MIRACLE
SOFTWARE SYSTEMS

Build your First Chatbot with Watson and WhatsApp

Open Lab | Digital Summit ‘18

Miracle Innovation Labs
Miracle Software Systems, Inc.

www.miraclesoft.com

Build your First Chatbot with Watson and WhatsApp

Introduction

This document contains a step-by-step process of creating a Chatbot with IBM Watson Assistant NLP and will teach you how to create a chatbot with Watson Assistant and how to integrate with WhatsApp using Node JS.

This guide was prepared by **Miracle's Innovation Labs**

Pre-Requisites

All attendees must have their workstation (with Internet) to participate in the lab (Both PC and MAC are compatible). The following pre-requisites will help you to make the Hands-on Lab experience easier.

- Active email ID for registering with IBM Bluemix to get access for Watson Assistant
- Download and install Node JS and ngrok
- Access for WhatsApp Web
- Test Editor such as Sublime Text (or) Notepad++

Technology Involved

- IBM Bluemix (PaaS)
- NLP - IBM Watson Assistant
- Server Side - Node JS

Labs Steps

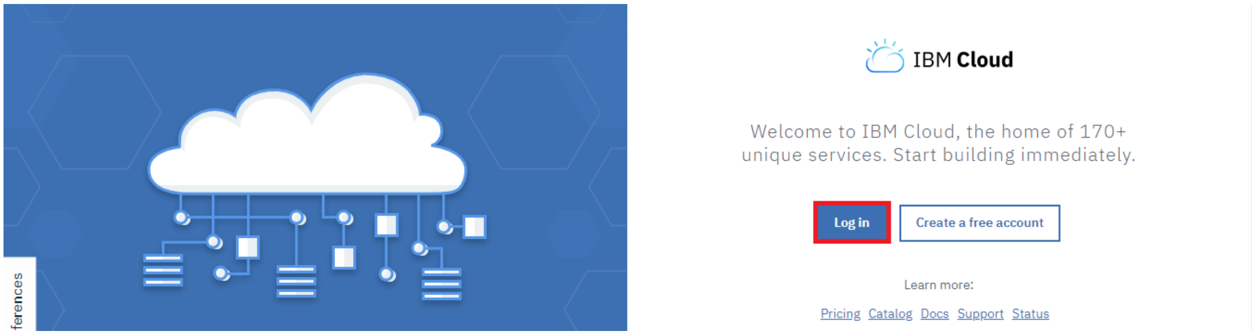
So, let us get started with the bot!

The following steps will outline creating a chatbot using Watson Assistant and integrate it with WhatsApp using Twilio. Users will be able to directly message your bot through WhatsApp to know about Miracle Software Systems, AP Cloud and Digital Summit.

Step #1 | Create Watson Assistant Service in IBM Bluemix

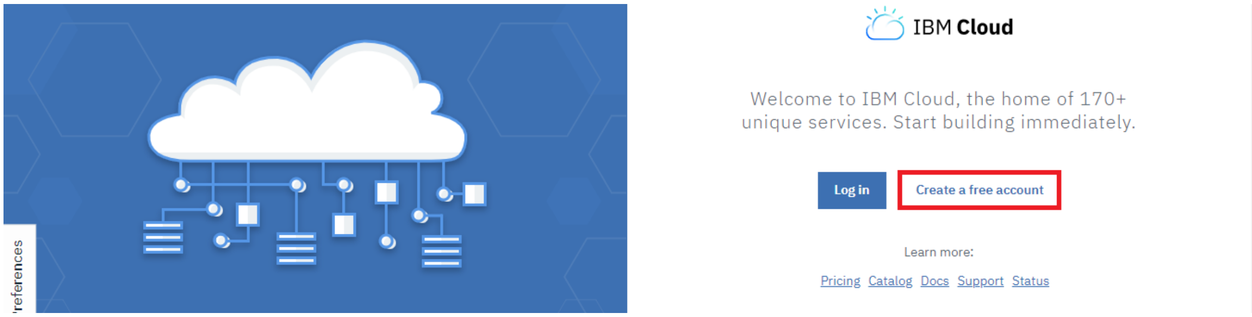
The first step will be to make sure that we have access to the IBM Bluemix console with either free trail option (or) the paid subscription option.

Login to Bluemix at http://bluemix.net(or) Register today at, https://console.bluemix.net/registration



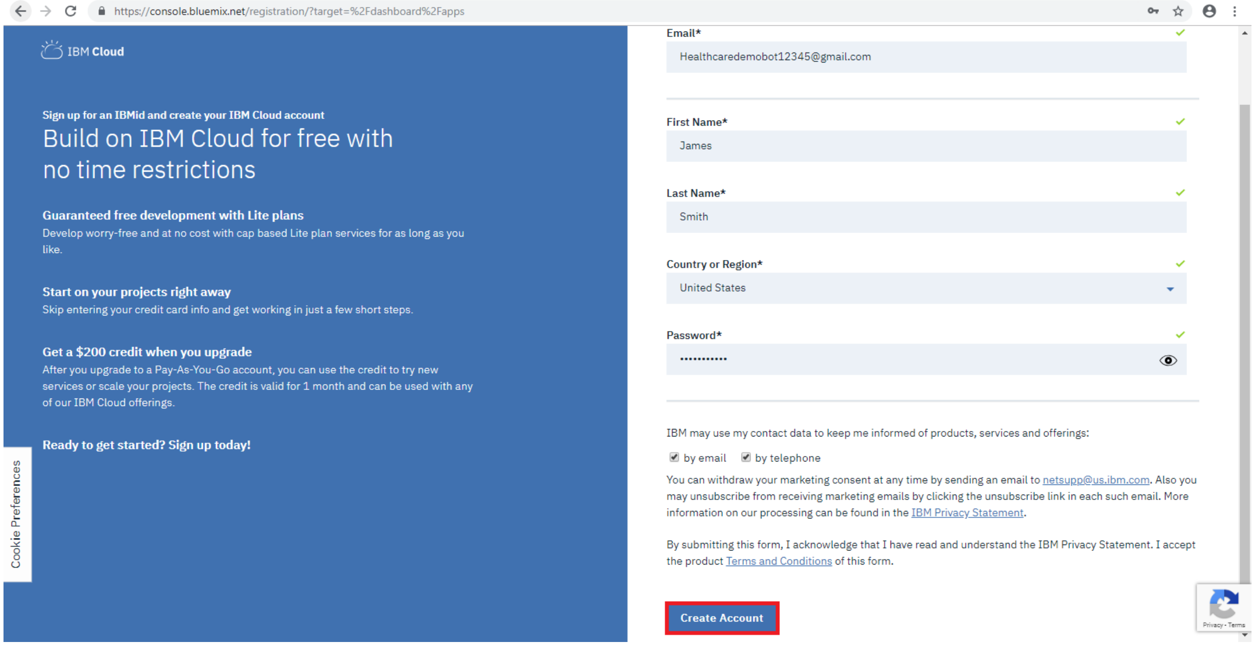
Welcome to IBM Cloud, the home of 170+ unique services. Start building immediately.

If you are a new user, click on **Create a free account.**



Welcome to IBM Cloud, the home of 170+ unique services. Start building immediately.

Now, you need to provide the details to the fields that are marked as required(*) and click on **Create Account.**



https://console.bluemix.net/registration/?target=%2Fdashboard%2Fapps

IBM Cloud

Sign up for an IBMid and create your IBM Cloud account

Build on IBM Cloud for free with no time restrictions

Guaranteed free development with Lite plans

Develop worry-free and at no cost with cap based Lite plan services for as long as you like.

Start on your projects right away

Skip entering your credit card info and get working in just a few short steps.

Get a $200 credit when you upgrade

After you upgrade to a Pay-As-You-Go account, you can use the credit to try new services or scale your projects. The credit is valid for 1 month and can be used with any of our IBM Cloud offerings.

Ready to get started? Sign up today!

Email*: Healthcaredemobot12345@gmail.com

First Name*: James

Last Name*: Smith

Country or Region*: United States

Password*: ••••••••••••

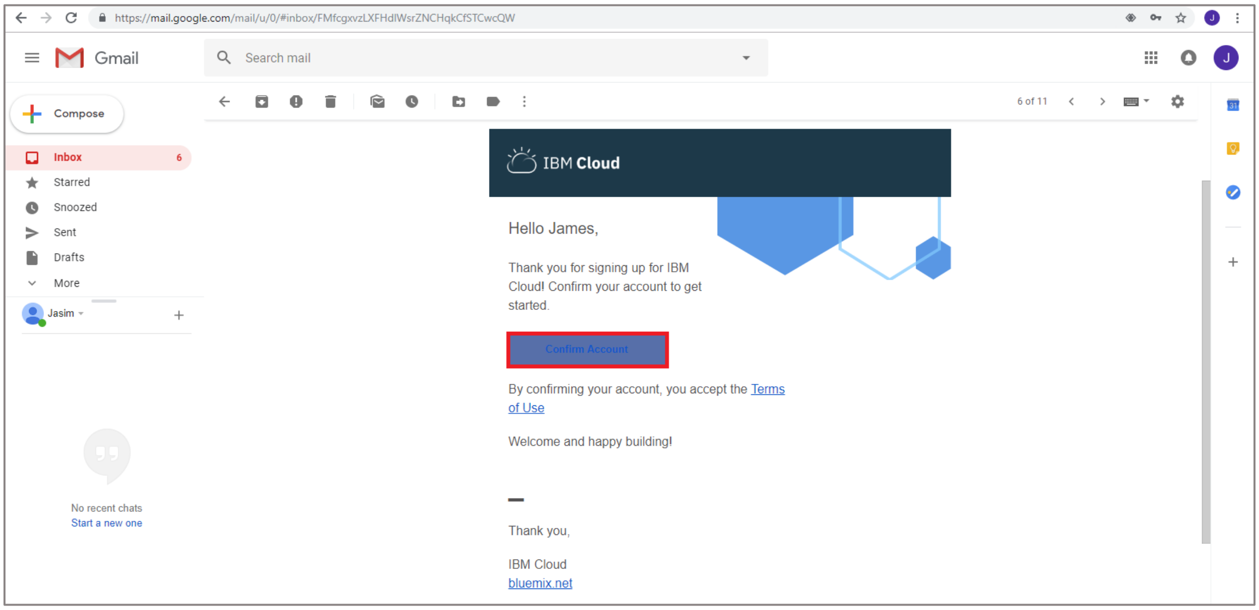
IBM may use my contact data to keep me informed of products, services and offerings:

☑ by email ☑ by telephone

You can withdraw your marketing consent at any time by sending an email to netsupp@us.ibm.com. Also you may unsubscribe from receiving marketing emails by clicking the unsubscribe link in each such email. More information on our processing can be found in the IBM Privacy Statement.

By submitting this form, I acknowledge that I have read and understand the IBM Privacy Statement. I accept the product Terms and Conditions of this form.

After creating account, confirmation mail will be sent to the registered mail id. Click on **Confirm Account**



https://mail.google.com/mail/u/0/#inbox/FMfcgxvzLXFHdlWsrZNCHqkCfSTCwcQW

IBM Cloud

Hello James,

Thank you for signing up for IBM Cloud! Confirm your account to get started.

By confirming your account, you accept the Terms of Use

Welcome and happy building!

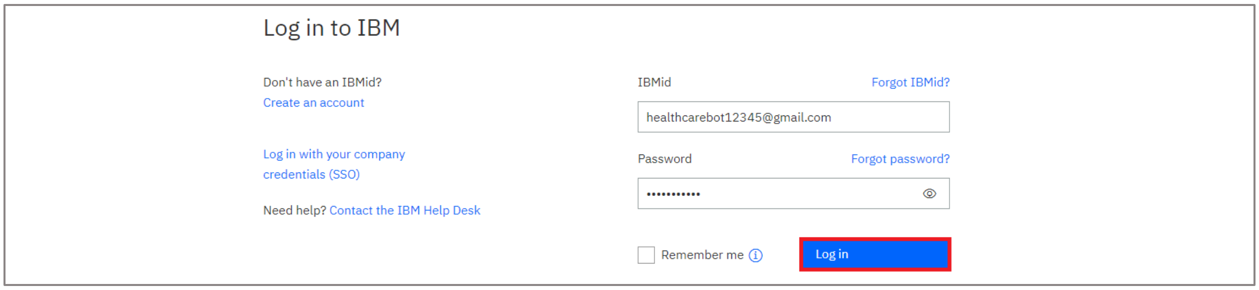
—

Thank you,

IBM Cloud

bluemix.net

Now, **Log in** to your Bluemix account by providing your credentials.



Log in to IBM

Don't have an IBMid?
Create an account

Log in with your company credentials (SSO)

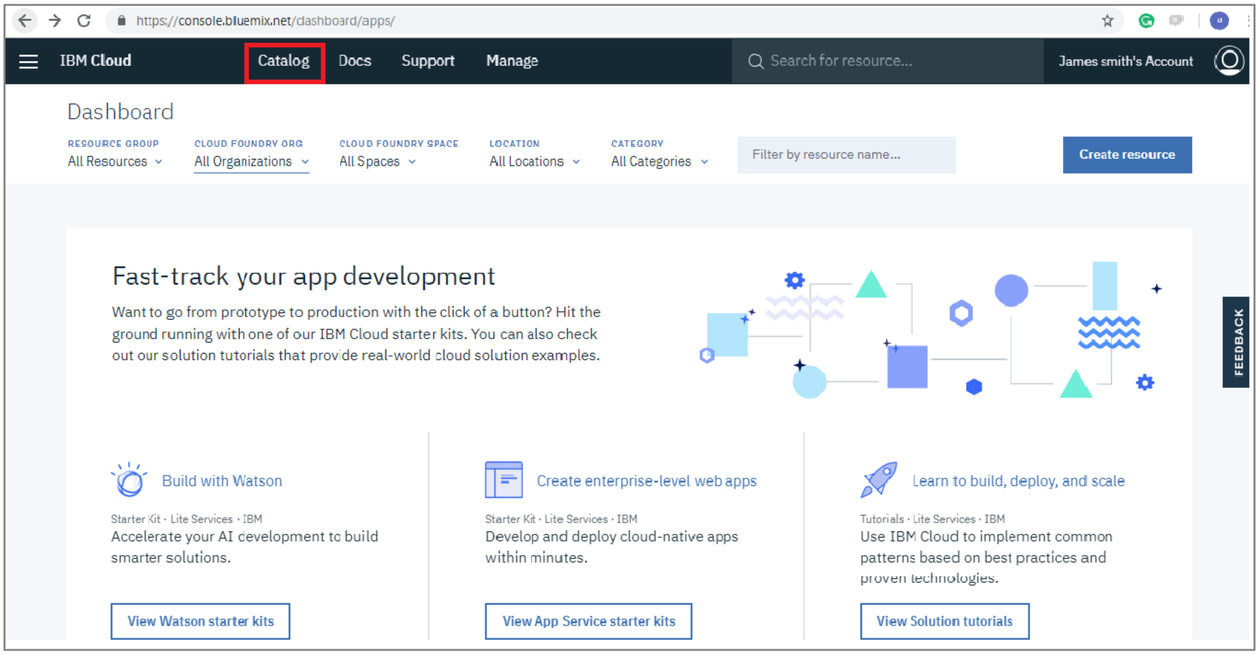
Need help? Contact the IBM Help Desk

IBMid — Forgot IBMid?
healthcarebot12345@gmail.com

Password — Forgot password?
•••••••••••

□ Remember me

You can see the dashboard as shown below. Now, click on **Catalog**.



https://console.bluemix.net/dashboard/apps/

Dashboard

RESOURCE GROUP	CLOUD FOUNDRY ORG	CLOUD FOUNDRY SPACE	LOCATION	CATEGORY
All Resources	All Organizations	All Spaces	All Locations	All Categories

Fast-track your app development

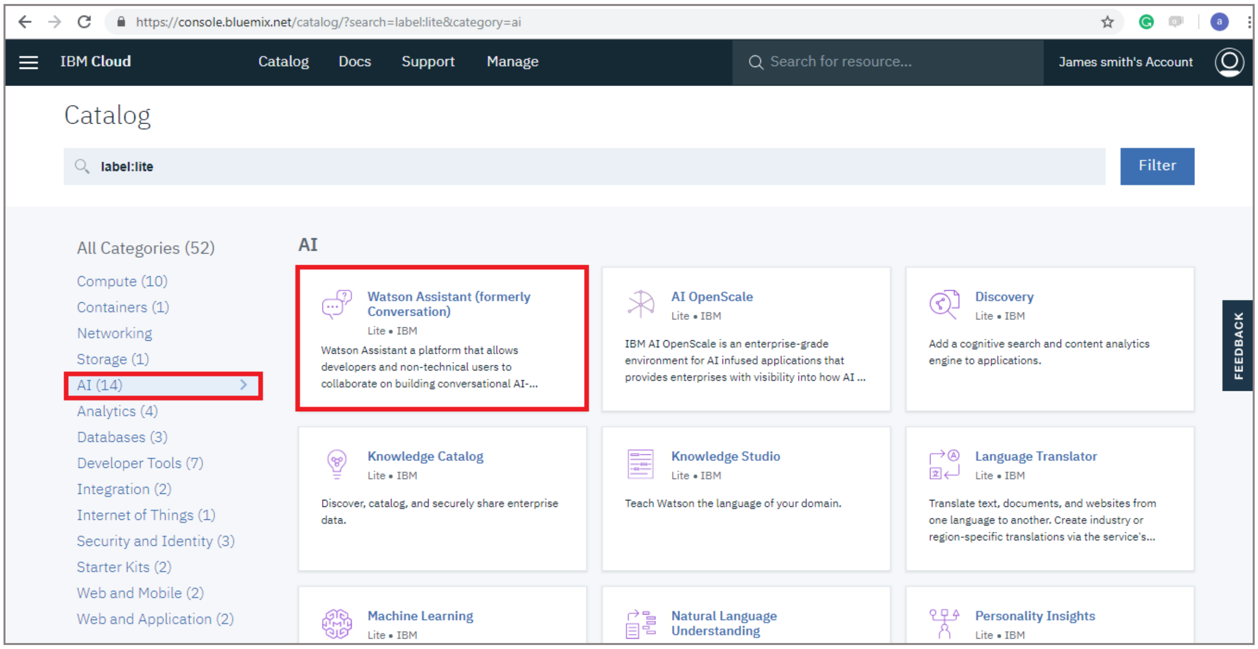
Want to go from prototype to production with the click of a button? Hit the ground running with one of our IBM Cloud starter kits. You can also check out our solution tutorials that provide real-world cloud solution examples.

Build with Watson
Starter Kit · Lite Services · IBM
Accelerate your AI development to build smarter solutions.

Create enterprise-level web apps
Starter Kit · Lite Services · IBM
Develop and deploy cloud-native apps within minutes.

Learn to build, deploy, and scale
Tutorials · Lite Services · IBM
Use IBM Cloud to implement common patterns based on best practices and proven technologies.

In Catalog, under the **AI** category you can see all the Watson Services where you can find **Watson Assistant**. Click on **Watson Assistant** tile for training the chatbot.



https://console.bluemix.net/catalog/?search=label:lite&category=ai

Catalog

label:lite

All Categories (52)
Compute (10)
Containers (1)
Networking
Storage (1)
AI (14)
Analytics (4)
Databases (3)
Developer Tools (7)
Integration (2)
Internet of Things (1)
Security and Identity (3)
Starter Kits (2)
Web and Mobile (2)
Web and Application (2)

AI

Watson Assistant (formerly Conversation)
Lite • IBM
Watson Assistant a platform that allows developers and non-technical users to collaborate on building conversational AI-...

AI OpenScale
Lite • IBM
IBM AI OpenScale is an enterprise-grade environment for AI infused applications that provides enterprises with visibility into how AI ...

Discovery
Lite • IBM
Add a cognitive search and content analytics engine to applications.

Knowledge Catalog
Lite • IBM
Discover, catalog, and securely share enterprise data.

Knowledge Studio
Lite • IBM
Teach Watson the language of your domain.

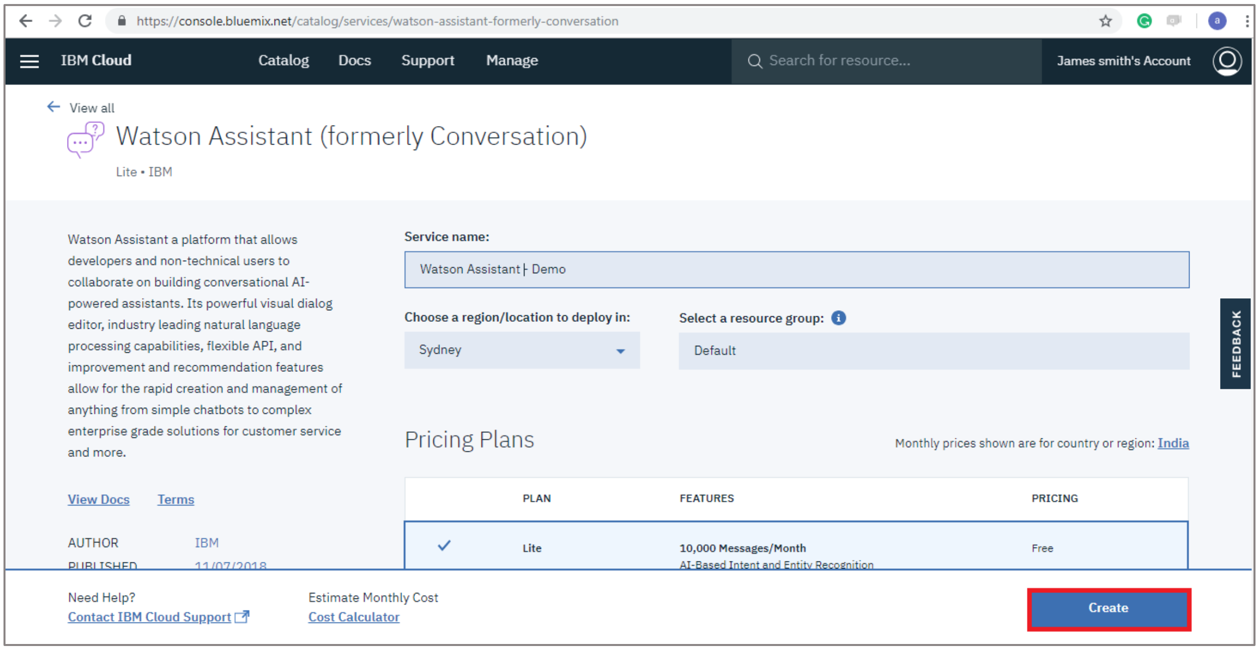
Language Translator
Lite • IBM
Translate text, documents, and websites from one language to another. Create industry or region-specific translations via the service's...

Machine Learning
Lite • IBM

Natural Language Understanding

Personality Insights
Lite • IBM

Now, type a unique name for the service instance in the **Service name** field. For example, type **my-conversation-demo**. Leave the default values for other options and click on **Create**.



https://console.bluemix.net/catalog/services/watson-assistant-formerly-conversation

View all

Watson Assistant (formerly Conversation)

Lite • IBM

Watson Assistant a platform that allows developers and non-technical users to collaborate on building conversational AI-powered assistants. Its powerful visual dialog editor, industry leading natural language processing capabilities, flexible API, and improvement and recommendation features allow for the rapid creation and management of anything from simple chatbots to complex enterprise grade solutions for customer service and more.

View Docs Terms

AUTHOR IBM
PUBLISHED 11/07/2018

Service name: Watson Assistant Demo

Choose a region/location to deploy in: Sydney

Select a resource group: Default

Pricing Plans

Monthly prices shown are for country or region: India

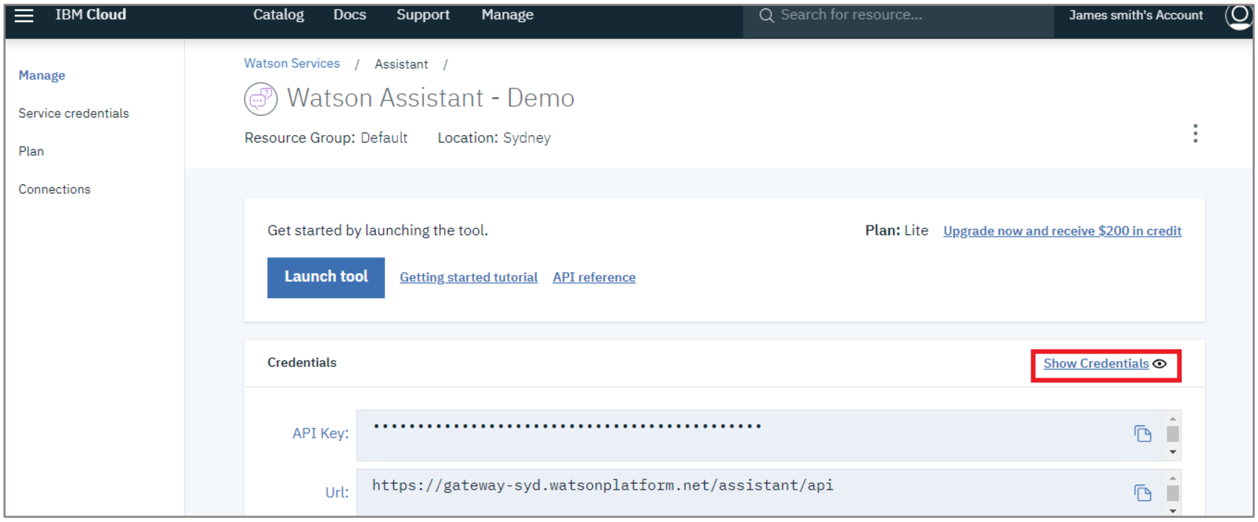
	PLAN	FEATURES	PRICING
✓	Lite	10,000 Messages/Month AI-Based Intent and Entity Recognition	Free

Need Help?
Contact IBM Cloud Support

Estimate Monthly Cost
Cost Calculator

Note - Creation of service may take up to a minute or two.

You will land on the **Manage** page of the service dashboard**.** Click on **Show Credentials** to make use of API key.



Watson Assistant - Demo

Resource Group: Default Location: Sydney

Get started by launching the tool.

Plan: Lite

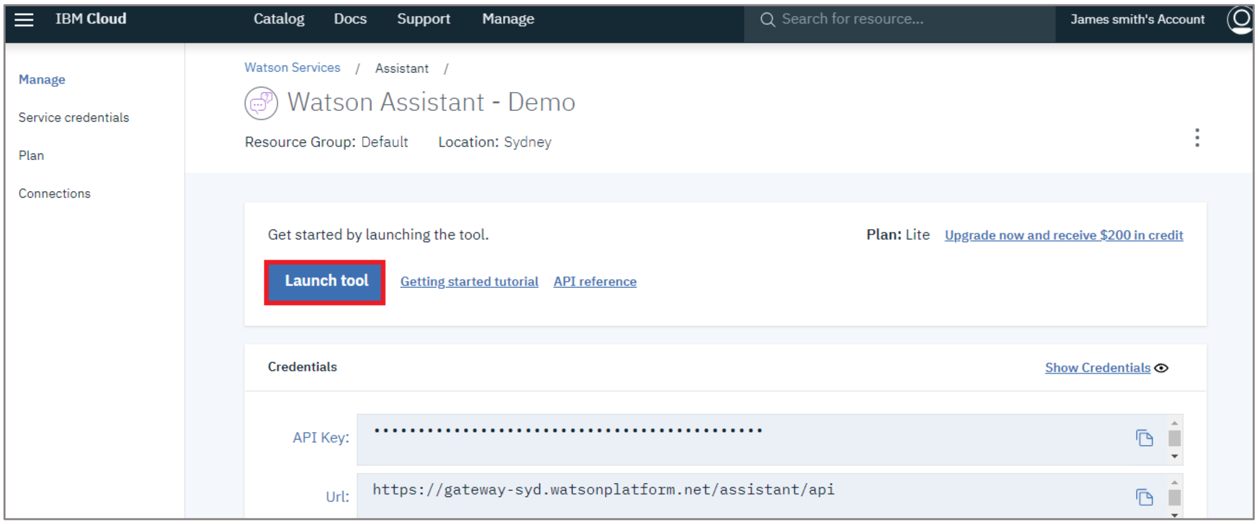
Credentials

API Key: ••

Url: https://gateway-syd.watsonplatform.net/assistant/api

Copy the API key and URL. Navigate to **app.js** file which you downloaded in your local drive and paste the API key in the place of **<*Your-Watson-Assistant-APIKey*>** and URL in place of **<Your-Watson-Assistant-URL>**

Now, go back to Watson Assistant dashboard and click on **Launch tool.** It will redirect you to the Skills page.



Watson Assistant - Demo

Resource Group: Default Location: Sydney

Get started by launching the tool.

Plan: Lite

Credentials

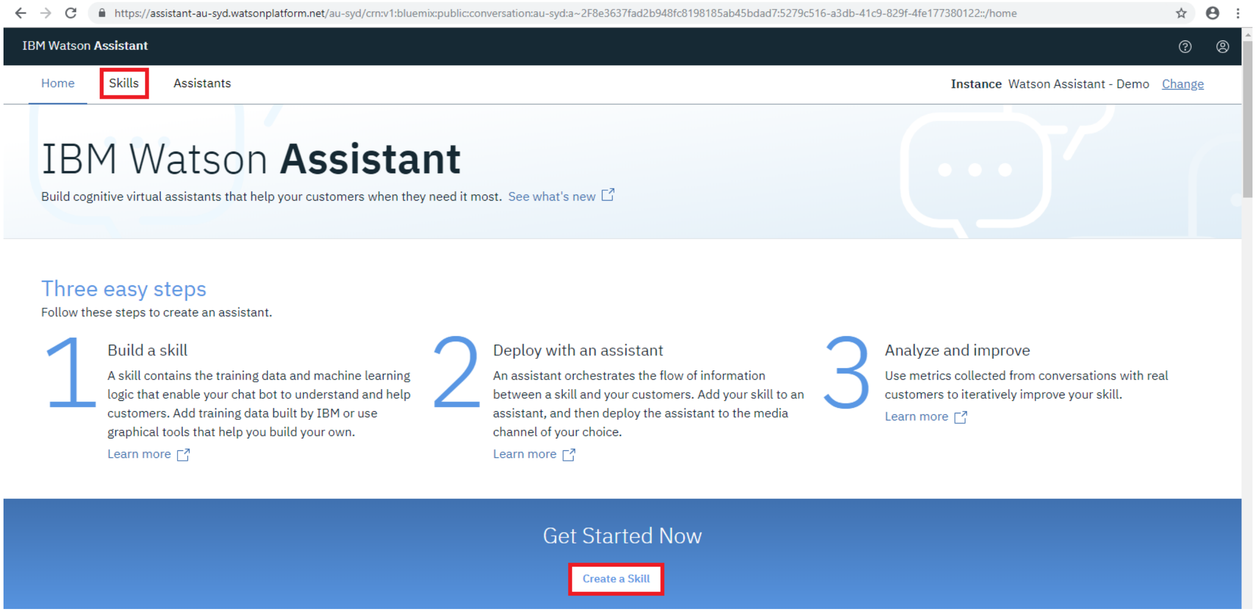
API Key: ••

Url: https://gateway-syd.watsonplatform.net/assistant/api

Step #2 | Create Skill in Watson Assistant Service

Your first step in the Watson Assistant tool is to create a Skill.

From the home page of the Watson Assistant tool, click on the **Skills** tab or click on the **Create a Skill** button to build your chatbot as shown below,



https://assistant-au-syd.watsonplatform.net/au-syd/crn:v1:bluemix:public:conversation:au-syd:a~2F8e3637fad2b948fc8198185ab45bdad7:5279c516-a3db-41c9-829f-4fe177380122::/home

IBM Watson **Assistant**

Home | Skills | Assistants

Instance Watson Assistant - Demo Change

IBM Watson **Assistant**

Build cognitive virtual assistants that help your customers when they need it most. See what's new

Three easy steps

Follow these steps to create an assistant.

1 Build a skill

A skill contains the training data and machine learning logic that enable your chat bot to understand and help customers. Add training data built by IBM or use graphical tools that help you build your own.

Learn more

2 Deploy with an assistant

An assistant orchestrates the flow of information between a skill and your customers. Add your skill to an assistant, and then deploy the assistant to the media channel of your choice.

Learn more

3 Analyze and improve

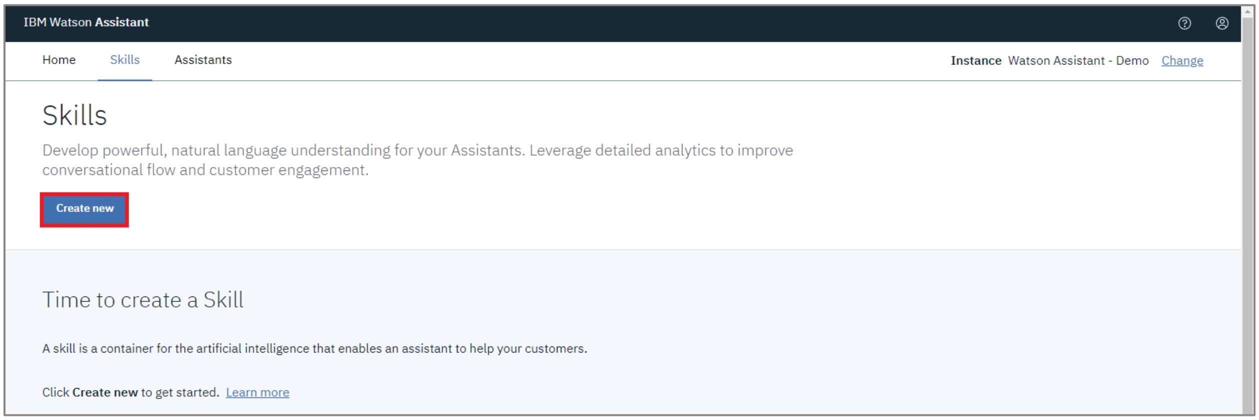
Use metrics collected from conversations with real customers to iteratively improve your skill.

Learn more

Get Started Now

Create a Skill

Then you will be navigated to **Skills** tab, where you can create a new skill. Click on **Create new** button as shown below,



IBM Watson **Assistant**

Home | Skills | Assistants

Instance Watson Assistant - Demo Change

Skills

Develop powerful, natural language understanding for your Assistants. Leverage detailed analytics to improve conversational flow and customer engagement.

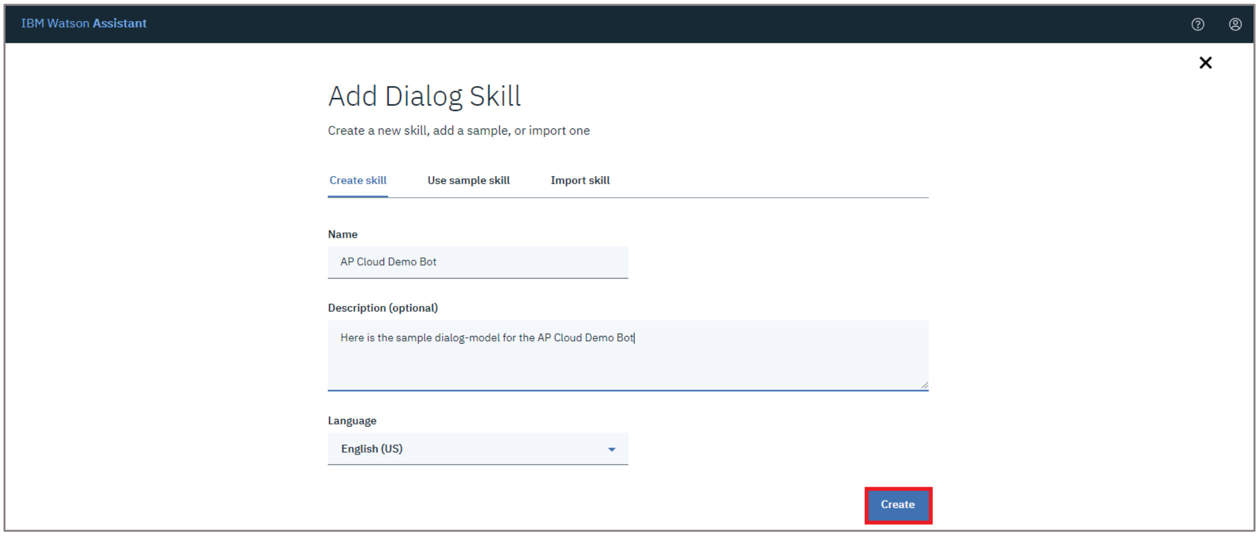
Create new

Time to create a Skill

A skill is a container for the artificial intelligence that enables an assistant to help your customers.

Click **Create new** to get started. Learn more

Once you click on the button in Skills tab, you will need to provide a Name and Description to your skill. After entering all details, click on **Create** button.



Add Dialog Skill

Create a new skill, add a sample, or import one

Name

AP Cloud Demo Bot

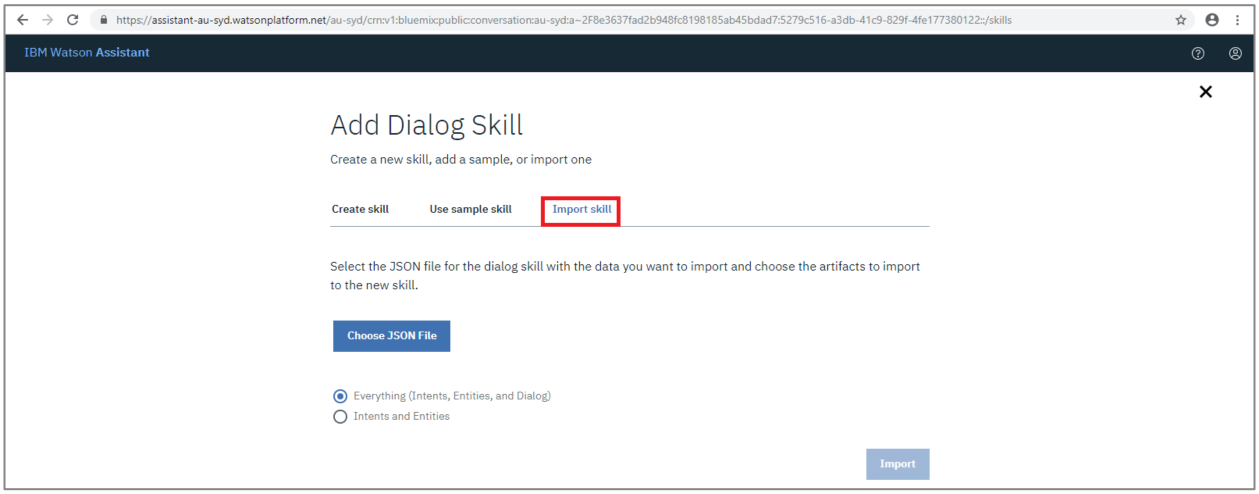
Description (optional)

Here is the sample dialog-model for the AP Cloud Demo Bot

Language

English (US)

If you want to import the existing skill, click on the **Import Skill** tab.



https://assistant-au-syd.watsonplatform.net/au-syd/crn:v1:bluemix:public:conversation:au-syd:a~2F8e3637fad2b948fc8198185ab45bdad7:5279c516-a3db-41c9-829f-4fe177380122::/skills

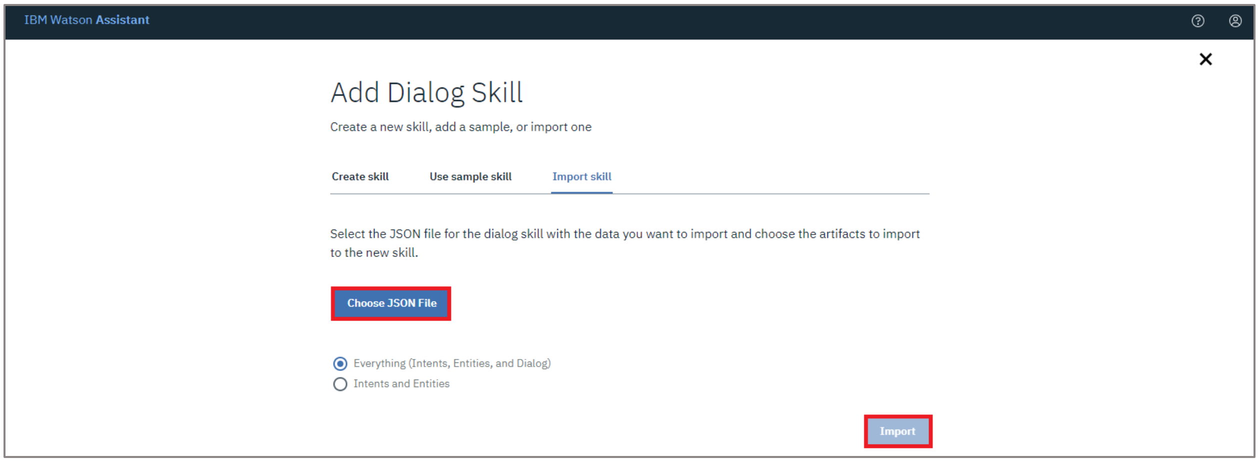
Add Dialog Skill

Create a new skill, add a sample, or import one

Select the JSON file for the dialog skill with the data you want to import and choose the artifacts to import to the new skill.

● Everything (Intents, Entities, and Dialog)
○ Intents and Entities

Choose any of the existing Watson Assistant Skill which is a **JSON** file to upload and click on **Import** as shown below,



IBM Watson Assistant

Add Dialog Skill

Create a new skill, add a sample, or import one

Select the JSON file for the dialog skill with the data you want to import and choose the artifacts to import to the new skill.

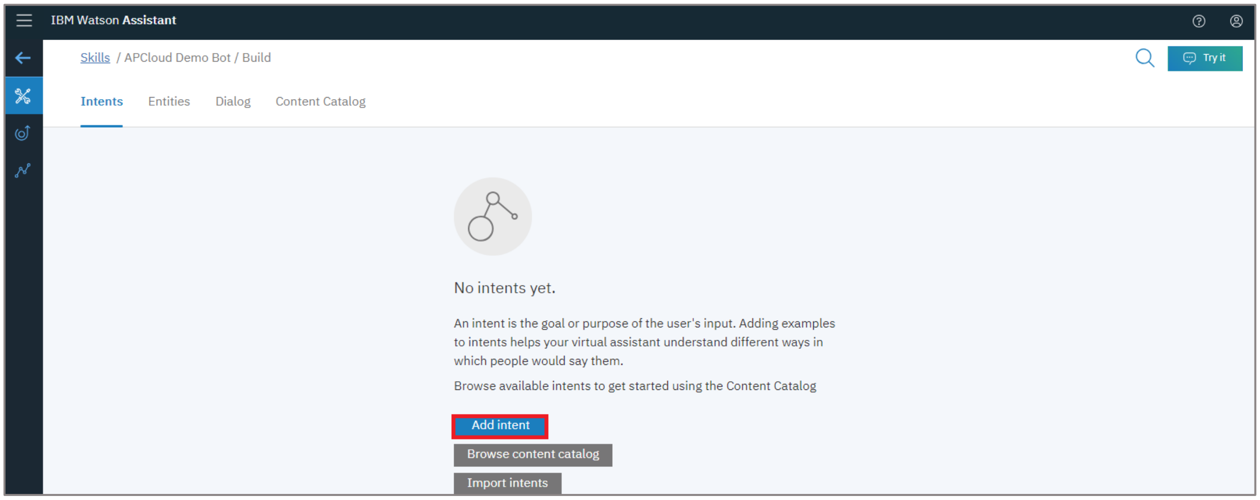
● Everything (Intents, Entities, and Dialog)
○ Intents and Entities

Note - You can find the sample JSON file with the name **dialog_model.json** in the example folder which you downloaded from GitHub repository.

Step #3 | Training the Skill using Intents, Entities and Dialogs

a) Intents

Now, you will land on the Intents page of your new skill. Intents are purpose or goals expressed in a user's input. Click on **Add intent** to define new Intents for your chatbot to get trained.



IBM Watson Assistant

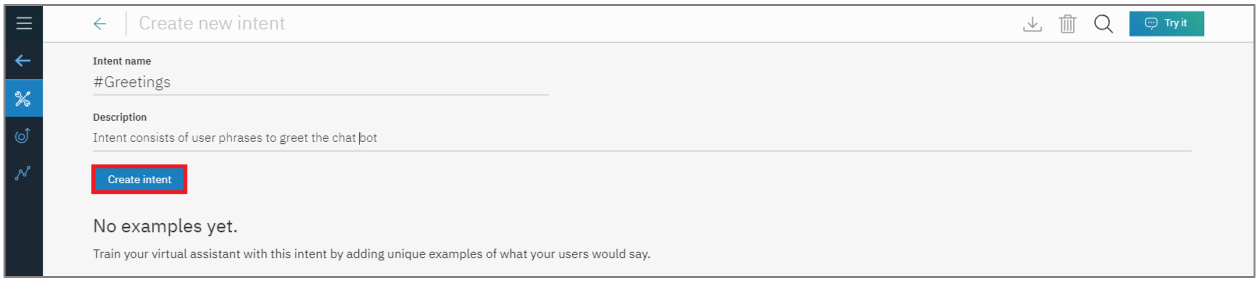
Skills / APCloud Demo Bot / Build

No intents yet.

An intent is the goal or purpose of the user's input. Adding examples to intents helps your virtual assistant understand different ways in which people would say them.

Browse available intents to get started using the Content Catalog

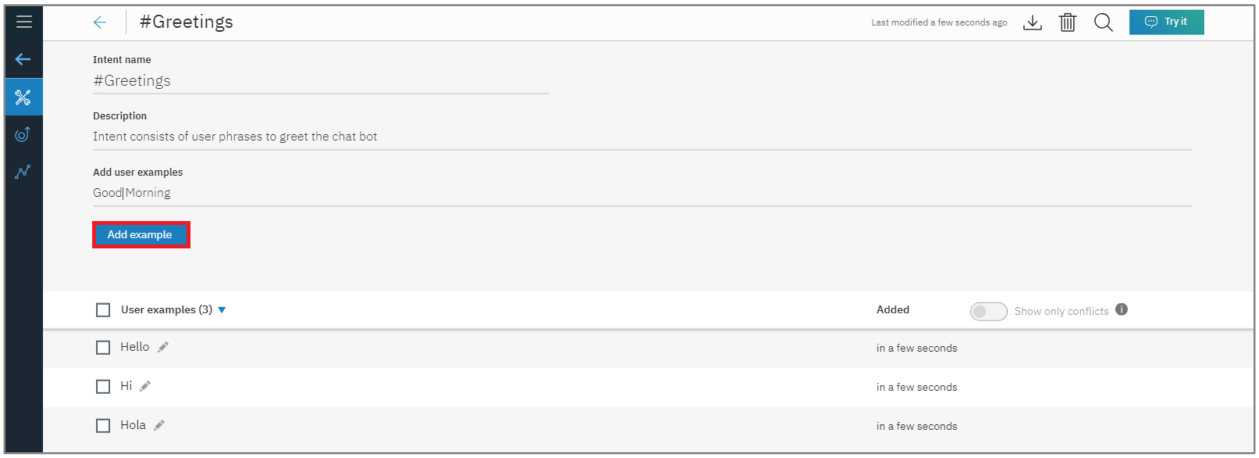
After clicking on **Add intent** button, you need to provide the Intent name, Description, and then click on **Create intent.**



Create new intent
Try it
Intent name
#Greetings
Description
Intent consists of user phrases to greet the chat bot
Create intent
No examples yet.
Train your virtual assistant with this intent by adding unique examples of what your users would say.

Now, you need to add user examples for that intent as shown below,

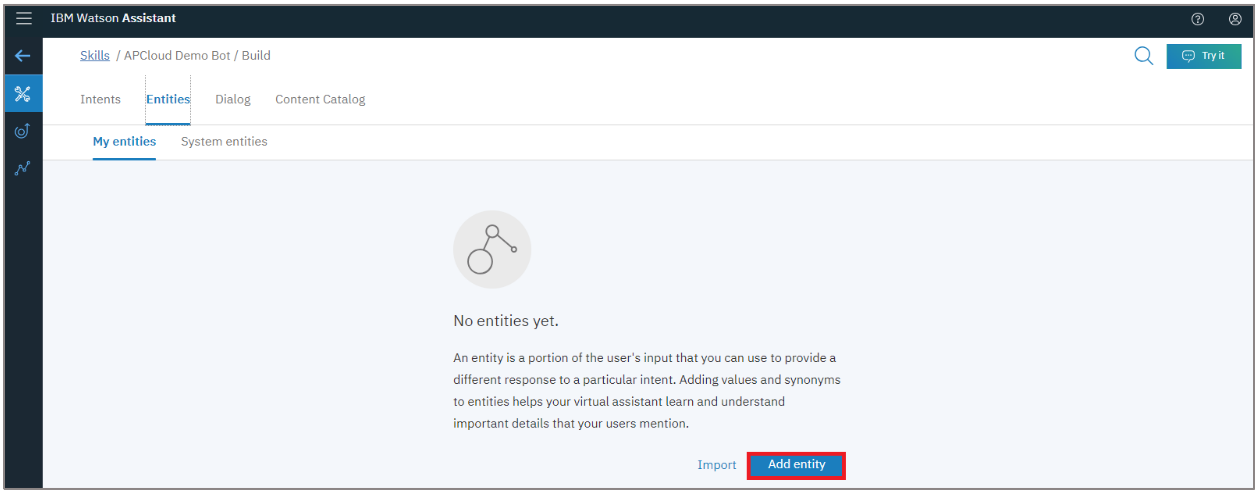
Note - After each example, you can click on **Add example** button or hit the enter button.



□ User examples (3)	Added
□ Hello	in a few seconds
□ Hi	in a few seconds
□ Hola	in a few seconds

b) Entities

An entity represents information in the user input that is relevant to the user's purpose. To create an entity, go to **Entities** tab, under **My entities** tab click on **Add entity**.



IBM Watson Assistant

Skills / APCloud Demo Bot / Build

Try it

Intents Entities Dialog Content Catalog

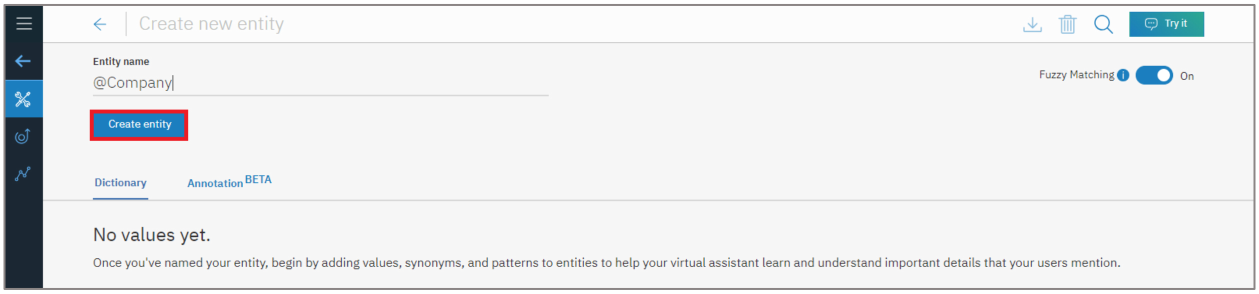
My entities System entities

No entities yet.

An entity is a portion of the user's input that you can use to provide a different response to a particular intent. Adding values and synonyms to entities helps your virtual assistant learn and understand important details that your users mention.

Import Add entity

In the Entity name field, provide a name for the entity and then click on **Create entity.**



Create new entity

Try it

Entity name

@Company

Fuzzy Matching On

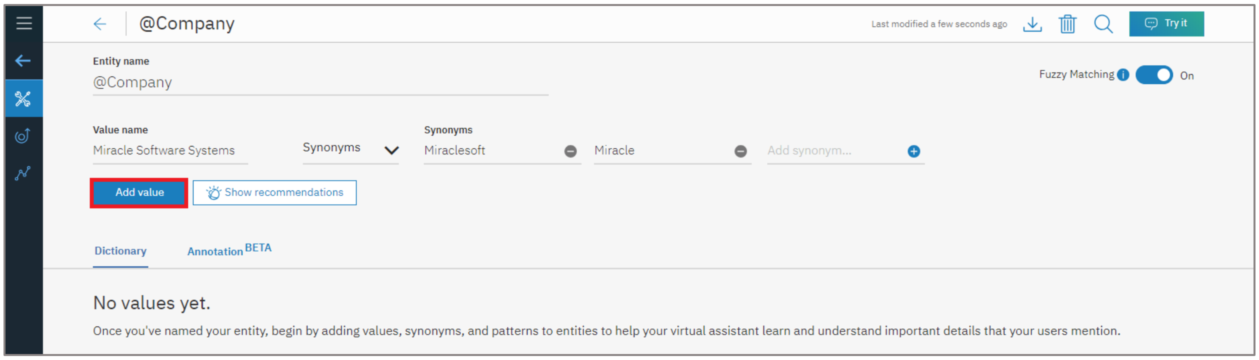
Create entity

Dictionary Annotation BETA

No values yet.

Once you've named your entity, begin by adding values, synonyms, and patterns to entities to help your virtual assistant learn and understand important details that your users mention.

After entity creation, you need to enter a Value name for the entity, click on **Add value** and also you can add any synonyms which are based on contextual similarity for specific values as shown below,



@Company

Last modified a few seconds ago

Try it

Entity name

@Company

Fuzzy Matching On

Value name: Miracle Software Systems

Synonyms

Synonyms: Miraclesoft, Miracle, Add synonym...

Add value

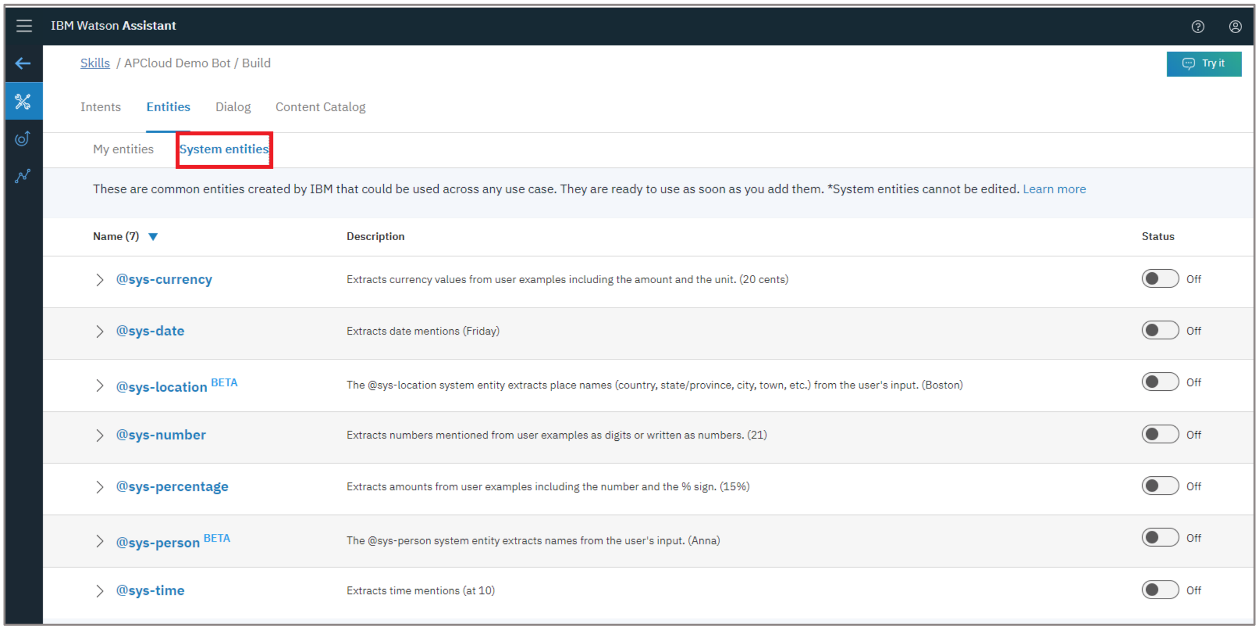
Show recommendations

Dictionary Annotation BETA

No values yet.

Once you've named your entity, begin by adding values, synonyms, and patterns to entities to help your virtual assistant learn and understand important details that your users mention.

You can also use predefined entities called **System Entities**. Click on **System entities** tab to select from a list of common entities that are provided by IBM.

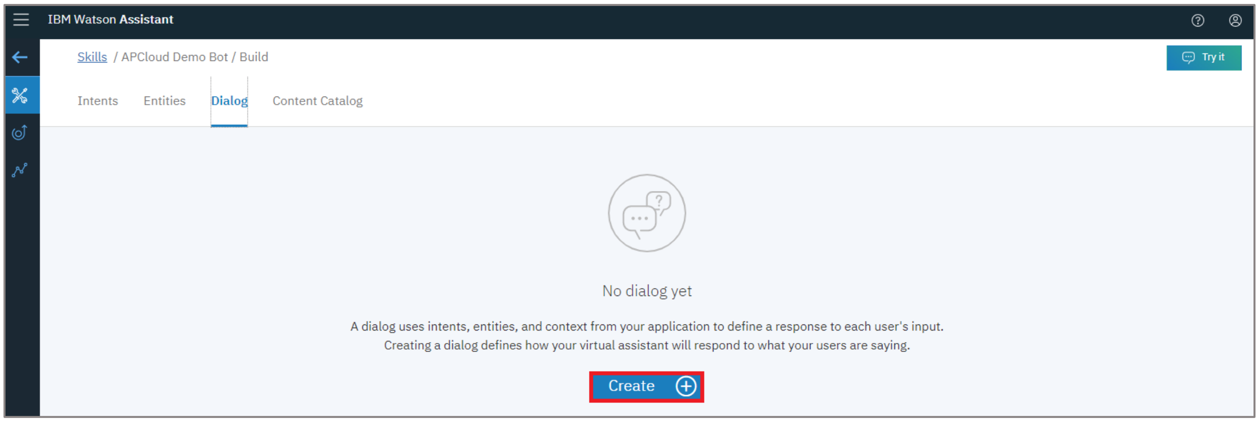


These are common entities created by IBM that could be used across any use case. They are ready to use as soon as you add them. *System entities cannot be edited. Learn more

Name (7) ▼	Description	Status
@sys-currency	Extracts currency values from user examples including the amount and the unit. (20 cents)	Off
@sys-date	Extracts date mentions (Friday)	Off
@sys-location BETA	The @sys-location system entity extracts place names (country, state/province, city, town, etc.) from the user's input. (Boston)	Off
@sys-number	Extracts numbers mentioned from user examples as digits or written as numbers. (21)	Off
@sys-percentage	Extracts amounts from user examples including the number and the % sign. (15%)	Off
@sys-person BETA	The @sys-person system entity extracts names from the user's input. (Anna)	Off
@sys-time	Extracts time mentions (at 10)	Off

c) Dialog

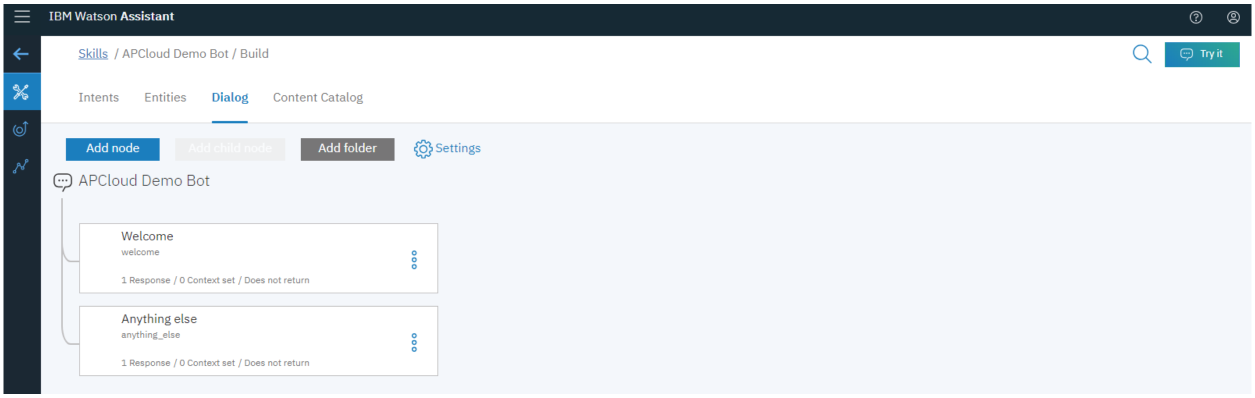
Dialog uses the intents and entities together that are identified in the user's input and respond to the user based on the matched intent. To create your Dialog nodes, click on **Create** button.



No dialog yet

A dialog uses intents, entities, and context from your application to define a response to each user's input. Creating a dialog defines how your virtual assistant will respond to what your users are saying.

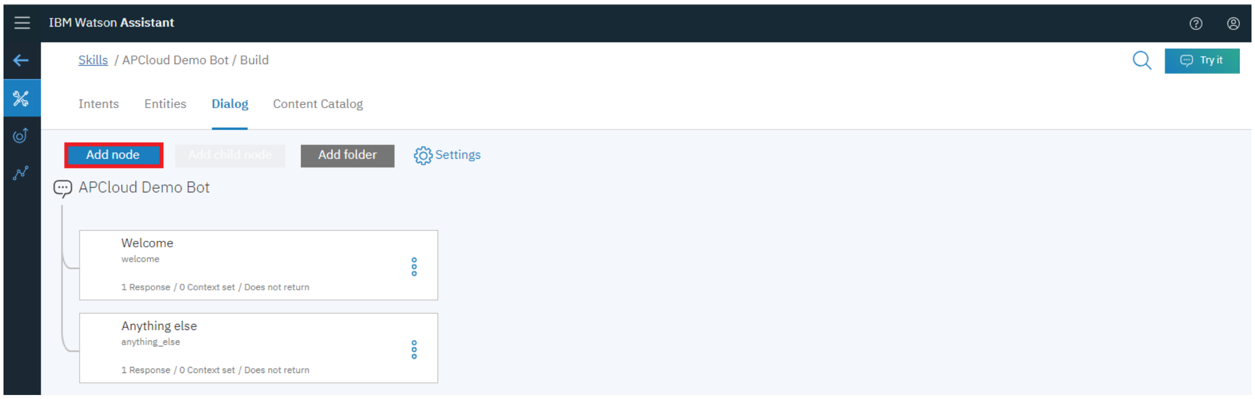
Once you click on that button under the **Dialog** tab, you will get two nodes initially.



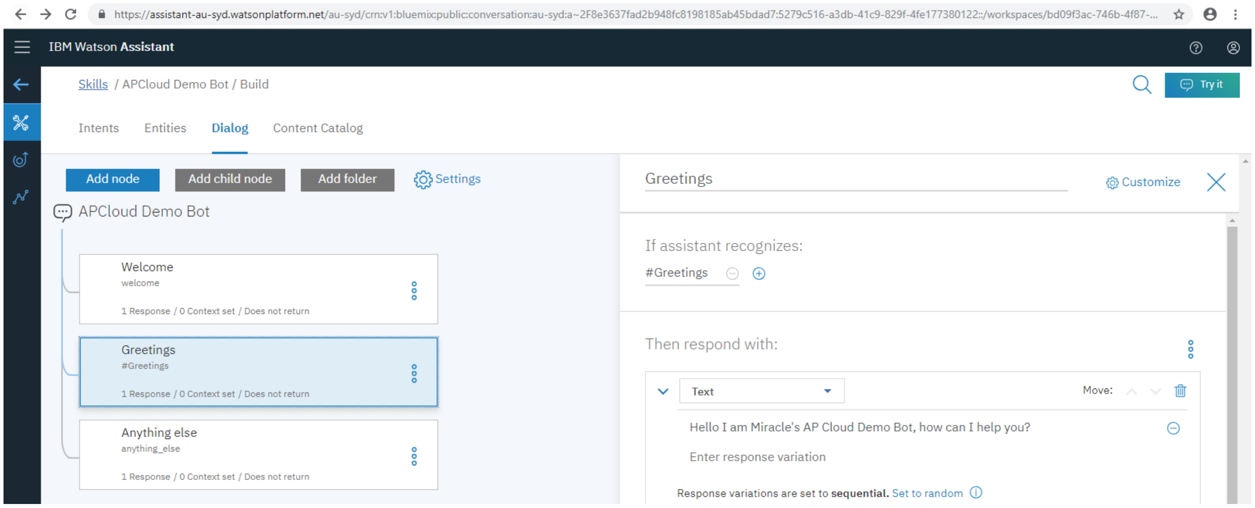
Welcome - This is the first node that contains the initial greetings when users engage with the service.

Anything else - This is the final node that contains phrases which are used to respond to the user when input is not recognized.

If you want to add more nodes to your dialog tree, click on **Add node** button on the top.



Then you will have one new node added into your dialog tree as shown below.


https://assistant-au-syd.watsonplatform.net/au-syd/crn:v1:bluemix:public:conversation:au-syd:a~2F8e3637fad2b948fc8198185ab45bdad7:5279c516-a3db-41c9-829f-4fe177380122::/workspaces/bd09f3ac-746b-4f87-...
IBM Watson Assistant
Skills / APCloud Demo Bot / Build
Try it
Intents
Entities
Dialog
Content Catalog
Add node
Add child node
Add folder
Settings
APCloud Demo Bot
Customize
Move:
Text

Welcome
welcome
1 Response / 0 Context set / Does not return

Greetings
#Greetings
1 Response / 0 Context set / Does not return

Anything else
anything_else
1 Response / 0 Context set / Does not return

Greetings

If assistant recognizes:
#Greetings

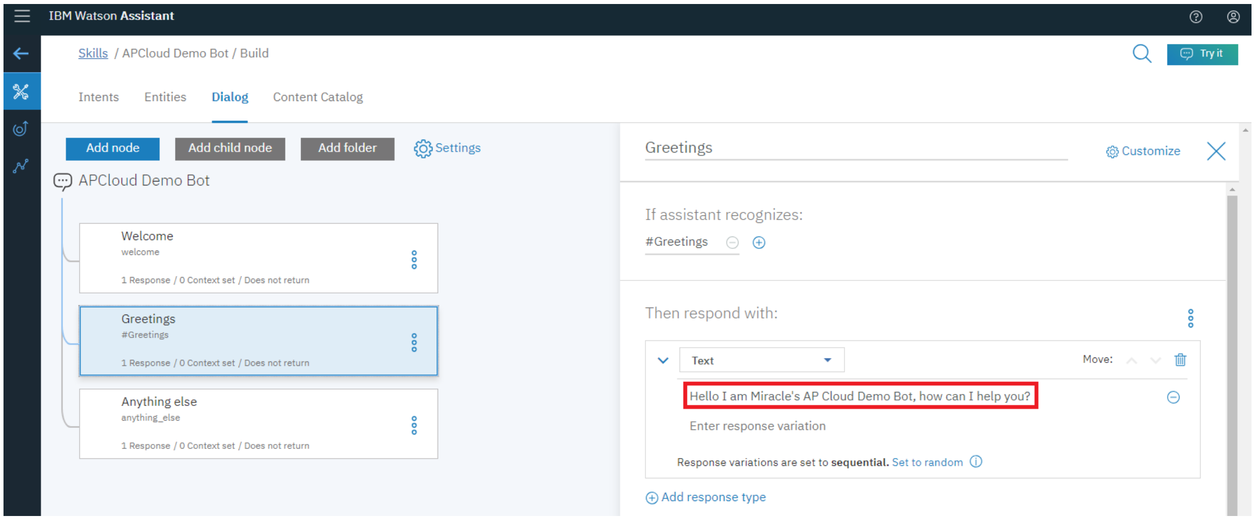
Then respond with:

Hello I am Miracle's AP Cloud Demo Bot, how can I help you?

Enter response variation

Response variations are set to **sequential.** Set to random

Add the text or multimedia elements that you want the service to display to the user as a response. For that, click on the node and provide response to user's request.



Welcome
welcome
1 Response / 0 Context set / Does not return

Greetings
#Greetings
1 Response / 0 Context set / Does not return

Anything else
anything_else
1 Response / 0 Context set / Does not return

Greetings

If assistant recognizes:
#Greetings

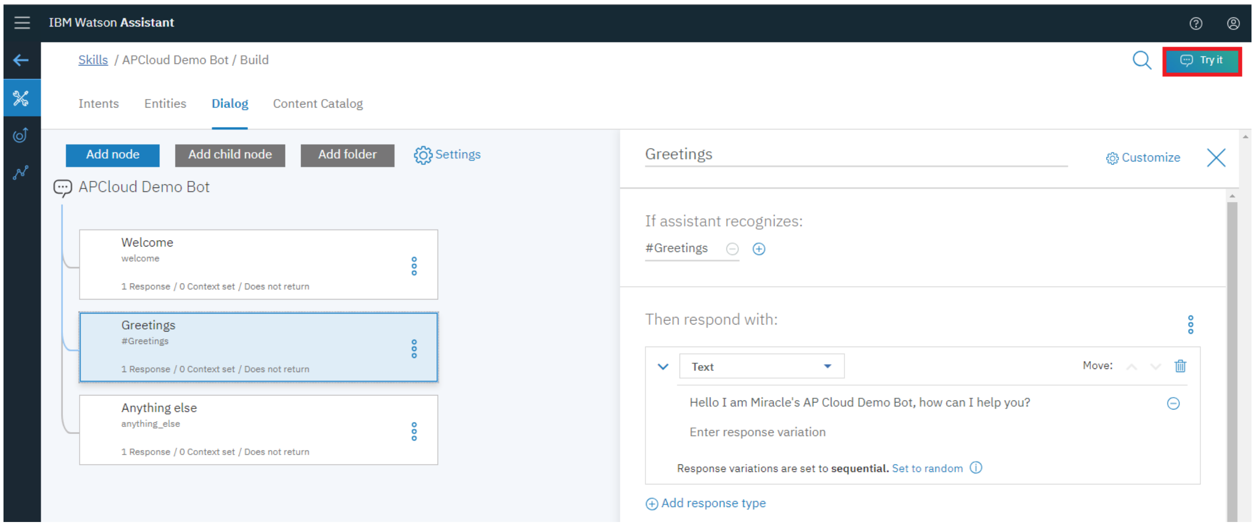
Then respond with:

Hello I am Miracle's AP Cloud Demo Bot, how can I help you?

Enter response variation

Response variations are set to **sequential.** Set to random

If you want to test your skill in the Watson Assistant tool itself, click on **Try it.**



Welcome
welcome
1 Response / 0 Context set / Does not return

Greetings
#Greetings
1 Response / 0 Context set / Does not return

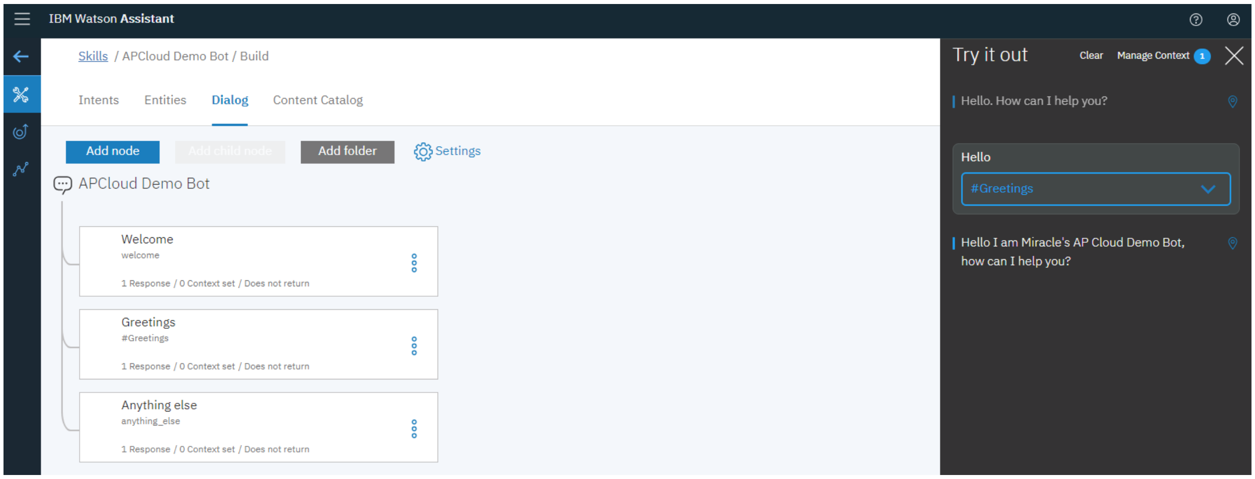
Anything else
anything_else
1 Response / 0 Context set / Does not return

Greetings

If assistant recognizes:
#Greetings

Then respond with:
Text
Hello I am Miracle's AP Cloud Demo Bot, how can I help you?
Enter response variation
Response variations are set to **sequential.** Set to random

Now, you are all set to test your chatbot in Watson Assistant tool.



Welcome
welcome
1 Response / 0 Context set / Does not return

Greetings
#Greetings
1 Response / 0 Context set / Does not return

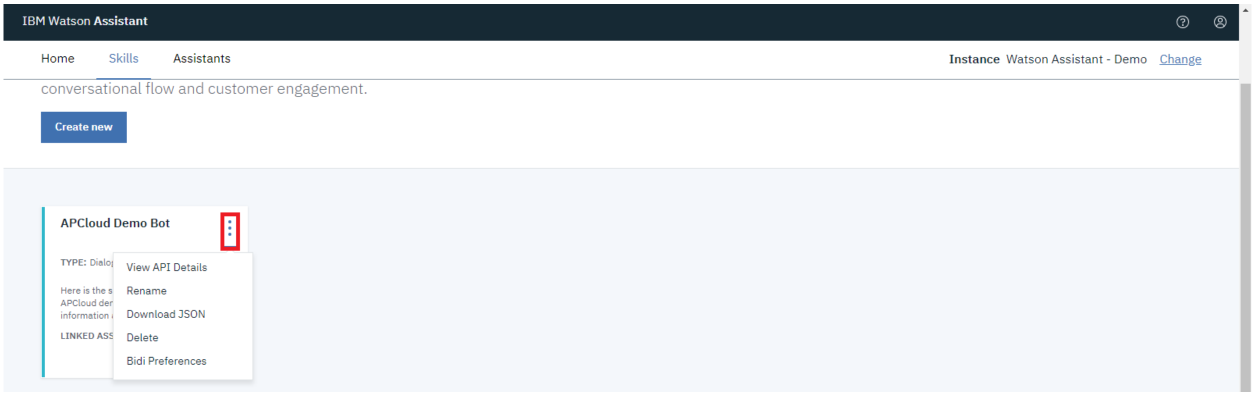
Anything else
anything_else
1 Response / 0 Context set / Does not return

Hello. How can I help you?

Hello
#Greetings

Hello I am Miracle's AP Cloud Demo Bot, how can I help you?

To access the skill through Node JS, you need to provide the Workspace ID in **app.js file**. For that, click on three dots (⋮), and the below options are displayed.



conversational flow and customer engagement.

APCloud Demo Bot

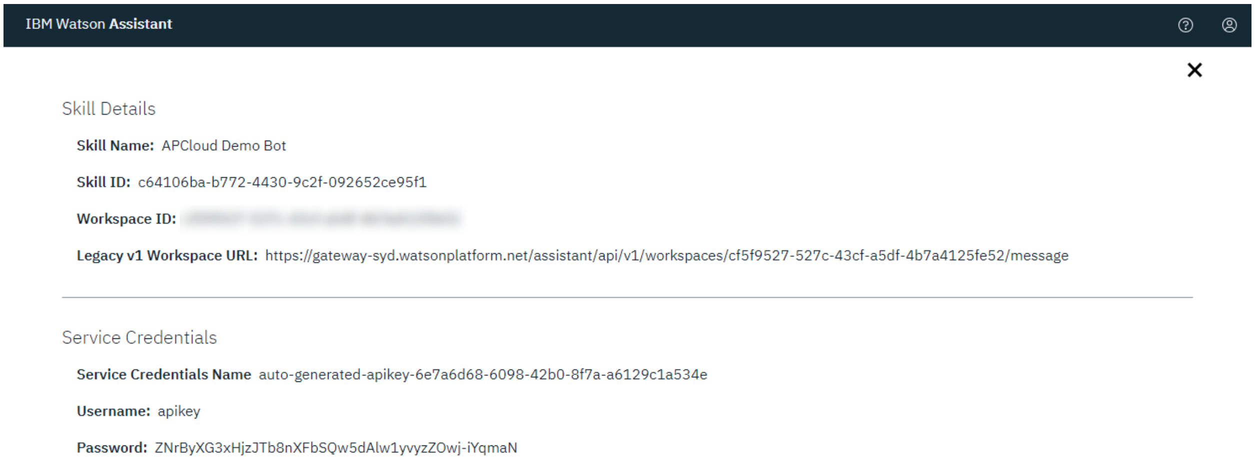
TYPE: Dialog

Here is the s
APCloud der
information

LINKED ASS

Choose **View API Details** option and click on it. You will get all the API details.

From those API details, you will get the Workspace ID. Copy that ID and navigate to **app.js** file, paste the ID in the place of <**Your-Watson-Assistant-WorkspaceID**>



Skill Details

Skill Name: APCloud Demo Bot

Skill ID: c64106ba-b772-4430-9c2f-092652ce95f1

Workspace ID: [redacted]

Legacy v1 Workspace URL: https://gateway-syd.watsonplatform.net/assistant/api/v1/workspaces/cf5f9527-527c-43cf-a5df-4b7a4125fe52/message

Service Credentials

Service Credentials Name auto-generated-apikey-6e7a6d68-6098-42b0-8f7a-a6129c1a534e

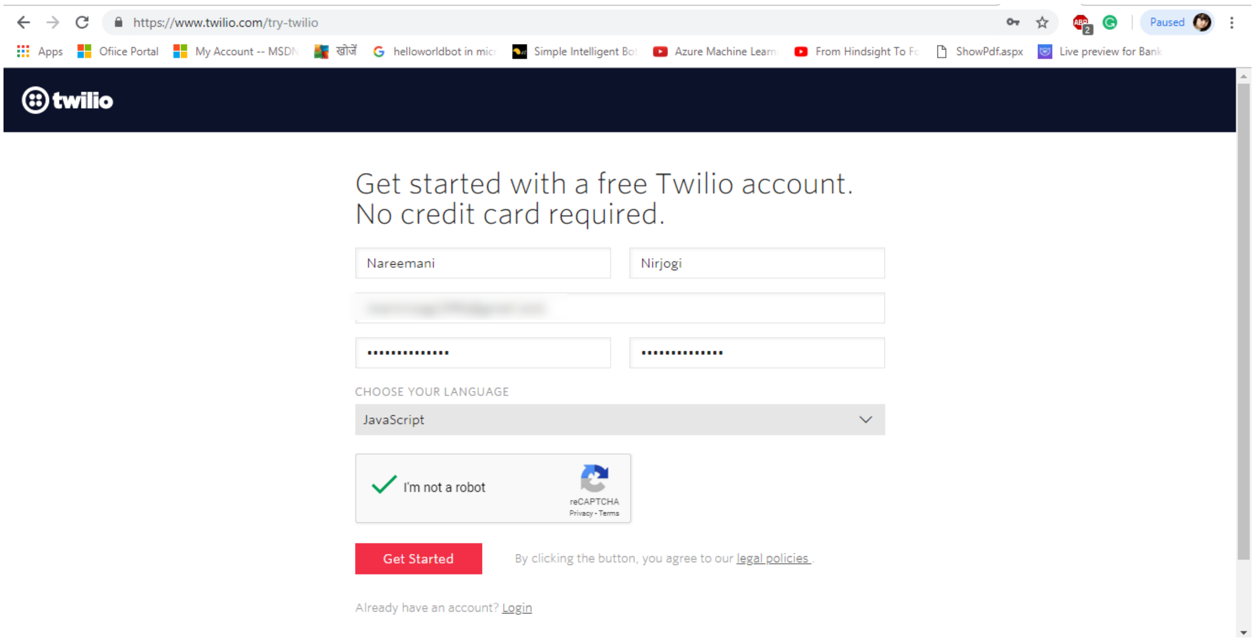
Username: apikey

Password: ZNrByXG3xHjzJTb8nXFbSQw5dAlw1yvyzZOwj-iYqmaN

Step #4 | Creating Twilio Account

Initially, you need to create a Twilio account to get the WhatsApp number for the bot. Here, is the link to create free Twilio account http://www.twilio.com/try-twilio.

Enter your details and click on **Get Started**



Get started with a free Twilio account.
No credit card required.

Nareemani | Nirjogi

[redacted]

•••••••••••••• | ••••••••••••••

CHOOSE YOUR LANGUAGE

JavaScript

☑ I'm not a robot

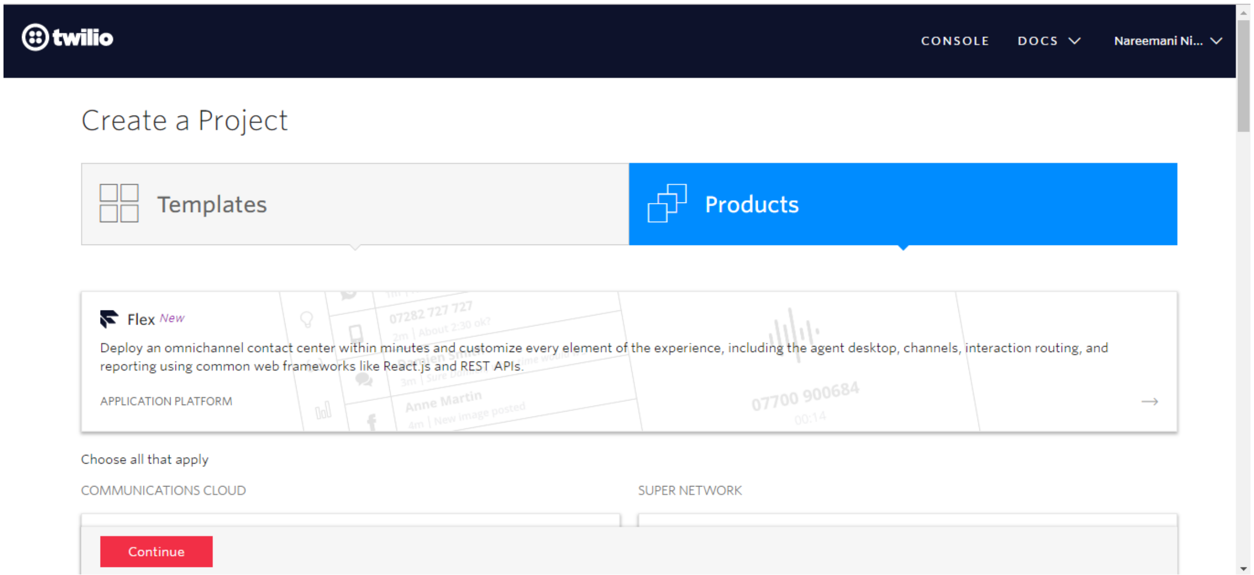
reCAPTCHA
Privacy - Terms

Get Started

By clicking the button, you agree to our legal policies.

Already have an account? Login

After creating a new Twilio account, you will land on the below dashboard. Select **Products** tile.



Create a Project

Flex *New*

Deploy an omnichannel contact center within minutes and customize every element of the experience, including the agent desktop, channels, interaction routing, and reporting using common web frameworks like React.js and REST APIs.

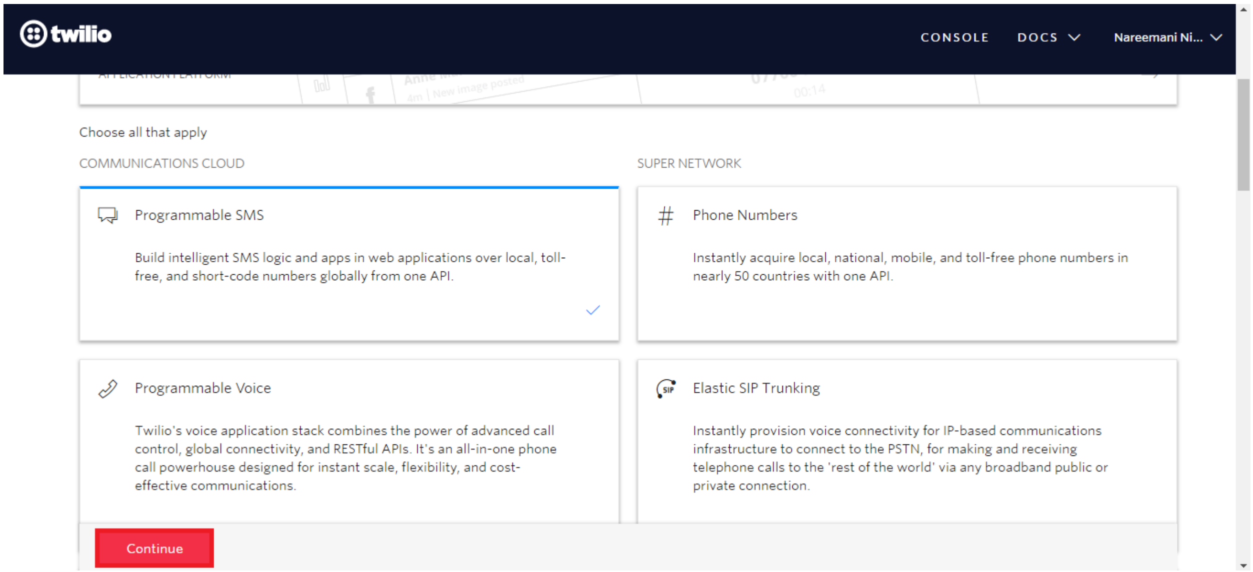
APPLICATION PLATFORM

Choose all that apply

COMMUNICATIONS CLOUD

SUPER NETWORK

Under Products, if you scroll down you will find the following services. Select **Programmable SMS** service and then click on **Continue.**



Choose all that apply

COMMUNICATIONS CLOUD

Programmable SMS

Build intelligent SMS logic and apps in web applications over local, toll-free, and short-code numbers globally from one API.

✓

Programmable Voice

Twilio's voice application stack combines the power of advanced call control, global connectivity, and RESTful APIs. It's an all-in-one phone call powerhouse designed for instant scale, flexibility, and cost-effective communications.

SUPER NETWORK

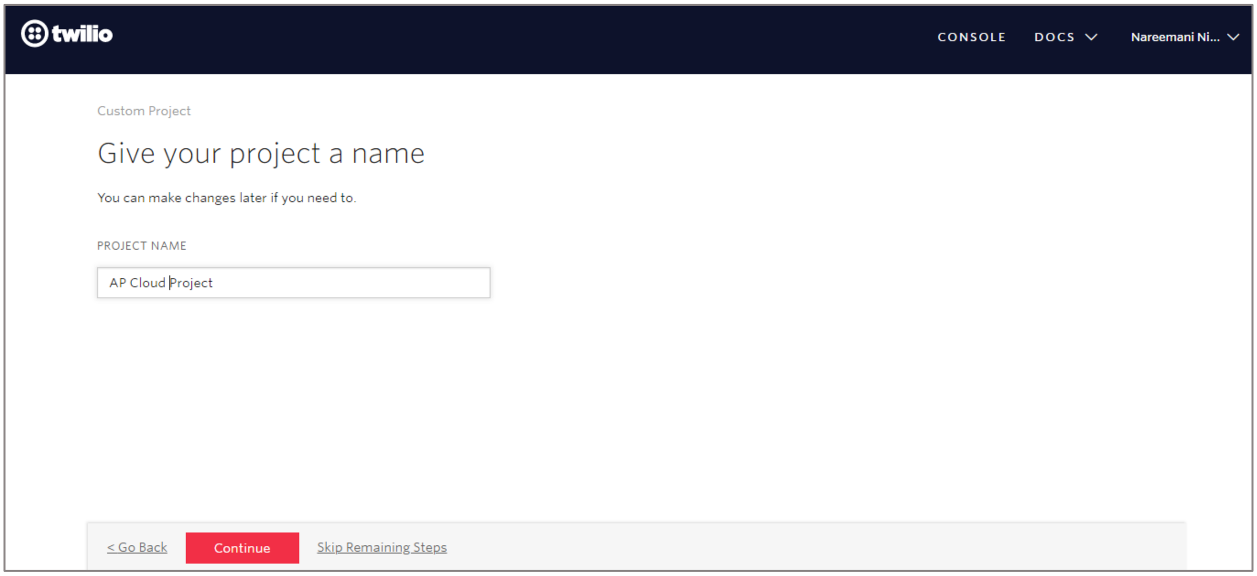
Phone Numbers

Instantly acquire local, national, mobile, and toll-free phone numbers in nearly 50 countries with one API.

Elastic SIP Trunking

Instantly provision voice connectivity for IP-based communications infrastructure to connect to the PSTN, for making and receiving telephone calls to the 'rest of the world' via any broadband public or private connection.

After selecting a service give a PROJECT NAME and then click on **Continue.**



Custom Project

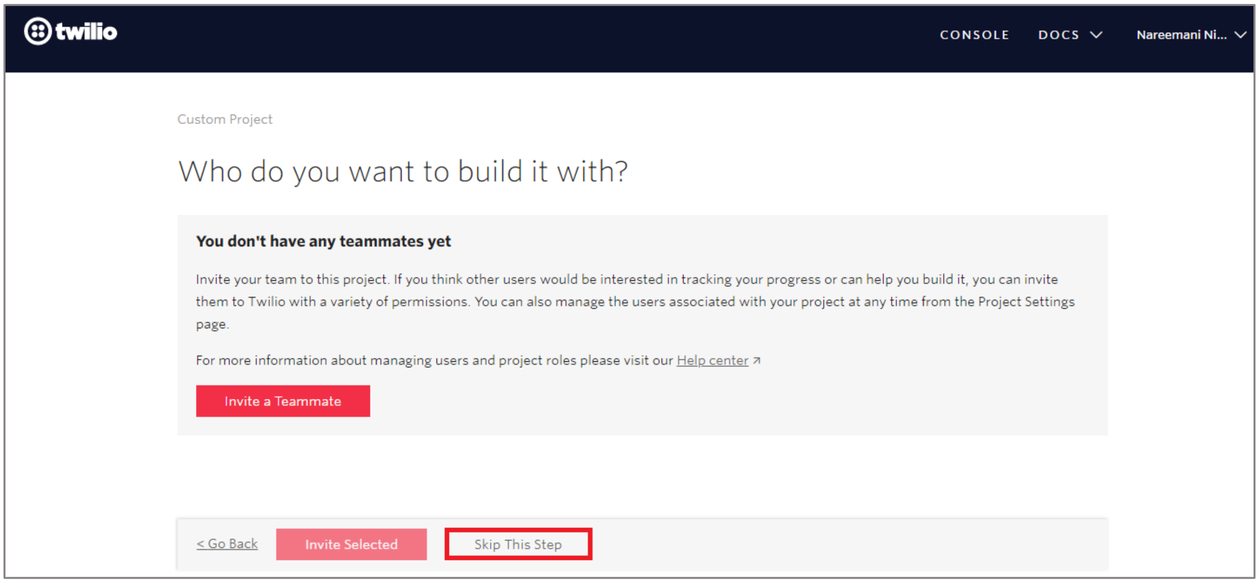
Give your project a name

You can make changes later if you need to.

PROJECT NAME

AP Cloud Project

After creating a Project, it will display the below page. You can select **Skip This Step** option.



twilio CONSOLE DOCS Nareemani Ni...

Custom Project

Who do you want to build it with?

You don't have any teammates yet

Invite your team to this project. If you think other users would be interested in tracking your progress or can help you build it, you can invite them to Twilio with a variety of permissions. You can also manage the users associated with your project at any time from the Project Settings page.

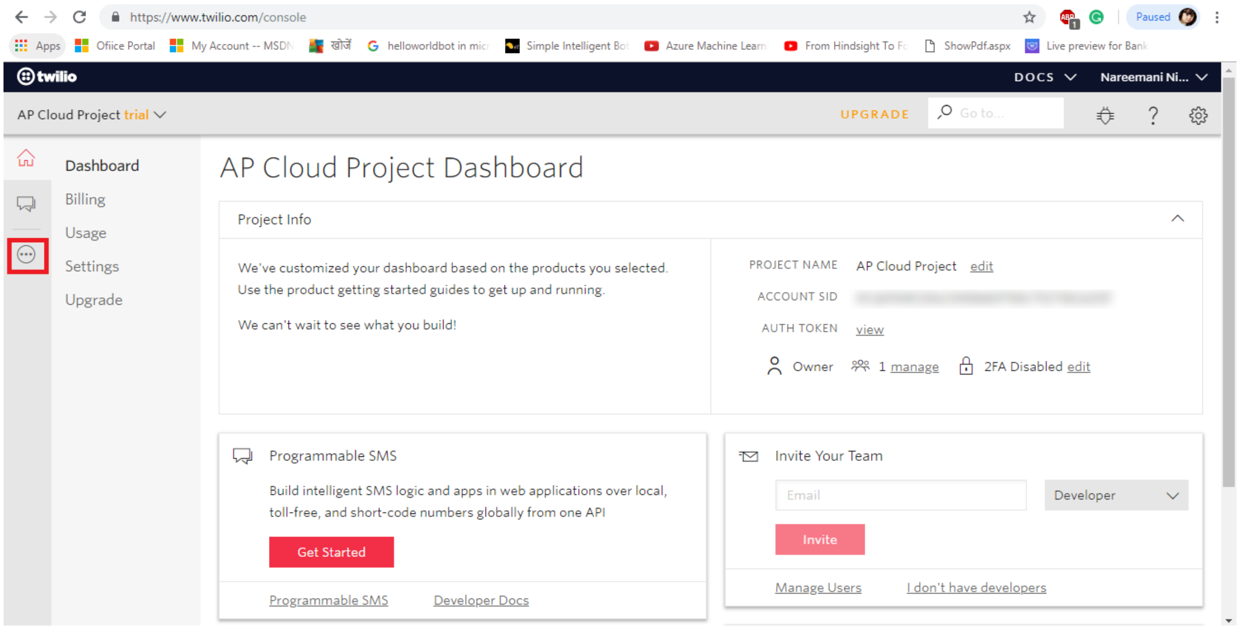
For more information about managing users and project roles please visit our Help center ↗

Invite a Teammate

< Go Back | Invite Selected | Skip This Step

It will display the Project Dashboard with the Project Name and Account SID. By using Account SID we can connect the Twilio project to Watson Assistant using Node JS. Copy the ACCOUNT SID and AUTH TOKEN for later use.

In this dashboard click on 3 horizontal dots icon (Products and Services option) as shown below.



https://www.twilio.com/console

Apps | Office Portal | My Account -- MSDN | खोजें | helloworldbot in mic | Simple Intelligent Bo | Azure Machine Learn | From Hindsight To F | ShowPdf.aspx | Live preview for Bank

twilio DOCS Nareemani Ni...

AP Cloud Project trial | UPGRADE | Go to...

Dashboard
Billing
Usage
Settings
Upgrade

AP Cloud Project Dashboard

Project Info

We've customized your dashboard based on the products you selected. Use the product getting started guides to get up and running.

We can't wait to see what you build!

PROJECT NAME	AP Cloud Project edit
ACCOUNT SID	[redacted]
AUTH TOKEN	view

Owner | 1 manage | 2FA Disabled edit

Programmable SMS

Build intelligent SMS logic and apps in web applications over local, toll-free, and short-code numbers globally from one API

Get Started

Programmable SMS | Developer Docs

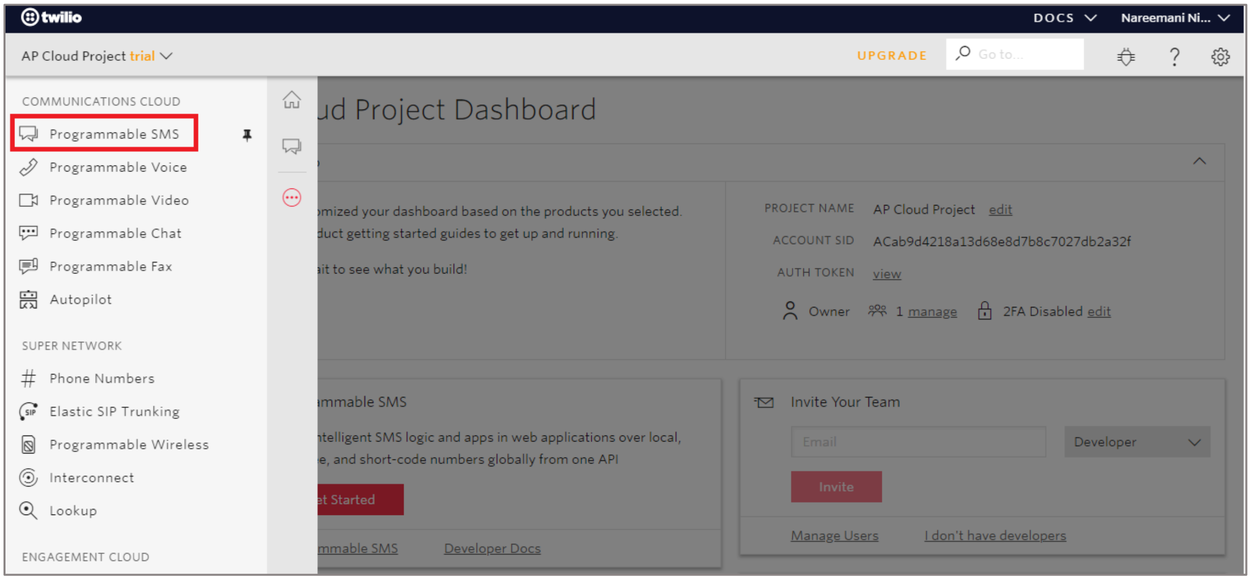
Invite Your Team

Email | Developer

Invite

Manage Users | I don't have developers

In Products and Services select **Programmable SMS** option.



omized your dashboard based on the products you selected.
duct getting started guides to get up and running.

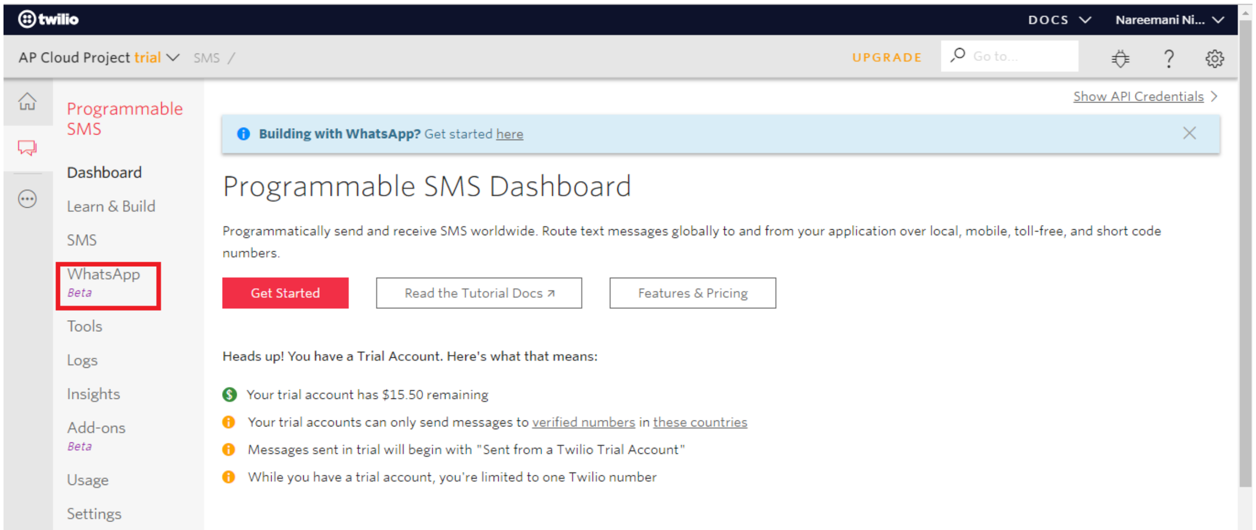
it to see what you build!

PROJECT NAME AP Cloud Project edit
ACCOUNT SID ACab9d4218a13d68e8d7b8c7027db2a32f
AUTH TOKEN view
Owner 1 manage 2FA Disabled edit

mmable SMS
ntelligent SMS logic and apps in web applications over local,
e, and short-code numbers globally from one API

Invite Your Team
Email

Under Programmable SMS, select **WhatsApp** which you can find as Beta.



Building with WhatsApp? Get started here

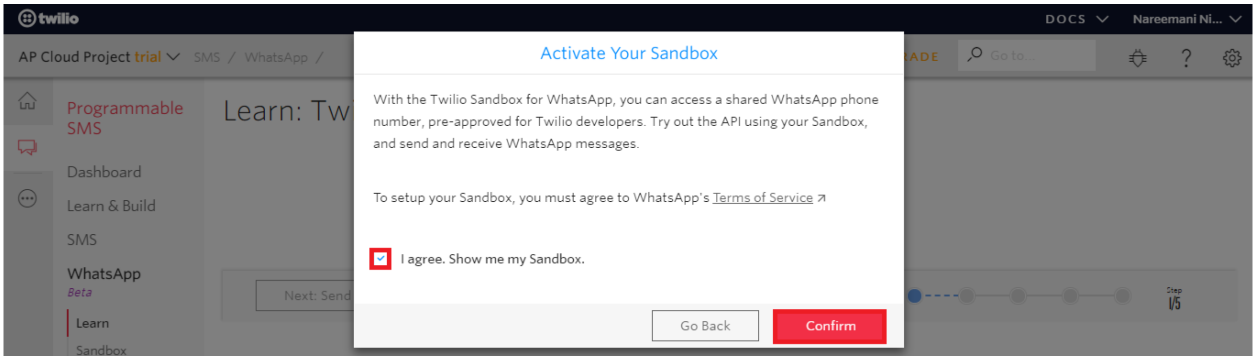
Programmable SMS Dashboard

Programmatically send and receive SMS worldwide. Route text messages globally to and from your application over local, mobile, toll-free, and short code numbers.

Heads up! You have a Trial Account. Here's what that means:

- Your trial account has $15.50 remaining
- Your trial accounts can only send messages to verified numbers in these countries
- Messages sent in trial will begin with "Sent from a Twilio Trial Account"
- While you have a trial account, you're limited to one Twilio number

After selecting WhatsApp, it will display **Activate your Sandbox** as shown below. Select the dialog box **I agree. Show me my Sandbox.** And then click on **Confirm** button.



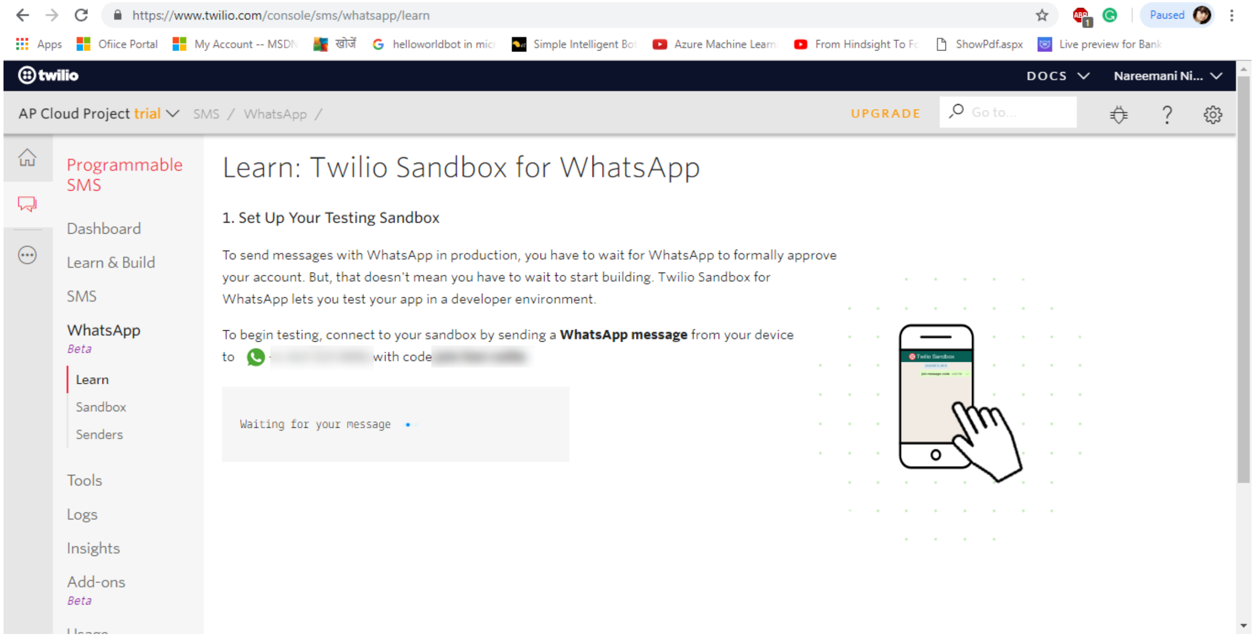
Activate Your Sandbox

With the Twilio Sandbox for WhatsApp, you can access a shared WhatsApp phone number, pre-approved for Twilio developers. Try out the API using your Sandbox, and send and receive WhatsApp messages.

To setup your Sandbox, you must agree to WhatsApp's Terms of Service ↗

☑ I agree. Show me my Sandbox.

After activating the Sandbox it will provide a WhatsApp contact number to the bot for testing and gives the code for connecting.



Learn: Twilio Sandbox for WhatsApp

1. Set Up Your Testing Sandbox

To send messages with WhatsApp in production, you have to wait for WhatsApp to formally approve your account. But, that doesn't mean you have to wait to start building. Twilio Sandbox for WhatsApp lets you test your app in a developer environment.

To begin testing, connect to your sandbox by sending a **WhatsApp message** from your device to [redacted] with code [redacted]

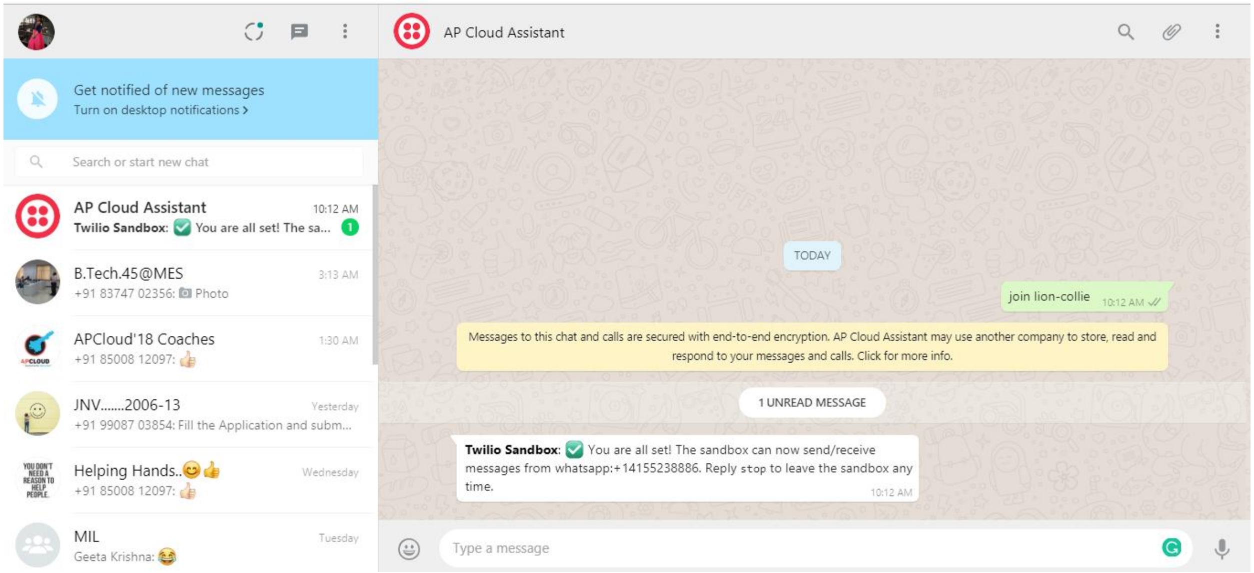
```
Waiting for your message
```

After adding the number that you received in the above step, save it to your contact list. Now, open WhatsApp in your mobile. If you don't have the WhatsApp application, download it.

Open your WhatsApp, search for your bot number or with the name you saved.

You need to send the code to the bot number to link your number with Sandbox.

Note - You can also open your WhatsApp in browser using https://web.whatsapp.com



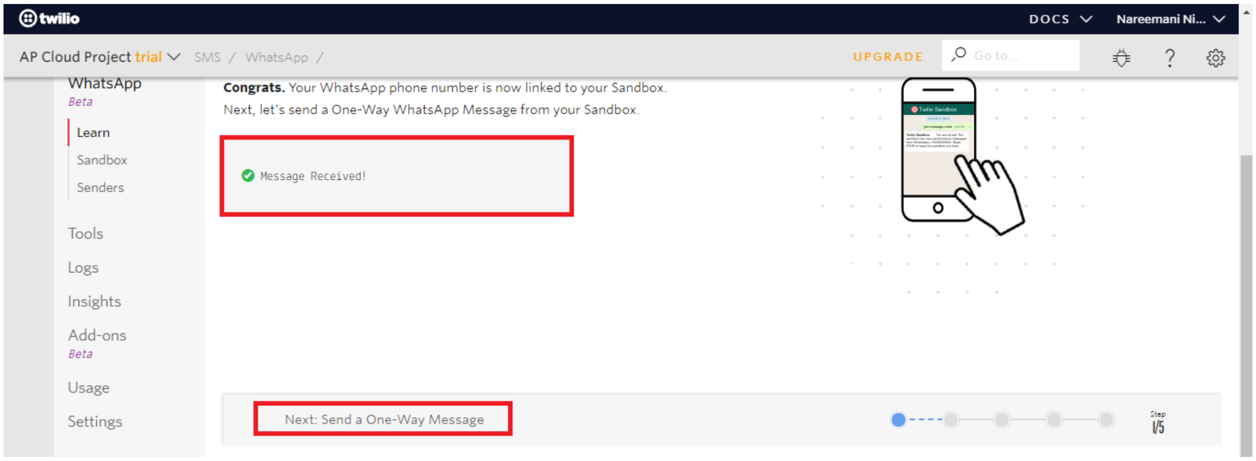
AP Cloud Assistant
Get notified of new messages
Turn on desktop notifications ›
Search or start new chat
AP Cloud Assistant 10:12 AM
Twilio Sandbox: ✅ You are all set! The sa...
B.Tech.45@MES 3:13 AM
+91 83747 02356: Photo
APCloud'18 Coaches 1:30 AM
+91 85008 12097: 👍
JNV.......2006-13 Yesterday
+91 99087 03854: Fill the Application and subm...
Helping Hands..😊👍 Wednesday
+91 85008 12097: 👍
MIL Tuesday
Geeta Krishna: 😂
TODAY
1 UNREAD MESSAGE
Type a message

join lion-collie 10:12 AM

Messages to this chat and calls are secured with end-to-end encryption. AP Cloud Assistant may use another company to store, read and respond to your messages and calls. Click for more info.

Twilio Sandbox: ✅ You are all set! The sandbox can now send/receive messages from whatsapp:+14155238886. Reply `stop` to leave the sandbox any time. 10:12 AM

After giving the code, your WhatsApp number will be linked to the Sandbox and will receive the message from Twilio. Then in your Twilio account it displays like **Message Received** as below and then click on **Next: Send a One–Way Message.**

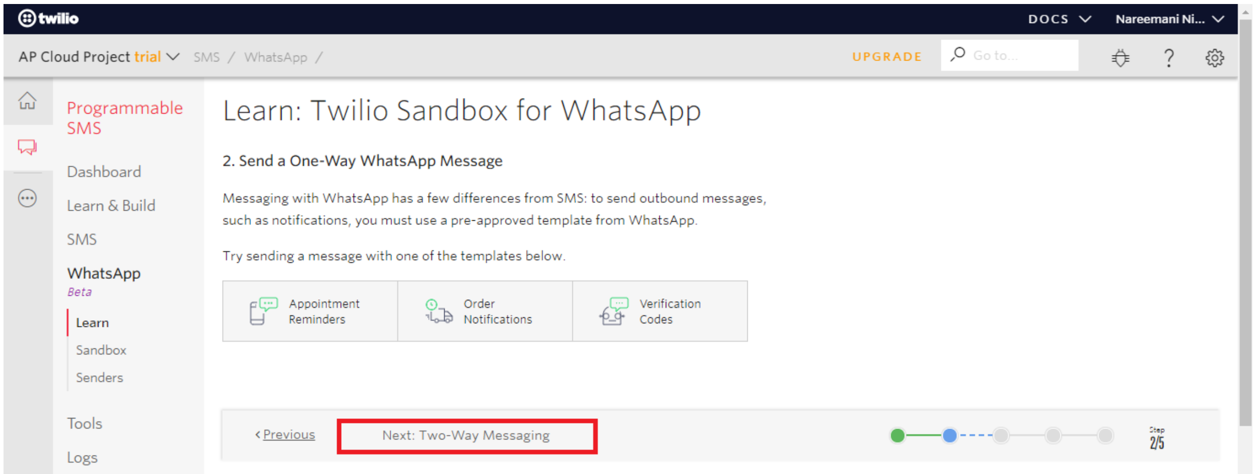


Congrats. Your WhatsApp phone number is now linked to your Sandbox.
Next, let's send a One-Way WhatsApp Message from your Sandbox.

✅ Message Received!

Next: Send a One-Way Message

This One-Way Message is used for sending Outbounding messages and Notifications. So, once you are done with One-Way Message click on **Next: Two-Way Messaging.**



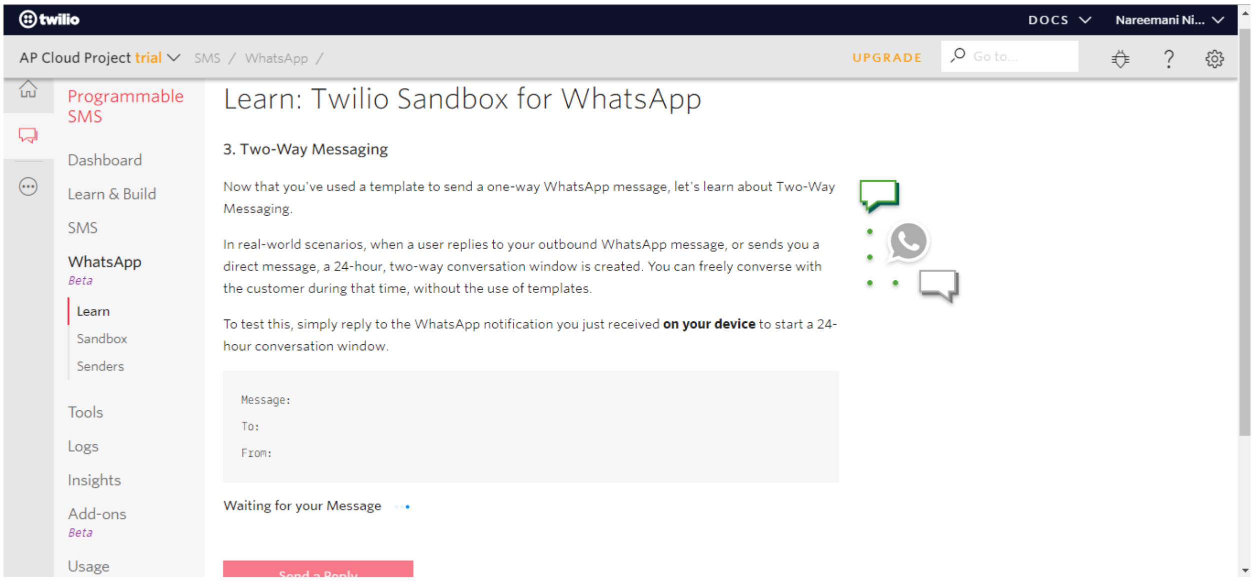
Learn: Twilio Sandbox for WhatsApp

2. Send a One-Way WhatsApp Message

Messaging with WhatsApp has a few differences from SMS: to send outbound messages, such as notifications, you must use a pre-approved template from WhatsApp.

Try sending a message with one of the templates below.

By enabling the Two-Way Messaging it creates two-way 24 hour conversation window.



Learn: Twilio Sandbox for WhatsApp

3. Two-Way Messaging

Now that you've used a template to send a one-way WhatsApp message, let's learn about Two-Way Messaging.

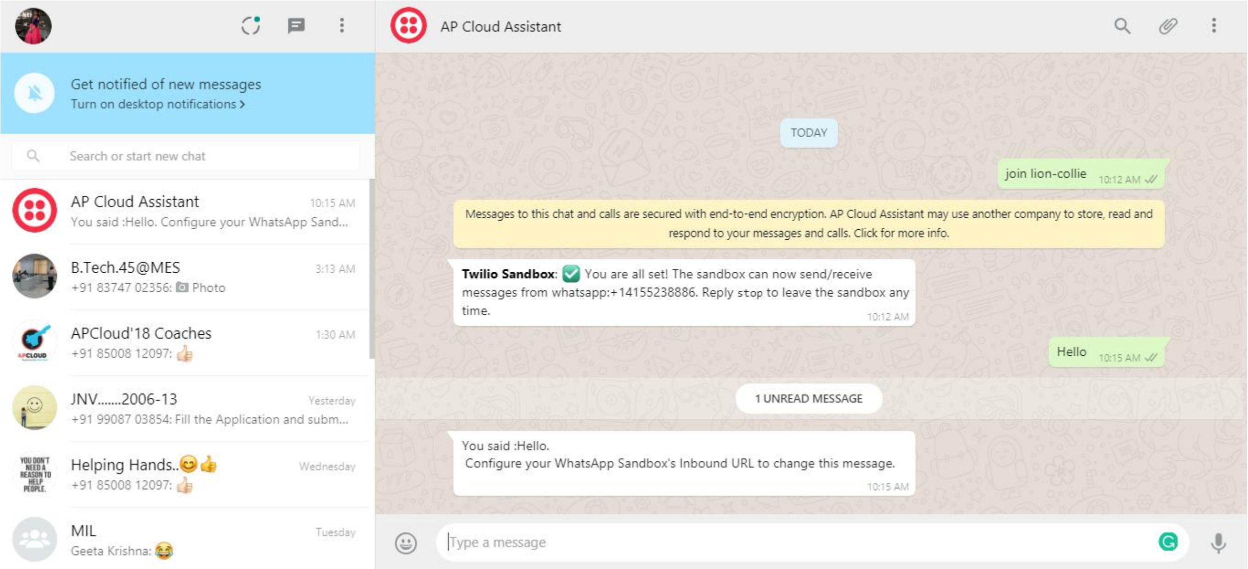
In real-world scenarios, when a user replies to your outbound WhatsApp message, or sends you a direct message, a 24-hour, two-way conversation window is created. You can freely converse with the customer during that time, without the use of templates.

To test this, simply reply to the WhatsApp notification you just received **on your device** to start a 24-hour conversation window.

```
Message:
To:
From:
```

Waiting for your Message

To test this, simply reply to the WhatsApp notification you received on your device to start a 24-hour conversation window. It responds back as shown below.



Get notified of new messages
Turn on desktop notifications ›

Search or start new chat

AP Cloud Assistant 10:15 AM
You said :Hello. Configure your WhatsApp Sand...

B.Tech.45@MES 3:13 AM
+91 83747 02356: 📷 Photo

APCloud'18 Coaches 1:30 AM
+91 85008 12097: 👍

JNV.......2006-13 Yesterday
+91 99087 03854: Fill the Application and subm...

Helping Hands..😊👍 Wednesday
+91 85008 12097: 👍

MIL Tuesday
Geeta Krishna: 😂

AP Cloud Assistant

TODAY

join lion-collie 10:12 AM ✓✓

Messages to this chat and calls are secured with end-to-end encryption. AP Cloud Assistant may use another company to store, read and respond to your messages and calls. Click for more info.

Twilio Sandbox: ✅ You are all set! The sandbox can now send/receive messages from whatsapp:+14155238886. Reply `stop` to leave the sandbox any time. 10:12 AM

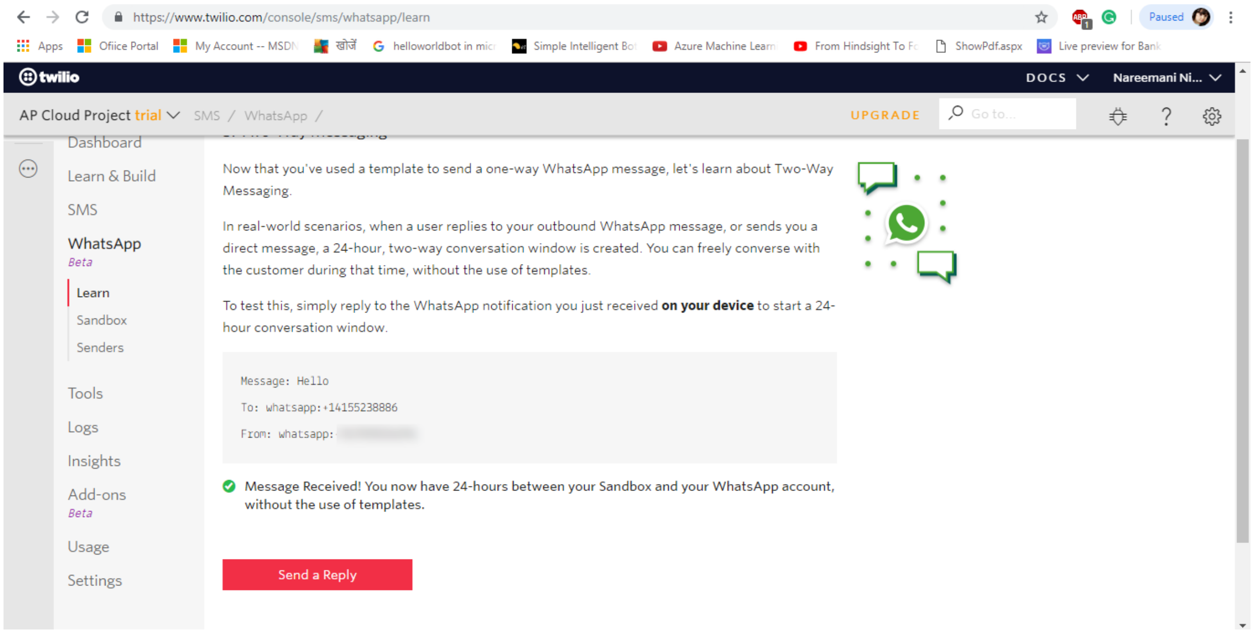
Hello 10:15 AM ✓✓

1 UNREAD MESSAGE

You said :Hello.
Configure your WhatsApp Sandbox's Inbound URL to change this message. 10:15 AM

Type a message

After receiving message in WhatsApp, the **To** number and **From** number will be updated automatically in the Two-Way messaging as shown below, and then click on **Next: Configure Your Sandbox.**



https://www.twilio.com/console/sms/whatsapp/learn

Now that you've used a template to send a one-way WhatsApp message, let's learn about Two-Way Messaging.

In real-world scenarios, when a user replies to your outbound WhatsApp message, or sends you a direct message, a 24-hour, two-way conversation window is created. You can freely converse with the customer during that time, without the use of templates.

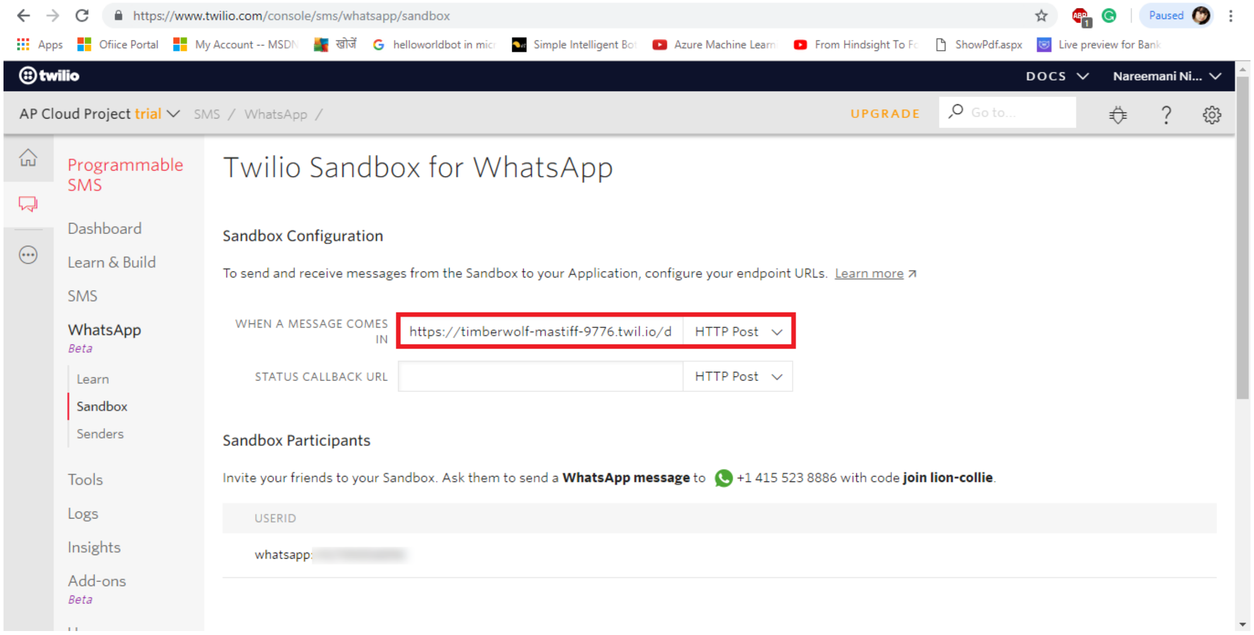
To test this, simply reply to the WhatsApp notification you just received **on your device** to start a 24-hour conversation window.

```
Message: Hello
To: whatsapp:+14155238886
From: whatsapp: [redacted]
```

✓ Message Received! You now have 24-hours between your Sandbox and your WhatsApp account, without the use of templates.

Send a Reply

After selecting Configure Your Sandbox, it will provide a default endpoint for the WhatsApp service like from where the messages are coming in.



Twilio Sandbox for WhatsApp

Sandbox Configuration

To send and receive messages from the Sandbox to your Application, configure your endpoint URLs. Learn more ↗

WHEN A MESSAGE COMES IN: https://timberwolf-mastiff-9776.twil.io/d | HTTP Post

STATUS CALLBACK URL: | HTTP Post

Sandbox Participants

Invite your friends to your Sandbox. Ask them to send a **WhatsApp message** to +1 415 523 8886 with code **join lion-collie**.

USERID

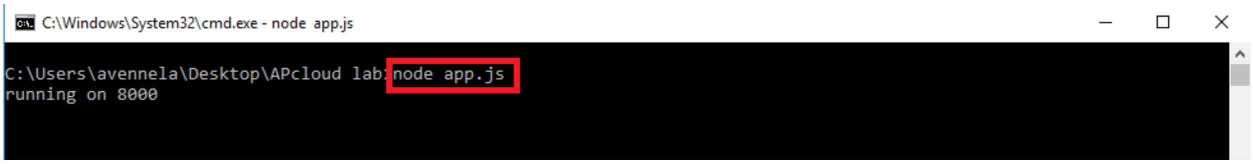
whatsapp:[redacted]

Here it provides the default endpoint for messages, now you need to give your bot endpoint in place of default so, that it will be connected to your bot which is built in IBM Watson.

Step #5 | Integration with WhatsApp using Node JS App

Go to **app.js** file, and place the Account SID and AUTH token which was copied previously from Twilio for authorizing the Twilio project. Now you connected Watson Conversation service with Twilio and finally you have to place the number of your Bot in **app.js** file, which was provided by Twilio in line **#49** in place of <WhatsApp-Number>. So, that it will receive the messages from the user and send the messages.

Navigate to the workspace folder where the code exists, and open command prompt. Run **node app.js**

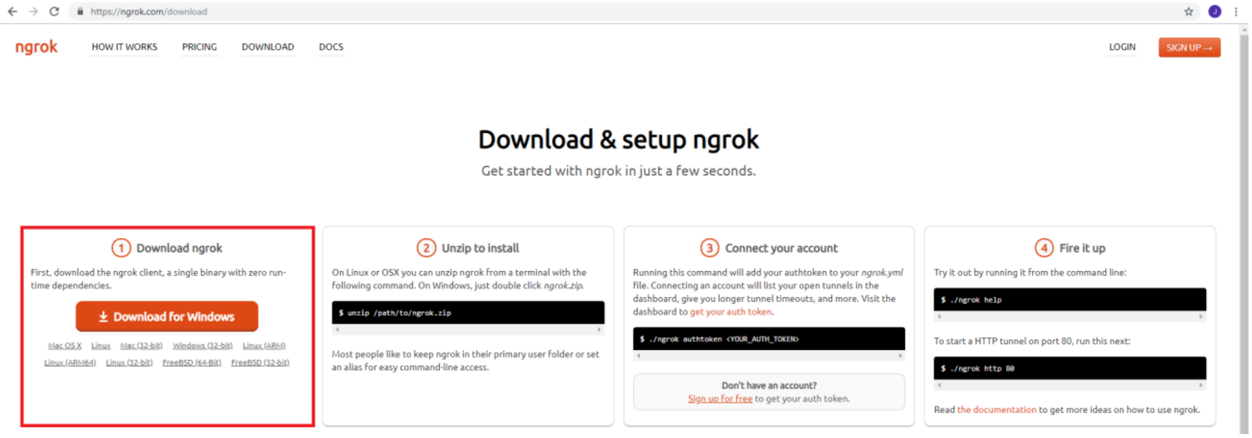


```
C:\Users\avennela\Desktop\APcloud lab>node app.js
running on 8000
```

Application is ***running on 8000*** port. Remember this for later use.

Open the browser and download ngrok by using the below link, https://ngrok.com/download (ngrok helps your app to get secure URL to your localhost server).

You need to install the ngrok based on the system requirement as provided below,



Download & setup ngrok

Get started with ngrok in just a few seconds.

1 Download ngrok

First, download the ngrok client, a single binary with zero run-time dependencies.

2 Unzip to install

On Linux or OSX you can unzip ngrok from a terminal with the following command. On Windows, just double click *ngrok.zip*.

```
$ unzip /path/to/ngrok.zip
```

Most people like to keep ngrok in their primary user folder or set an alias for easy command-line access.

3 Connect your account

Running this command will add your authtoken to your *ngrok.yml* file. Connecting an account will list your open tunnels in the dashboard, give you longer tunnel timeouts, and more. Visit the dashboard to get your auth token.

```
$ ./ngrok authtoken <YOUR_AUTH_TOKEN>
```

Don't have an account?
Sign up for free to get your auth token.

4 Fire it up

Try it out by running it from the command line:

```
$ ./ngrok help
```

To start a HTTP tunnel on port 80, run this next:

```
$ ./ngrok http 80
```

Read the documentation to get more ideas on how to use ngrok.

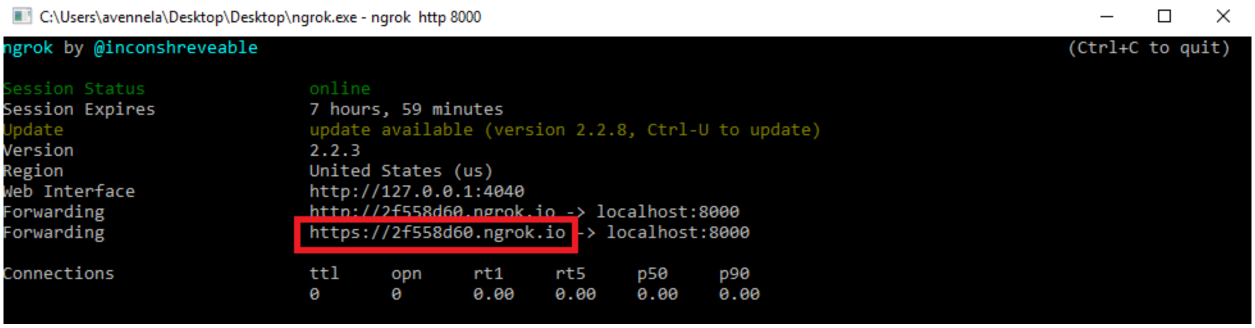
After downloading the ngrok, extract the downloaded folder and run the **ngrok.exe** file. Now, give the following command and click on the Enter button.

ngrok http <Your-Application-Port>

Example: ngrok http 8000

Once you run the application successfully with the above command, you will get the url as ***https://<random_code>.ngrok.io>*** . Copy this for later use.

Note - You should not close this window until you stop running your Node JS application.

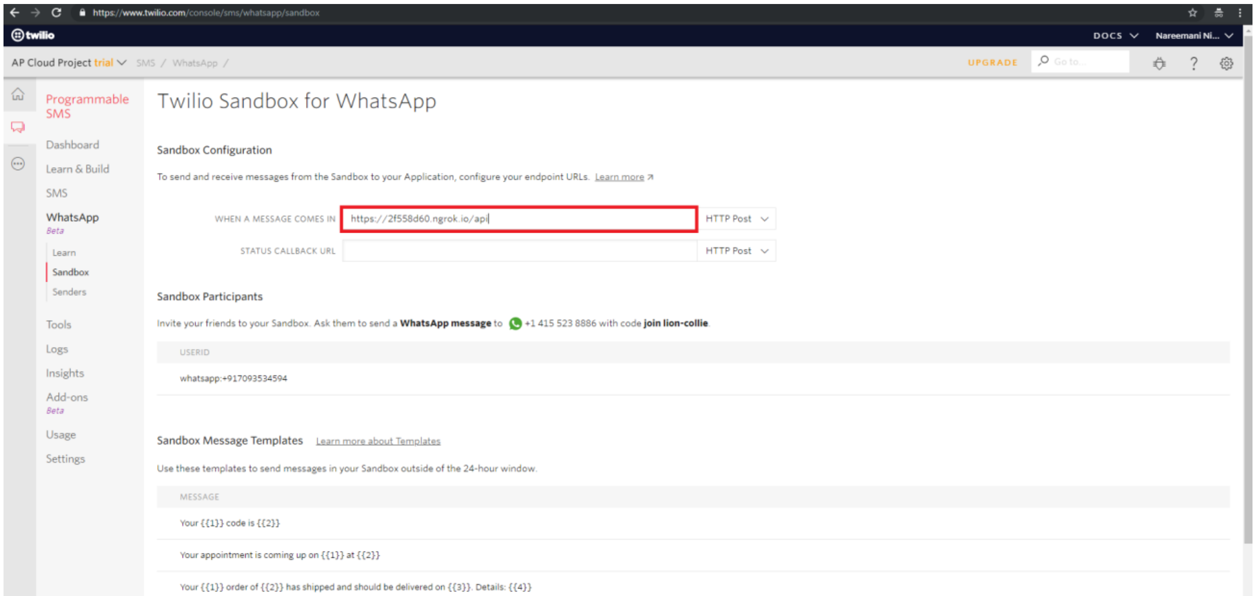

C:\Users\avennela\Desktop\Desktop\ngrok.exe - ngrok http 8000

```
ngrok by @inconshreveable                                                             (Ctrl+C to quit)

Session Status                online
Session Expires               7 hours, 59 minutes
Update                        update available (version 2.2.8, Ctrl-U to update)
Version                       2.2.3
Region                        United States (us)
Web Interface                 http://127.0.0.1:4040
Forwarding                    http://2f558d60.ngrok.io -> localhost:8000
Forwarding                    https://2f558d60.ngrok.io -> localhost:8000

Connections                   ttl     opn     rt1     rt5     p50     p90
                              0       0       0.00    0.00    0.00    0.00
```

Now, navigate to the app that you created in your Twilio account and place the URL in the place of **WHEN MESSAGE COMES IN** as shown below,



https://www.twilio.com/console/sms/whatsapp/sandbox

Twilio Sandbox for WhatsApp

Sandbox Configuration

To send and receive messages from the Sandbox to your Application, configure your endpoint URLs. Learn more ↗

WHEN A MESSAGE COMES IN: https://2f558d60.ngrok.io/api — HTTP Post

STATUS CALLBACK URL: — HTTP Post

Sandbox Participants

Invite your friends to your Sandbox. Ask them to send a **WhatsApp message** to +1 415 523 8886 with code **join lion-collie**.

USERID
whatsapp:+917093534594

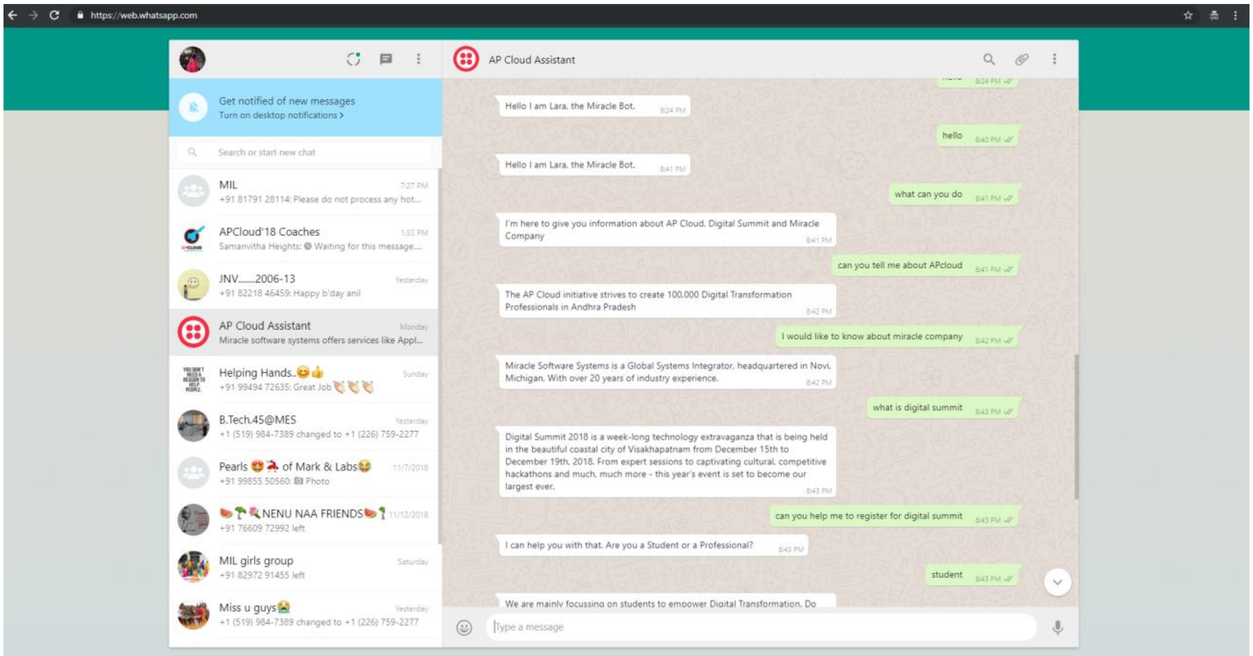
Sandbox Message Templates Learn more about Templates

Use these templates to send messages in your Sandbox outside of the 24-hour window.

MESSAGE
Your {{1}} code is {{2}}
Your appointment is coming up on {{1}} at {{2}}
Your {{1}} order of {{2}} has shipped and should be delivered on {{3}}. Details: {{4}}

Step #6| Testing AP Cloud Bot in WhatsApp

Open your WhatsApp, search for your Bot number and start a conversation with the bot.



https://web.whatsapp.com

MIL — 7:27 PM
+91 81791 28114: Please do not process any hot...

APCloud'18 Coaches — 1:33 PM
Samanvitha Heights: Waiting for this message....

JNV.......2006-13 — Yesterday
+91 82218 46459: Happy b'day anil

AP Cloud Assistant — Monday
Miracle software systems offers services like Appl...

Helping Hands..😊👍 — Sunday
+91 99494 72635: Great Job 👏👏👏

B.Tech.45@MES — Yesterday
+1 (519) 984-7389 changed to +1 (226) 759-2277

Pearls 😍🦞 of Mark & Labs😂 — 11/7/2018
+91 99855 50560: Photo

🍉🌴🌹NENU NAA FRIENDS🍉🌴 — 11/12/2018
+91 76609 72992 left

MIL girls group — Saturday
+91 82972 91455 left

Miss u guys😭 — Yesterday
+1 (519) 984-7389 changed to +1 (226) 759-2277

AP Cloud Assistant

Hello I am Lara, the Miracle Bot. 8:24 PM

hello 8:40 PM

Hello I am Lara, the Miracle Bot. 8:41 PM

what can you do 8:41 PM

I'm here to give you information about AP Cloud, Digital Summit and Miracle Company 8:41 PM

can you tell me about APcloud 8:41 PM

The AP Cloud initiative strives to create 100,000 Digital Transformation Professionals in Andhra Pradesh 8:42 PM

I would like to know about miracle company 8:42 PM

Miracle Software Systems is a Global Systems Integrator, headquartered in Novi, Michigan. With over 20 years of industry experience. 8:42 PM

what is digital summit 8:43 PM

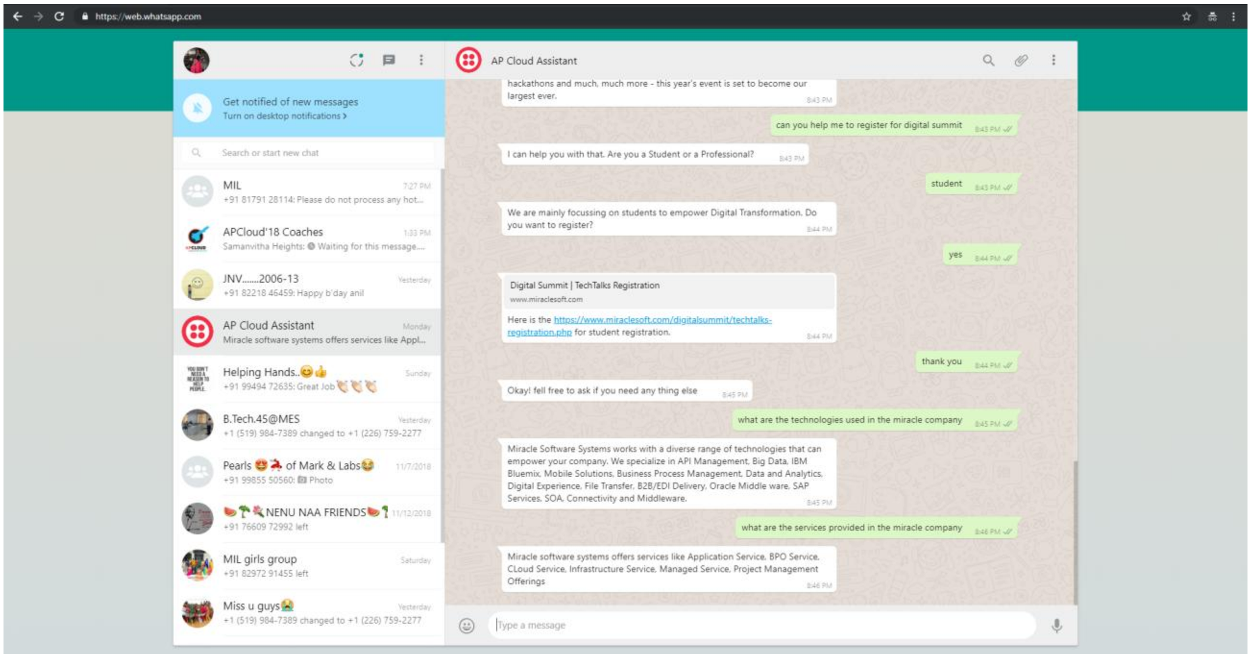
Digital Summit 2018 is a week-long technology extravaganza that is being held in the beautiful coastal city of Visakhapatnam from December 15th to December 19th, 2018. From expert sessions to captivating cultural, competitive hackathons and much, much more - this year's event is set to become our largest ever. 8:43 PM

can you help me to register for digital summit 8:43 PM

I can help you with that. Are you a Student or a Professional? 8:43 PM

student 8:43 PM

We are mainly focussing on students to empower Digital Transformation. Do



https://web.whatsapp.com

Get notified of new messages
Turn on desktop notifications ›

Search or start new chat

MIL 7:27 PM
+91 81791 28114: Please do not process any hot...

APCloud'18 Coaches 1:33 PM
Samanvitha Heights: Waiting for this message....

JNV.......2006-13 Yesterday
+91 82218 46459: Happy b'day anil

AP Cloud Assistant Monday
Miracle software systems offers services like Appl...

Helping Hands..😊👍 Sunday
+91 99494 72635: Great Job👏👏👏

B.Tech.45@MES Yesterday
+1 (519) 984-7389 changed to +1 (226) 759-2277

Pearls 😍 of Mark & Labs😂 11/7/2018
+91 99855 50560: Photo

🍉🌴NENU NAA FRIENDS🍉 11/12/2018
+91 76609 72992 left

MIL girls group Saturday
+91 82972 91455 left

Miss u guys😭 Yesterday
+1 (519) 984-7389 changed to +1 (226) 759-2277

AP Cloud Assistant

hackathons and much, much more - this year's event is set to become our largest ever. 8:43 PM

can you help me to register for digital summit 8:43 PM

I can help you with that. Are you a Student or a Professional? 8:43 PM

student 8:43 PM

We are mainly focussing on students to empower Digital Transformation. Do you want to register? 8:44 PM

yes 8:44 PM

Digital Summit | TechTalks Registration
www.miraclesoft.com
Here is the https://www.miraclesoft.com/digitalsummit/techtalks-registration.php for student registration. 8:44 PM

thank you 8:44 PM

Okay! fell free to ask if you need any thing else 8:45 PM

what are the technologies used in the miracle company 8:45 PM

Miracle Software Systems works with a diverse range of technologies that can empower your company. We specialize in API Management, Big Data, IBM Bluemix, Mobile Solutions, Business Process Management, Data and Analytics, Digital Experience, File Transfer, B2B/EDI Delivery, Oracle Middle ware, SAP Services, SOA, Connectivity and Middleware. 8:45 PM

what are the services provided in the miracle company 8:46 PM

Miracle software systems offers services like Application Service, BPO Service, CLoud Service, Infrastructure Service, Managed Service, Project Management Offerings 8:46 PM

Hurray!! With this lab you are able to create your WhatsApp bot using **Watson Assistant** and **Twilio.**

For any questions regarding this lab please feel free to reach out to innovation@miraclesoft.com.