

# Advanced features that will make your chatbot act like human

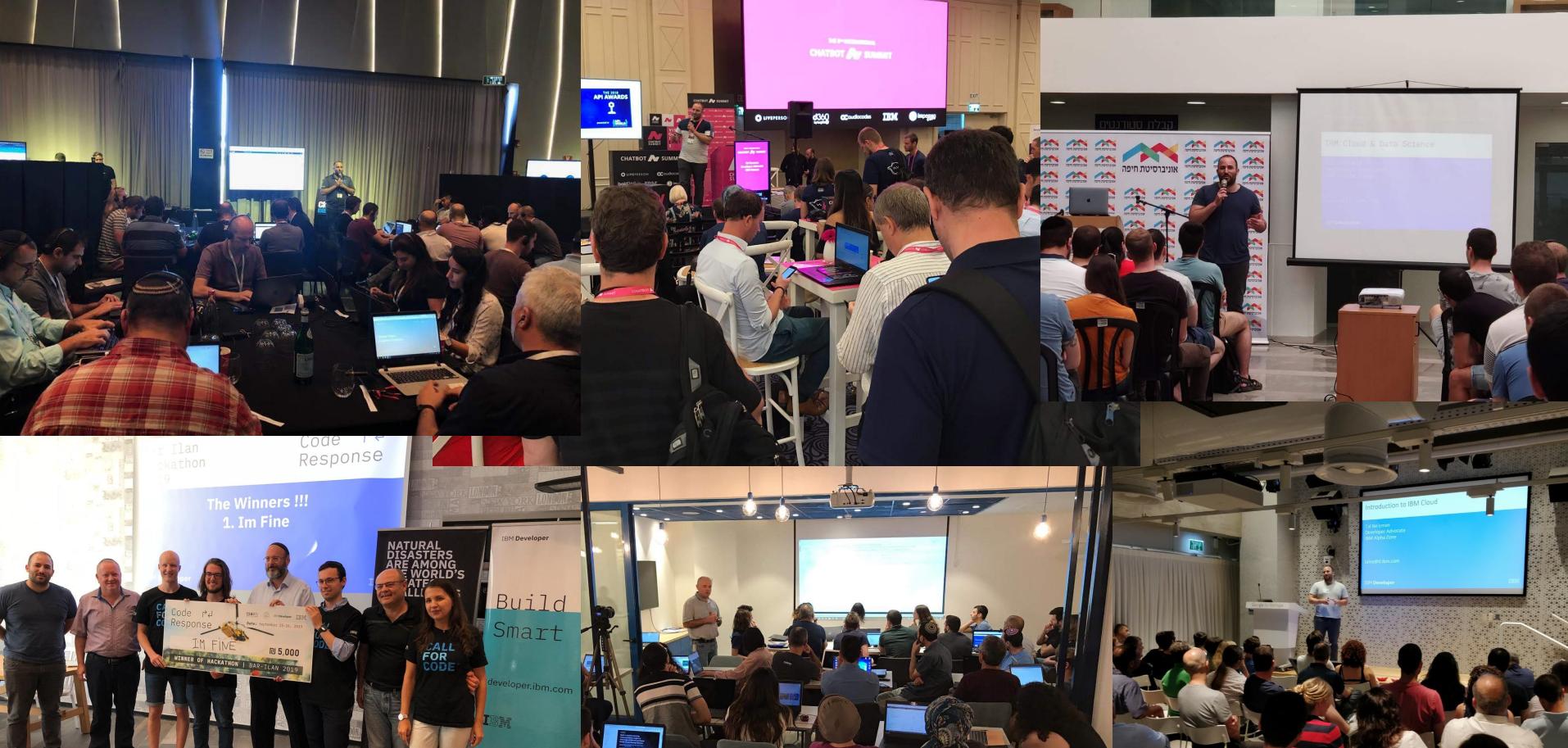
Tal Neeman  
Developer Advocate, IBM

# Hi, I'm Tal

I'm a Developer Advocate at IBM.

I lecture at meetups, participate as mentor at hackathons, having fun in awesome webinars and I also write articles / tutorials about open source or new technologies on IBM Cloud.





[developer.ibm.com](https://developer.ibm.com)

# Watson Assistant

Conversational AI that fuels smart customer self-service

Single path to get the job done, including phone

Uses AI to resolve customer questions the fastest in the market

Combine conversational AI, with AI-powered search

Connect to any systems or applications you need



...



Customer, Employee

...

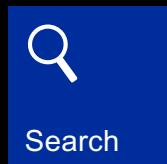


Resolution



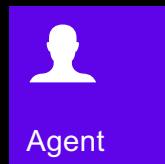
Dialog

...



Search

...



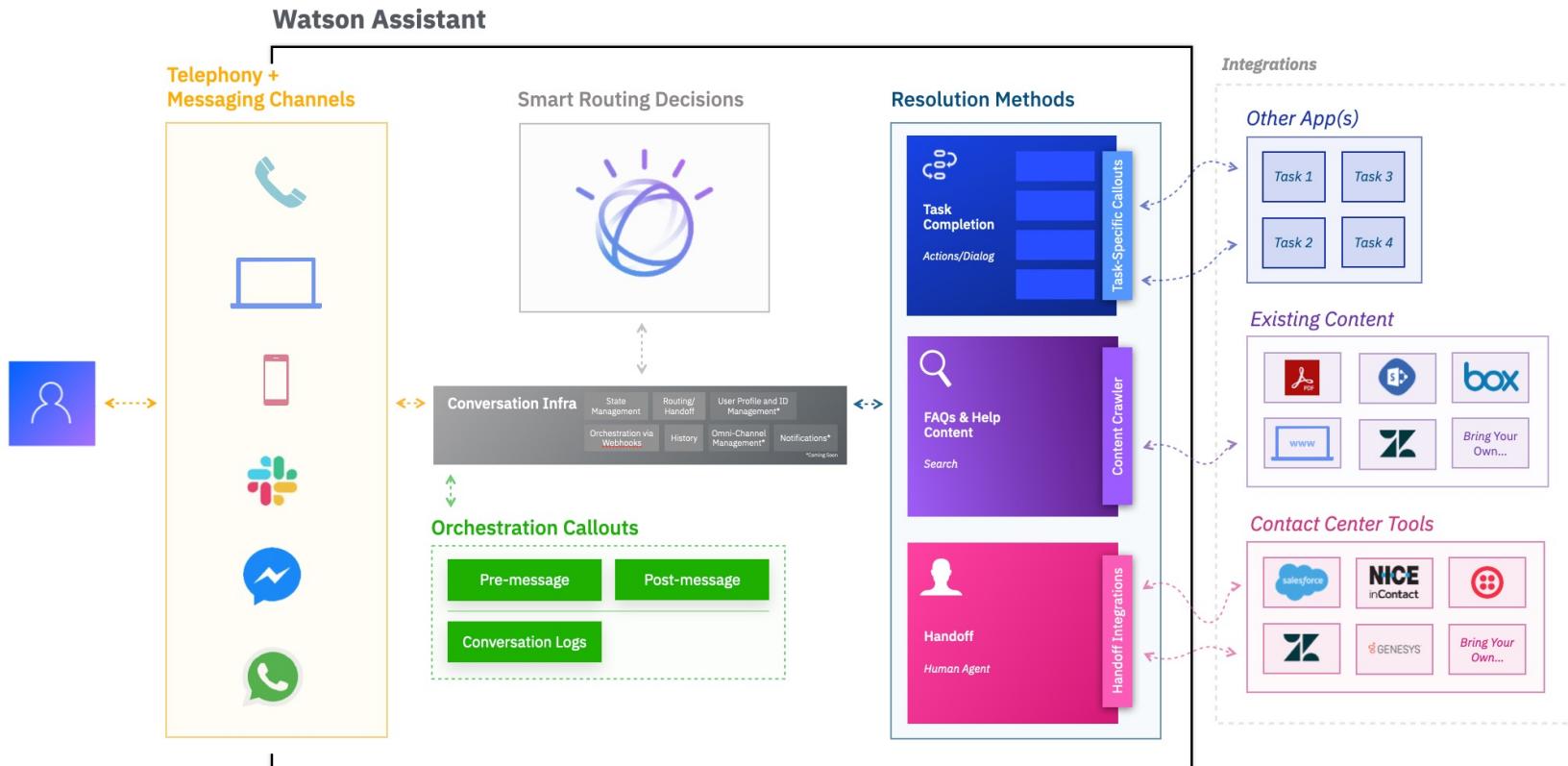
Agent

Watson Assistant

Skills

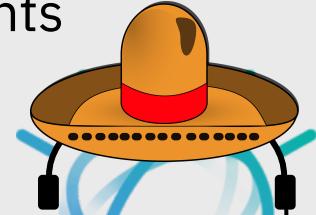
Watson Discovery

# How it works



# Watson Assistant

## Assistants



∞

## Skills

```
ul.skills
+skill('programming', '98%', '(Hello - John, real - name, real -')
+skill('planning', '88%', '( I can plan very well every day, there')
+skill('organisation', '77%', '( I am good with organising projects')
+skill('visual design', '75%', '(I am mostly handling wireframe')
hi{style="margin: 8px"}
hi mypersonal.skills}
ul.skills
+skill('creativity', '98%', '(creative thinking about design and')
+skill('learning', '93%', '( I would describe myself as having')
+skill('communication', '89%', '( I understand and speak English')
```



∞

Skills /

# Skills

insurance-voice-bot

```
ul.skills
+skill('programming', '98%', '(Hello - John, nice to meet you! I am a programming voice bot. I can answer many questions about insurance products and services. I am good with organizing processes and visual designs. I am mostly handling web-based applications and databases. I am also good at learning new things and communicating effectively with users.)')
+skill('planning', '88%', '(I can plan very well every step of the process. I am good at organizing processes and visual designs. I am mostly handling web-based applications and databases. I am also good at learning new things and communicating effectively with users.)')
+skill('organisation', '77%', '(I am good with organizing processes and visual designs. I am mostly handling web-based applications and databases. I am also good at learning new things and communicating effectively with users.)')
+skill('visual design', '75%', '(I am good with organizing processes and visual designs. I am mostly handling web-based applications and databases. I am also good at learning new things and communicating effectively with users.)')
```

de Patt... Dial... Options



# Intents : category that defines a user goal or purpose.

← #General\_Greetings

Last modified a day ago



Try it

## Intent name

Name your intent to match a customer's question or goal. For example, #pay\_bill or #open\_account.

#General\_Greetings

## Description (optional)

Greet the bot.

## Add user example

Type a user example here

Add example

Show recommendations



User examples (27) ▾

Added

Show only conflicts

Good day

a day ago

Good evening

a day ago

Good morning

a day ago

Good to see you

a day ago

Greetings

a day ago

Have you been well?

a day ago

# Entity : Watson's way of handling significant parts of an input that should be used to alter the way it responds to the intent

The screenshot shows the Watson Assistant Entity configuration interface. On the left, the entity is defined as '@gender'. The 'Entity name' field contains '@gender'. The 'Value name' field is empty, and the 'Enter value' placeholder is visible. A 'Synonyms' section includes a dropdown menu with 'Add synonym...' and a 'Show recommendations' button. Below this, there are tabs for 'Dictionary' (selected) and 'Annotation BETA'. Under 'Dictionary', there are two entries: 'Entity values (2)' (checkbox checked, showing 'female') and 'female' (checkbox checked). Under 'Annotation BETA', there are sections for 'Type' and 'Synonyms', both currently empty.

**@gender**

Entity name  
Name your entity, for example @account\_type or @credit\_card.  
@gender

Value name  
Enter value

Synonyms

Add synonym... Show recommendations

Dictionary Annotation BETA

Entity values (2) ▾

female

Type

Synonyms

> @sys-currency Extracts currency values from user

> @sys-date Extracts date mentions (Friday)

> @sys-location BETA The @sys-location system entity ex...

> @sys-number Extracts numbers mentioned from

> @sys-percentage Extracts amounts from user examp...

> @sys-person BETA The @sys-person system entity ext...

> @sys-time Extracts time mentions (at 10)

# Dialog

[Add node](#)[Add child node](#)[Add folder](#)[!\[\]\(8b57f0e15e7dda24cf9977561475f640\_img.jpg\) Settings](#)

 insurance-voice-bot

conversation\_start

1 Response / 0 Context set / Does not return



#term\_insurance and @details

1 Response / 1 Context set / Returns



#Insurance\_Policy\_Inquiry and @prote...

1 Response / 0 Context set / Returns



#welcome\_greetings

1 Response / 0 Context set / Does not return



# Analytics

Filter

Refresh data

Last updated: 2:30 PM

This week

17 Jun 19 to 19 Jun 19

by

day

Intents

Entities

Total conversations i

4

Avg. msg. per conversation i

9.75

Max. conversations i

4

06/18/2019

Weak understanding i

3 msg.  
[View logs](#)

what can you do

06/18/2019 @ 10:36 AM

[Open conversation](#)

#General\_Agent\_Capabilities

Trained: 06/19/2019 @ 1:57 PM

No entities



please try again can you help me

06/18/2019 @ 10:36 AM

[Open conversation](#)

#General\_Agent\_Capabilities

@Response:Yes

another thing

06/18/2019 @ 10:35 AM

[Open conversation](#)

#General\_Greetings

No entities

thank you

06/18/2019 @ 10:35 AM

[Open conversation](#)

#General\_Positive\_Feedback

@bye:bye

# Watson Assistant

1

Build your own assistant using [IBM Watson Assistant](#)

The screenshot shows a conversation between a user and a virtual assistant. The assistant's message is: "Hello, I'm a demo customer care virtual assistant to show you the basics. I can help with directions to my store, hours of operation and booking an in-store appointment". The user's message is: "Hi can I schedule an appointment". The assistant's message is: "What day would you like to come in?". A blue button labeled "tomorrow" is visible. The user's message is: "at 17". The assistant's message is: "Let me confirm: You want an appointment for Friday at 5 PM. Is this correct?". A blue button labeled "Send a message..." is at the bottom.

2

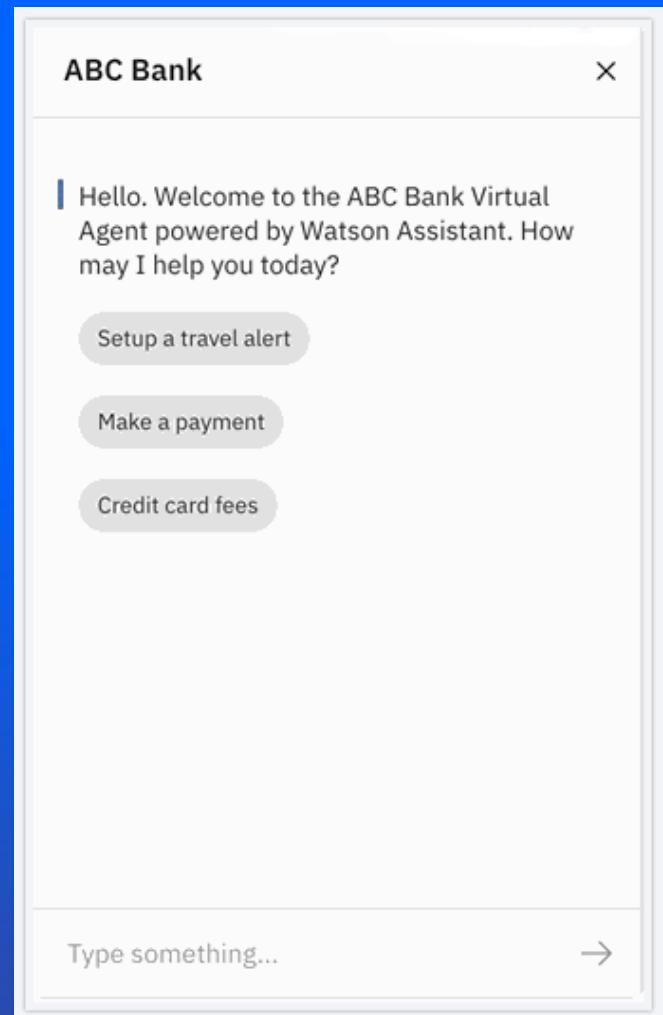
Build your own assistant using [IBM Watson Assistant](#)

This screenshot continues the conversation from the previous step. The assistant's message is: "What day would you like to come in?". A blue button labeled "tomorrow" is visible. The assistant's message is: "What time on Friday do you want to come in?". A blue button labeled "at 17" is visible. The assistant's message is: "Let me confirm: You want an appointment for Friday at 5 PM. Is this correct?". A blue button labeled "Send a message..." is at the bottom.

# Web chat

## Out of the box web chat

- Building a chat interface takes money and time
- Watson Assistant virtual assistants can be deployed in minutes
- Secure Login
- Visual Customization



# Disambiguation

- Watson Assistant doesn't jump to conclusions
- With disambiguation, Watson Assistant automatically asks for clarification: no guess work

The screenshot shows a mobile-style chat interface for the DTE Bank Virtual Assistant. At the top, it says "DTE Bank Assistant". Below that, a message from the bot reads: "Hello. Welcome to the DTE Bank Virtual Assistant Demo. How may I help you today?". A row of buttons follows: "I am traveling", "Pay my bills", "Check my account balance", and "Can I use my card while abroad". The user then types "I am traveling" into a blue input field. The bot responds with "Okay! I can help you:". Below this, another row of buttons appears: "Look for Travel Tips", "Set up a Travel Alert", and "None of the above". A black callout box on the right side contains the text: "Automatically disambiguates a user's utterance if its unsure". At the bottom is a large input field with a placeholder "Type something..." and a send button with a right-pointing arrow.

DTE Bank Assistant

Hello. Welcome to the DTE Bank Virtual Assistant Demo. How may I help you today?

I am traveling Pay my bills

Check my account balance

Can I use my card while abroad

I am traveling

Okay! I can help you:

Look for Travel Tips Set up a Travel Alert

None of the above

Type something... →

Automatically disambiguates a user's utterance if its unsure

# Slots

- Slots collect information at the user's pace
- Your assistant asks only for the missing details

Chat window in production

DTE Bank Assistant

Okay I will help you setup a Travel Alert. I just need a few pieces of information from you about your trip. First, where are you going?

i am traveling to Rome tomorrow

When do you come back?

in a week

Your account has been setup for a travel alert for 2020-04-30 to 2020-05-06 while traveling to Rome. Thank you.

I have your Mobile number as [444-555-6666](#). Would you like to update it?

Yes

No

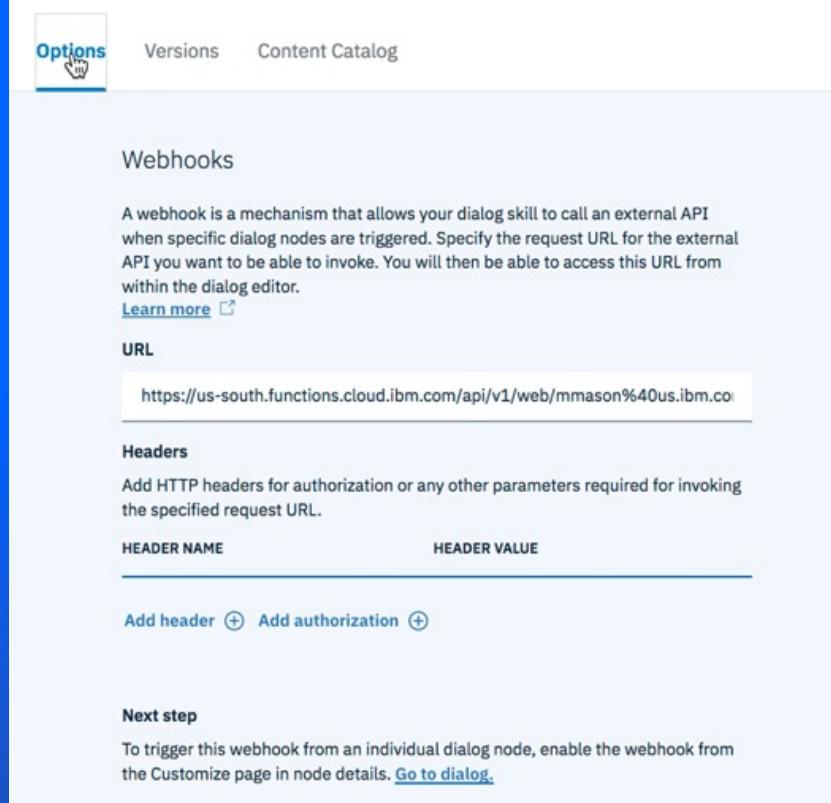
Watson Assistant tooling to configure slots

Then check for:

	CHECK FOR	SAVE IT AS	IF NOT PRESENT, ASK	TYPE	
1	@sys-location	\$location	Where are you travelir	Required	
2	@sys-date	\$depart_date	When do you leave?	Required	
3	@sys-date	\$return_date	When do you come ba	Required	

# Webhooks

- Webhooks pull external data into your virtual assistant (for example, account information)
- Webhooks invoke actions in other systems (for example, opening a support ticket)



The screenshot shows a user interface for configuring a webhook. At the top, there's a navigation bar with 'Options' (highlighted with a hand cursor icon), 'Versions', and 'Content Catalog'. Below the navigation, the title 'Webhooks' is displayed. A descriptive text explains what a webhook is: 'A webhook is a mechanism that allows your dialog skill to call an external API when specific dialog nodes are triggered. Specify the request URL for the external API you want to be able to invoke. You will then be able to access this URL from within the dialog editor.' There is a 'Learn more' link with a help icon. The 'URL' field contains the value 'https://us-south.functions.cloud.ibm.com/api/v1/web/mmason%40us.ibm.co'. Under the 'Headers' section, there's a note: 'Add HTTP headers for authorization or any other parameters required for invoking the specified request URL.' Below this, there are two columns: 'HEADER NAME' and 'HEADER VALUE', separated by a horizontal line. At the bottom, there are buttons for 'Add header' and 'Add authorization' with plus icons.

Webhooks

A webhook is a mechanism that allows your dialog skill to call an external API when specific dialog nodes are triggered. Specify the request URL for the external API you want to be able to invoke. You will then be able to access this URL from within the dialog editor.

[Learn more](#)

**URL**

https://us-south.functions.cloud.ibm.com/api/v1/web/mmason%40us.ibm.co

**Headers**

Add HTTP headers for authorization or any other parameters required for invoking the specified request URL.

HEADER NAME	HEADER VALUE
-------------	--------------

Add header [+](#) Add authorization [+](#)

**Next step**

To trigger this webhook from an individual dialog node, enable the webhook from the Customize page in node details. [Go to dialog](#).

# Search skill

- Improve coverage of your assistant by using **existing content** within your organization
  - Let AI find and highlight relevant answers from complex documents
  - Surface answers from existing content like marketing pages and knowledge base articles
  - Use pre-built connectors to search existing data sources

DTE Bank Assistant

Can I use my card while abroad

I searched my knowledge base and found this information which might be useful:

***Can I use my ABC Bank Visa Debit Card at a bank overseas to obtain local currency?***

When you are travelling internationally, you *can use* your Debit or Credit Card to obtain...

Show more ▾

***Using your Credit Card when traveling abroad***

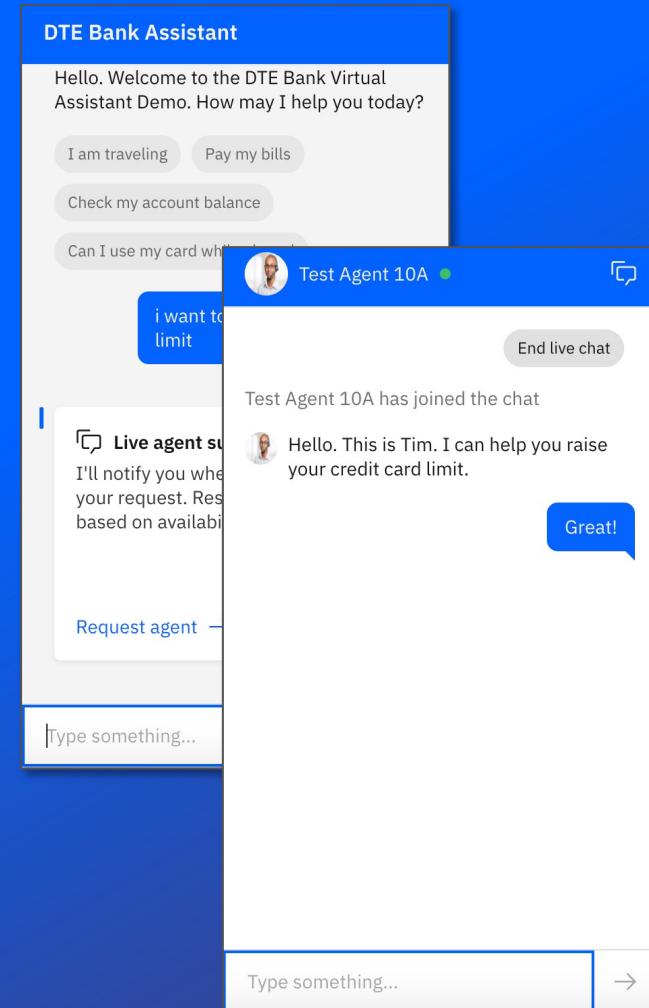
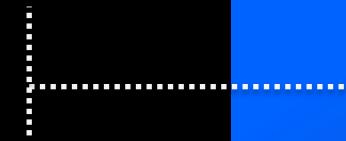
When travelling *abroad*, you *can use* your Credit Card to make purchases and obtain local...

Show more ▾

Type something... →

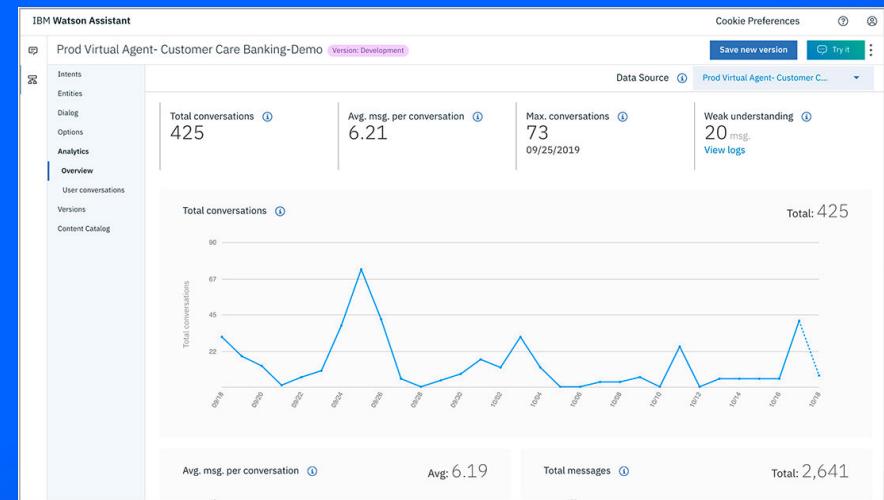
# Agent hand-off

- Routes to the right human agent, as required
- Continues to self-serve while customer waits for agent's response
- Connectors available to leading customer service platforms



# Analytics

- Easy-to-use analytics dashboard
- Visualize trends in your user message data
- Take action to improve where required
- Watson Assistant can learn from customer interactions and present an improved experience



# Intent recommendation

- AI for continuous learning
- Watson helps you find the intents your users need most
- Sources include connected live assistants and CSV files

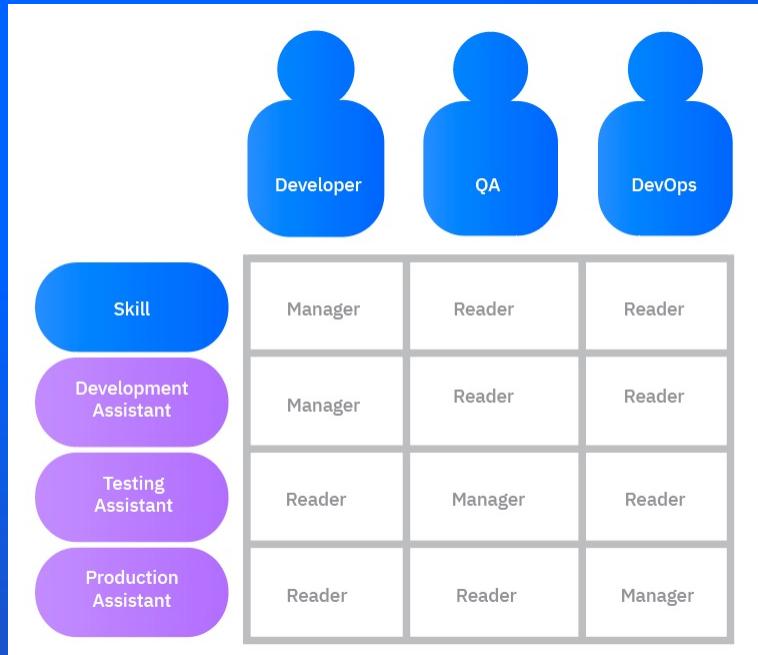
The screenshot shows the Watson Intent Recommendations interface. At the top, it says "Intent Recommendations" with "Plus" and "Beta" buttons. Below that, a message states: "Watson helps you find the intents your users need most by grouping the most common and similar user examples. Recommended intents are sourced from connected live assistants and CSV files. You can manage your recommendation sources [here](#). Watson is grouping your utterances".

Below this, under "Recommended intents" (results from: CSV files), there are four items:

- update\_phone\_number**: 9 examples. Examples: "can I update my phone number", "I want to update my phone number", "I'd like to update my phone number".
- update\_email**: 5 examples. Examples: "help update email", "update account email", "update email address".
- advice**: 2 examples. Examples: "traveling abroad advice", "advice for travelling internationally".
- tips\_travel**: 4 examples. Examples: "international travel tips", "advice for international travel", "any tips when I travel internationally".

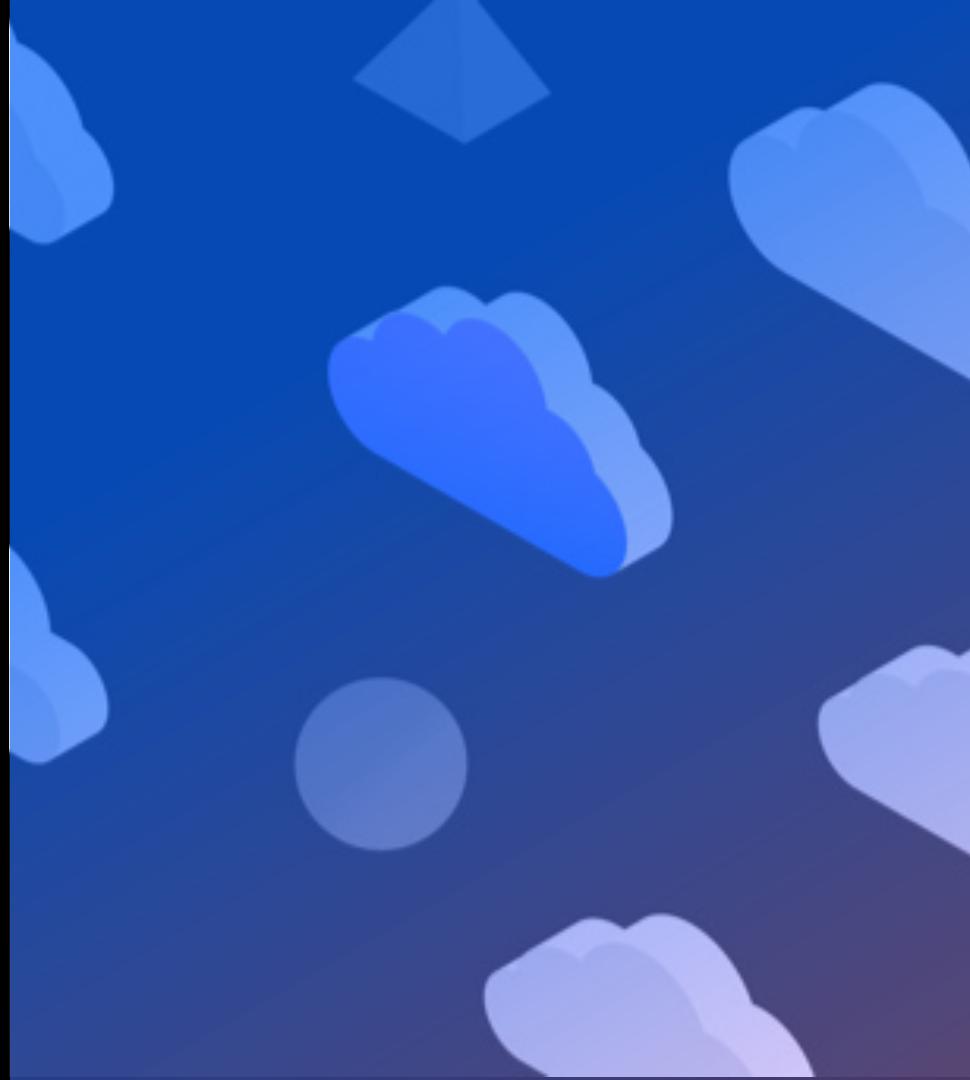
# Access control

- Lifecycle management
- User roles to govern the development and maintenance of virtual assistants
- Dialog skill versioning complete the lifecycle management story.



# Deploy anywhere

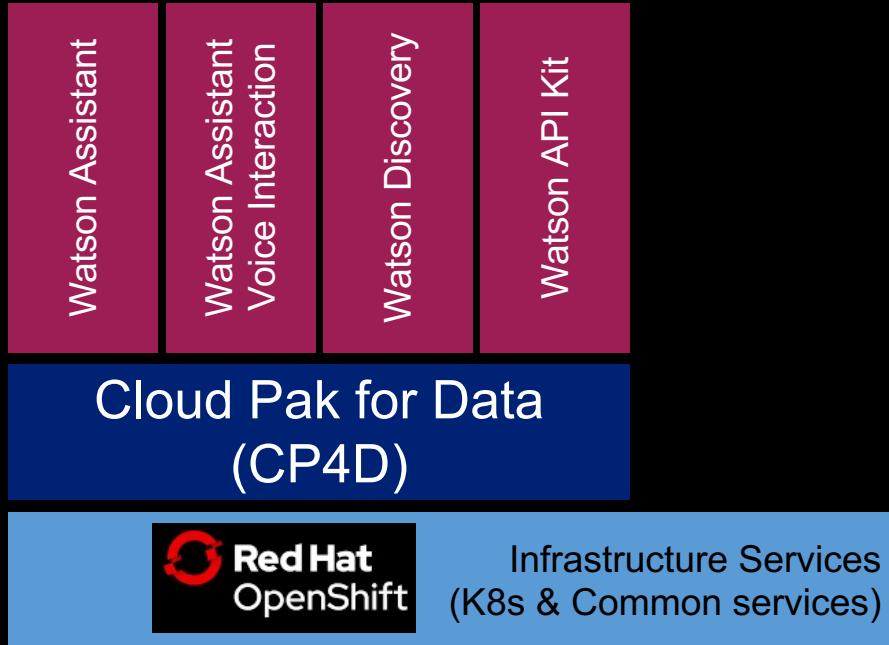
- Deploy on IBM Cloud using the Watson Assistant SaaS service
- Deploy Watson Assistant in your private cloud, any vendor's cloud, or on-premises



# Watson on Cloud Pak for Data

Avoid vendor lock-in, deploy Watson anywhere

Cartridge



Watson cartridges  
include Watson solution  
+ CP4D + OpenShift, all  
in one license

Available as perpetual or  
committed term licenses

**50%** of customer  
service happens  
on the phone



# Watson Assistant Voice Interaction

## Voice support for your virtual assistants

- Natural sounding neural speech synthesis
- Send and receive SMS & MMS messages during an ongoing voice call, for example web links, images of damage to property, email addresses, 2 factor authentication texts
- At any point during a call Watson can initiate a call transfer to an agent



# Watson Assistant Voice Interaction



# Built for the Enterprise

Scale. Secure. Private.  
Any Language. Any Cloud.



# Built for the Enterprise **Data Protection and Security**

## **Security and privacy at every step**

Watson Assistant gives you control over your data, provides data isolation, encrypts your data, provides an audit trail, etc.

IBM conducts ongoing security and penetration testing using internal and external entities.



# Built for the Enterprise

## Compliance and certifications

### Certified information security and data protection

ISO 27001, 27017, 27018

SOC1 / SOC2

HIPAA

European Union GDPR

PCI (Q4)



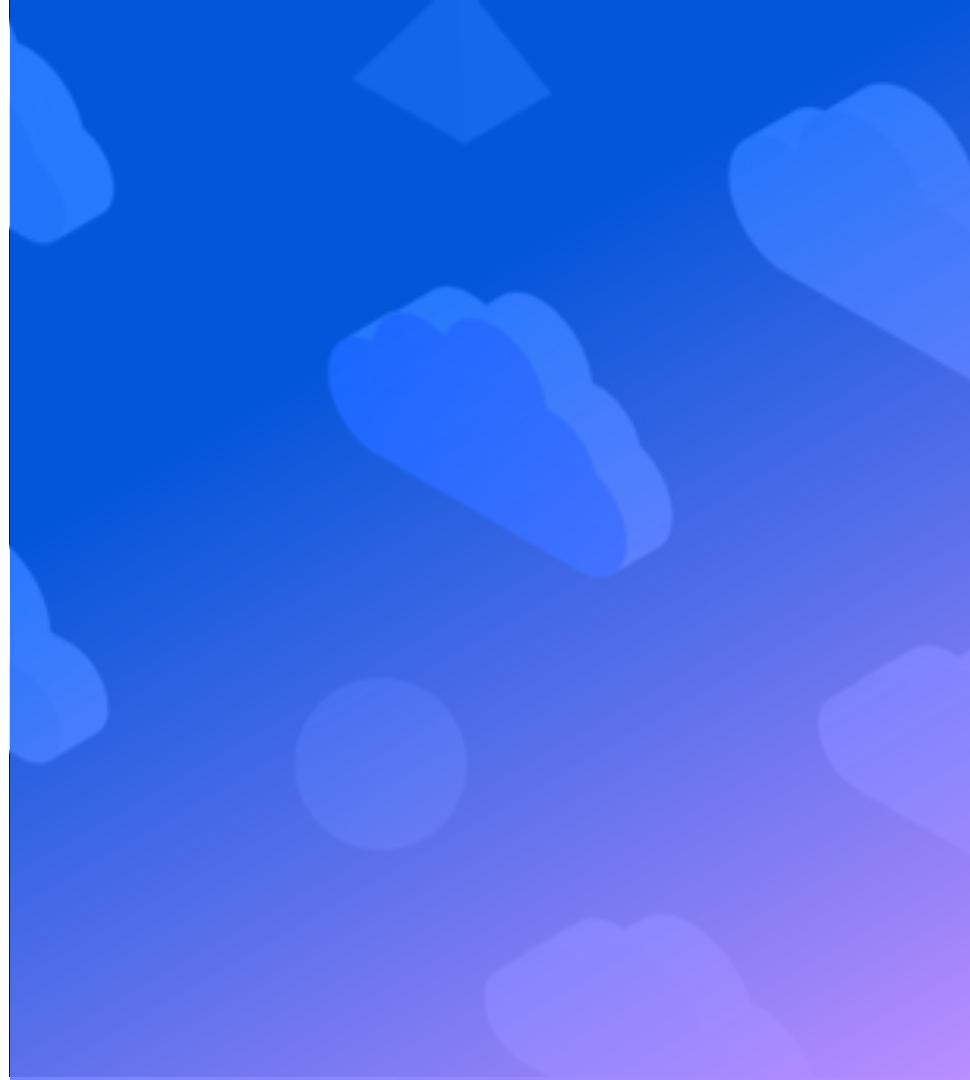
# Built for the Enterprise

## **Deployment flexibility and scalability**

### **Implement your assistant where and how you need**

Scale to millions of users with high availability, multi-zone region availability, and service level agreements.

Run on our cloud, on premise, or other public clouds.



# Development Process

