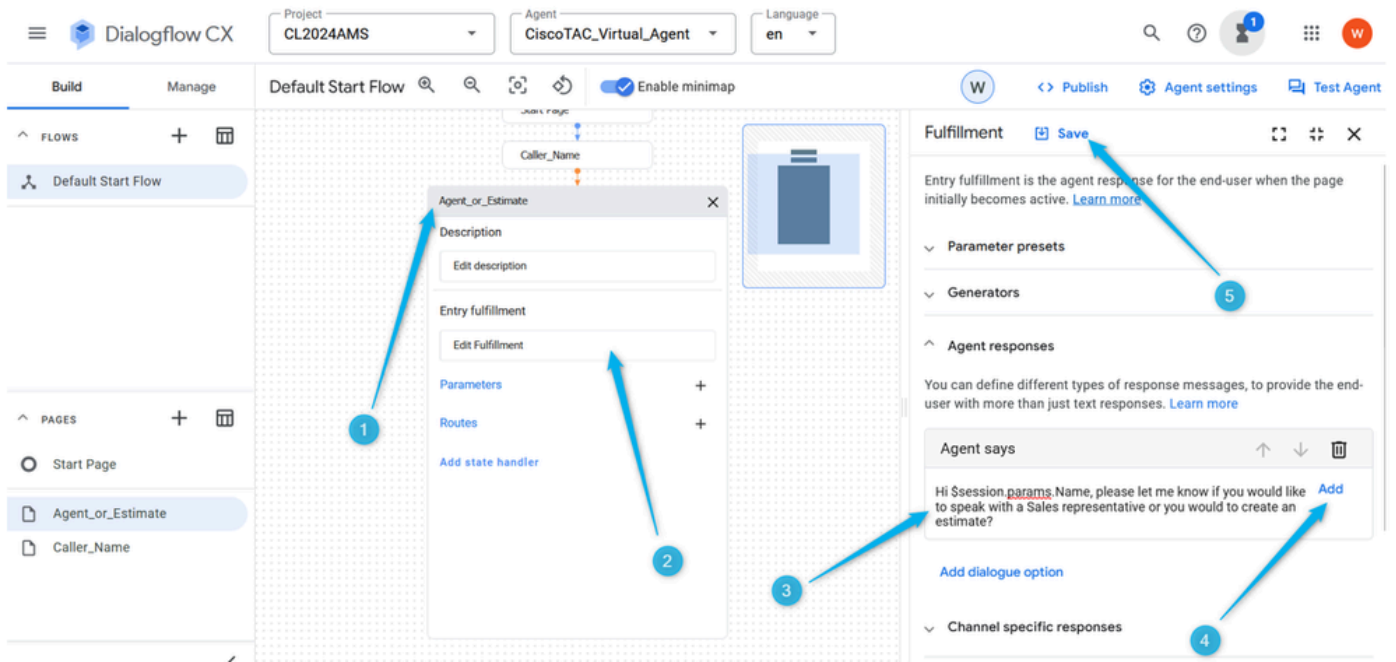


Step 3. Configure **Entry Fulfillment** for **Agent_or_Estimate** page. Open up **Agent_or_Estimate** page, and click **Entry Fulfillment**. In the Agent response type: Hi \$session.params.Name, please let me know if you would like to speak with an agent or if you would to create an estimate?

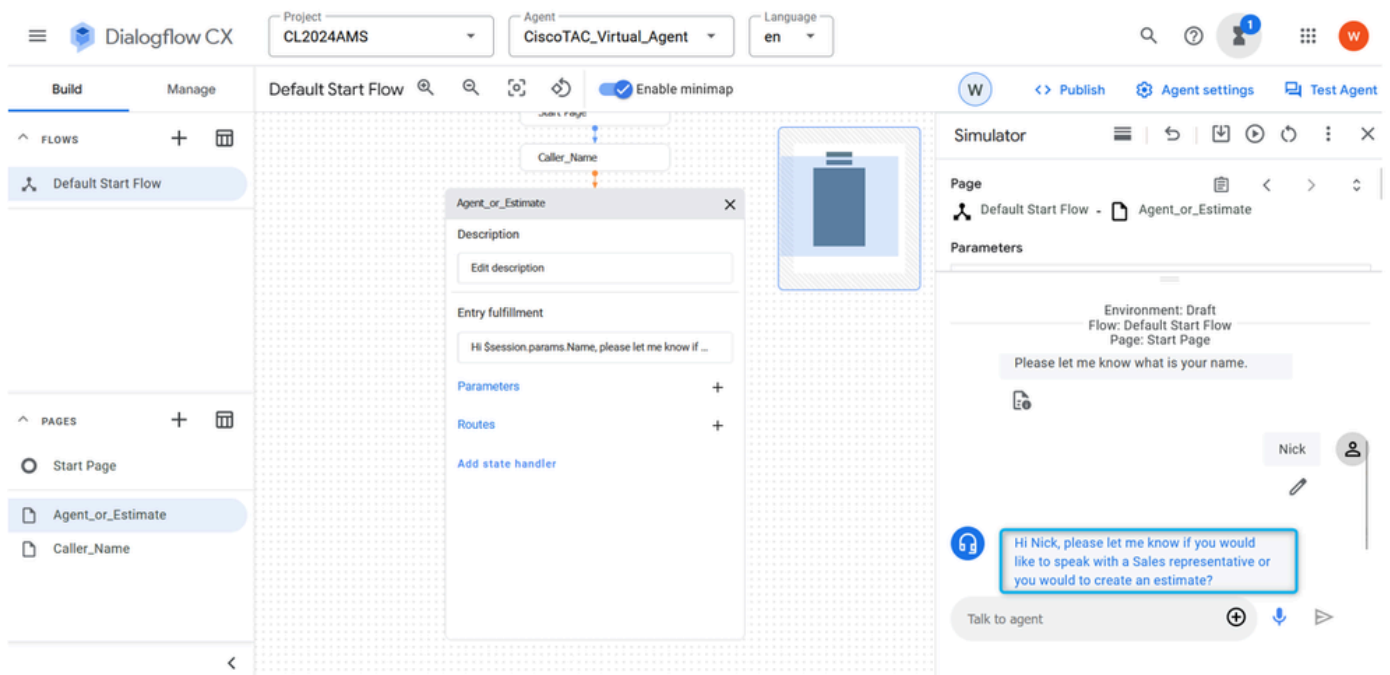
Do not forget to **Save** the change.



Note: If you cannot copy and paste the suggested fulfillment just start typing in the **Agent Response** field, then you can paste the text, then delete unnecessary text.



Step 4. Test if the conversation flow is configured properly at this point. Click **Test Agent** and in the **Talk to Agent** field type Hello and then type your name.

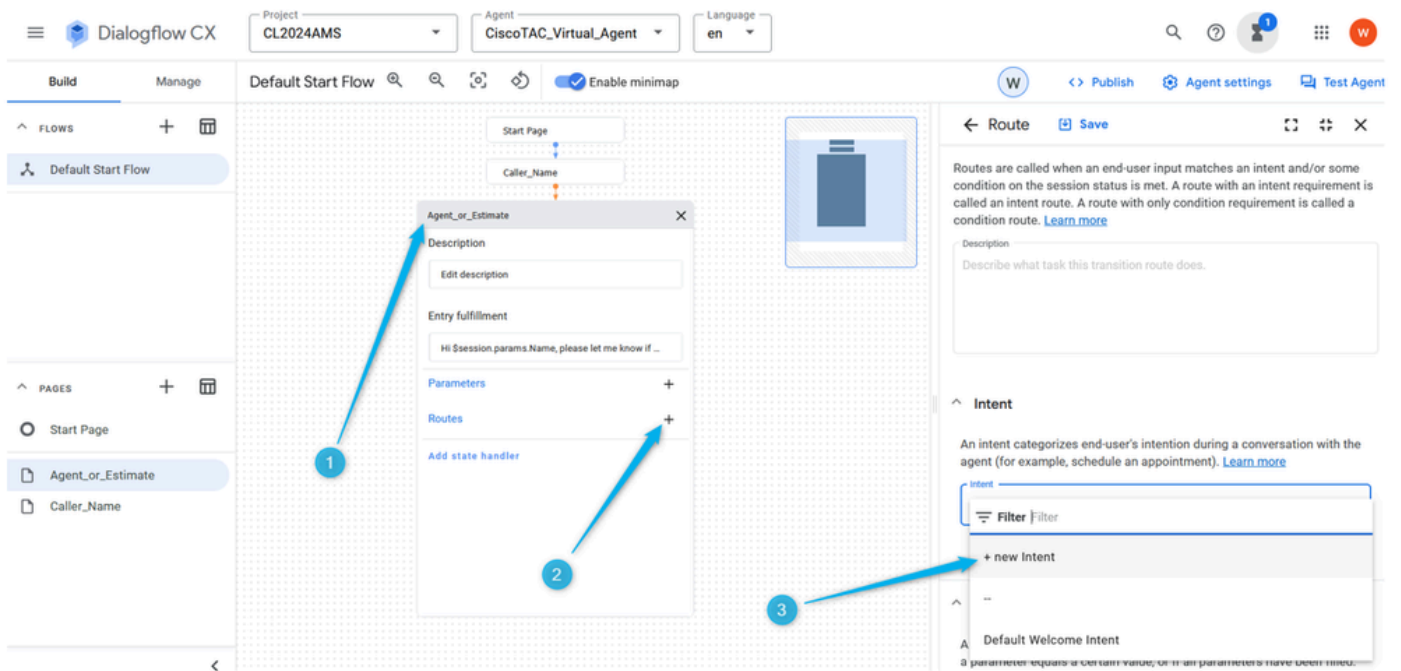


Task 4. Configure Route in Agent_or_Estimate page to move the call to new page What_Kind_Of_Agent.

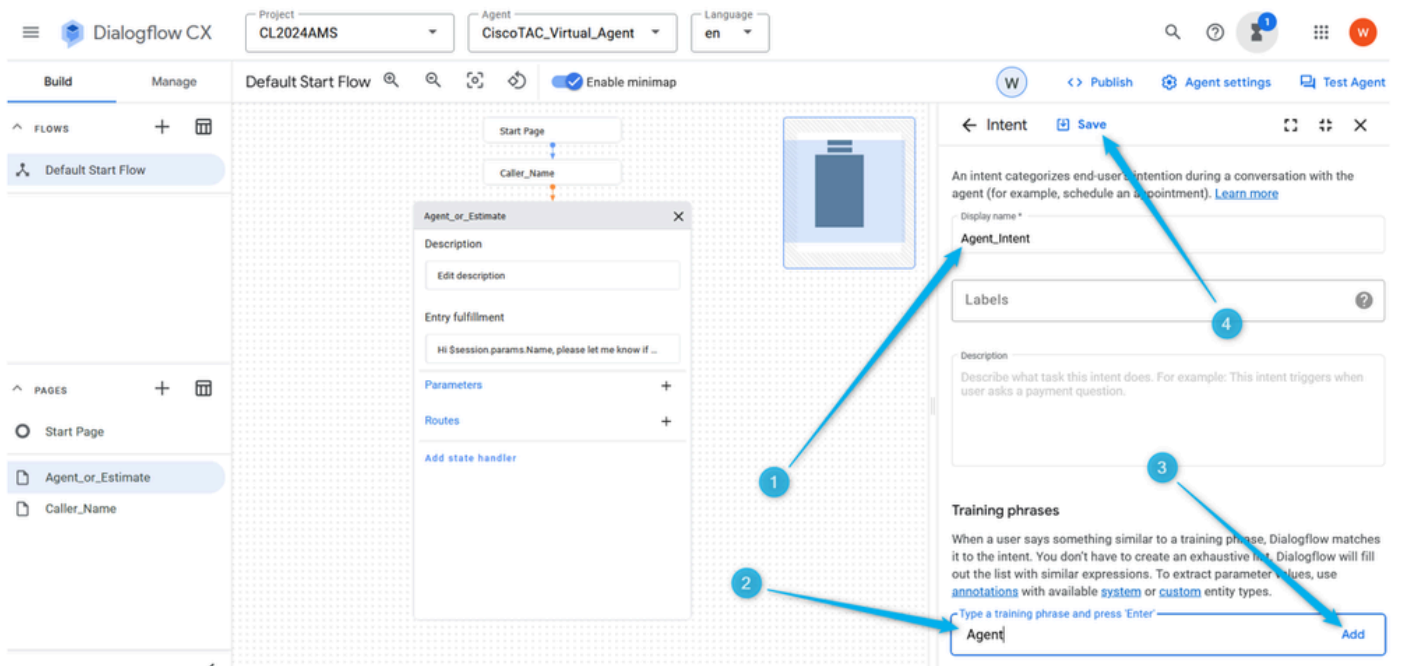
Step 1. Open up the **Agent_or_Estimate** page, click on **Create New Route**, and then click on **Create New Intent**.



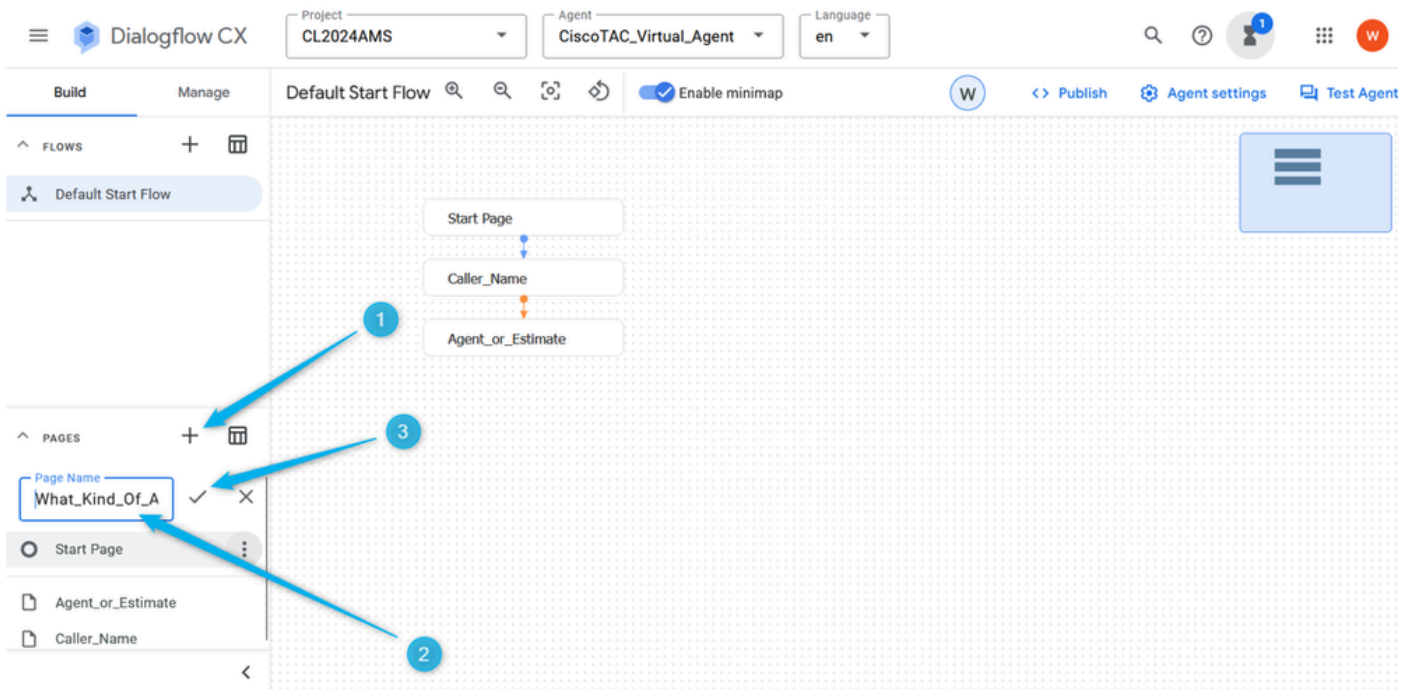
Note: An intent is a mapping between what a user says or types and a specific action or response that the conversational agent can take. Intents help the agent understand the user request and determine the appropriate response or action to take.



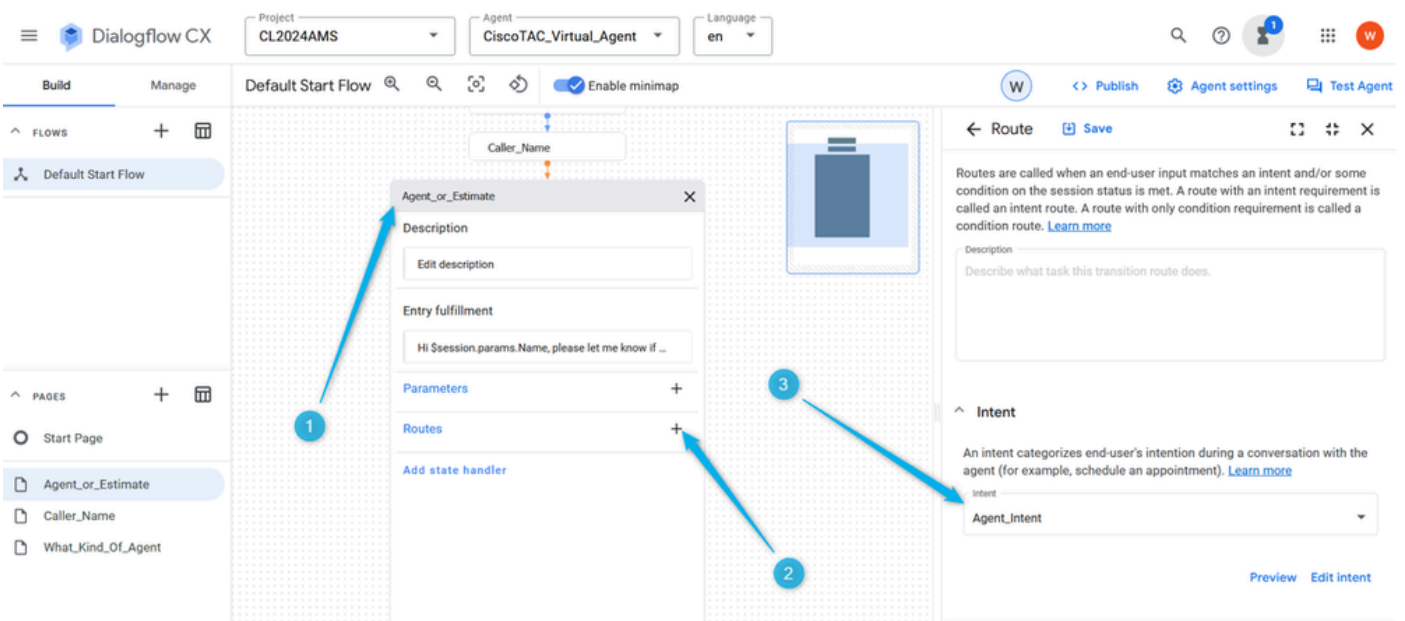
Step 2. Name the **Intent Agent_intent**. Provide 3-5 training phrases, something like agent, representative, escalate, real person. Do not forget to save the change of the page.



Step 3. Create new page and name it **What_Kind_Of_Agent**.



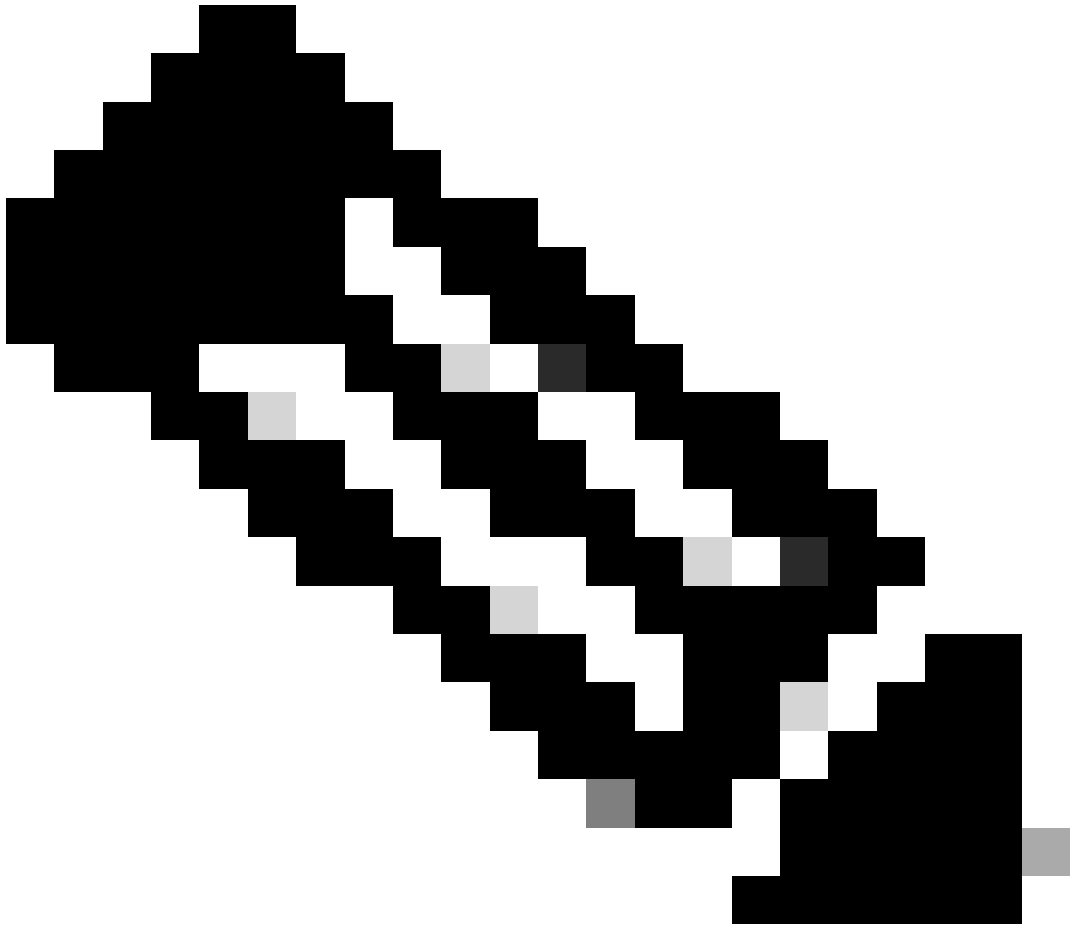
Step 4. Click on **Agent_or_Estimate** page. Add a new **Route**, select the **Intent**.



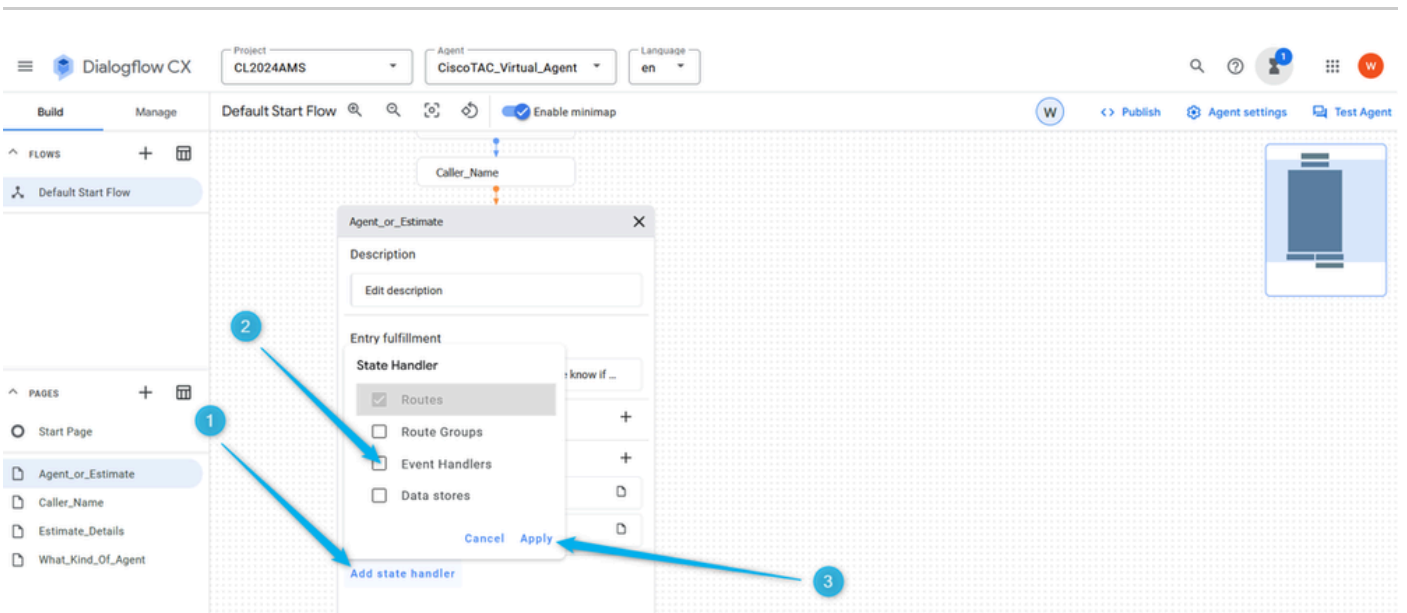
Step 5. On the **Routes** settings scroll down and select action to move the call to the page **What_Kind_Of_Agent**.

The screenshot displays the Dialogflow CX console interface. At the top, the project is identified as 'CL2024AMS' and the agent as 'CiscoTAC_Virtual_Agent'. The main workspace shows a flow diagram with a state handler configuration window for the 'Agent_or_Estimate' page. The configuration window includes fields for 'Description', 'Entry fulfillment', 'Parameters', 'Routes', and 'Add state handler'. The 'Add state handler' button is highlighted with a red callout '1'. The right sidebar shows the 'Route' configuration panel, which includes options for 'Add dialogue option', 'Channel specific responses', 'Webhook settings', 'Advanced settings', and 'Call companion settings'. The 'Transition' section is expanded, showing 'Flow' and 'Page' options, with 'Page' selected. The 'Page' dropdown menu is set to 'What_Kind_Of_Agent'. The 'Save' button in the top right of the route configuration panel is highlighted with a red callout '2'.

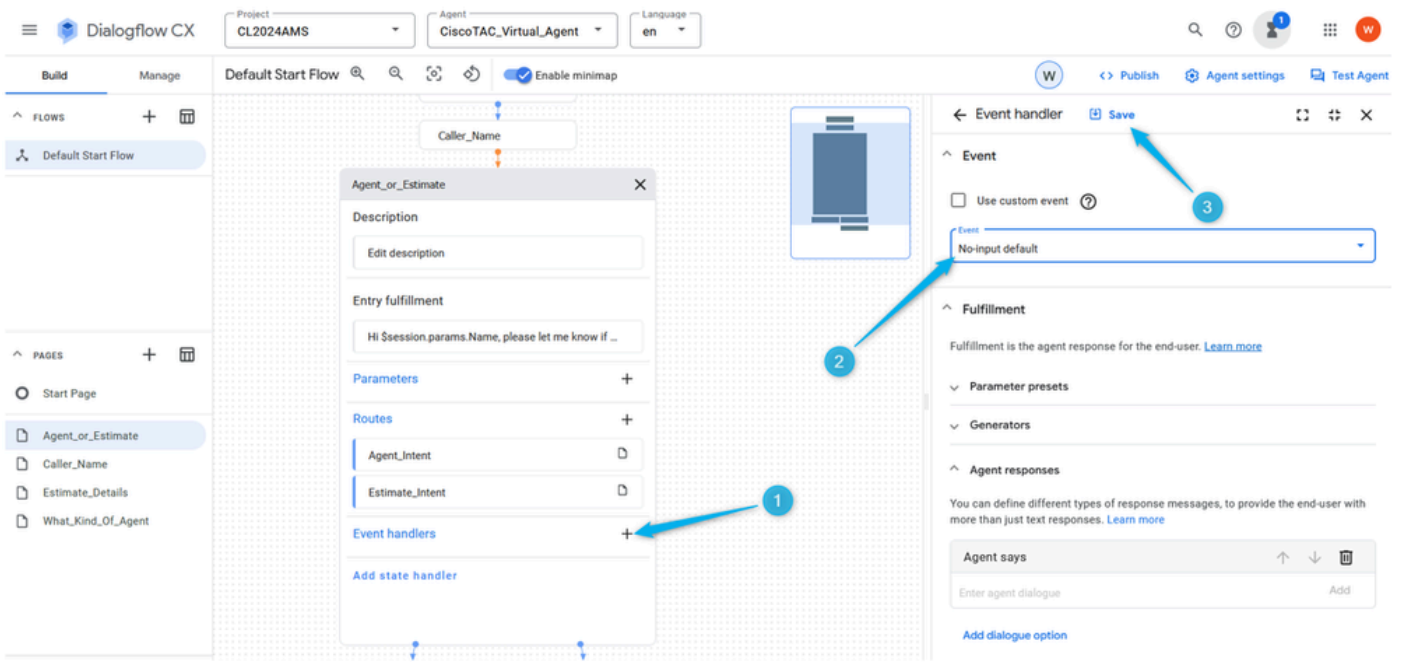
Step 6. For a better communication experience you need to add no-input-default **Event handlers** otherwise the system detects no input even before you have a chance to provide input. While on the **Agent_or_Estimate** page, click on **Add state handler**, select **Event handlers**, and click on **Apply**.



Note: An **Event handlers** is a type of intent that is triggered when a specific event occurs. For example, if the **Virtual Agent** does not receive any input or it does not recognize the input, the event handler is used to trigger no-input intent which helps to continue the conversation.

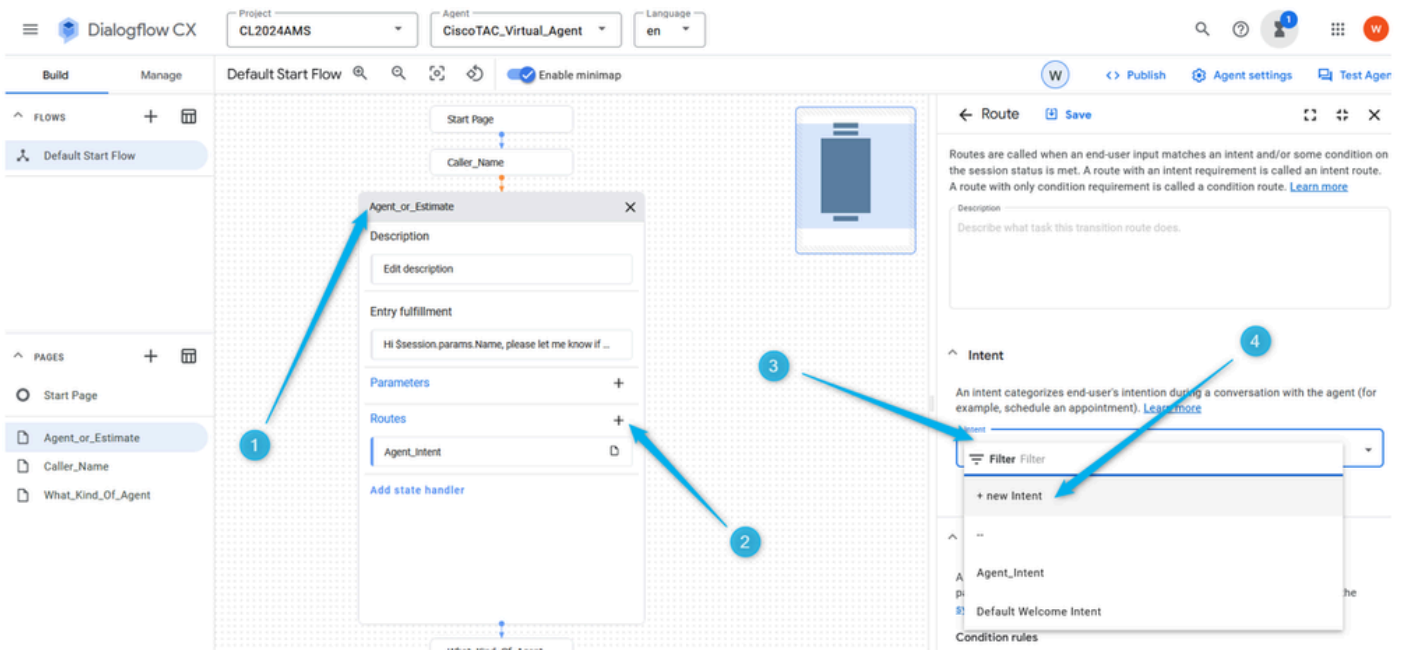


Step 7. Click on **Add New Event handlers**, select from the **No-input default** list and save the change.

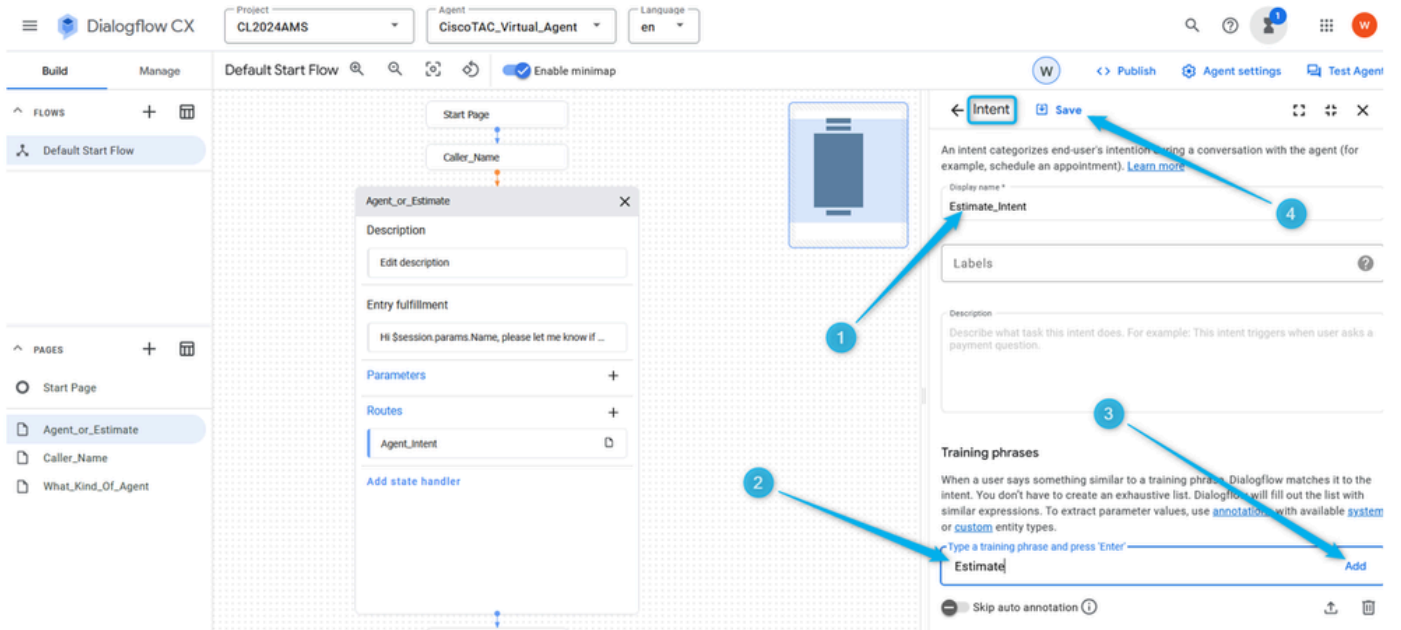


Task 5. Configure Route for Estimate branch and Connect Agent_or_Estimate to new page Estimate_Details

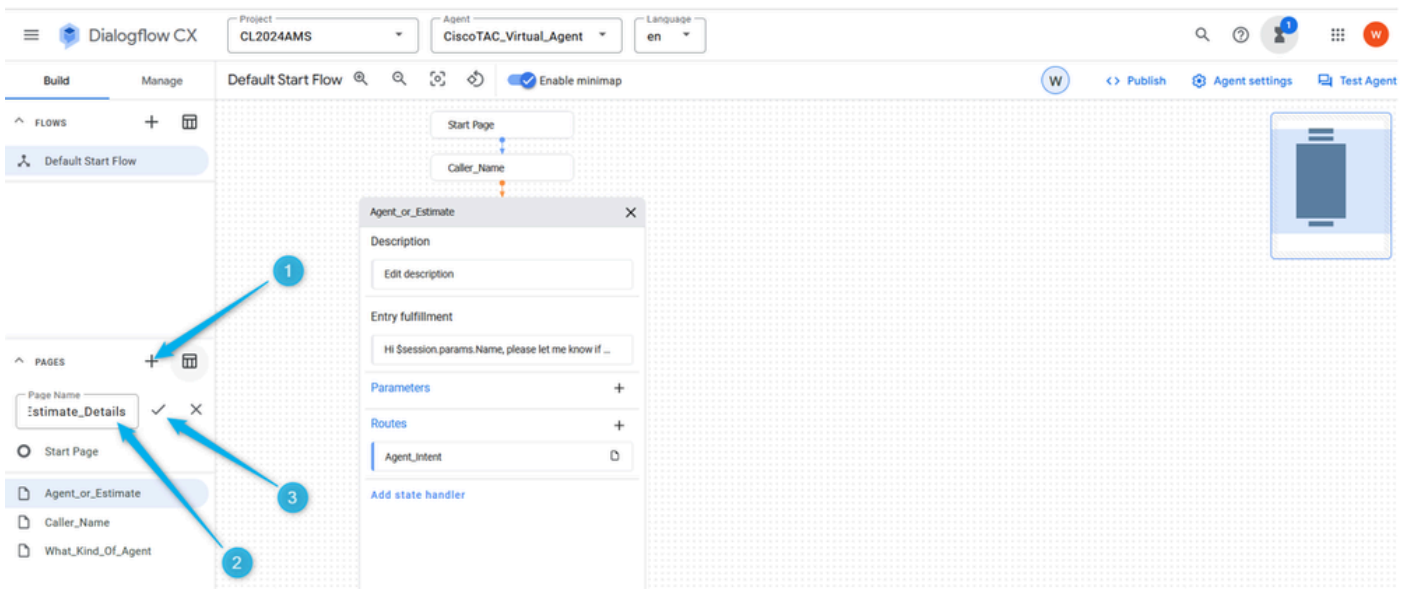
Step 1. Create **Estimate_Intent**. While on **Agent_or_Estimate** page click the plus icon (+) to add new **Route** and create new **Intent**.



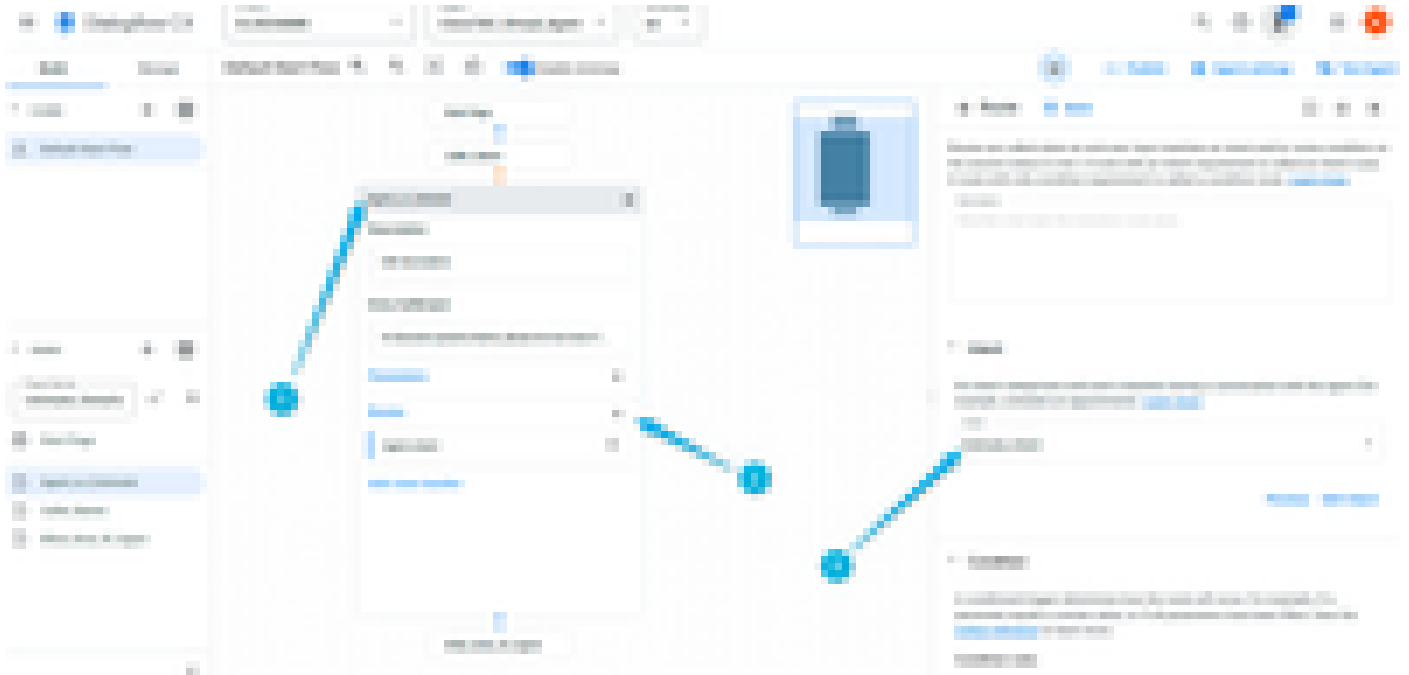
Step 2. Name the intent as **Estimate_Intent** and provide some training phrases. As for the training phrases you can add statements like estimate, price calculation, I need to know how much it cost. Save the intent.



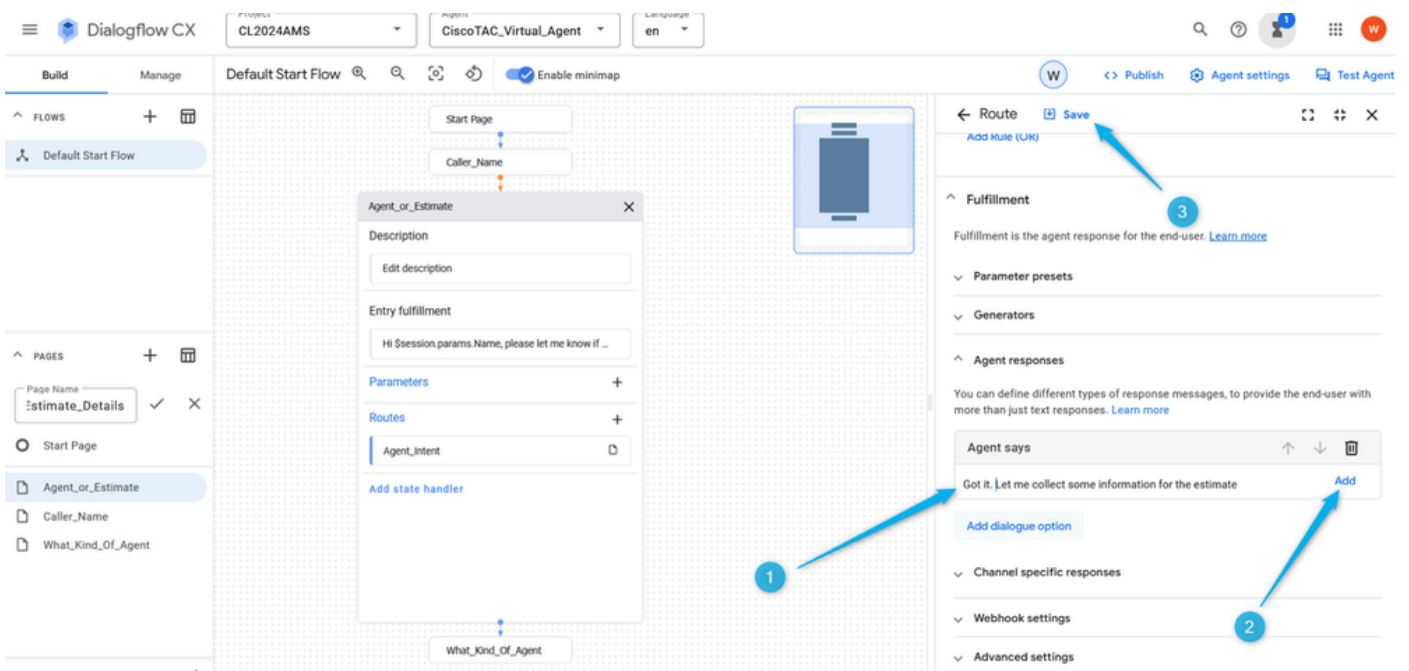
Step 3. Create new page with the name **Estimate_Details**. Connect **Agent_or_Estimate** and **Estimate_Details** pages when **Estimate_Intent** is triggered.



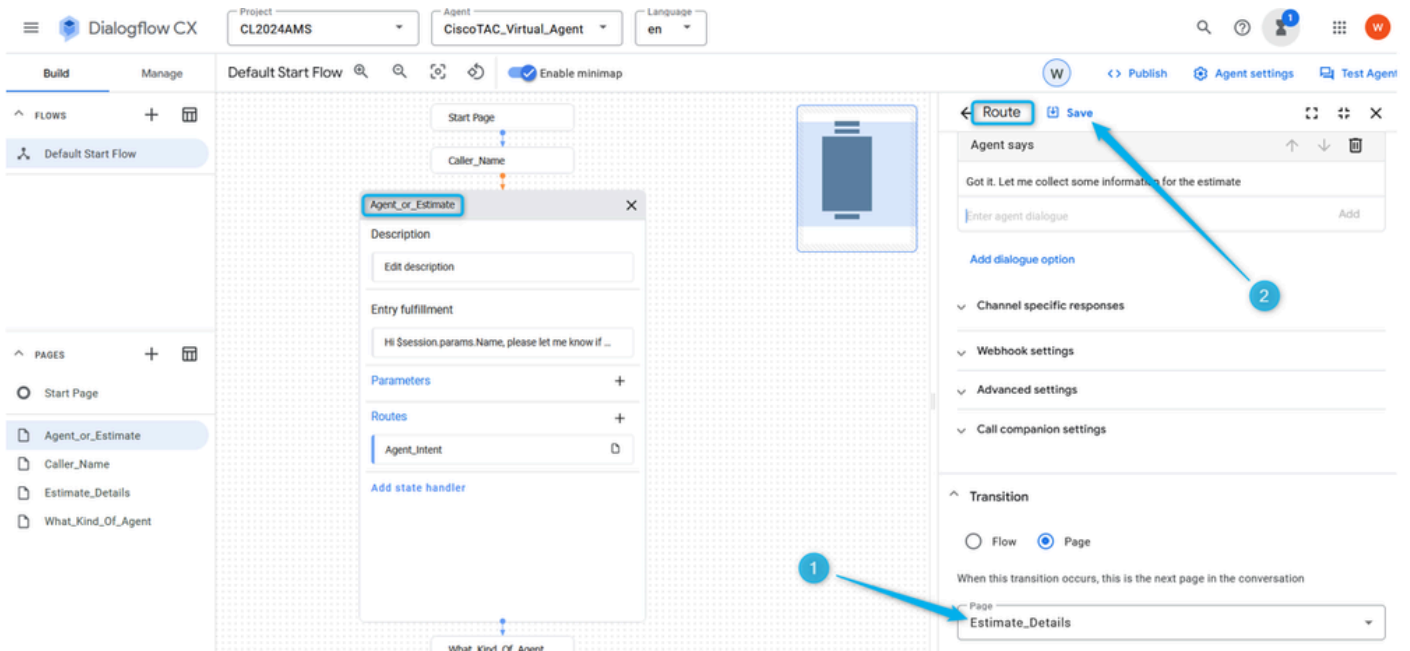
Step 4. Click the **Agent_or_Estimate** page. Add new **Route**, and select the **Intent Estimate_Intent**.



Step 5. Scroll a bit down and add the agent response that the caller hears once the **Estimate_Intent** is triggered. You can type something like, let me collect some information for the estimate.

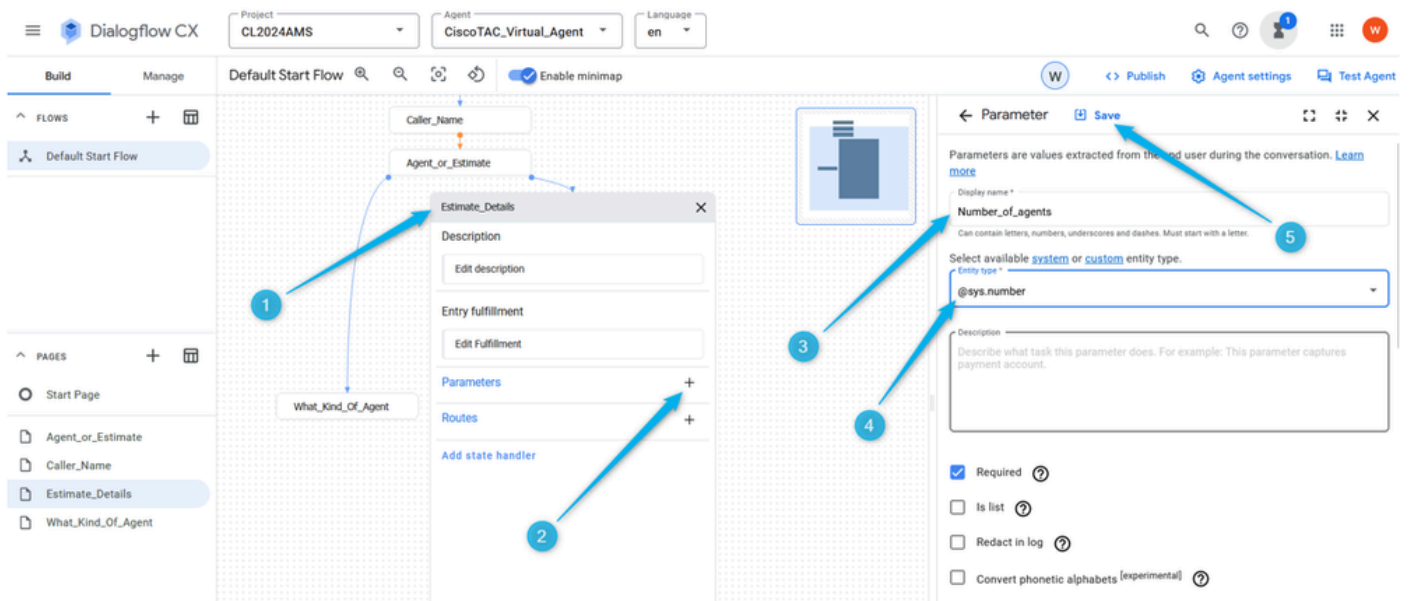


Step 6. Scroll all the way down and select the transaction to the page **Estimate_Details** once the intent is triggered. Save the page configuration.

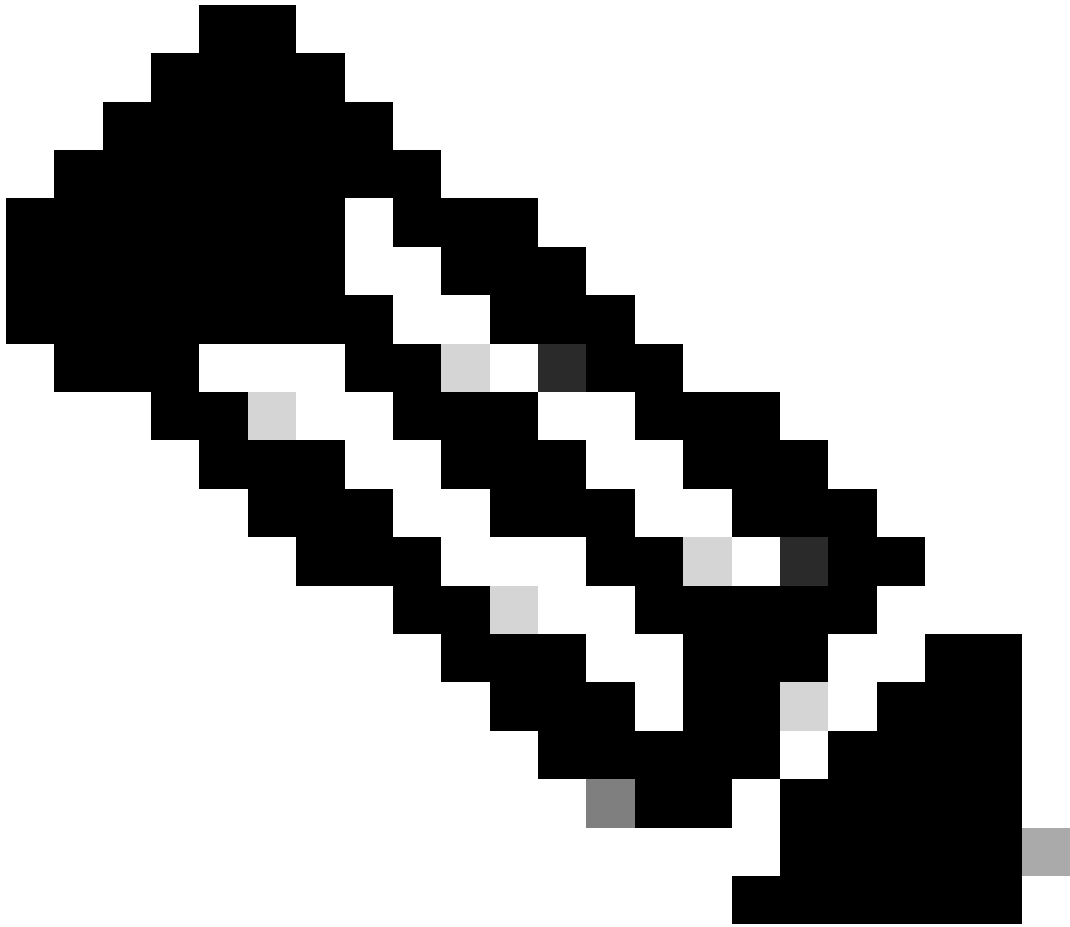


Task 6. Configure Estimate_Details page with Parameters and Route

Step 1. Similar to how you created the **Parameter** for the caller name, create the **Parameter** for the number of agents which the caller needs the estimate for. Click on the **Estimate_Details** page, add the **Parameter**, name it **Number_of_agents**, and select from the list the standard **Entity** type `sys.number`. Do not forget to save the change.



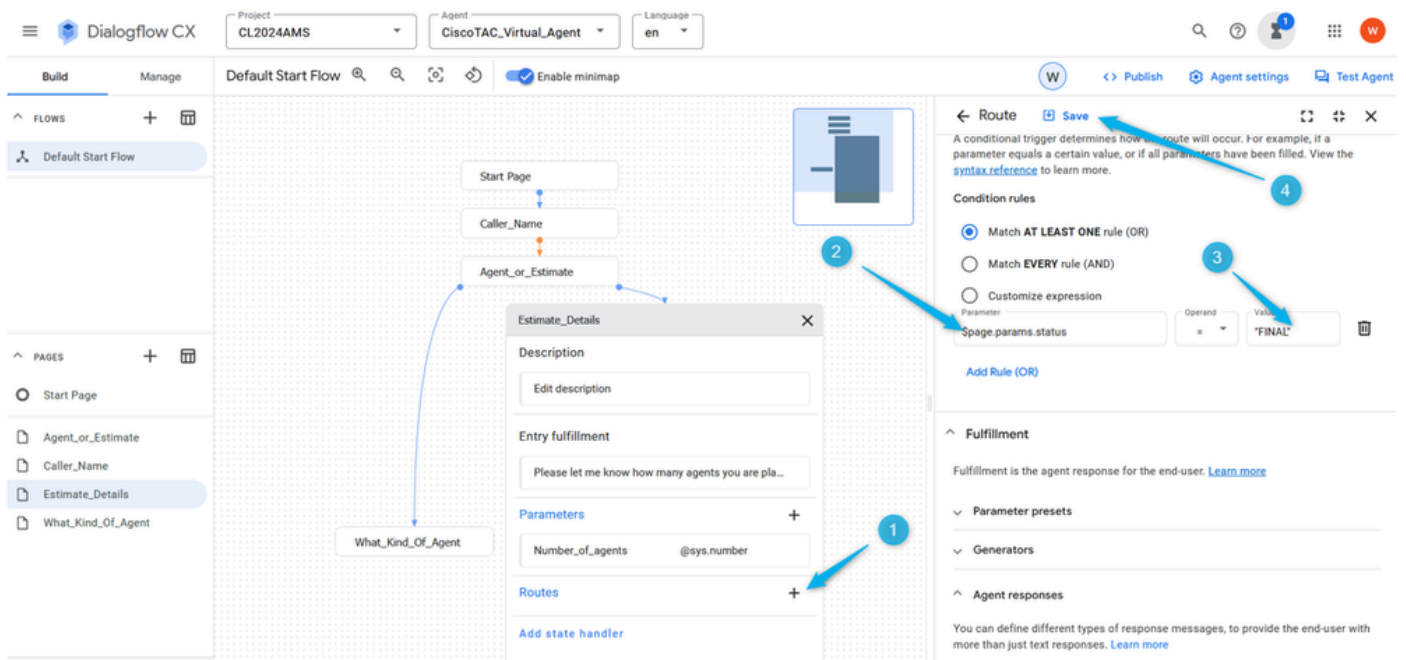
Step 2. Configure the **Entry Fulfillment** for the caller to understand what information the **Virtual Agent** is looking for. You can type something like, please let me know how many agents you are planning to have in your Contact Center.



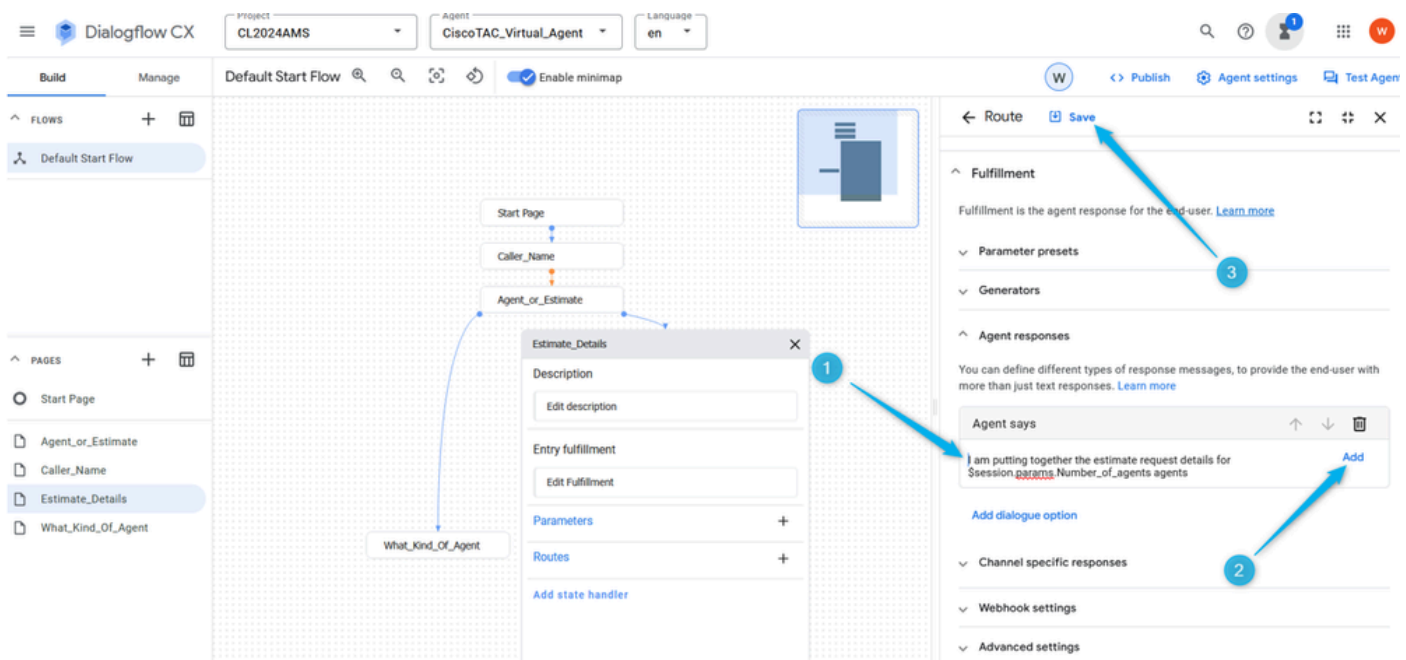
Note: If you cannot copy and paste the suggested fulfillment just start typing in the **Agent Responses** field, then you can paste the text, then delete unnecessary text.

The screenshot displays the Dialogflow CX interface for editing a flow. The top navigation bar shows the project name 'CL2024AMS' and the agent name 'CiscoTAC_Virtual_Agent'. The left sidebar lists the flow 'Default Start Flow' and the page 'Start Page'. The central canvas shows a flow diagram with nodes for 'Caller_Name', 'Agent_or_Estimate', and 'What_Kind_Of_Agent'. A dialog box for 'Estimate_Details' is open, showing the 'Entry fulfillment' field. The right-hand 'Fulfillment' panel is active, showing the 'Agent says' response with the text 'Please let me know how many agents you are planning to have in your Contact Center'. The 'Add' button (3) is highlighted in the fulfillment panel, and the 'Save' button (4) is highlighted in the top right of the fulfillment panel. A blue arrow (1) points to the 'Edit Fulfillment' field in the dialog box, and another blue arrow (2) points to the 'Add' button in the fulfillment panel.

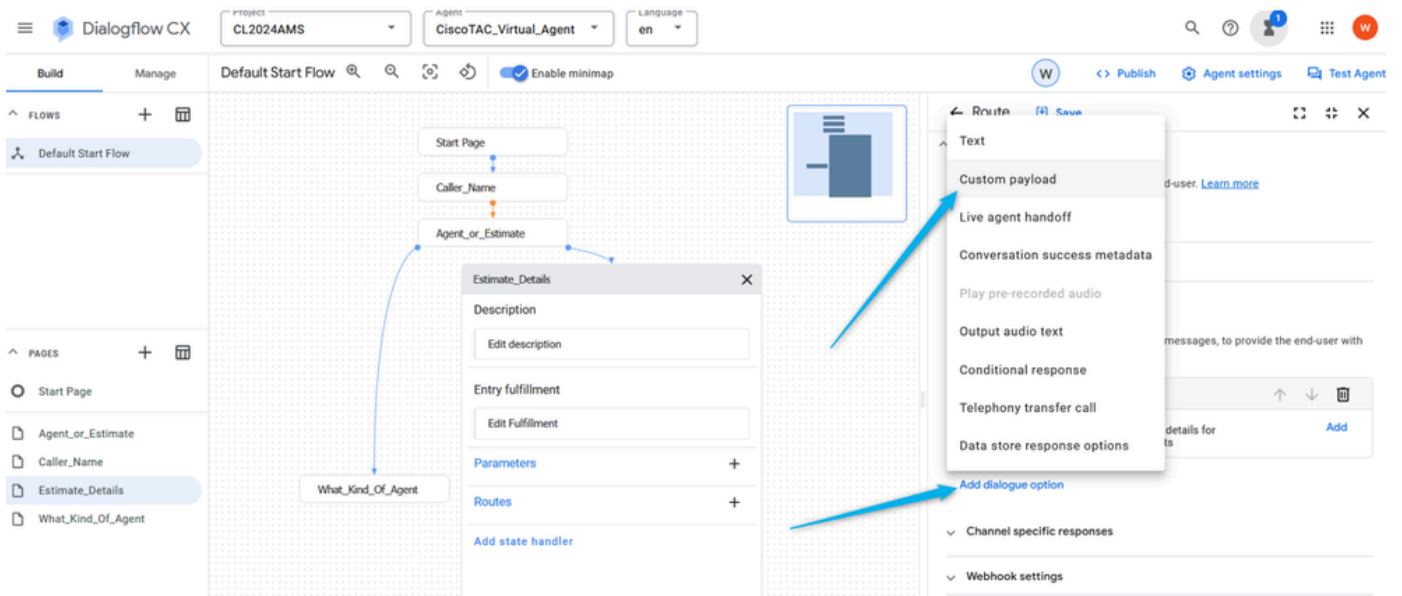
Step 3. Select the condition which triggers the action on the **Estimate_Details** page. While on the **Estimate_details** page, click on add new **Route**, on the right window scroll down a bit and configure the condition `$page.params.status = "FINAL"` .



Step 4. Scroll more down and add the **Virtual Agent** response. Type: I am putting together the estimate request details for `$session.params.Number_of_agents` agents.



Step 5. Add dialogue option and select **Custom payload** from the list.



Post this next syntax to the **Custom payload** section and save the configurations.

```
{
  "Execute_Request": {
    "Data": {
      "Params": {
        "Estimate_Agents_Count": "$session.params.Number_of_agents"
      }
    }
  }
}
```



Note: In JSON data format, a variable is a key-value pair that represents a property of an object. The key is a string that identifies the property, and the value is the data associated with the property.

The **Custom payload** contains the key **Estimate_Agents_Count** and the value is the **Parameter** `$session.params.Number_of_agents`. This **Parameter** is changed depending on the caller response.

Project: CL2024AMS | Agent: CiscoTAC_Virtual_Agent | Language: en

Build | Manage | Default Start Flow | Enable minimap

FLAWS | + | Default Start Flow

PAGES | + | Start Page | Agent_or_Estimate | Caller_Name | Estimate_Details | What_Kind_Of_Agent

Agent_or_Estimate

Estimate_Details

Description: Edit description

Entry fulfillment: Please let me know how many agents you are pla...

Parameters: Number_of_agents @sys.number

Routes: Spage.params.status = "FINAL"

Add state handler

Route | Save

Agent says: I am putting together the estimate request details for \$session.params.Number_of_agents agents

Enter agent dialogue

Custom payload

```

1 {
2   "Execute_Request": {
3     "Data": {
4       "Params": {
5         "Estimate_Agents_Count":
6           "$session.params.Number_of_agents"
7       }
8     }
9   }
10 }

```

Select template

Add dialogue option

Step 6. Scroll more down on the **Route** section and set up **Transition** to **End Flow**.

Project: CL2024AMS | Agent: CiscoTAC_Virtual_Agent | Language: en

Build | Manage | Default Start Flow | Enable minimap

FLAWS | + | Default Start Flow

PAGES | + | Start Page | Agent_or_Estimate | Caller_Name | Estimate_Details | What_Kind_Of_Agent

Agent_or_Estimate

Estimate_Details

Description: Edit description

Entry fulfillment: Please let me know how many agents you are pla...

Parameters: Number_of_agents @sys.number

Routes: Spage.params.status = "FINAL"

Add state handler

Route | Save

Select template

Add dialogue option

Channel specific responses

Webhook settings

Advanced settings

Call companion settings

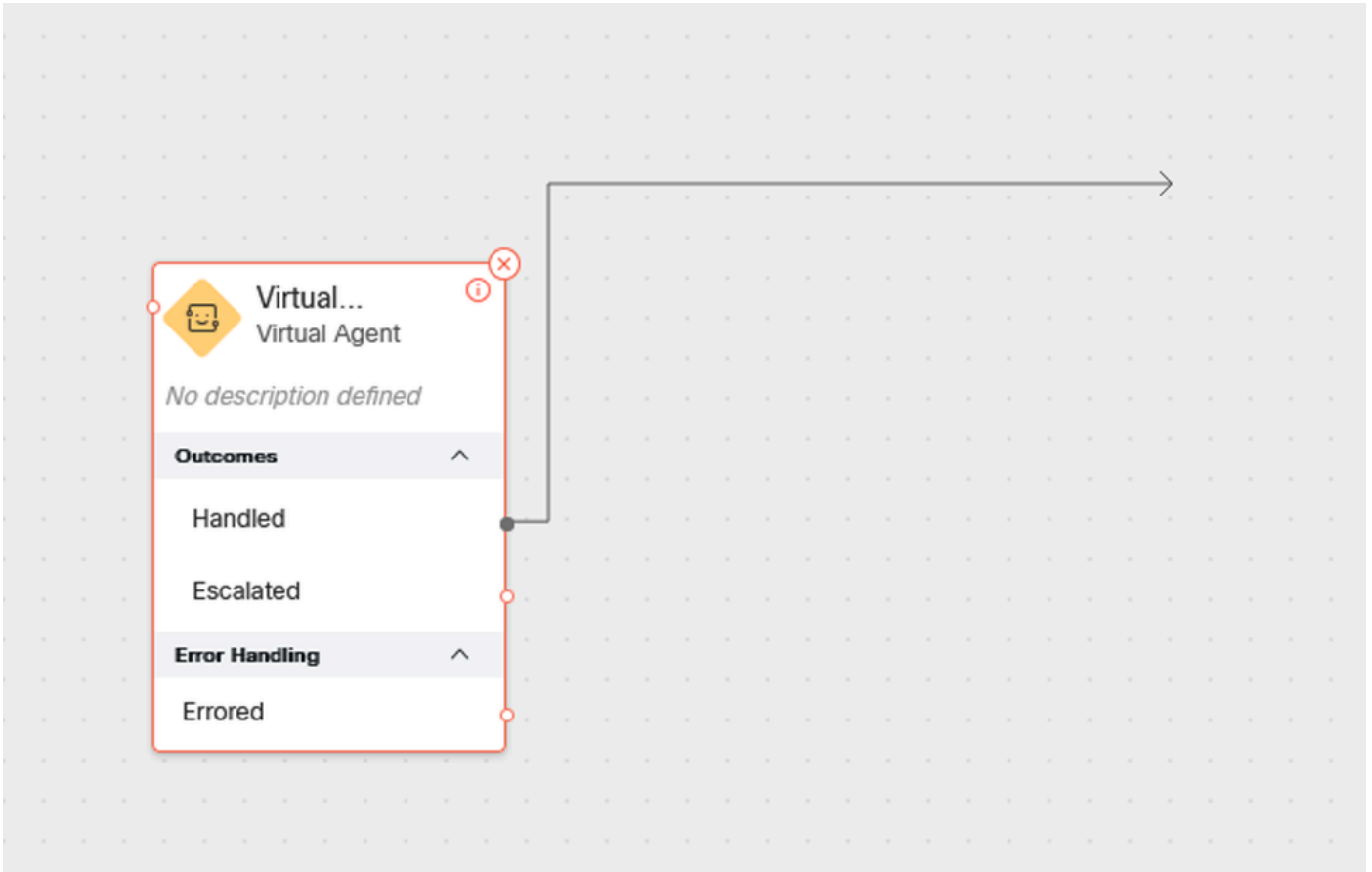
Transition

Flow Page

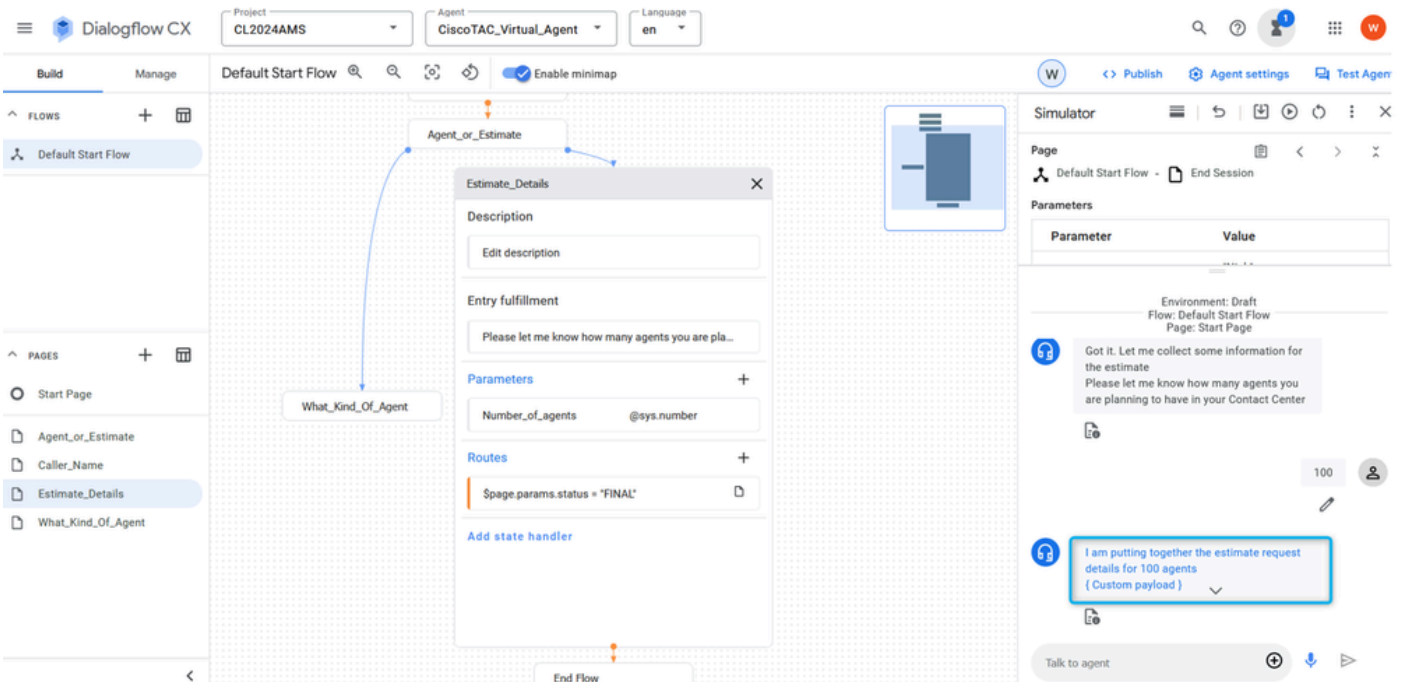
When this transition occurs, this is the next page in the conversation

Page: End Flow

It terminates the session on the Dialogflow side and transfers the call to WxCC where it continues from the **Virtual Agent Handled** path.

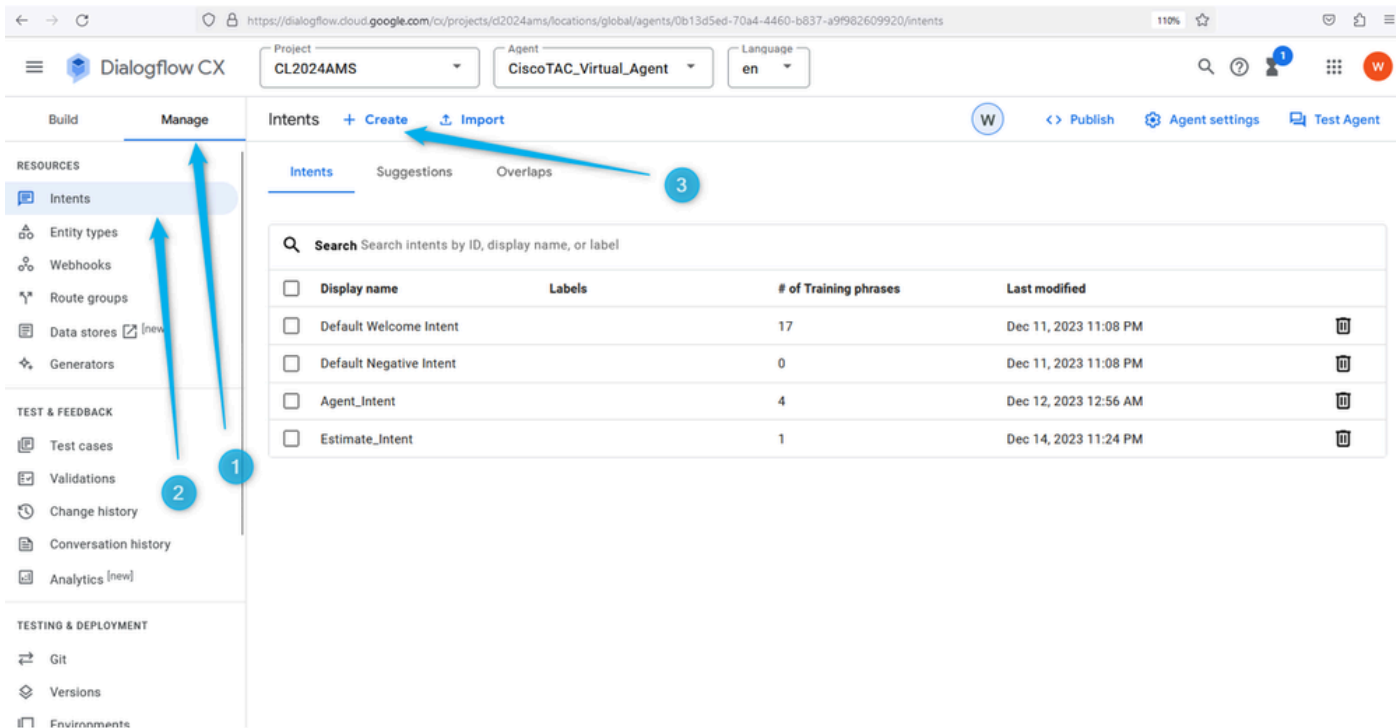


Step 7. Test your **Virtual Agent** flow at this point.

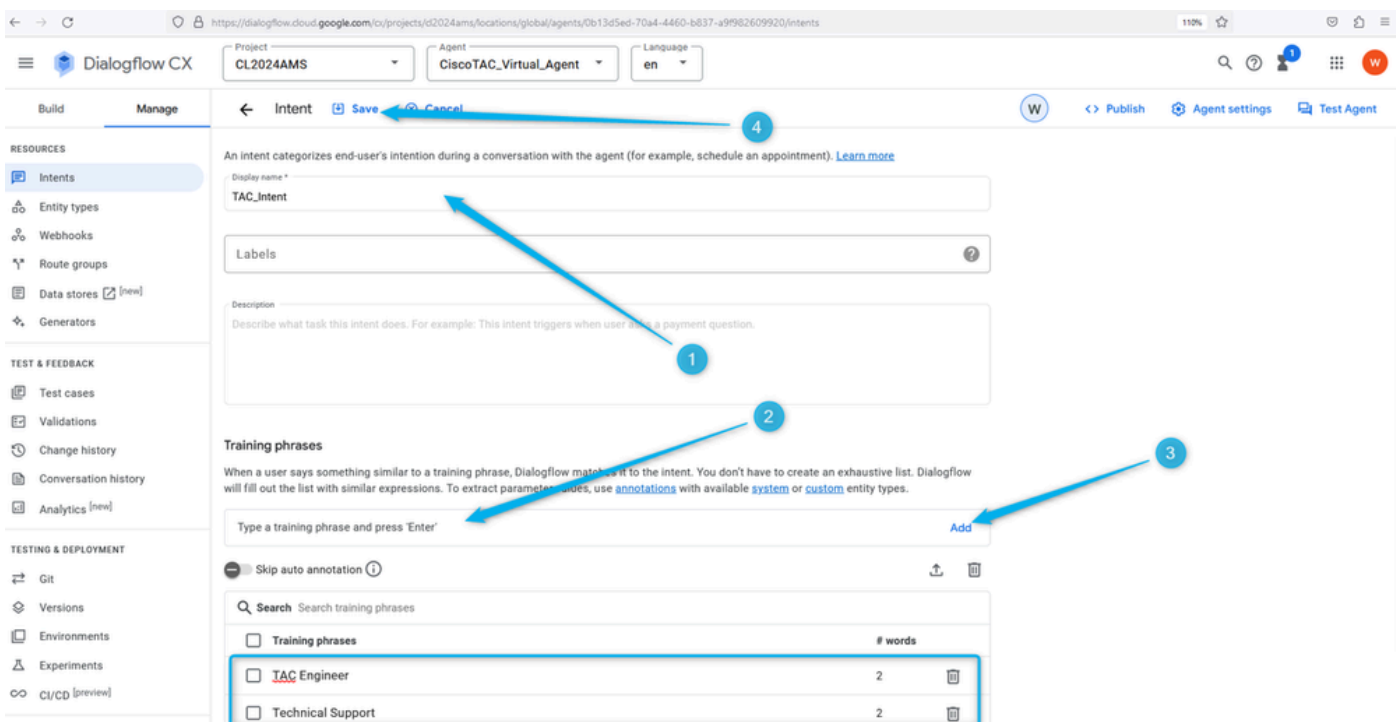


Task 7. Configure Estimate_Details page with Routes.

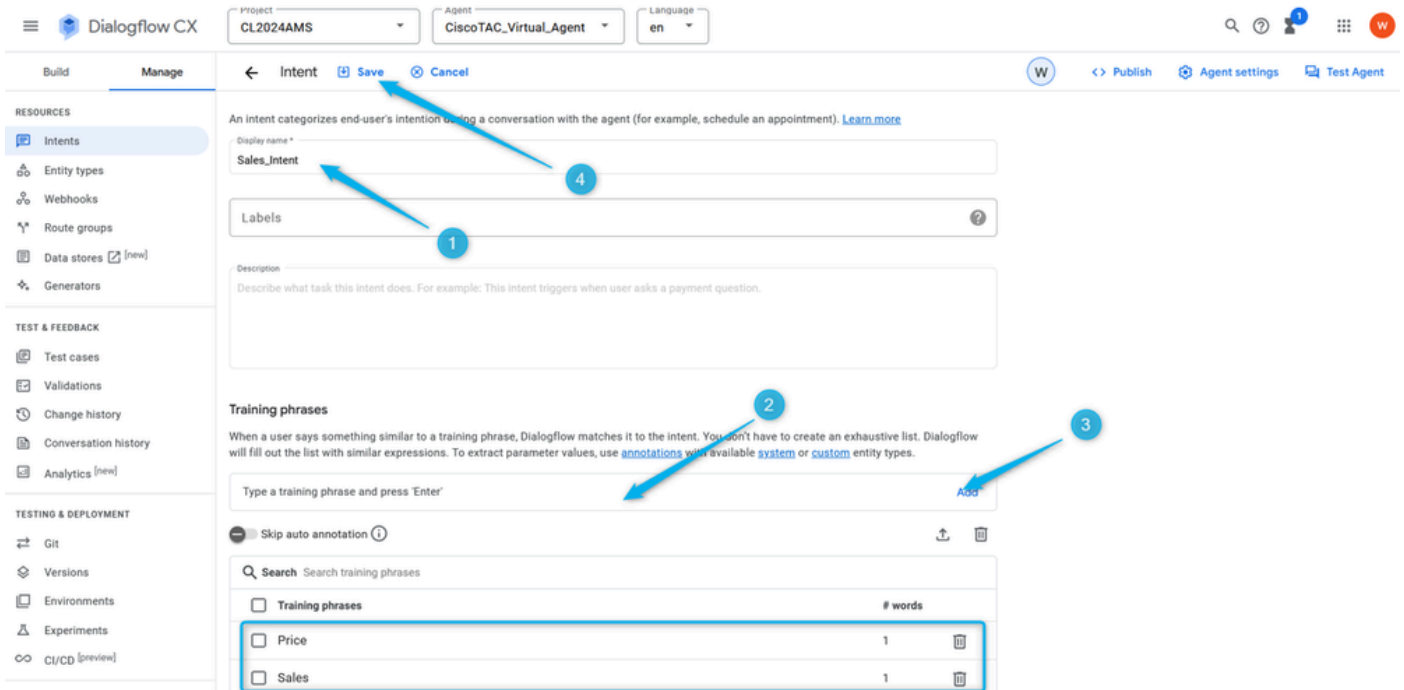
Step 1. Create two additional intents, **TAC_Intent** and **Sales_Intent**. Click on **Manage**, select Intents from the **Resources** list, and then click on **Create**.



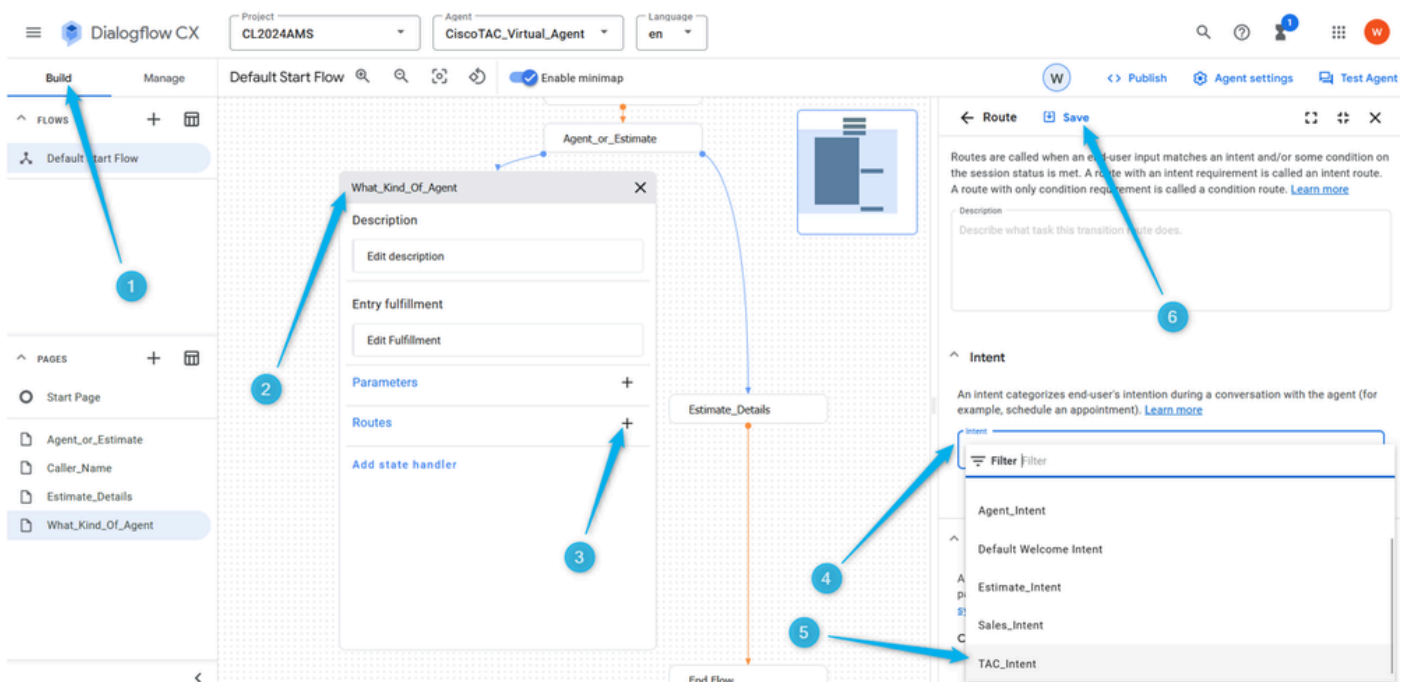
Name the intent and provide some training phrases. For example, for **TAC_Intent** you can add the phrases like: TAC Engineer, Technical Support.



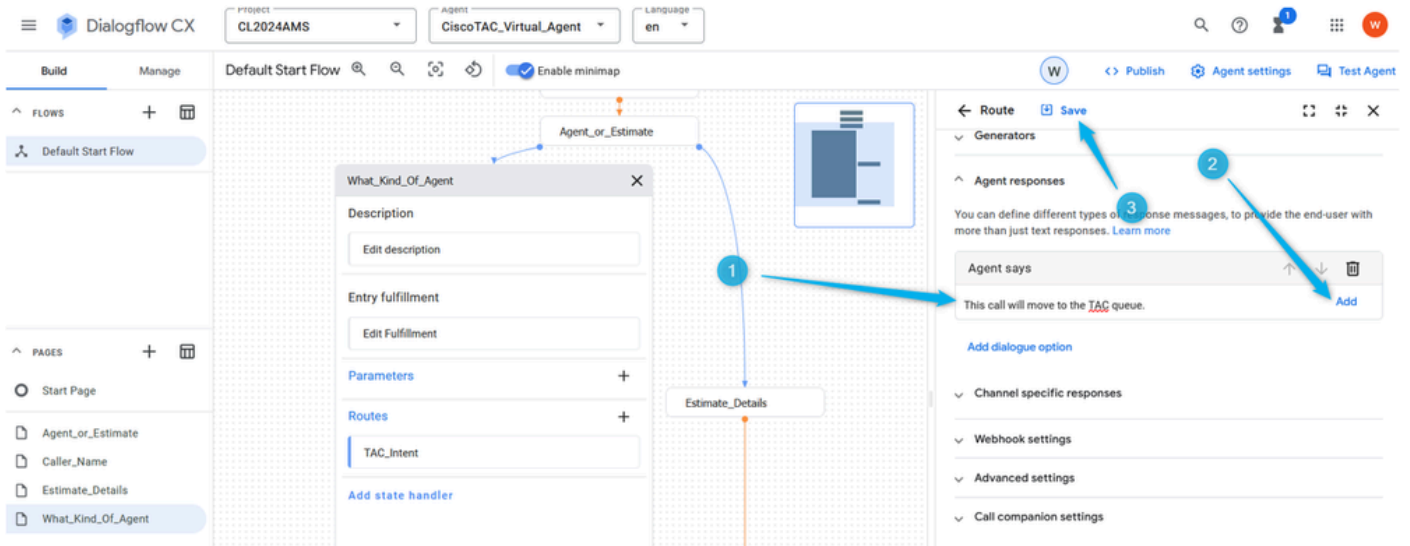
For **Sales_Intent** you can specify something like Price, Sales, and so on.



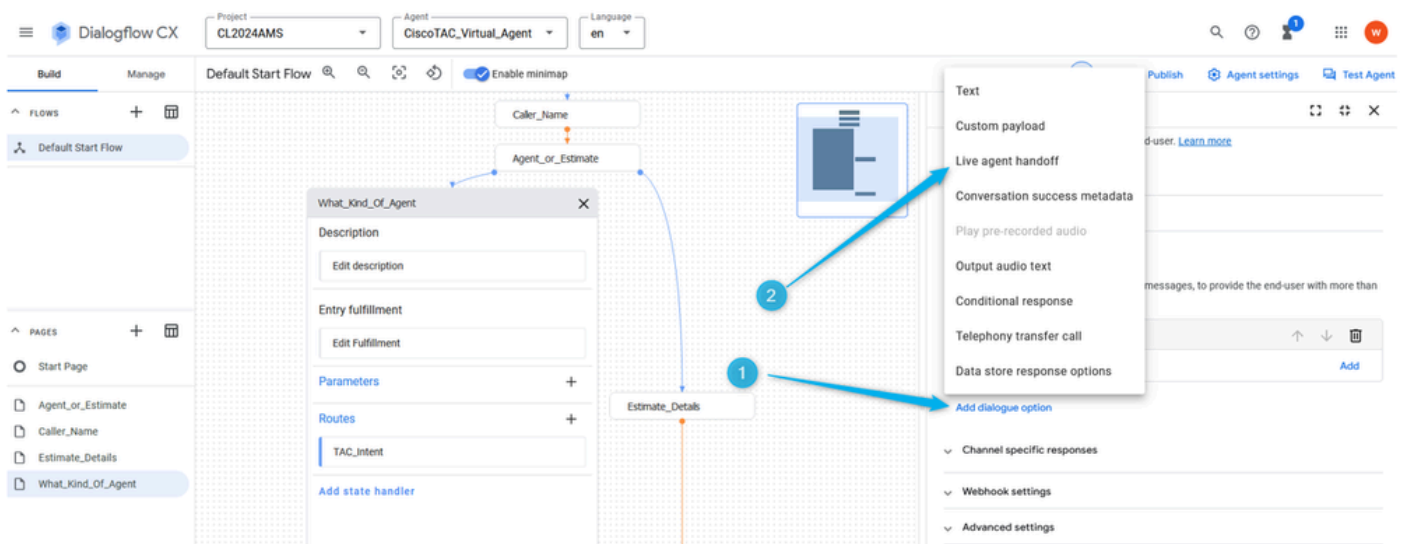
Step 2. Add **Route** for the TAC queue. Go back to the queue and click on the **What_Kind_Of_Agent** page. Then click on **Add New Route** and select the intent you created in the previous step for the TAC queue. Save the route settings.



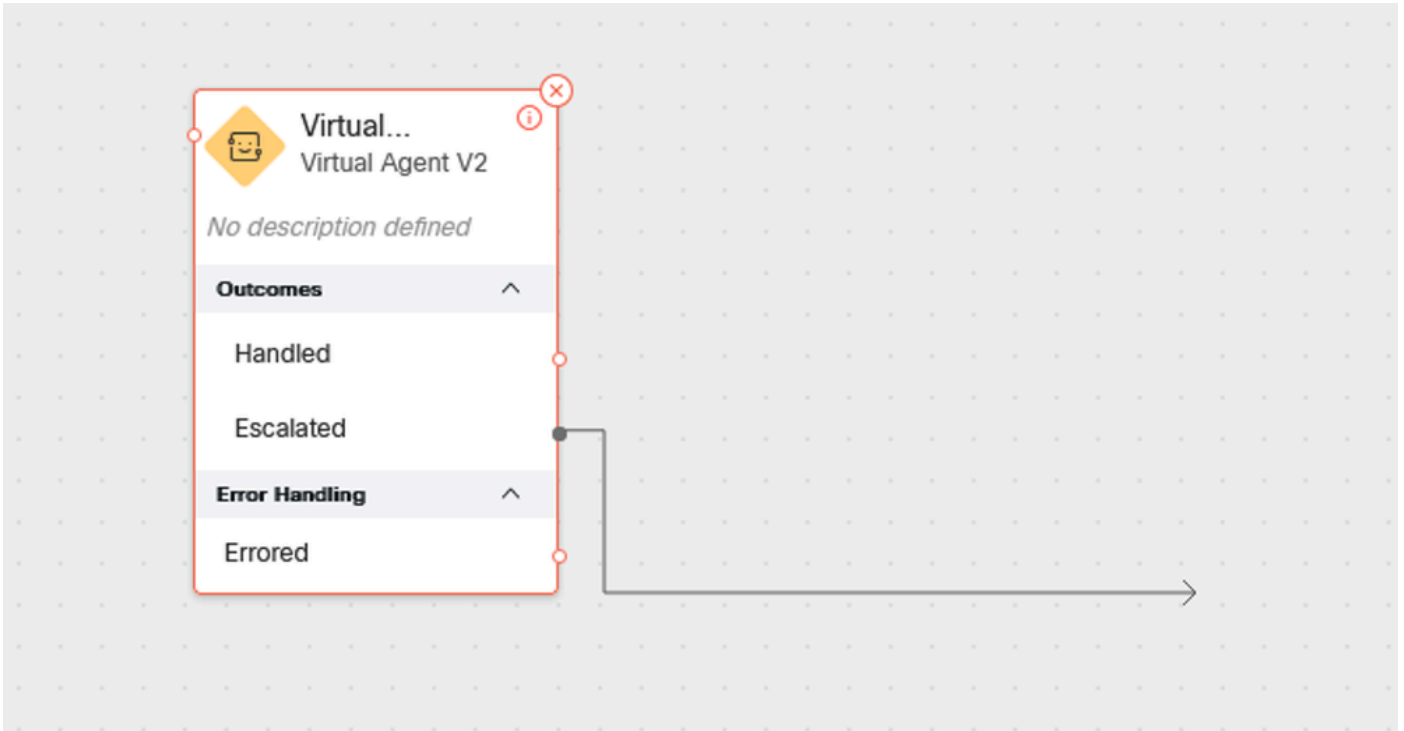
Step 3. Scroll down and add the agent response that the caller hears once the intent is triggered.



Step 4. Add the dialog option to move the call to the live agent by selecting **Live agent handoff** .

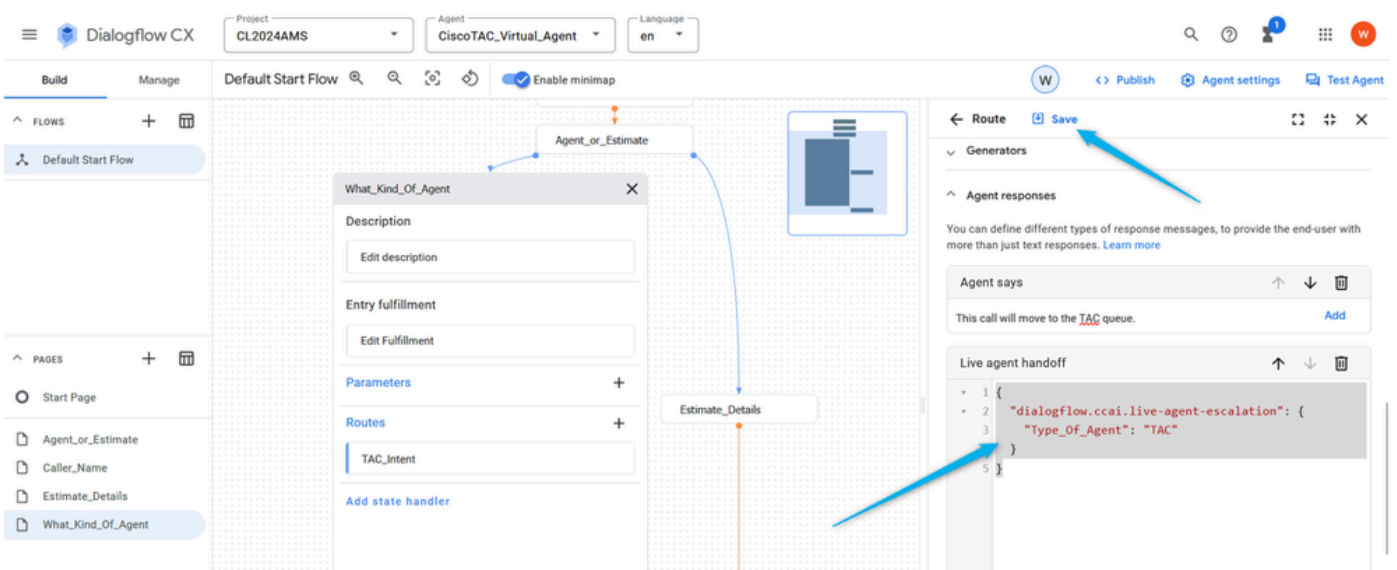


By selecting this option, the call moves out of the **Escalate** output of the **Virtual Agent V2** block in the flow builder.

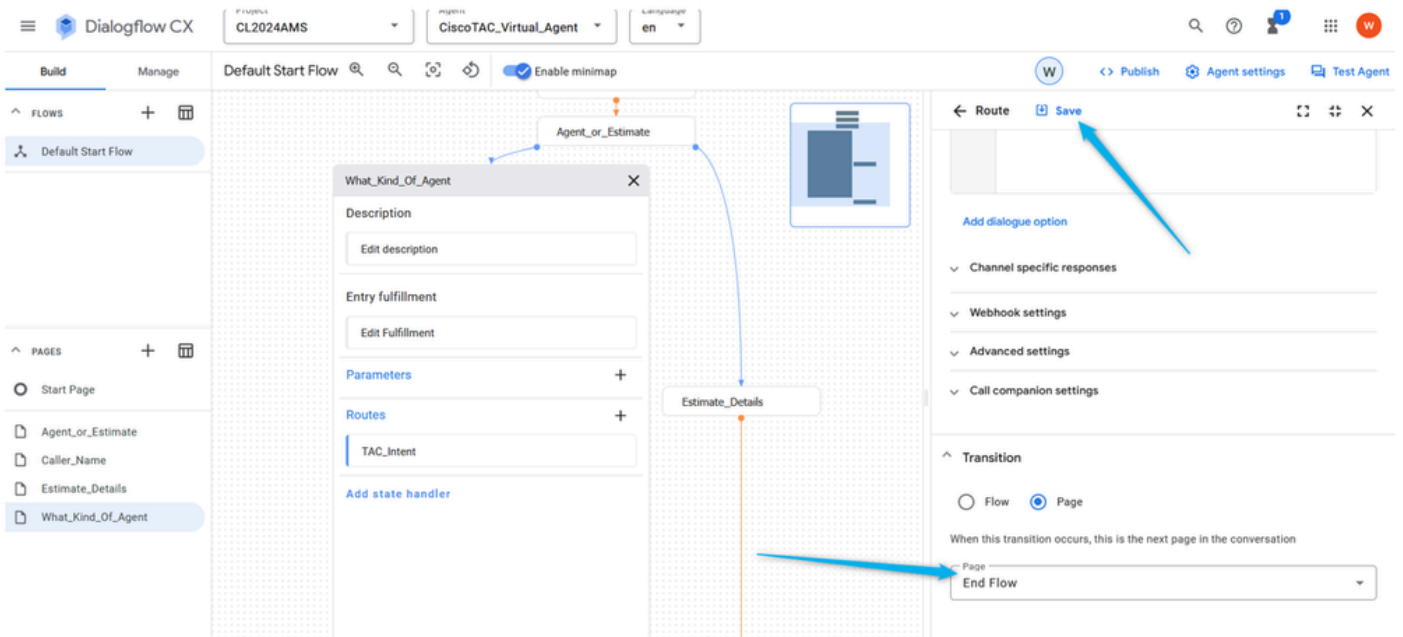


Step 5. In the **Live agent handoff** payload field, you can add the data in the JSON format which you can later parse in the WxCC flow. In this case, you need to add **Type_Of_Agent (TAC)**. TAC which helps you to make the routing decision to the correct queue in the flow.

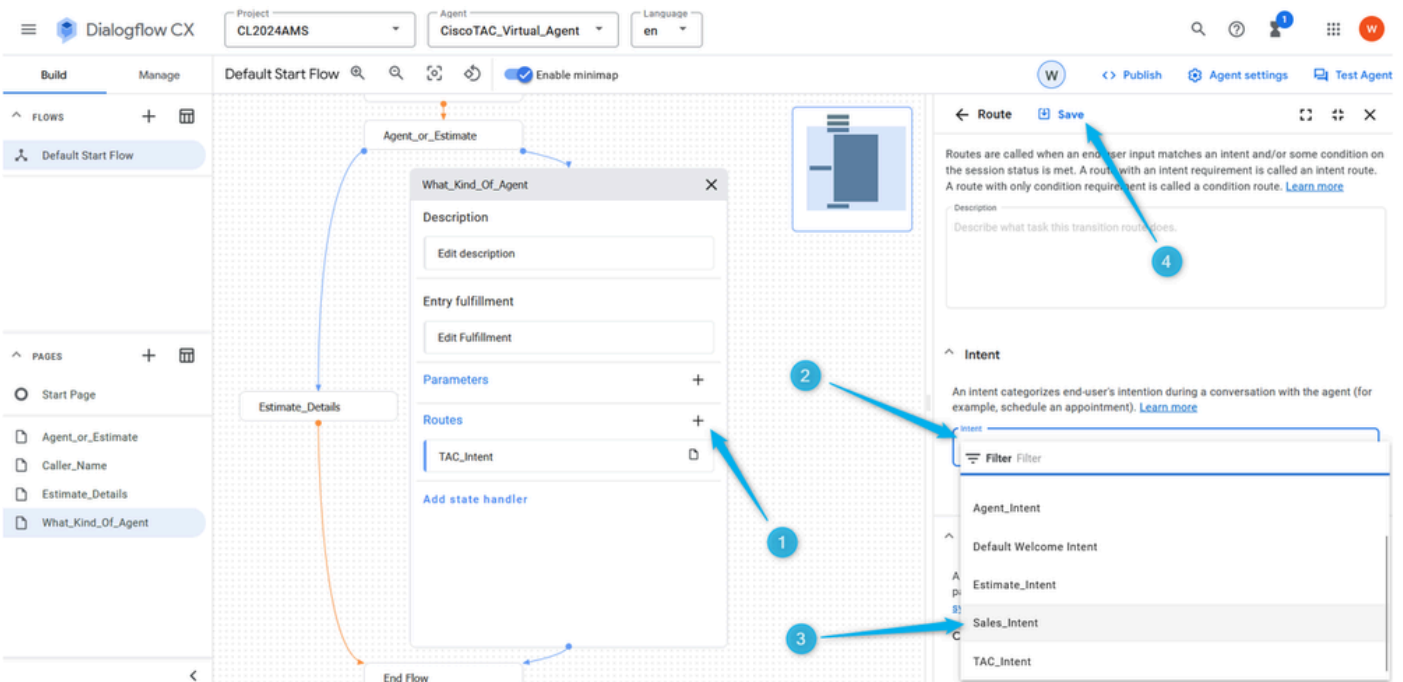
```
{
  "dialogflow.ccai.live-agent-escalation": {
    "Type_Of_Agent": "TAC"
  }
}
```



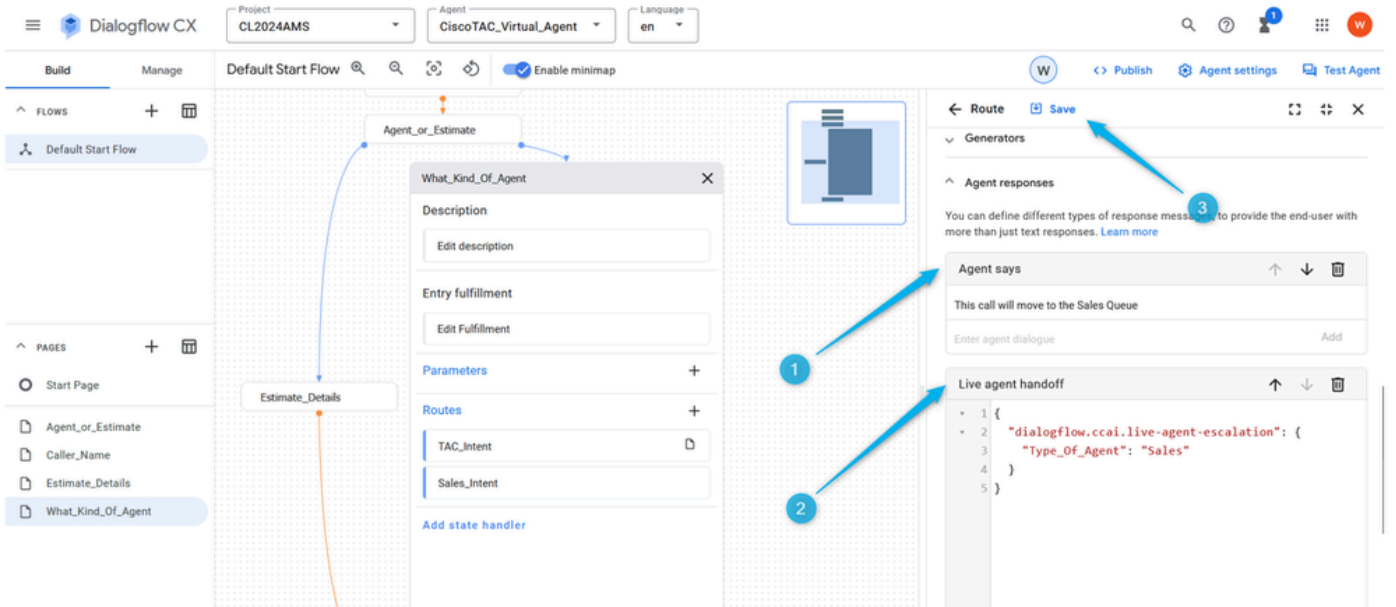
Step 6. End the flow on the Dialogflow side once the call is moved to the WxCC flow.



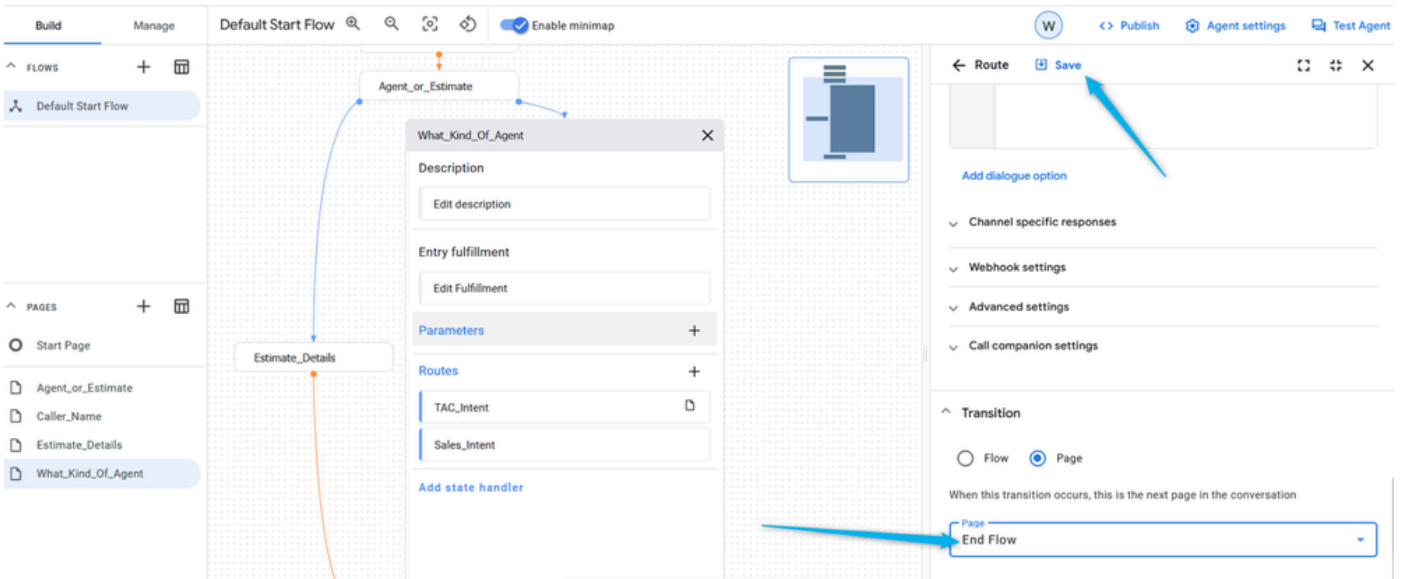
Step 7. Do the same steps to configure the **Route** for the **Sales** queue. Click on **Add New Route**. Select **Sales_Intent** and save the **Route** settings.



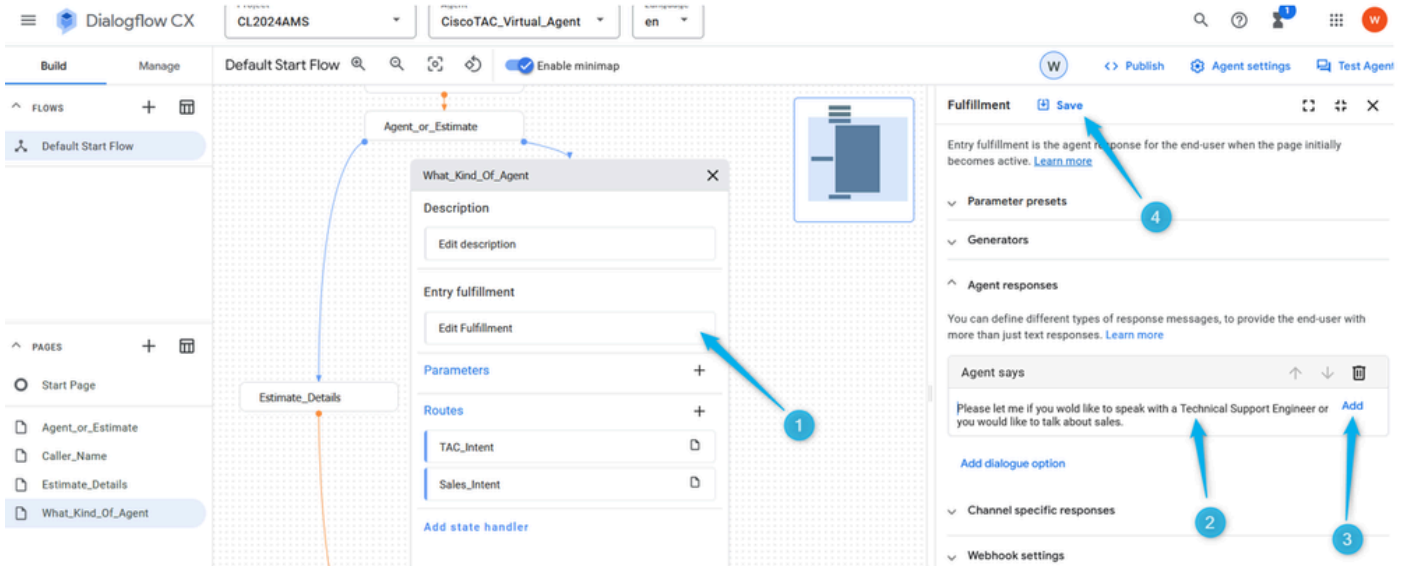
Step 8. Add the **Agent** response and **Live agent handoff** dialog option.



Step 9. End the flow for this page once the intent is triggered and the call is moved to the WxCC flow.



Step 10. Add the **Entry Fulfillment** to the **What Kind Of Agent** page so the caller knows what kind of answer the **Virtual Agent** expects. Click on the **Entry Fulfillment** field and type, please let me if you would like to speak with a Technical Support Engineer or you would like to talk about sales.



Step 11. Test your Virtual Agent.

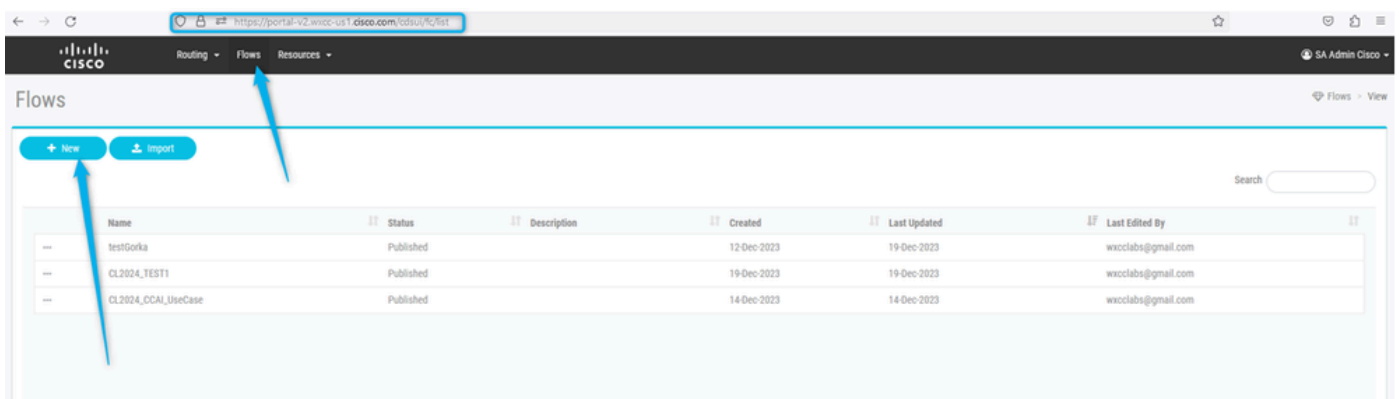
Configure Flow with Virtual Agent in Webex Contact Center Management Portal

Objectives

In this section, you can see how to build flow in Webex Contact Center Flow Builder with the **Virtual Agent** block which moves the call to queue with live agents or to estimate branch where data about the number of agents for the estimate can be extracted and used for **Analyzer** report.

Task 1. Create new flow.

Step 1. In the Webex Contact Center Admin portal open up the **Routing Strategy Module** and **Create New Flow** entry window.

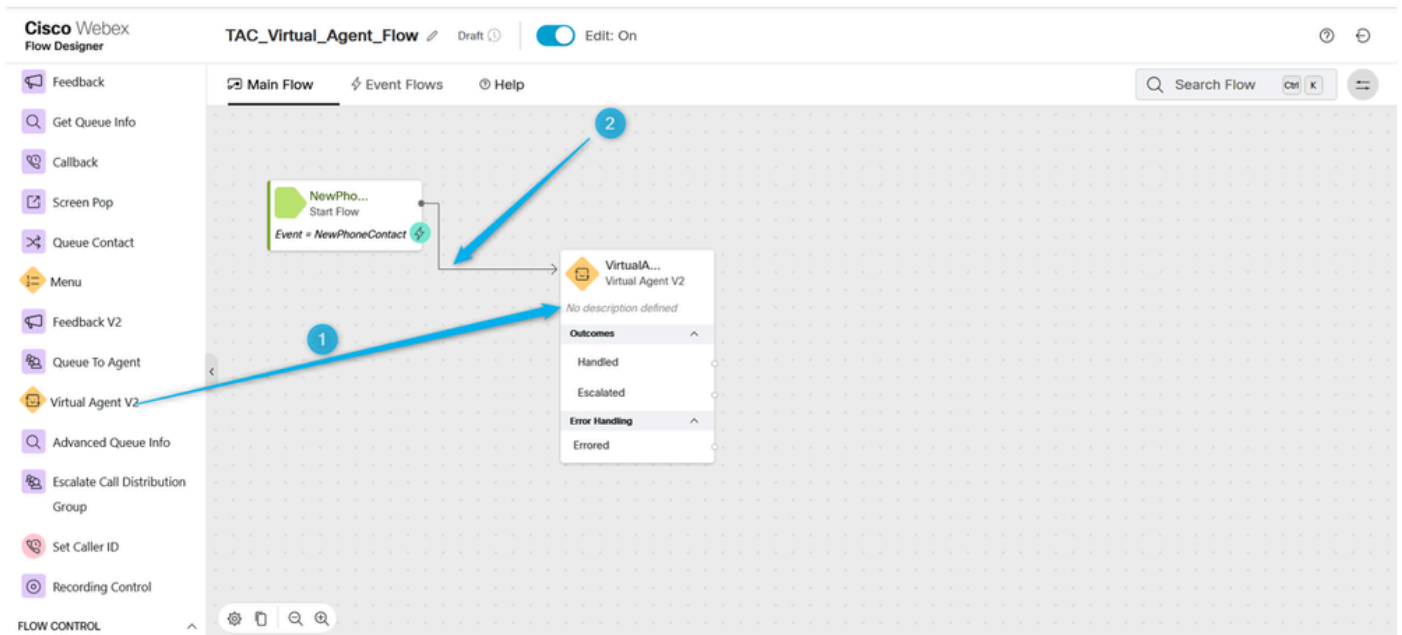


Step 2. Call the flow {Your Name}_Virtual_Agent_Flow .



Task 2. Configured Handled path to extract estimate data for the Analyzer report.

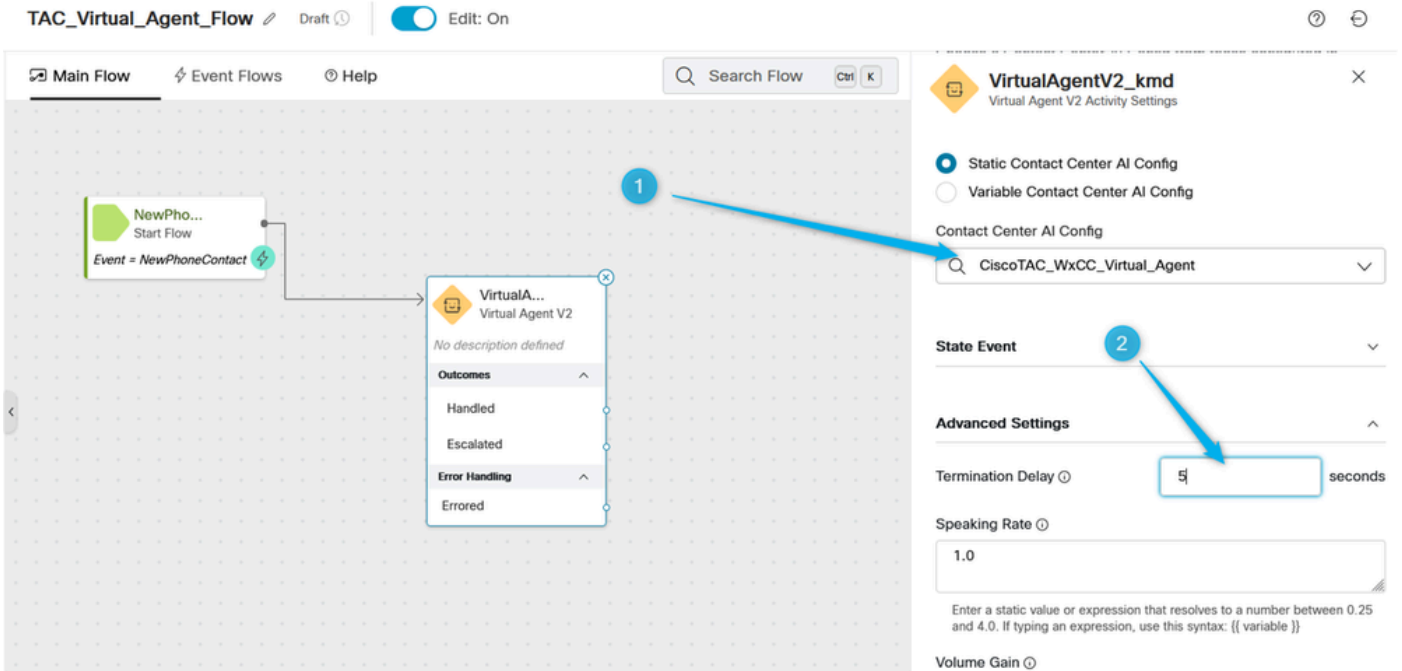
Step 1. Move the **Virtual Agent V2** to the flow and connect it with the **NewPhoneContact** block.



Step 2. Click on **Virtual Agent V2** block and under the block settings select **Contact Center AI Config** which you created earlier or use the preconfigured **Virtual Agent** Dan_User1_Virtual_Agent. Also, click **Advanced Settings** and increase the **Termination Delay** time from 3 to 5 seconds.

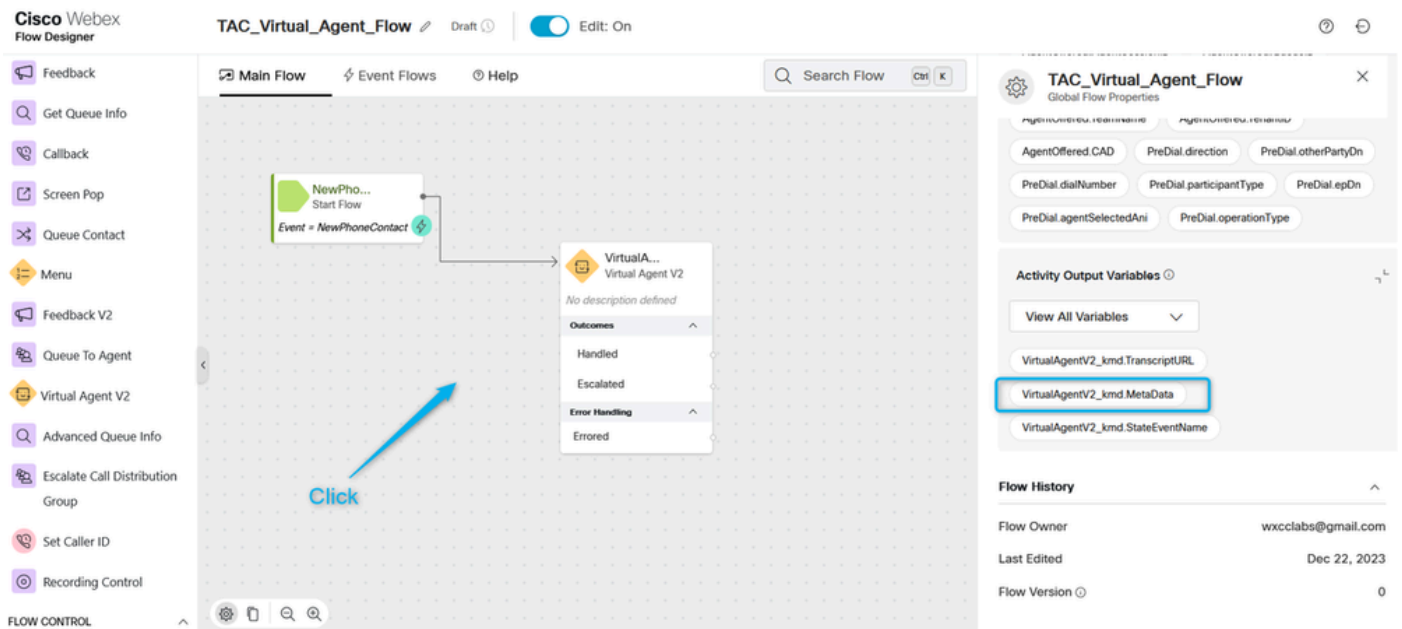


Note: Termination Delay is the time range that must be set to allow completion of the audio prompt from the **Virtual Agent** in Dialogflow before the contacts move to the Webex Contact Center. For example, if in Dialogflow VA config there is a long response before the call goes to **Live agent handoff**, it cuts the response not finished and the call moves to the queue.



Step 3. (Informational only) Understand how the call-related data is moving from Dialogflow to Webex Contact Center.

When the conversation is transferred from Dialogflow to WxCC, it creates some output variable with data in JSON format which has been generated in the Dialogflow portal while the caller was interacting with the **Virtual Agent**. One of the output variables is **VirtualAgentV2.MetaData**. You can see it by clicking anywhere on the grey area in the **Flow Builder** and scroll down on the right window. This output variable contains the data you specified in the **Custom payload**.



The goal here is to extract the information about how many agents the caller requested for the estimate. In the previous section, you have created the parameter with the name **Number_of_Agents**.

The screenshot shows the Dialogflow CX interface for project CL2024AMS. The main workspace displays a flow diagram with nodes 'Agent_or_Estimate' and 'What_Kind_Of_Agent'. A modal window titled 'Estimate_Details' is open, showing the 'Parameters' section where a parameter named 'Number_of_agents' is defined with the entity type '@sys.number'. On the right, the 'Parameter' configuration panel is visible, showing the 'Display name' as 'Number_of_agents' and the 'Entity type' as '@sys.number'. The 'Required' checkbox is checked.

And you configure the **Route** with **Custom payload** where once the parameter is filled, the value of the parameter is assigned to the key **Estimate_Agents_Count** and then the call is moved to WxCC side.

The screenshot shows the Dialogflow CX interface with the 'Route' configuration panel open. The 'Custom payload' section contains a JSON object where the value of the 'Number_of_agents' parameter is assigned to the 'Estimate_Agents_Count' key. The JSON is as follows:

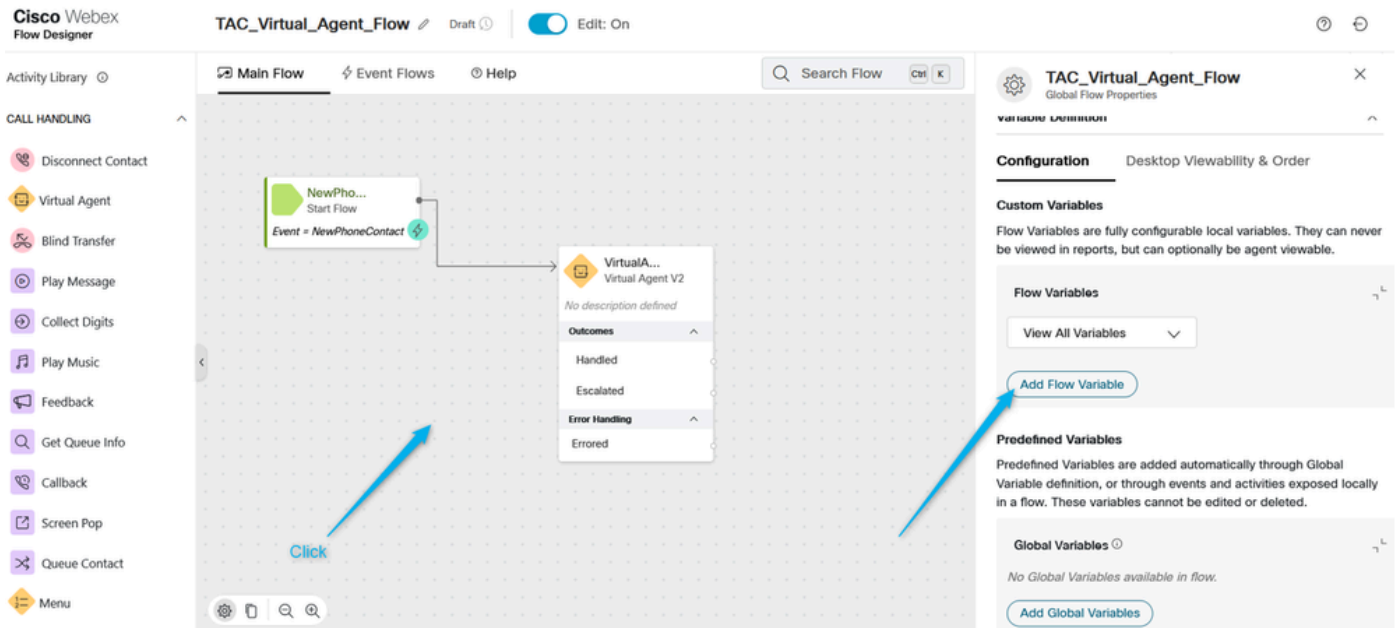
```

1 {
2   "Execute_Request": {
3     "Data": {
4       "Params": {
5         "Estimate_Agents_Count":
6           "$session.params.Number_of_agents"
7       }
8     }
9   }

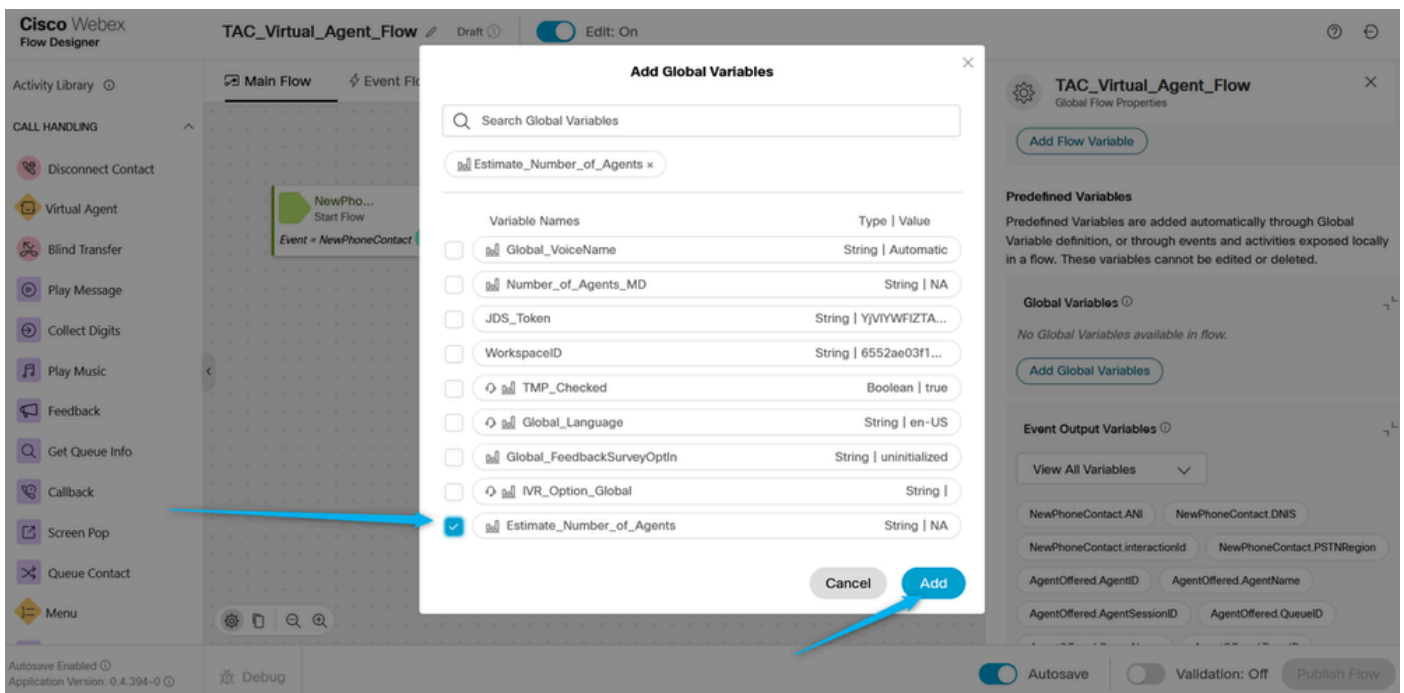
```

The 'Routes' section in the 'Estimate_Details' modal is also visible, showing a route with the configuration 'Spage.params.status = 'FINAL''.

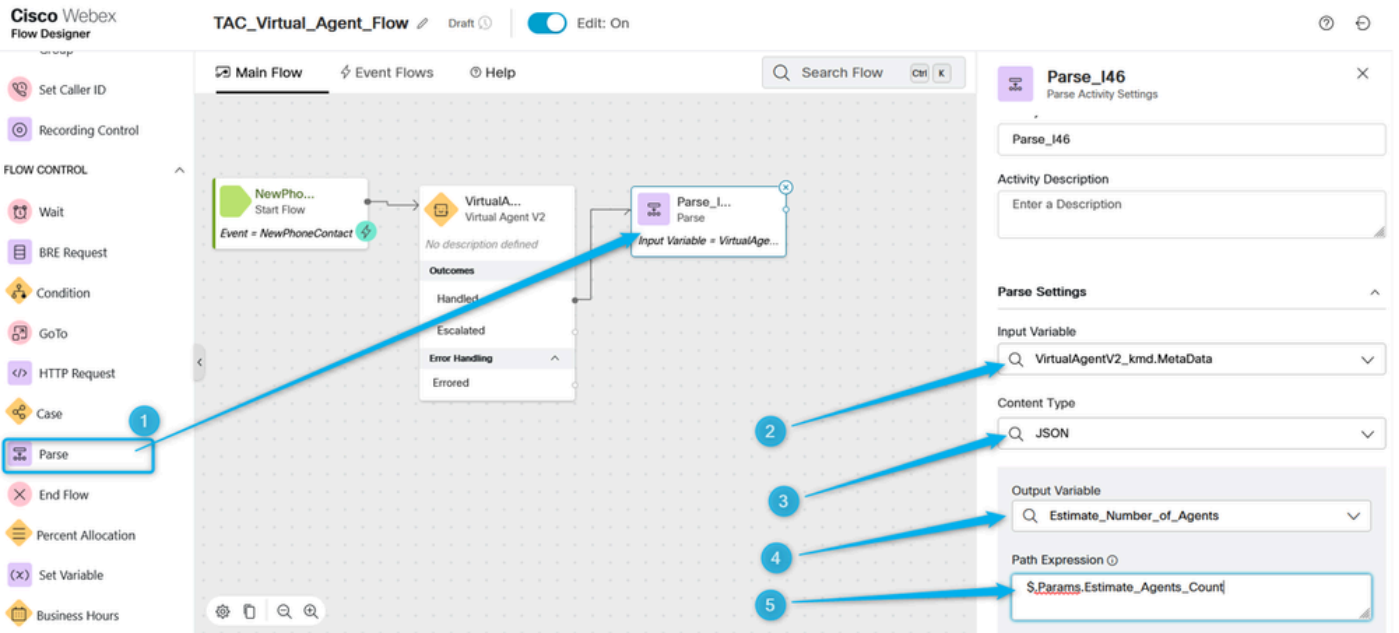
Step 4. Configure **Virtual Agent Handled** path to extract the estimate data and associate it with **Global Variable**. By parsing JSON data from the **VirtualAgentV2_MetaData** variable you can extract the value of the **Number_of_Agents** parameter value and assign it to the new variable on the WxCC environment. You also want the variable to be reportable, so you need to use a **Global Variable**. While in WxCC flow builder, click anywhere on the grey area, and on the right window click on **Add Global Variable**.



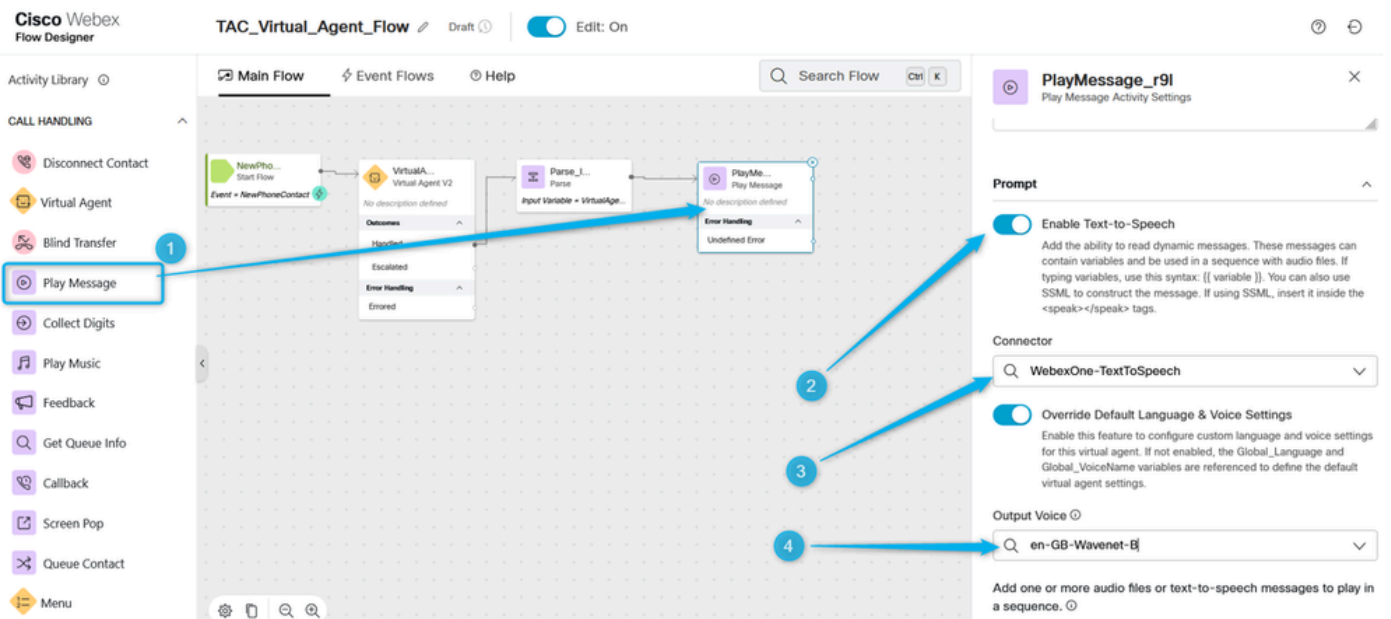
The **Global Variable Estimate_Number_of_Agents** needs to be created earlier in the WxCC Admin Portal. Then you just need to select it and click Add. This makes this **Global Variable** available for you to use in your flow.



Step 5. Add the **Parse** node. In the **Parse** node select **VirtualAgentV2.MetaData** as the **Input Variable**, select from the list the **Global Variable** you added to the flow in the previous step as the **Output Variable**, and use this next string to parse the JSON data `$.Params.Estimate_Agents_Count`.

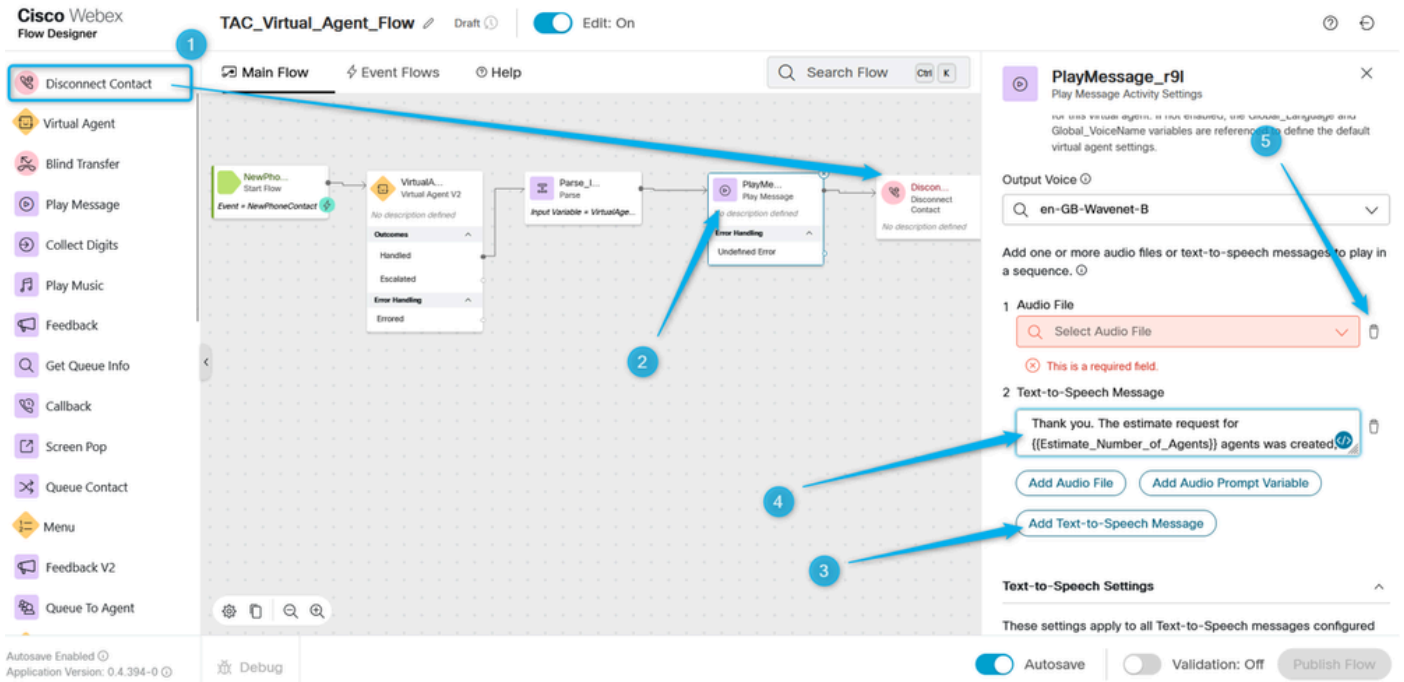


Step. 6. Use the **Play Message** node to validate the result and notify the caller. Add the **Play Message** node, **Enable Text-to-Speech** feature, select the TTS connector and choose **Output Voice** from the list.



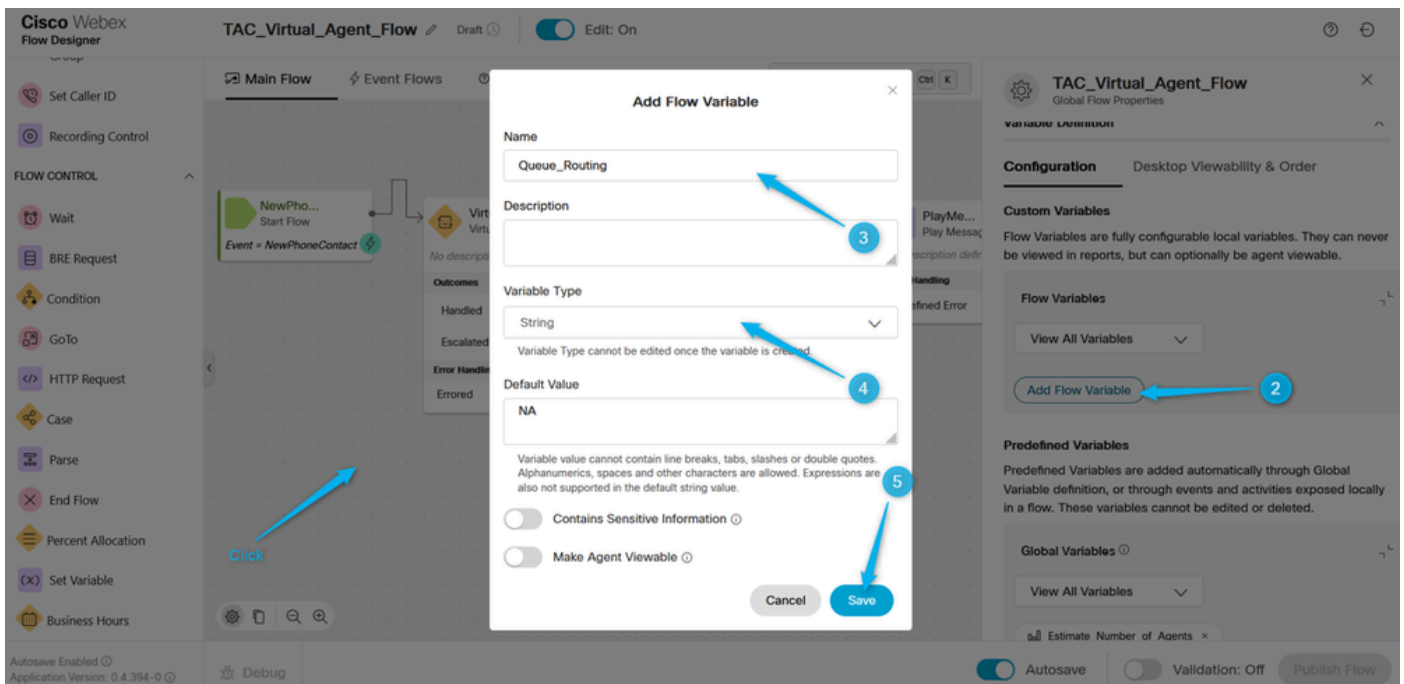
Step 7. Add **Disconnect Contact** node. Then click in the **Play Message** again, and add this Text-to-Speech Message, in the TTS field type, thank you. The estimate request for **{{Estimate_Number_of_Agents}}** agents was created, and your team can reach out to you soon with the results.

Delete the **Audio File** option and publish the flow.



Task 3. Configured Escalated to move the call to the appropriate Queue with live agents.

Step 1. Create Flow variable and name it **Queue_Routing**.



Step 2. Add the **Parse** node and configure it to assign the value of the **Type_Of_Agent** variable from Dialogflow to the **Queue_Routing** flow variable.

The screenshot shows the Cisco Webex Flow Designer interface for a flow named "TAC_Virtual_Agent_Flow". The main flow canvas contains several nodes: "Virtual Agent V2", two "Parse" nodes, a "Play Message" node, and a "Disconnect Contact" node. A "Parse" node is selected, and its configuration panel is open on the right. The configuration includes:

- Activity Description:** Enter a Description
- Parse Settings:**
 - Input Variable:** VirtualAgentV2_kmd.Metadata
 - Content Type:** JSON
 - Output Variable:** Queue_Routing
 - Path Expression:** \$.['dialogflow.cca.live-agent-escalation'].Type_Of_Agent

 Blue arrows and numbers 1 through 5 point to the Parse node in the flow, the Parse configuration panel, and the specific fields mentioned above.

Step 3 Add the **Case** node and configure it with the variable **Queue_Routing**. In the link, Description configure values **TAC** and **Sales** as these are two values you move from the **Dialogflow** portal.

The screenshot shows the same flow as in Step 3, but with a "Case" node added. The "Case" node configuration panel is open on the right. The configuration includes:

- Case:** Select a variable or build an expression and add all possible cases that it can be matched against. Case statements are evaluated from top to bottom in sequence.
 - Variable:** Queue_Routing
- LINK DESCRIPTION:**
 - TAC
 - Sales

 Blue arrows and numbers 1 through 4 point to the Case node in the flow, the Case configuration panel, and the specific fields mentioned above.

Step 4. Add **Play Message** nodes to verify the call goes to the TAC queue. Configure the **Play Message** node with TTS and type the text similar to this, Thank ou for waiting. The TAC engineer can be with you shortly.

Cisco Webex Flow Designer TAC_Virtual_Agent_Flow Draft Edit: On

Activity Library CALL HANDLING

- Disconnect Contact
- Virtual Agent
- Blind Transfer
- Play Message**
- Collect Digits
- Play Music
- Feedback
- Get Queue Info
- Callback
- Screen Pop
- Queue Contact
- Menu

Main Flow

```

    graph LR
      Start(( )) --> Parse1[Parse]
      Parse1 --> Play1[Play Message]
      Play1 --> Discon1[Disconnect Contact]
      Parse1 --> Parse2[Parse]
      Parse2 --> Case[Case]
      Case --> Play2[Play Message]
      Case --> Play3[Play Message]
      Case --> Discon2[Disconnect Contact]
  
```

Play Message Activity Settings

- Enable Text-to-Speech
- Connector: WebexOne-TextToSpeech
- Override Default Language & Voice Settings
- Output Voice: en-GB-Wavenet-B
- 1 Text-to-Speech Message: "Thank you for waiting. The TAC engineer will be with you shortly."

Autosave Validation: Off Publish Flow

Step 5. Do the same for the **Sales** queue. Let the caller know that the call can be connected to the **Sales** agent shortly.

Cisco Webex Flow Designer TAC_Virtual_Agent_Flow Draft Edit: On

Activity Library CALL HANDLING

- Disconnect Contact
- Virtual Agent
- Blind Transfer
- Play Message
- Collect Digits
- Play Music
- Feedback
- Get Queue Info
- Callback
- Screen Pop
- Queue Contact
- Menu

Main Flow

```

    graph LR
      Start(( )) --> Parse1[Parse]
      Parse1 --> Play1[Play Message]
      Play1 --> Discon1[Disconnect Contact]
      Parse1 --> Parse2[Parse]
      Parse2 --> Case[Case]
      Case --> Play2[Play Message]
      Case --> Play3[Play Message]
      Case --> Discon2[Disconnect Contact]
  
```

Play Message Activity Settings

- Override Default Language & Voice Settings
- Connector: WebexOne-TextToSpeech
- Output Voice: en-GB-Wavenet-B
- 1 Text-to-Speech Message: "Thank you for waiting. The Sales agent will be with you shortly."

Autosave Validation: Off Publish Flow

Step 6. Add **Queue Contact** block and configure it with the **TAC_Queue**.

Cisco Webex Flow Designer TAC_Virtual_Agent_Flow Draft Edit: On

Virtual Agent
Blind Transfer
Play Message
Collect Digits
Play Music
Feedback
Get Queue Info
Callback
Screen Pop
Queue Contact
Menu
Feedback V2
Queue To Agent
Virtual Agent V2

Main Flow Event Flows Help Search Flow Ctrl K

PlayMe... Play Message
No description defined
Error Handling Undefined Error

Discon... Disconnect Contact
No description defined

Case_0... Case
{(Queue_Routing)}

Case
TAC
Sales
Default
Add New
Error Handling Undefined Error

PlayMe... Play Message
No description defined
Error Handling Undefined Error

Queue... Queue Contact
No description defined
Error Handling Failure

QueueContact_4ek
Queue Contact Activity Settings

Activity Description
Enter a Description

Contact Handling
Choose if all contacts should go to a single queue, or if queue selection should change based on the value of a flow variable.

Static Queue
Variable Queues

Queue TAC_Queue

Select a single queue used for all interactions in this branch of the flow. If the queue supports Skills Based Routing, additional configurations appear below.

Set Contact Priority
Enable this feature if contacts in this path of the flow should be prioritized over other contacts in the queue. If this is enabled for some but not all contacts, there is a risk that those without an assigned priority will never move to the top of the queue.

Autosave Enabled Application Version: 0.4.394-0 Debug Autosave Validation: Off Publish Flow

Step 7. Add additional **Queue Contact** and configure it with the **Sales_Queue**.

Cisco Webex Flow Designer TAC_Virtual_Agent_Flow Draft Edit: On

Virtual Agent
Blind Transfer
Play Message
Collect Digits
Play Music
Feedback
Get Queue Info
Callback
Screen Pop
Queue Contact
Menu
Feedback V2
Queue To Agent
Virtual Agent V2

Main Flow Event Flows Help Search Flow Ctrl K

PlayMe... Play Message
No description defined
Error Handling Undefined Error

Discon... Disconnect Contact
No description defined

Case_0... Case
{(Queue_Routing)}

Case
TAC
Sales
Default
Add New
Error Handling Undefined Error

PlayMe... Play Message
No description defined
Error Handling Undefined Error

Queue... Queue Contact
No description defined
Error Handling Failure

Queue... Queue Contact
No description defined
Error Handling Failure

QueueContact_vpj
Queue Contact Activity Settings

Contact Handling
Choose if all contacts should go to a single queue, or if queue selection should change based on the value of a flow variable.

Static Queue
Variable Queues

Queue Sales_Queue

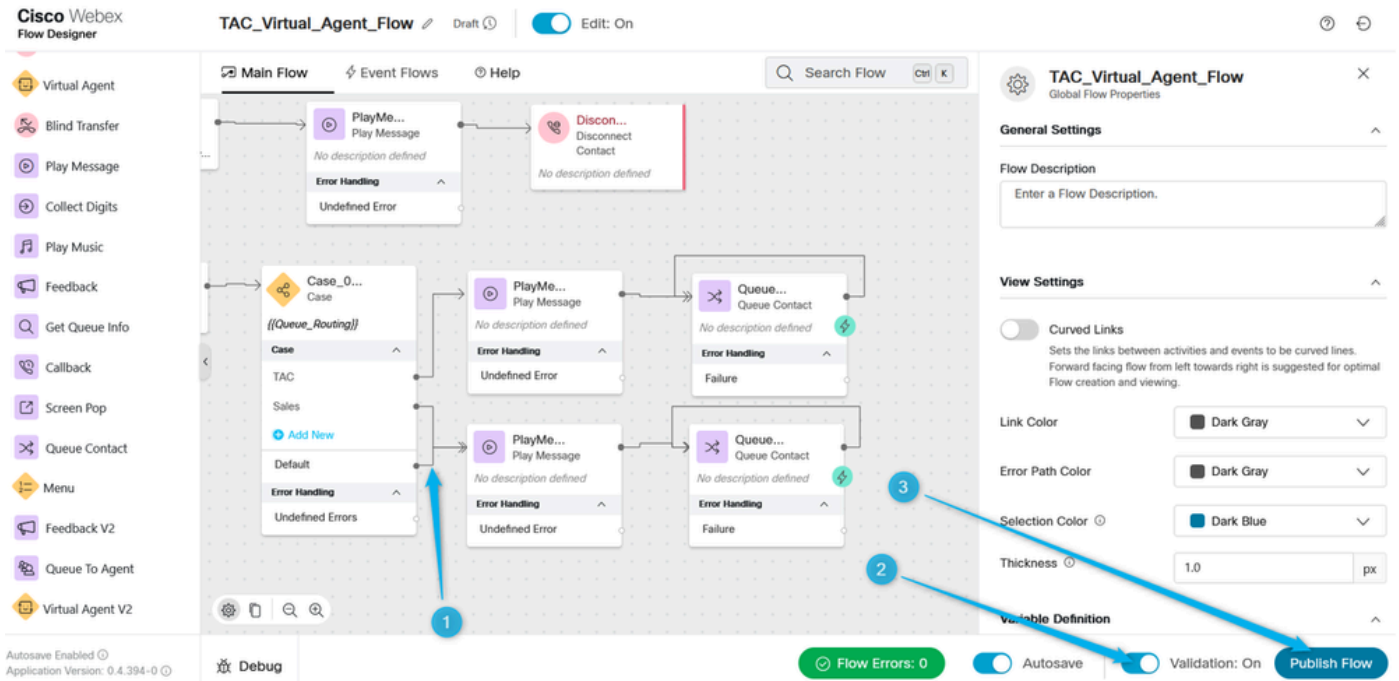
Select a single queue used for all interactions in this branch of the flow. If the queue supports Skills Based Routing, additional configurations appear below.

Set Contact Priority
Enable this feature if contacts in this path of the flow should be prioritized over other contacts in the queue. If this is enabled for some but not all contacts, there is a risk that those without an assigned priority will never move to the top of the queue.

Check Agent Availability
Enable this feature if teams with no available agents should be excluded from routing as time in queue progresses. A Queue's Call Distribution Group(s) may be skipped to find an agent sooner.

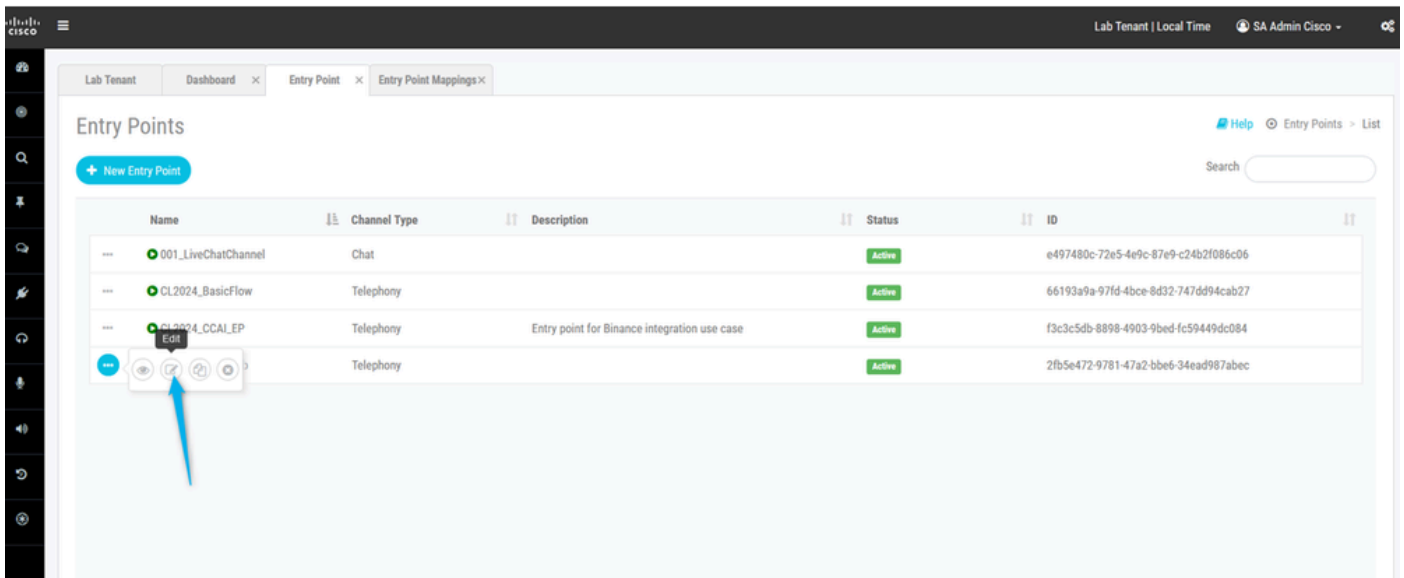
Autosave Enabled Application Version: 0.4.394-0 Debug Autosave Validation: Off Publish Flow

Step 8. Point **Default** output on the **Case** node to the **Play Message** related to the **Sales Queue**. Validate and click **Publish the Flow**.



Task 4. Add the flow to you Entry Point.

Step 1. Go to **Entry Points** and select your **Entry Point**. Click on three dots to edit the **Entry Point**.



Step 2. Select the flow and other required fields and save the **Entry Point**.

Name: DialogflowCX_Lab

Description:

Type: Entry Point

Channel Type: Telephony

Status: Active

Advanced Settings

Service Level Threshold: 60 seconds

Time Zone (Routing Strategies Only): (GMT-05:00) Eastern Standard Time (America/New_York)

Flow: TAC_Virtual_Agent_Flow

Version Label: Latest

Music on Hold: defaultmusic_on_hold.wav

Save Cancel

Step 3. Configure **Entry Point** mapping for your **Entry Point**.

Lab Tenant | Dashboard | Entry Point | Entry Point Mappings

New Dialed Number Mapping

Webex Calling

Select a Webex Calling Location, choose from available numbers and assign the number to an Entry Point. Webex Calling numbers can be added through the Webex Calling Service in Control Hub via a Authorized Cloud Connected PSTN Provider or using the Local Gateway method.

Location: US

Available Numbers: +14402308308

Entry Point: DialogflowCX_Lab

PSTN Region: Default

Save Reset Cancel

Task 5. Test your configurations.

After all these configurations are completed, call the DN related to your **Entry Point** and test the integration.

Related Information

- [Cisco Technical Support & Downloads](#)