

ORACLE®

Oracle Digital Assistant

The Complete Training

Human Agent Integration



Image courtesy of pixabay.com

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Topic agenda

- 1 ➤ Overview of agent integration
- 2 ➤ Use case in action
- 3 ➤ How it works
- 4 ➤ Context transfer using custom properties
- 5 ➤ Using custom properties for queue routing

Topic agenda

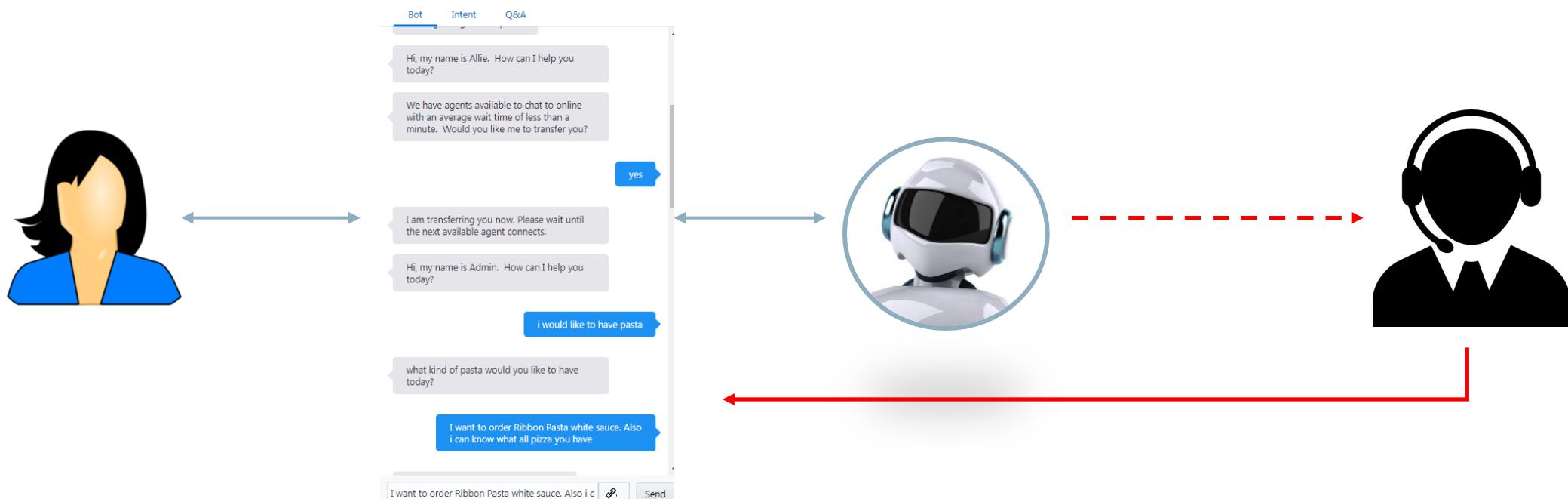
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Overview of agent integration

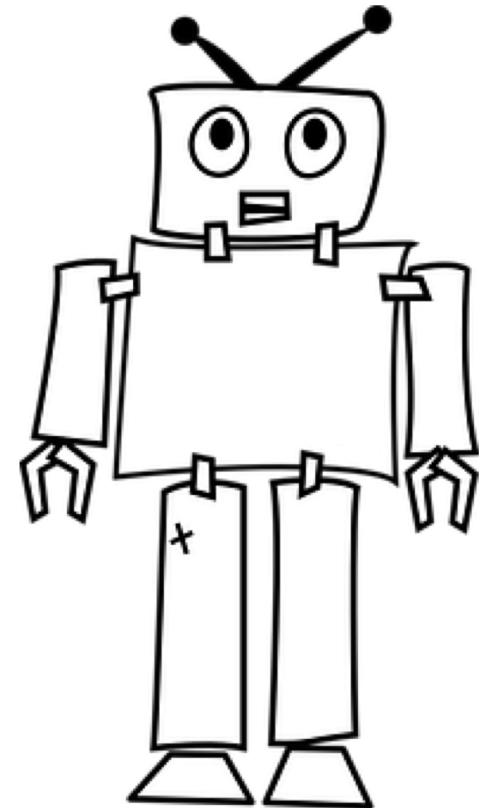
- Digital Assistant often used as call deflection mechanism for call center
 - But sometime you may still need to speak to a human
 - High value engagements
 - Some business interaction might require human involvement
 - Human handles use cases the bot is not set up to handle
- The bot doesn't always get it right
 - Enable users to get unstuck
 - User gets frustrated because bot isn't helping
 - Give access to human support if bot is struggling to deal with human conversation

Overview of agent integration

- When this happens
 - The digital assistant could transfer the current chat conversation to a human agent.
 - User should continue to stay in the same channel (web, messenger, app)

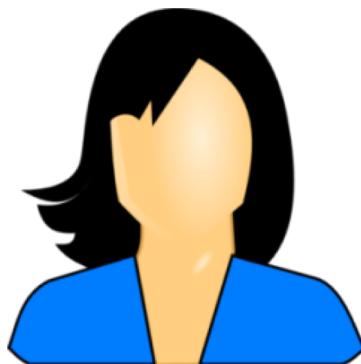


Oracle Digital Assistant provides
built-in agent integration with
Oracle Service Cloud



Actors

- Bot user
 - Customer using Oracle Digital Assistant
 - User can be on any channel supported by Oracle Digital Assistant
- Skill
 - Built using Oracle Digital Assistant
- Agent system
 - Receive and respond to the chat from their existing customer service application platforms like Oracle Service Cloud (RightNow), Zendesk, Genesys etc.



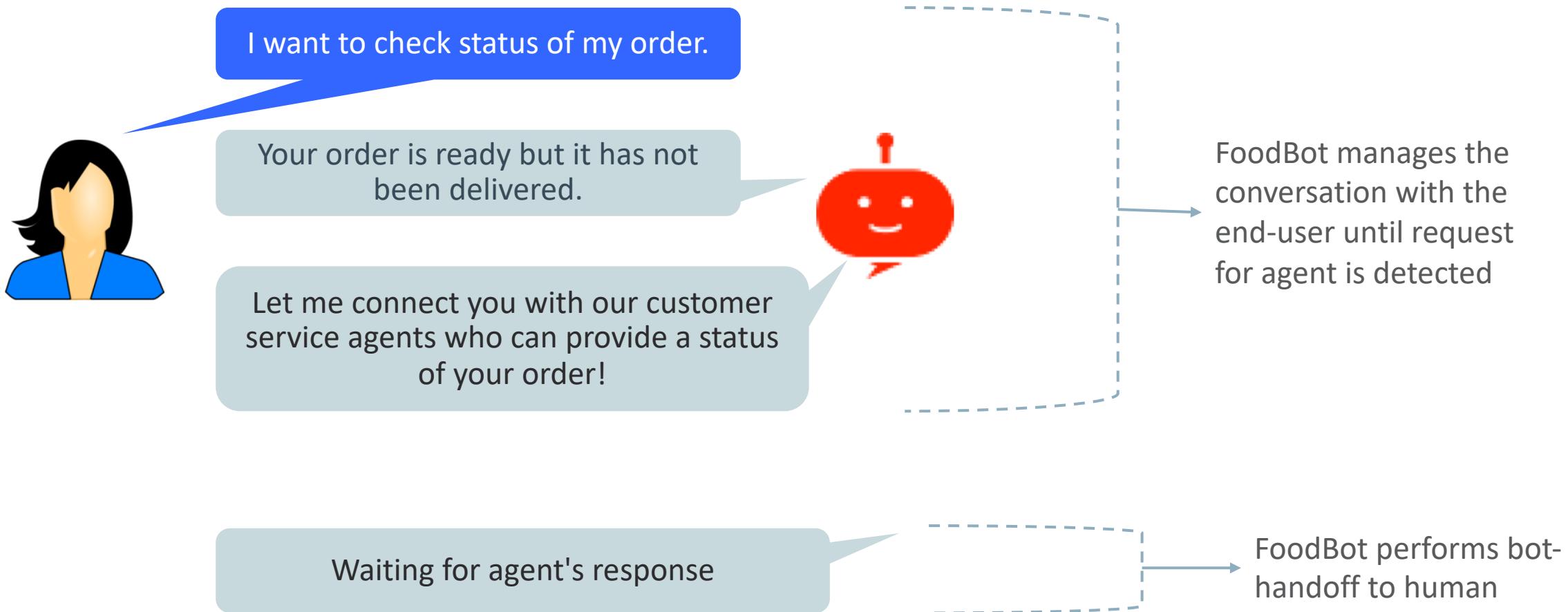
zendesk

 **GENESYS™**

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Use case – FoodBot agent integration



Use case – FoodBot agent integration



Hi, my name is Allie. Sorry to hear about the delay..

I just called the driver and he is outside your house now.

I apologize for the delay. May I offer a discount for your next purchase ? Use code "PIZZA50"

Is there anything else I can help you today with?

No, thank you.



Allie now types FoodBot's response and can see user's answers as if they were chatting one-to-one.

Allie can disconnect from conversation and FoodBot can continue

After Allie disconnects, FoodBot digital assistant takes over

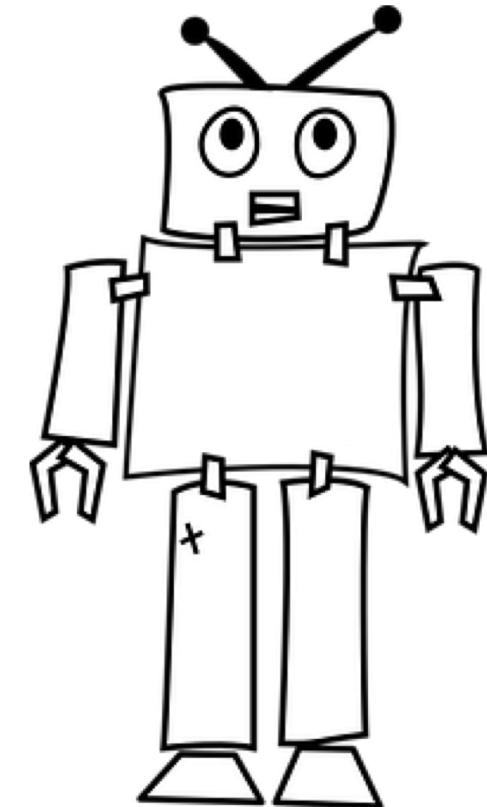
Agent integration benefits

- Users communicate with a human agent using the same conversation channel they used when chatting with the bot
 - No context switch
 - Same messenger
- Agents
 - Receive user request and accept or decline the conversation
 - In the latter case, the bot takes over again
 - Have access to the complete conversation history of user interacting with the bot
 - Can execute bot flows to help users
- Once agent disconnect from conversation, the bot can continue

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Oracle Digital Assistant uses specific agent **webhook channels** to integrate with **agent systems**.



Configure agent integration

- Bot developer will add a special agent integration channel to their bot
- Channel initiates conversations and sends/receives agent messages
- Implements a webhook under the covers

The screenshot shows the Oracle Autonomous Digital Assistant interface. On the left, there is a dark sidebar with the following navigation options:

- Home
- Development (selected)
- Skills
- Digital Assistants
- Channels (highlighted with a red box)
- Store
- Settings
- Downloads...
- Documentation...

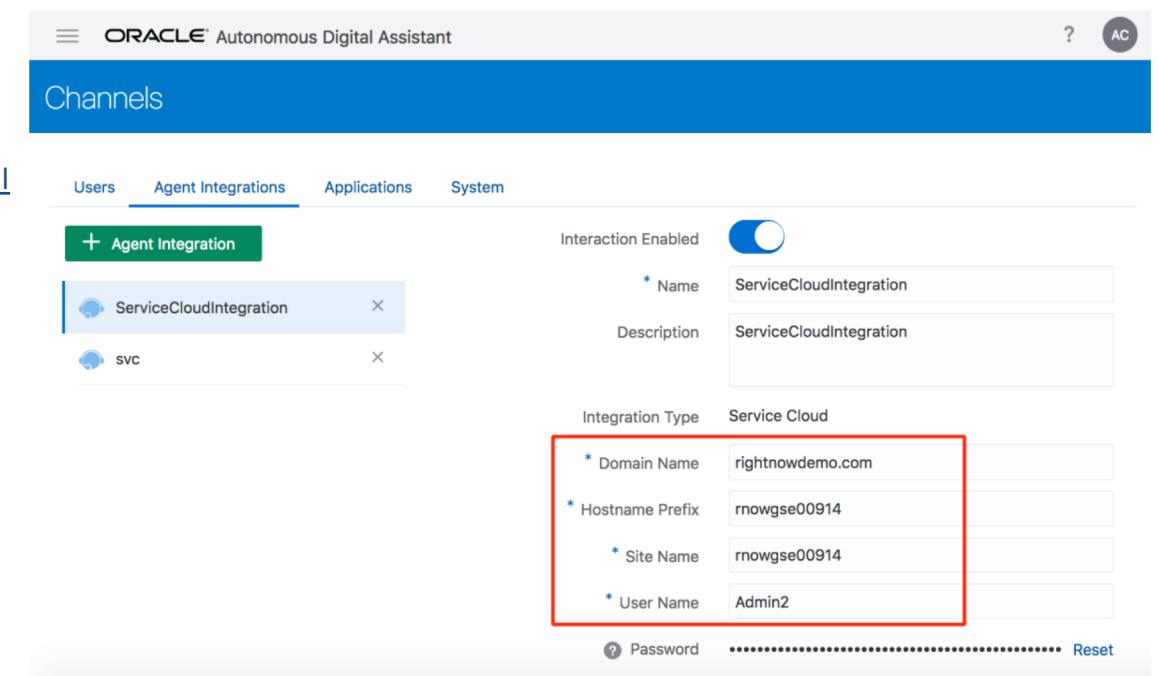
The main content area is titled "ORACLE Autonomous Digital Assistant" and has a blue header bar with the title "Channels". Below the header, there is a navigation bar with tabs: Users, Agent Integrations (highlighted with a red box), Applications, and System. Under the "Agent Integrations" tab, there is a button labeled "+ Agent Integration". A list of existing integrations is shown, including "ServiceCloudIntegration" and "svc". To the right of the list, there are configuration fields:

- Interaction Enabled: A toggle switch is turned on.
- * Name: ServiceCloudIntegration
- Description: ServiceCloudIntegration
- Integration Type: Service Cloud
- * Domain Name: rightnowdemo.com
- * Hostname Prefix: rnowgse00914
- * Site Name: rnowgse00914
- * User Name: Admin2
- >Password: (redacted)

Configure agent integration

- Refer to Service Cloud instance to get details for hostname and site name prefix
 - Get this info from your Service Cloud admin
 - Hostname or sitename typically same as interface name

- https://<ServiceCloud>.rightnowdemo.com/services/soap/connect/chat_soap?wsdl



Enable bot to human interaction from BotML

- Through BotML you decide when you allow the user to be passed to agent
 - When a user conversation is passed to an agent
 - Use case is handled only by an agent
 - Sentiment analysis - user is angry/upset?
- In the dialog flow two System components enable bot to human interaction
 - System.AgentInitiation
 - System.AgentConversation

Agent initiation in dialog flow

```
agentInitiation:  
  component: "System.AgentInitiation"  
  properties:  
    agentChannel: "ServiceCloudIntegration"  
    agentActions: "OrderPizza"  
    nlpResultVariable: "iResult"  
    waitingMessage: "Let me connect you with  
    resumedMessage: "Please wait as find we  
transitions:  
  actions:  
    accepted: "agentConversation"  
    rejected: "reject"  
    OrderPizza: "OrderPizza"
```

Initiates the handshake with external Agent system

Name of the channel

List of actions that will be available for human Agent that can be directly fired

Message to be given to user while waiting for the agent to connect

Message to be given to user if the user sends repeated messages to connect

Action to be taken once ticket is accepted in External agent system

Action to be taken if no agent is available

OrderPizza is the dialog state called when the agent triggers and an action using /OrderPizza command in the chat window.

Start agent conversation in dialog flow

```
agentConversation:  
  component: "System.AgentConversation"  
  properties:  
    agentChannel: "ServiceCloudIntegration"  
    nlpResultVariable: "iResult"  
    exitKeywords: "bye, bye, good night, end, quit"  
    conclusionMessage: "Have a nice day."  
transitions:  
  next: "endPrompt"
```

→ Manages message processing between the user and the agent

→ Name of the channel

→ Keywords when used by the user terminates the conversation with the agent.

When user types any of these words the conversation is ended.

A typical user – bot – agent conversation

The image displays a user interaction with a pizza bot and an Oracle service agent. On the left, a screenshot of a web-based pizza ordering interface shows a user message: "I am looking for some offers I can't find online". The bot responds with: "We have a special offer for you today, get 15% off on your order today." The user then says: "Great Show me the pizzas now". The bot replies: "Connecting you back to the Bot..". Finally, the bot displays a pizza image and its details: "CHEESE Classic marinara sauce topped with whole milk mozzarella cheese." Below the image is a "Order Now" button.

On the right, a screenshot of an Oracle service interface shows a chat log between a user ("Abhay Bhavsar") and an admin. The user requested a chat, and the admin responded with the offer. The user then asked for pizzas, and the admin provided the "Cheese" pizza details. The admin also noted that the user disconnected from the chat session.

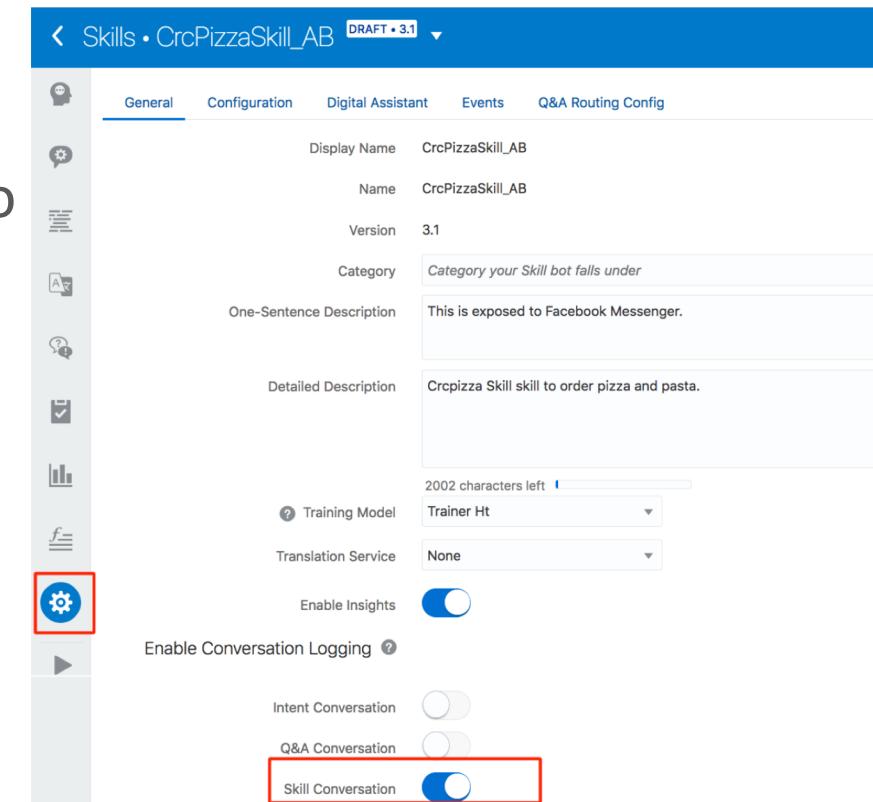
Message	Time	User	Content
I am looking for some offers I can't find online	00:02:26	Abhay Bhavsar	
We have a special offer for you today, get 15% off on your order today.	14:29:17 [00:01:07]	Admin	Abhay Bhavsar: I am looking for some offers I can't find online
Great Show me the pizzas now	14:29:43 [00:01:33]	Admin	Admin: We have a special offer for you today, get 15% off on your order today.
Connecting you back to the Bot..	14:30:32 [00:02:22]	Abhay Bhavsar	Abhay Bhavsar: Great Show me the pizzas now
Here are our pizzas you can order today	14:30:54 [00:02:44]	Admin	Admin: /OrderPizza
CHEESE Classic marinara sauce topped with whole milk mozzarella cheese. 	14:30:59 [00:02:49]	System	System: The end user Abhay Bhavsar has disconnected from chat 485

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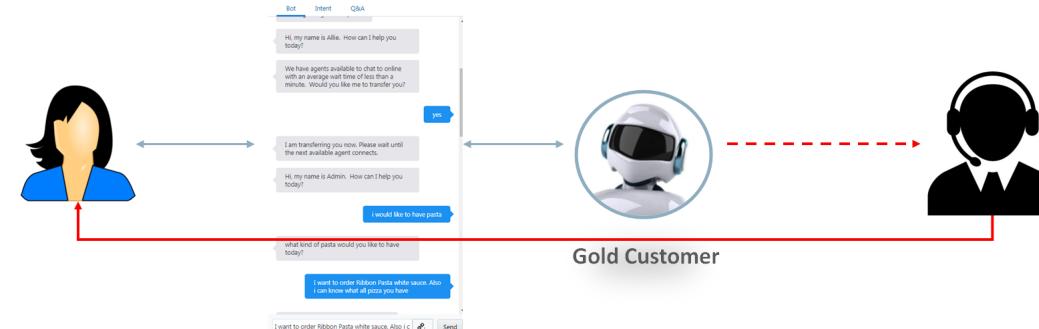
Context transfer using custom properties

- Ideally the bot should pass to the agent:
 - User information
 - Context information – reason for user being directed to the live agent
 - Current bot – user conversation history
 - Action that the agent can trigger to return the handoff to the bot
 - Whether the conversation can be passed to a specific agent/department



Three ways of passing context

- Conversation logs
 - “Out of the box” functionality that passes conversation history
 - Need to turn on conversation logging
- Primary attributes
 - Fields already defined in service cloud that can be set from the bot
- Custom attributes
 - Newly created properties that you define in service cloud for a specific need



Context passed in conversation logs

Testing TutorialCbPizzaBot Skill

Place an order for 2 pitchers

The Water Jug shipment with 2 items will be sent right away

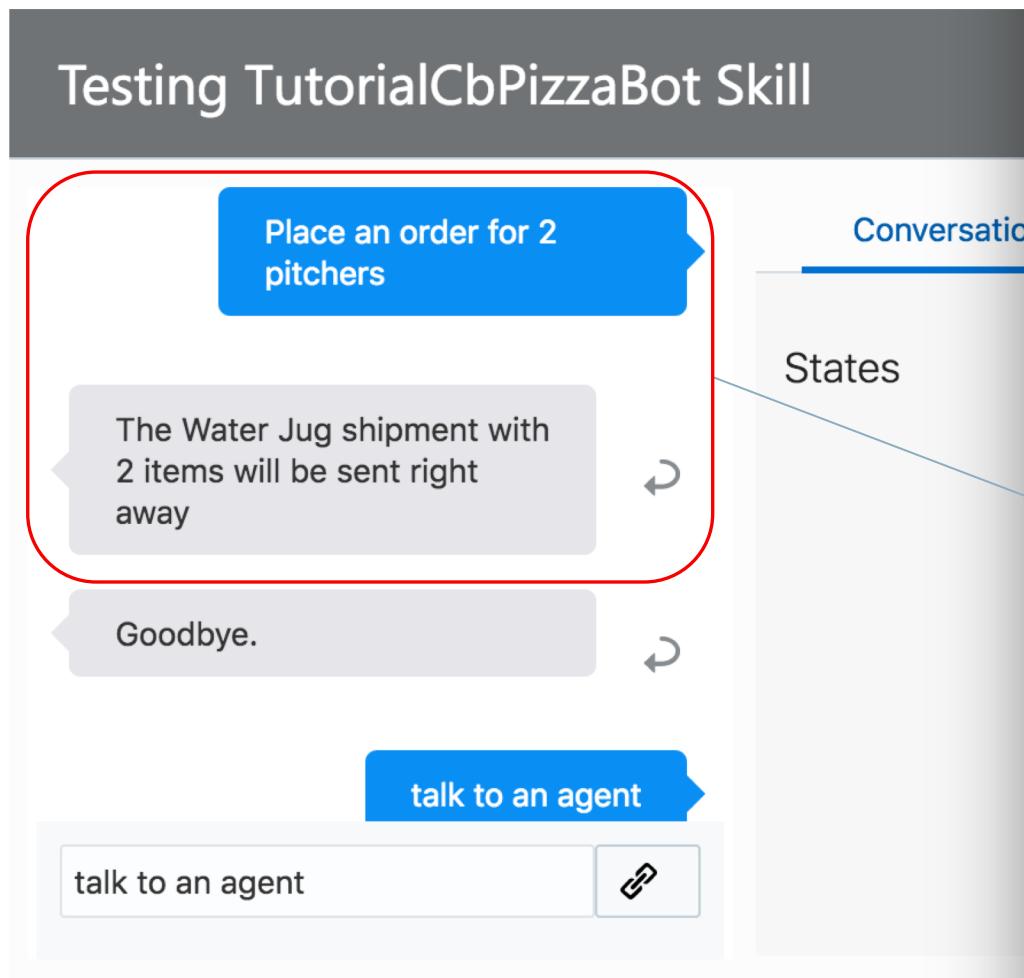
Goodbye.

talk to an agent

talk to an agent

States

Conversation



A red box highlights the bot's response "Place an order for 2 pitchers". A blue arrow points from this box to the user's identical message "Place an order for 2 pitchers" in the conversation log, indicating context preservation.

Chats

Unrestricted 00:01:01 1

Joe Doe

Queue: Product Support
Email: joe.doe@oracle.com
Chat subject: talk to an agent

bot: Hi, how can I help you?

user: Place an order for 2 pitchers

bot: The Water Jug shipment with 2 items will be sent right away

bot: Goodbye.

user: talk to an agent

bot: Hi, how can I help you?

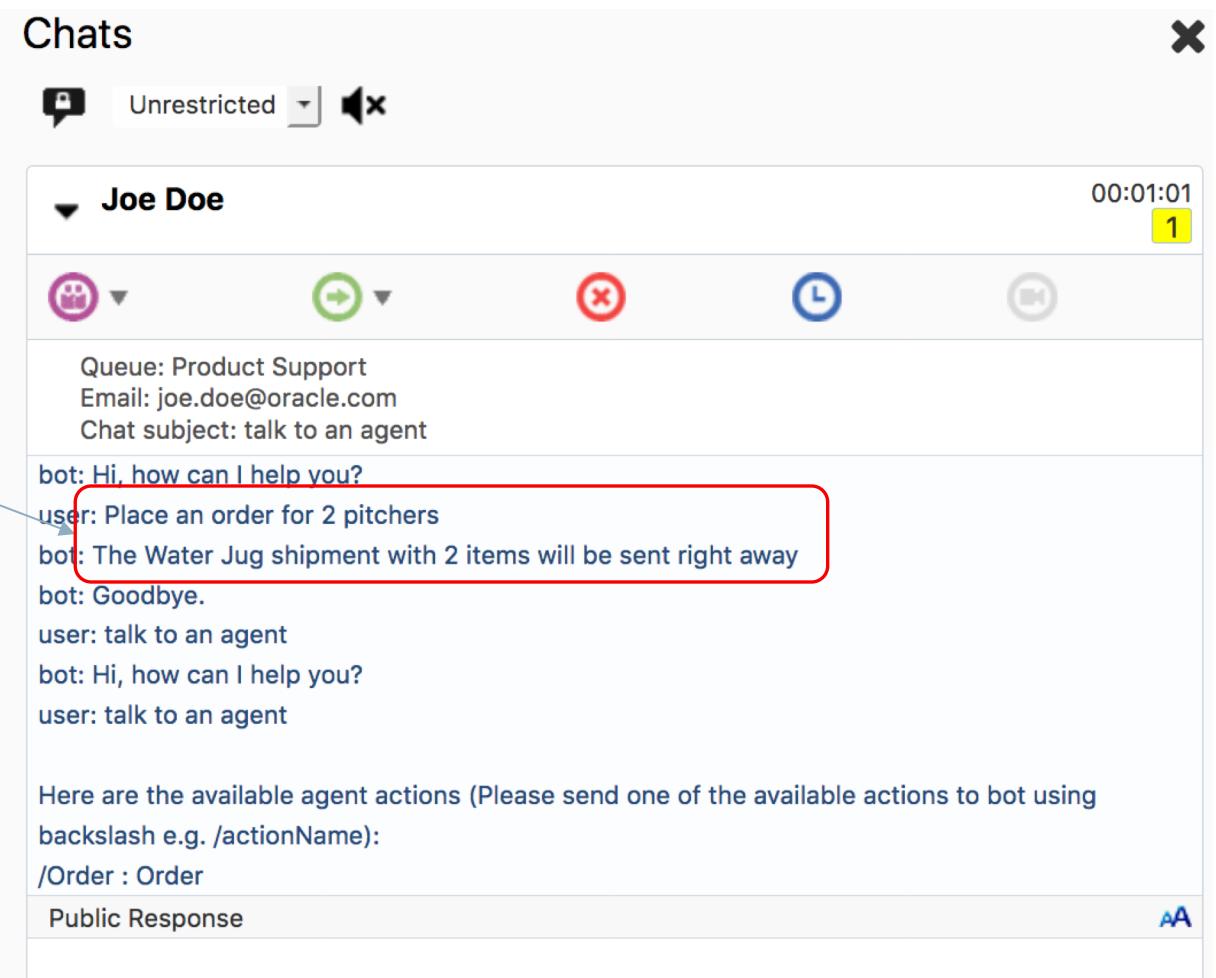
user: talk to an agent

Here are the available agent actions (Please send one of the available actions to bot using backslash e.g. /actionName):

/Order : Order

Public Response

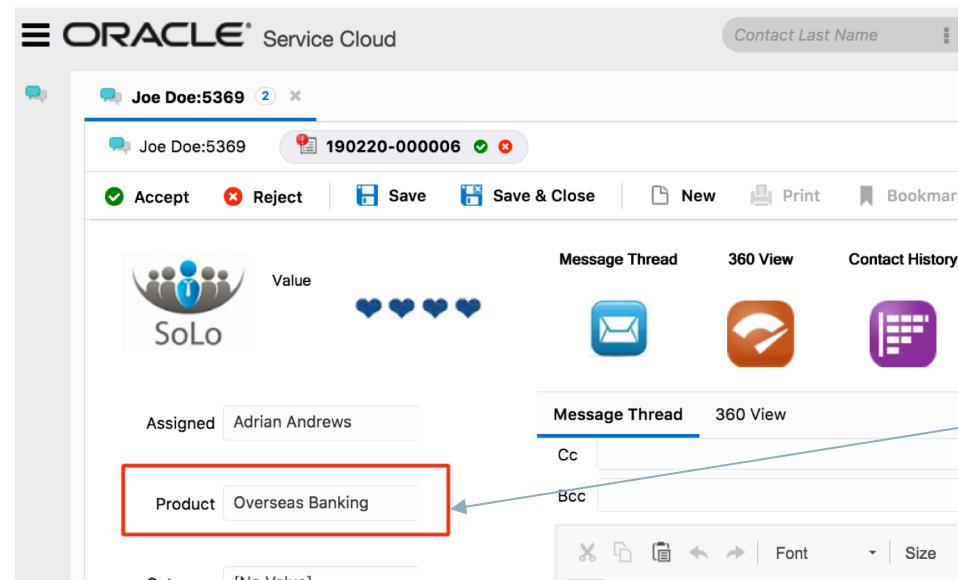
AA



The screenshot shows a conversation log for "Joe Doe". The user asks "Place an order for 2 pitchers" and the bot responds with "The Water Jug shipment with 2 items will be sent right away". Both messages are highlighted with a red box, demonstrating context preservation. The conversation also includes messages about product support and a goodbye message.

Passing context using primary fields

- Service Cloud already defines useful information in primary fields
 - e.g. ProductID, ContactID, OrganizationID
- These fields already exist in the Service Cloud dashboard
- These can be populated directly from the dialog flow



In this case **productID** 178 refers to
Overseas Banking

```
metadata:  
  platformVersion: "1.1"  
main: true  
name: "CrcPizzaBot_AB"  
context:  
  variables:  
    iResult: "nlpresult"  
    myCustomProps: "map"  
  
setupCustomProps:  
  component: "System.SetVariable"  
properties:  
  variable: "myCustomProps"  
  value:  
    customerInformation:  
      interfaceID:  
        name: "solo_financial_1"  
      productID:  
        id: 178  
transitions: {}
```

Passing context using primary fields

- Some fields get populated automatically through conversation history
 - Firstname, Lastname, EmailAddress
- For others you explicitly define the fields to be updated and their values in the flow
- Refer to SOAP API to understand properties and types
 - https://<Service Cloud>/services/soap/connect/chat_soap?wsdl=server
- Look for section ChatCustomerInformation

```
<!-- ===== -->
<!-- Chat Customer Information -->
<!-- ===== -->

<xs:complexType name="ChatCustomerInformation">
```

Passing context using primary fields

- Note that the InterfaceID is of type NamedID so it can be referred to by using an id as well as name, while the ProductID can only be referred to by id since it is of type ID.

```
<xs:element name="InterfaceID" type="rnccm:NamedID" minOccurs="1" maxOccurs="1"/>
<xs:element name="ContactID" type="rnccm:ID" minOccurs="0" maxOccurs="1" />
<xs:element name="OrganizationID" type="rnccm:ID" minOccurs="0" maxOccurs="1" />
<xs:element name="Question" type="xs:string" minOccurs="0" maxOccurs="1"/>
<xs:element name="ProductID" type="rnccm:ID" minOccurs="0" maxOccurs="1"/>
<xs:element name="CategoryID" type="rnccm:ID" minOccurs="0" maxOccurs="1"/>
```

```
<xs:complexType name="NamedID">
  <xs:sequence>
    <xs:element name="ID" type="ID" minOccurs="0" maxOccurs="1"/>
    <xs:element name="Name" type="xs:string" minOccurs="0" maxOccurs="1"/>
  </xs:sequence>
</xs:complexType>
```

```
<xs:complexType name="ID">
  <xs:attribute name="id" type="xs:long" use="optional"/>
</xs:complexType>
```

Passing context using primary fields

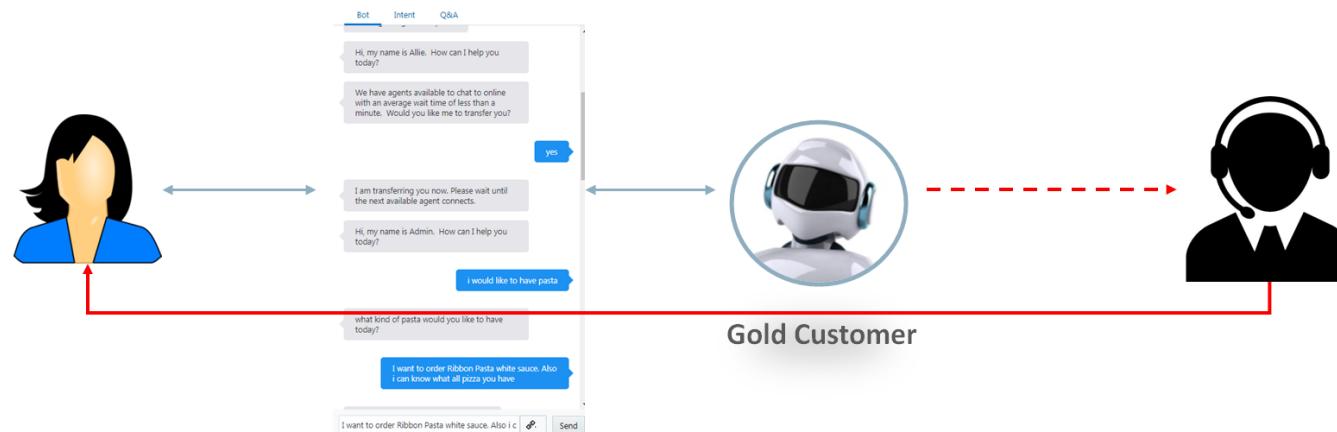
- In dialog flow we have a map variable with a particular format
 - customerInformation – The format of the customer information is as per the SOAP WSDL
 - Note that interfaceID can be referred by name as well as id unlike productID

```
setupCustomProps:  
  component: "System.SetVariable"  
  properties:  
    variable: "myCustomProps"  
    value:  
      customerInformation:  
        interfaceID:  
          name: "solo_financial_1"  
        productID:  
          id: 178  
  transitions: {}
```

- myCustomProps is the properties object. It holds all the primary as well as custom properties
- interfaceID is the name of the interface defined in Service Cloud. The Oracle Service Cloud SOAP API defines the structure of this object.
- Product ID points to the Service Product ID in Service Cloud.

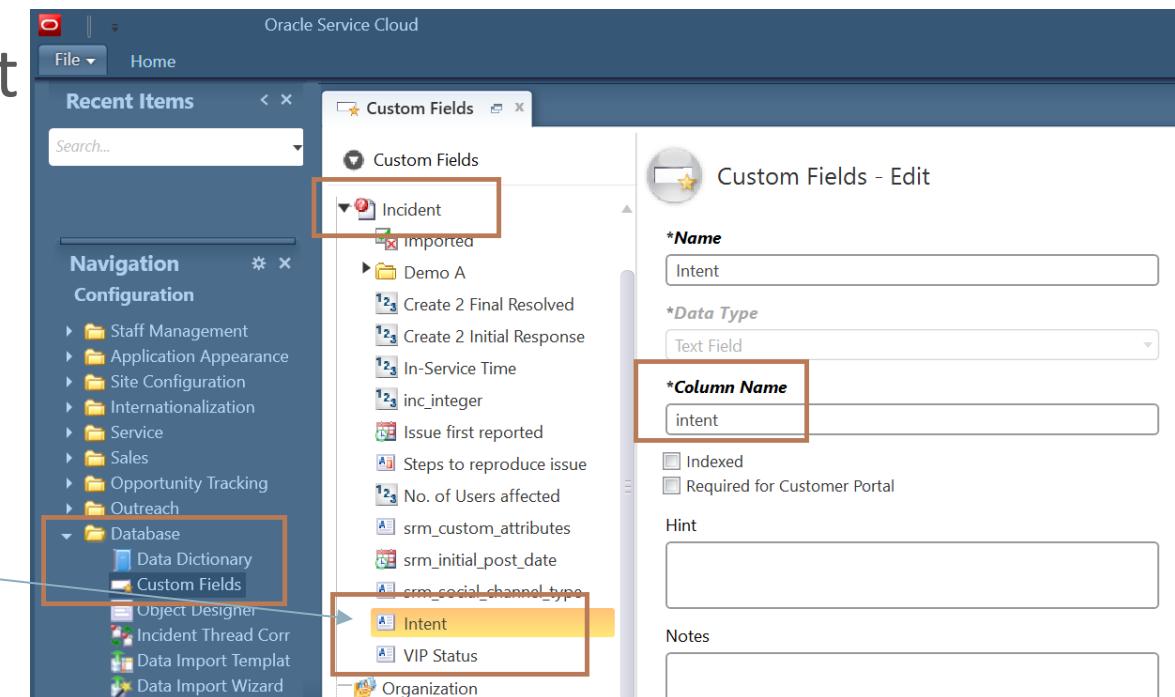
Passing context using custom fields

- Custom fields allow use case specific information to be passed between the skill and Service Cloud
 - e.g. pass an order number from the bot to the agent
- Service cloud displays this information to the agent
- Routing rules can be used to route calls to agents based on custom fields
 - GOLD customer gets routed to a department for handling high profile customers



Passing context using custom fields

- When a chat request is accepted an incident is created, the incident dataset gets populated from the custom properties. Both primary and custom fields gets populated.
- New custom fields can be created in the Incident table
- In dialog flow custom fields are referred to C\$<CustomFieldName>



Passing context using custom fields

- The documentation provides access to the complete Service Cloud data
- Oracle Service Cloud provides REST APIs for listing custom fields
 - Developer can discover all custom properties
 - <https://docs.oracle.com/en/cloud/saas/service/18c/cxsvc/api-queryresults.html>

JSON	Raw Data	Headers
Save Copy		
<pre>items: 0: tableName: "incidents" count: 16 columnNames: 0: "imported" 1: "cs_accepted_offer_yn" 2: "cs_accepted_install_yn" 3: "cs_install_date_dtm" 4: "cs_made_offer_yn" 5: "cs_offer_name_text" 6: "cs_offer_price_text" 7: "cs_offer_install_price_text" 8: "cs_offer_tax_text" 9: "cs_offer_total_text" 10: "cs_payment_method_menu" 11: "status_crosschannelreport" 12: "c2fr" 13: "c2init_resp" 14: "in_service" 15: "inc_integer" 16: "issue_first_reported" 17: "steps_to_repro" 18: "no_of_users_affected" 19: "srm_custom_attributes" 20: "srm_initial_post_date" 21: "srm_social_channel_type" 22: "intent" 23: "vipstatus"</pre>		

Passing context using custom fields

- Custom properties defined as a map in dialog flow
- Pass variable with a particular format to support each custom field
 - customFields, custom fields
- custom properties are referred to by the name c\$<CustomFieldName>
- The data type of these properties is defined by the SOAP WSDL
 - https://<Service Cloud>/services/soap/connect/chat_soap?wsdl=server

```
metadata:  
  platformVersion: "1.1"  
main: true  
name: "CrcPizzaBot_AB"  
context:  
  variables:  
    iResult: "nlpresult"  
    myCustomProps: "map"  
  
setupCustomProps:  
  component: "System.SetVariable"  
properties:  
  variable: "myCustomProps"  
  value:  
  
customerInformation:  
  interfaceID:  
    name: "solo_financial_1"  
  
productID:  
  id: 178  
  
customFields:  
  - name: "c$intent"  
    dataType: "STRING"  
    dataValue:  
      stringValue: "${intentName}"  
  - name: "c$vipstatus"  
    dataType: "STRING"  
    dataValue:  
      stringValue: "GOLD"  
transitions: {}
```

Passing context using custom fields

JSON Raw Data Headers

Save Copy

```
items:
  0:
    tableName: "incidents"
    count: 16
    columnNames:
      0: "imported"
      1: "cs_accepted_offer_yn"
      2: "cs_accepted_install_yn"
      ...
      20: "srm_initial_post_date"
      21: "srm_social_channel_type"
      22: "intent" intent
      23: "vipstatus" vipstatus
```

```
setupCustomProps:
  component: "System.SetVariable"
  properties:
    variable: "myCustomProps"
    value:
      customerInformation:
        interfaceID:
          name: "solo_financial_1"
        productID:
          id: 178
      customFields:
        - name: "c$intent"
          dataType: "STRING"
          dataValue:
            stringValue: "${intentName}"
        - name: "c$vipstatus"
          dataType: "STRING"
          dataValue:
            stringValue: "GOLD"
      transitions: {}
```

Passing context using custom fields

- Custom properties passed to Service Cloud via System.AgentInitiation

```
metadata:  
  platformVersion: "1.1"  
main: true  
name: "CrcPizzaBot_AB"  
context:  
  variables:  
    iResult: "nlpresult"  
    myCustomProps: "map"
```

```
agentInitiation:  
  component: "System.AgentInitiation"  
properties:  
  agentChannel: "ServiceCloudIntegration"  
  agentActions: "OrderPizza"  
  nlpResultVariable: "iResult"  
  waitingMessage: "Let me connect you with our Customer  
  resumedMessage: "Please wait as find we find the best  
  customProperties: "${myCustomProps.value}"  
transitions:  
actions:  
  accepted: "agentConversation"  
  rejected: "reject"  
  OrderPizza: "OrderPizza"
```

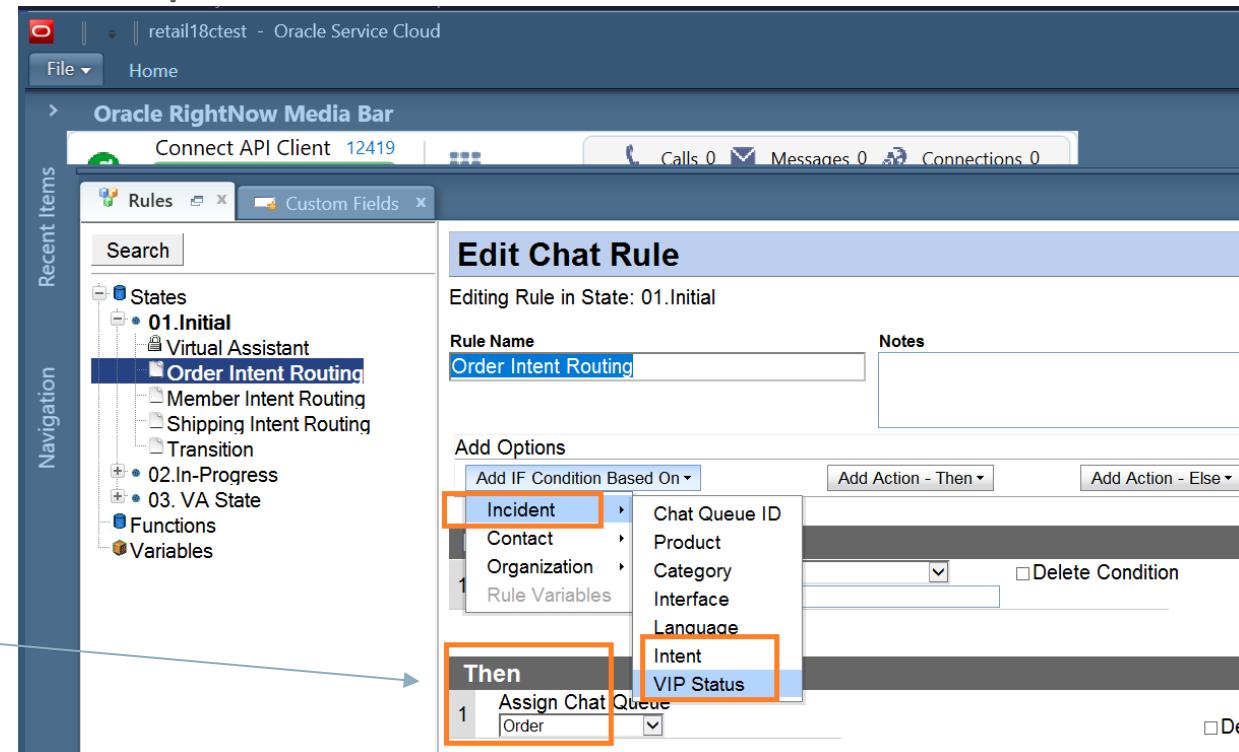
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Using custom properties for queue routing

- Based on custom property you may decide to route request to a specific agent queue
 - If VIP status then route to order queue

```
setupCustomProps:  
  component: "System.SetVariable"  
  properties:  
    variable: "myCustomProps"  
    value:  
  
    customerInformation:  
      interfaceID:  
        name: "solo_financial_1"  
  
    productID:  
      id: 178  
  
    customFields:  
      - name: "c$intent"  
        dataType: "STRING"  
        dataValue:  
          stringValue: "${intentionName}"  
      - name: "c$vipstatus"  
        dataType: "STRING"  
        dataValue:  
          stringValue: "GOLD"  
transitions: {}
```



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