Build a bot with QnA Maker and Azure Bot Service

600 XP

29 min • Module • 0 of 5 units completed

4.6 (651)

Bots are a popular way to provide support through multiple communication channels. This module describes how to use the QnA Maker service and Azure Bot Service to create a bot that answers user questions.

Start >

Overview

Introduction

In today's connected world, people use a variety of technologies to communicate. For example:

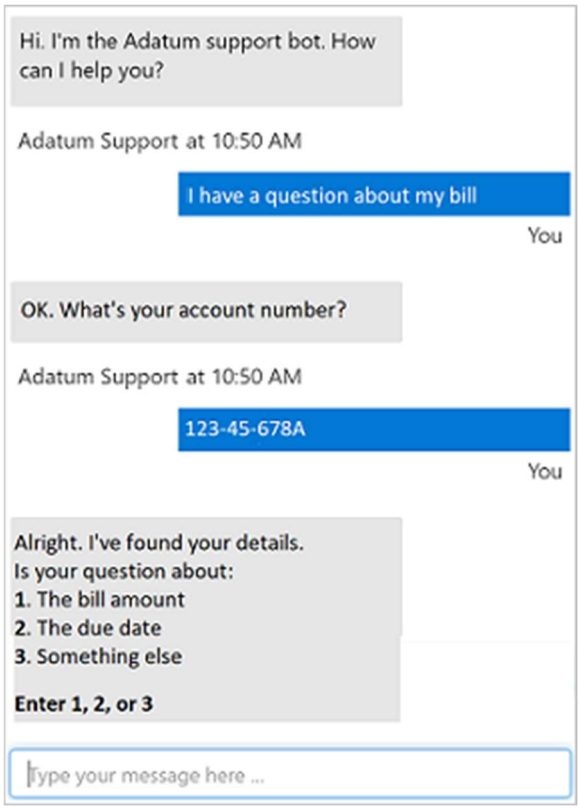
- Voice calls
- Messaging services
- Online chat applications
- Email
- Social media platforms
- Collaborative workplace tools

We've become so used to ubiquitous connectivity, that we expect the organizations we deal with to be easily contactable and immediately responsive through the channels we already use. Additionally, we expect these organizations to engage with us individually, and be able to answer complex questions at a personal level.

Conversational AI

While many organizations publish support information and answers to frequently asked questions (FAQs) that can be accessed through a web browser or dedicated app. The complexity of the systems and services they offer means that answers to specific questions are hard to find. Often, these organizations find their support personnel being overloaded with requests for help through phone calls, email, text messages, social media, and other channels.

Increasingly, organizations are turning to artificial intelligence (AI) solutions that make use of AI agents, commonly known as *bots* to provide a first-line of automated support through the full range of channels that we use to communicate. Bots are designed to interact with users in a conversational manner, as shown in this example of a chat interface:



Note

The example shown here is a chat interface, such as you might find on a web site; but bots can be designed to work across multiple channels, including email, social media platforms, and even voice calls. Regardless of the channel used, bots typically manage conversation flows using a combination of natural language and constrained option responses that guide the user to a resolution.

Conversations typically take the form of messages exchanged in turns; and one of the most common kinds of conversational exchange is a question followed by an answer. This pattern forms the basis for many user support bots, and can often be based on existing FAQ documentation. To implement this kind of solution, you need:

- A ***knowledge base*** of question and answer pairs - usually with some built-in natural language processing model to enable questions that can be phrased in multiple ways to be understood with the same semantic meaning.
- A ***bot service*** that provides an interface to the knowledge base through one or more channels.

Get started with QnA Maker and Azure Bot Service

You can easily create a user support bot solution on Microsoft Azure using a combination of two core technologies:

- **QnA Maker**. This cognitive service enables you to create and publish a knowledge base with built-in natural language processing capabilities.
- **Azure Bot Service**. This service provides a framework for developing, publishing, and managing bots on Azure.

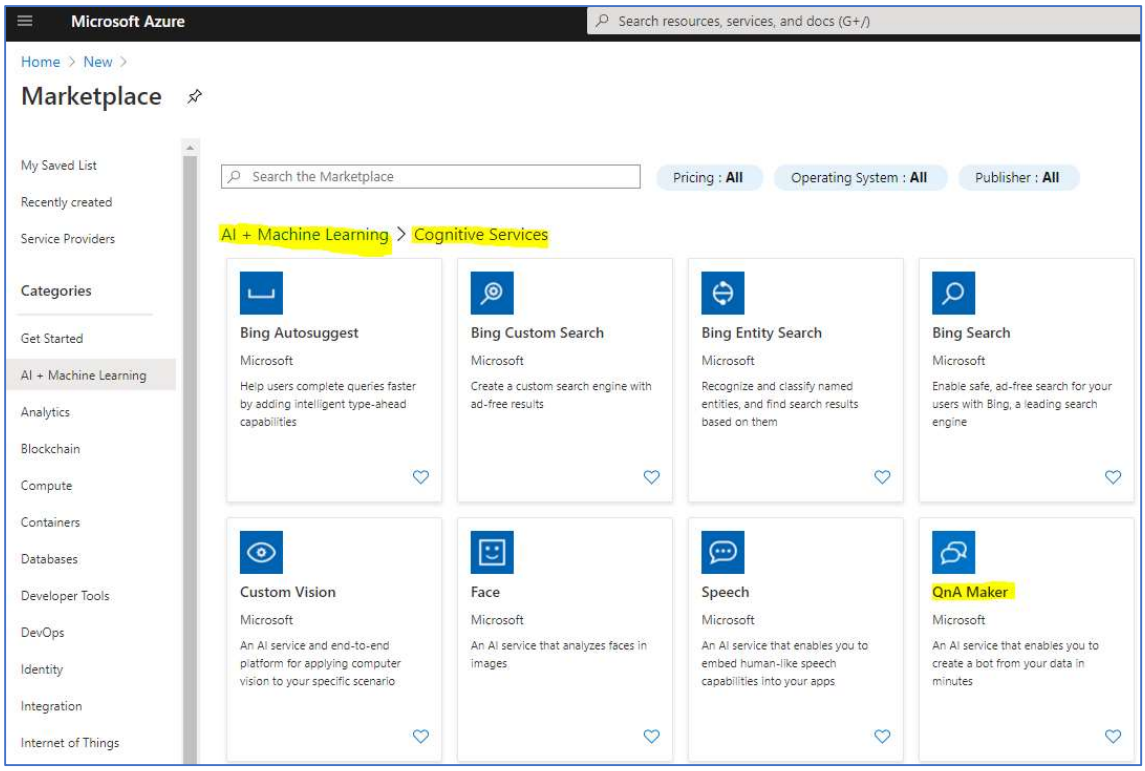
Creating a QnA Maker knowledge base

The first challenge in creating a user support bot is to use the QnA Maker service to create a knowledge base. The service provides a dedicated *QnA Maker portal* web-based interface that you can use to create, train, publish, and manage knowledge bases.

> **Note**
> You can write code to create and manage knowledge bases using the QnA Maker REST API or SDK. However, in most scenarios it is easier to use the QnA Maker portal.

Provision a QnA Maker Azure resource

To create a knowledge base, you must first provision a **QnA Maker** resource in your Azure subscription. You can do this directly in the Azure portal before you start creating your knowledge base, or you can start developing your knowledge base in the QnA Maker portal and provision the resource when prompted.


Microsoft Azure
Search resources, services, and docs (G+/)
Home > New >
Marketplace
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Recently created
Service Providers
Categories
Get Started
AI + Machine Learning
Analytics
Blockchain
Compute
Containers
Databases
Developer Tools
DevOps
Identity
Integration
Internet of Things
Search the Marketplace
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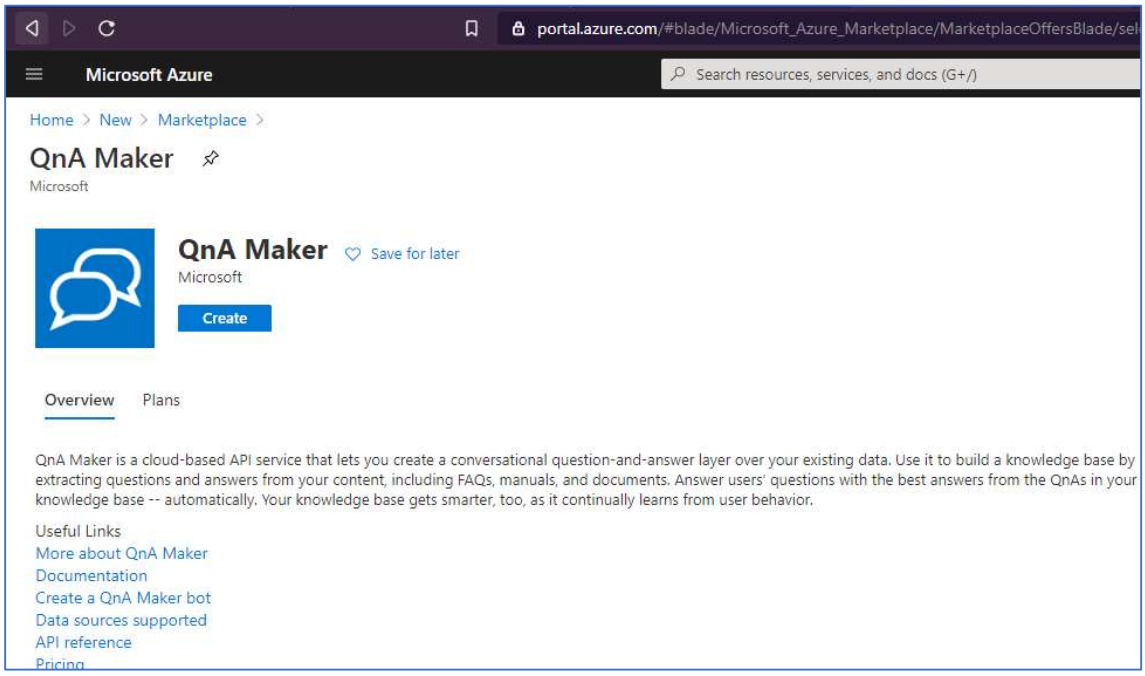
Operating System : All
Publisher : All
AI + Machine Learning > Cognitive Services
Bing Autosuggest
Microsoft
Help users complete queries faster by adding intelligent type-ahead capabilities
Bing Custom Search
Microsoft
Create a custom search engine with ad-free results
Bing Entity Search
Microsoft
Recognize and classify named entities, and find search results based on them
Bing Search
Microsoft
Enable safe, ad-free search for your users with Bing, a leading search engine
Custom Vision
Microsoft
An AI service and end-to-end platform for applying computer vision to your specific scenario
Face
Microsoft
An AI service that analyzes faces in images
Speech
Microsoft
An AI service that enables you to embed human-like speech capabilities into your apps
QnA Maker
Microsoft
An AI service that enables you to create a bot from your data in minutes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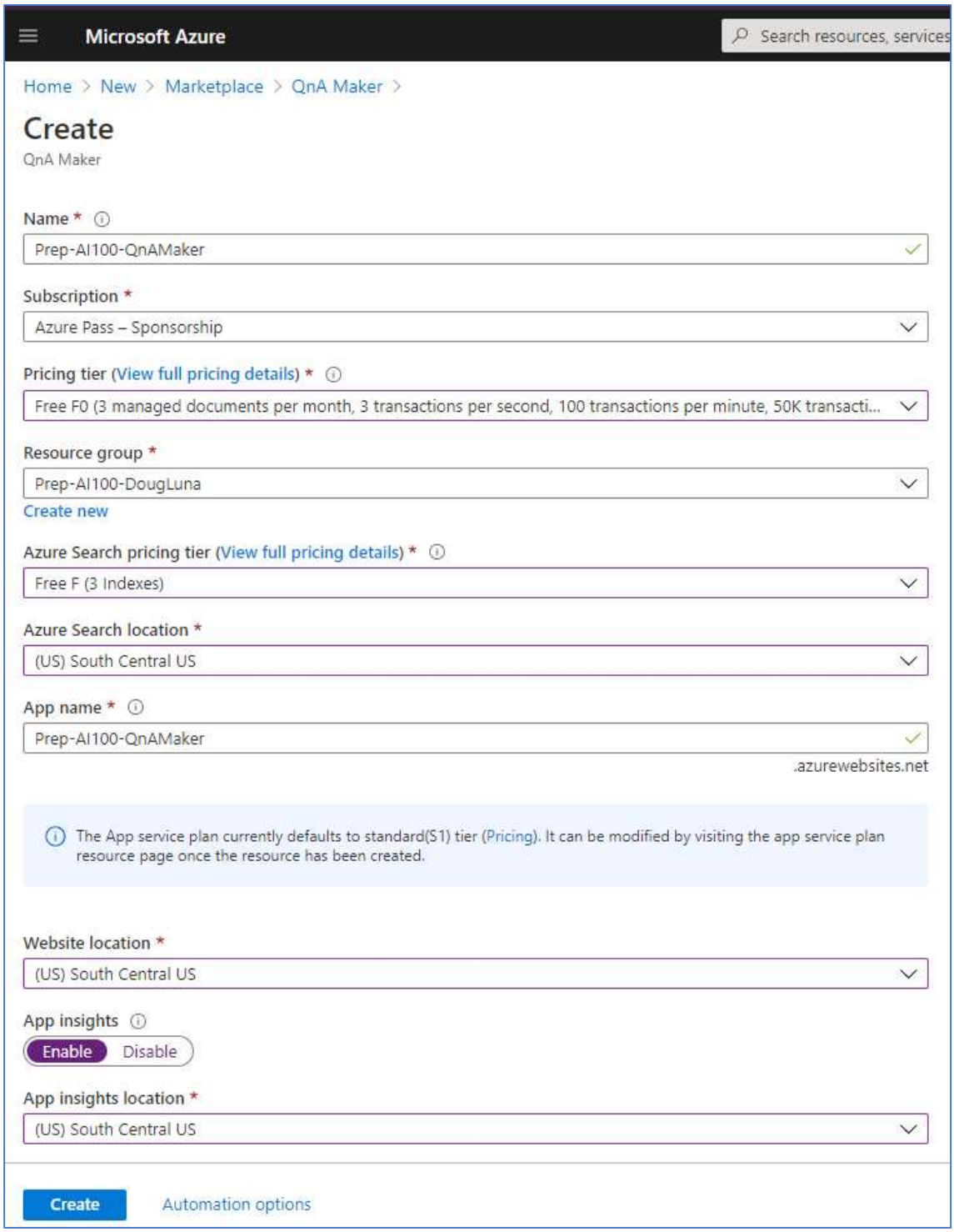
Microsoft Azure
Search resources, services, and docs (G+/)
Home > New > Marketplace >
QnA Maker
Microsoft
QnA Maker
Save for later
Microsoft
Create
Overview
Plans
QnA Maker is a cloud-based API service that lets you create a conversational question-and-answer layer over your existing data. Use it to build a knowledge base by extracting questions and answers from your content, including FAQs, manuals, and documents. Answer users' questions with the best answers from the QnAs in your knowledge base -- automatically. Your knowledge base gets smarter, too, as it continually learns from user behavior.
Useful Links
More about QnA Maker
Documentation
Create a QnA Maker bot
Data sources supported
API reference
Pricing


Microsoft Azure
Search resources, services
Home > New > Marketplace > QnA Maker >
Create
QnA Maker
Name *
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Subscription *
Azure Pass – Sponsorship
Pricing tier (View full pricing details) *
Free F0 (3 managed documents per month, 3 transactions per second, 100 transactions per minute, 50K transacti...
Resource group *
Prep-AI100-DougLuna
Create new
Azure Search pricing tier (View full pricing details) *
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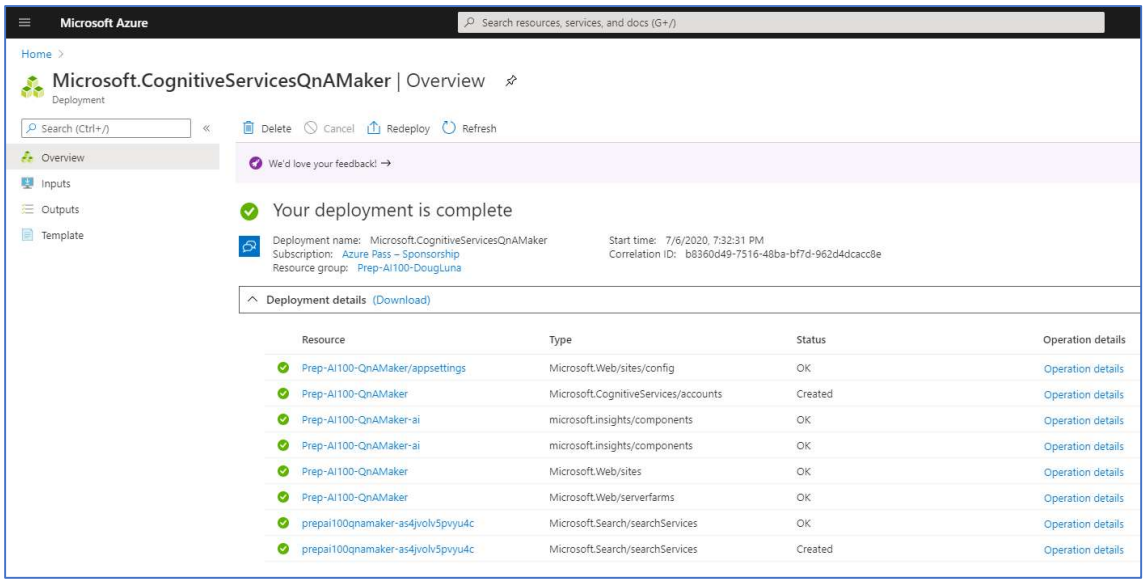
Azure Search location *
(US) South Central US
App name *
Prep-AI100-QnAMaker
.azurewebsites.net
The App service plan currently defaults to standard(S1) tier (Pricing). It can be modified by visiting the app service plan resource page once the resource has been created.
Website location *
(US) South Central US
App insights
Enable
Disable
App insights location *
(US) South Central US
Create
Automation options


Microsoft Azure
Search resources, services, and docs (G+/)
Home
Microsoft.CognitiveServicesQnAMaker | Overview
Deployment
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Overview
Inputs
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Template
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Refresh
We'd love your feedback! →
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Deployment name: Microsoft.CognitiveServicesQnAMaker
Subscription: Azure Pass – Sponsorship
Resource group: Prep-AI100-DougLuna
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Deployment details (Download)
Resource
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Prep-AI100-QnAMaker
Microsoft.Web/serverfarms
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Operation details
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Microsoft.Search/searchServices
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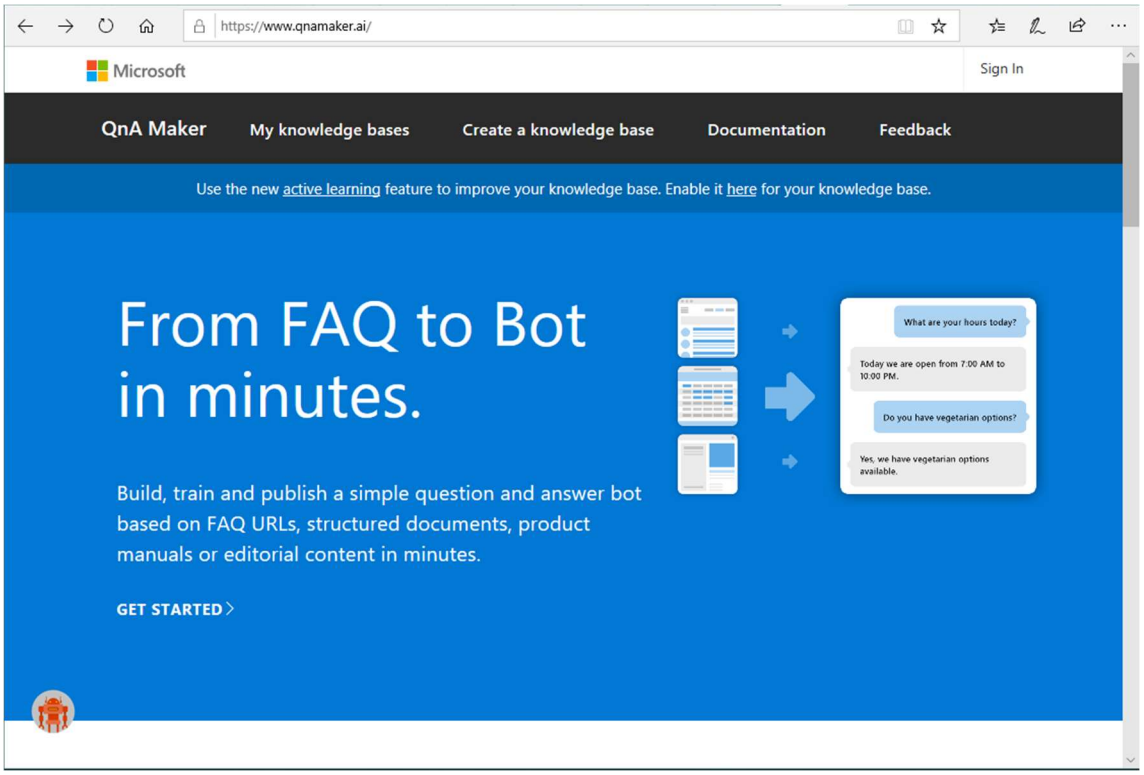
Operation details

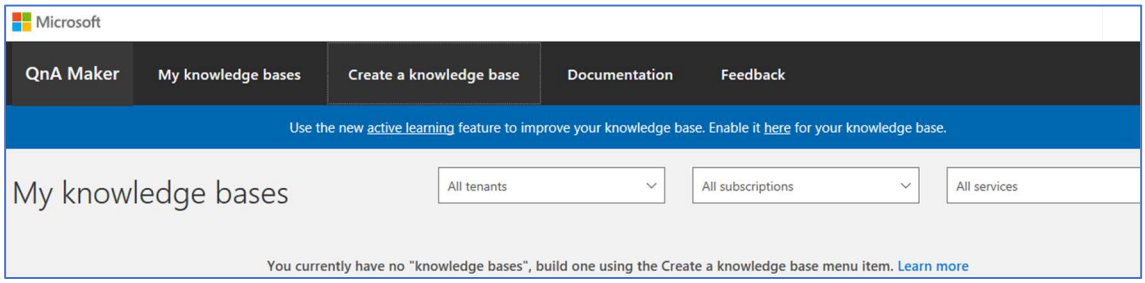
Creating a QnA Maker Service

Before you can integrate QnA Maker with a Bot, that is supported by a knowledge base, you have to create a QnA Service. The service creation, along with the supporting knowledge base, are managed through the QnA Maker portal.

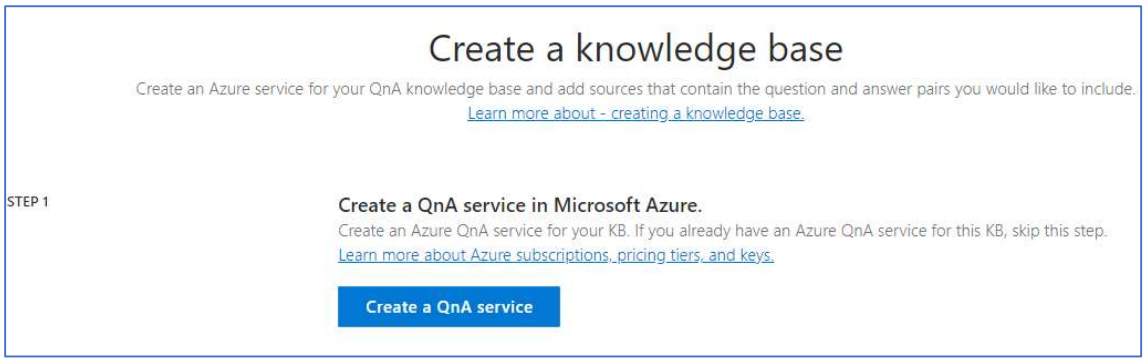
When you first visit the portal, you are simply presented with the static web page that describes some information about going from FAQ to Bot. In order to do anything useful with the service, you need to have a knowledge base created. You will learn about the knowledge base creation in the next lesson. Here we focus on the actual service itself.



To get started with the service, you need to select **Create a knowledge base**. This will require a sign in, using a Microsoft Account login. Once you sign in, chances are that you do not have any knowledge bases existing and the display will indicate this.



If you Click or Select the **Create a knowledge base** menu again, a new page loads allowing you to create your QnA Service.

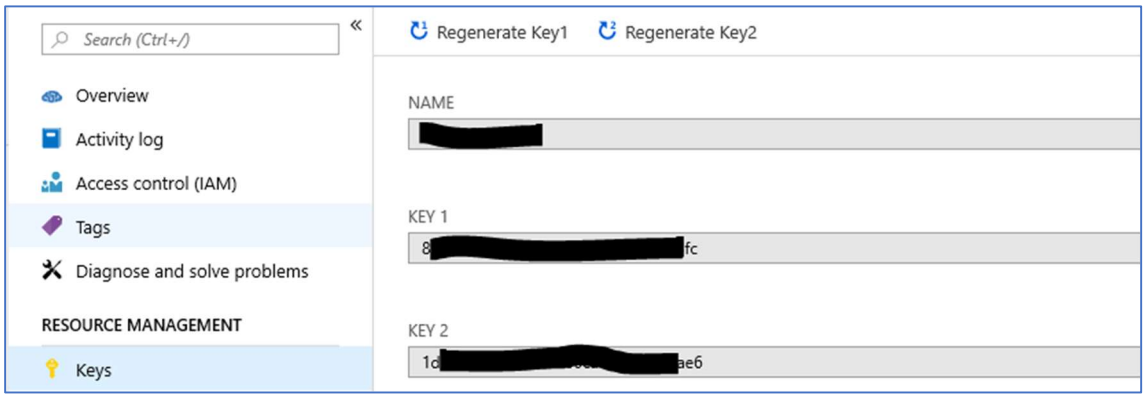


Once you Click or Select the Create QnA Service, you are directed to your Azure portal, if you are already signed into the Azure portal. If you are not currently signed in, you will be required to sign into Microsoft Azure with your existing Azure account. This is required because the service will be hosted on Azure.

The service requires you to provide the following information:

- Name - like all Azure services, this name must be unique
- Subscription - the Azure subscription that will be used to host the service
- Pricing Tier - this is based on number of transactions per second. You will investigate this further in the walkthrough and labs but note that pricing tiers can change
- Location - you should select a geographic location that is closest to you or where you want to host the service
- Resource Group - like all Azure objects, you should assign this service to an existing resource group, or create a new one
- Search Pricing Tier - select the lowest cost search tier that will serve your needs. Searching is required in order for the service to function correctly. There is currently one free option that includes 3 indexes, 50MB of storage, and no scaling options
- App Name - an app name is automatically chosen based on the service name you created at the top. You can change this app name to something different if you wish. It will be the host portion of the URL that will be generated for the service
- Website location - determines where the web site will be hosted. The default is to host it in the same location as the service
- App Insights - you can opt to include insights for the service to help you diagnose and evaluate the app and service for various performance considerations. If you choose to enable App Insights, you will also need to select a location for the app insights data. Once again, the default is in the same region.

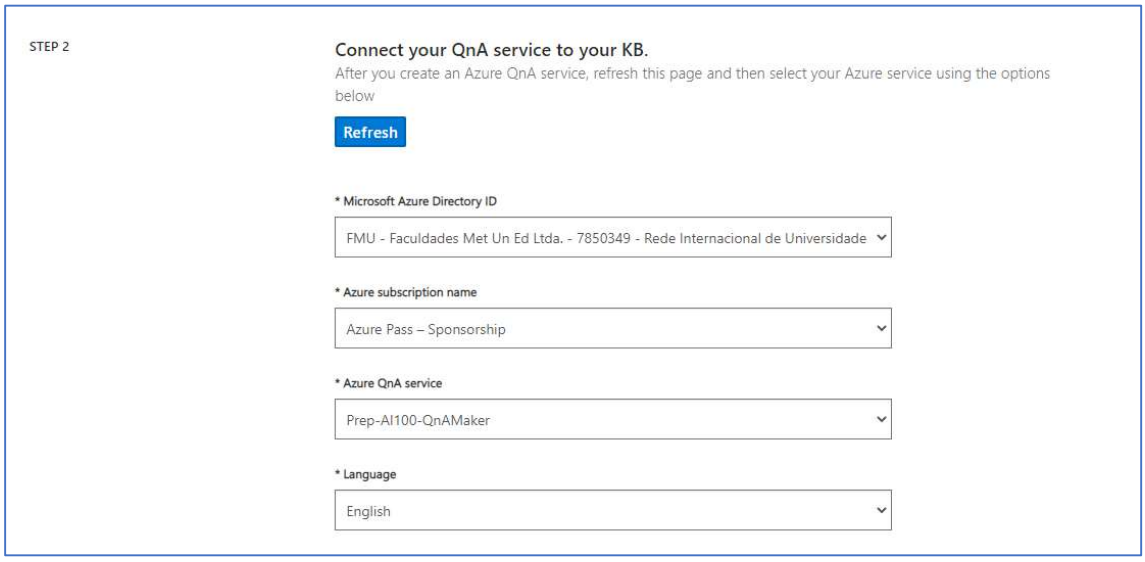
Once you create the service, it will be hosted on Azure and accessible to Bots through the use of the name you created and will require authorization through the use of a key. You can find the key (2 provided) on the Keys blade under the Resource Management option.



Add a Knowledge Base to the Service

Once you have a QnA Service created, you can then begin to build a knowledge base to support the questions and answers that will be used in the service. As mentioned in topic one, you can use multiple sources for this KB or you can build one from scratch. It's best to make use of existing FAQs or support documents if you have them already.

To begin adding the knowledge base to your QnA service, you will revisit the QnA Maker portal again and refresh the page. Assuming that you are logged into the Azure portal and the QnA Maker portal with the same Microsoft account, refreshing the QnA Maker portal page will cause an update to take place behind the scenes. When you begin looking at step 2, you will be able to select the Azure Directory ID, Subscription, and QnA Service name, as shown here.



Once you have connected the service to this knowledge base, you can move on the next step which allows you to name the KB and then begin to populate the KB with the necessary questions and answers. You should ensure that you name your KB with a descriptive name that makes it easy to understand its purpose when you work with it.

Walkthrough - Add a Knowledge Base to the Service

Connect the QnA Service to the KB

1. Go back to the QnA web portal tab and refresh the page
2. The page will refresh but the entries in step 2 will not be filled in for you, only that a link to the account information has been populated
3. Select your Azure Directory ID, subscription name, and Azure QnA Service (your newly created service name)
4. In step 3, give your knowledge base a name. In this case we will use the Microsoft Bot FAQ so you can name it 'BotFAQ'
5. Download the Microsoft Bot FAQ zip file and extract it to your local computer
6. In Step 4 of the QnA web portal process, Click or Select + Add file, locate your extracted Word document from the previous step, and add it as a source to populate your KB
7. Click or Select **Professional** under Chit-chat to add a pre-defined personality to your KB
8. Click or Select Create your KB
9. After a short time, your KB will be created and the Edit page will load

STEP 3

Name your KB.

The knowledge base name is for your reference and you can change it at anytime.

* Name

BotFAQ-DougLuna

STEP 4

Populate your KB.

Extract question-and-answer pairs from an online FAQ, product manuals, or other files. Supported formats are .tsv, .pdf, .doc, .docx, .xlsx, containing questions and answers in sequence. Learn more about knowledge base sources. Skip this step to add questions and answers manually after creation. The number of sources and file size you can add depends on the QnA service SKU you choose. Learn more about QnA Maker SKUs.

☐ Enable multi-turn extraction from URLs, .pdf or .docx files. Learn more.

URL

http://

+ Add URL

File name

Microsoft Bot FAQ.docx

+ Add file

File name

Microsoft Bot FAQ.docx

+ Add file

Chit-chat

Give your bot the ability to answer thousands of small-talk questions in a voice that fits your brand. When you add chit-chat to your knowledge base by selecting a personality below, the questions and responses will be automatically added to your knowledge base, and you'll be able to edit them anytime you want. Learn more about chit-chat.

- ○ None
- ◉ Professional
- ○ Friendly
- ○ Witty
- ○ Caring
- ○ Enthusiastic

STEP 5

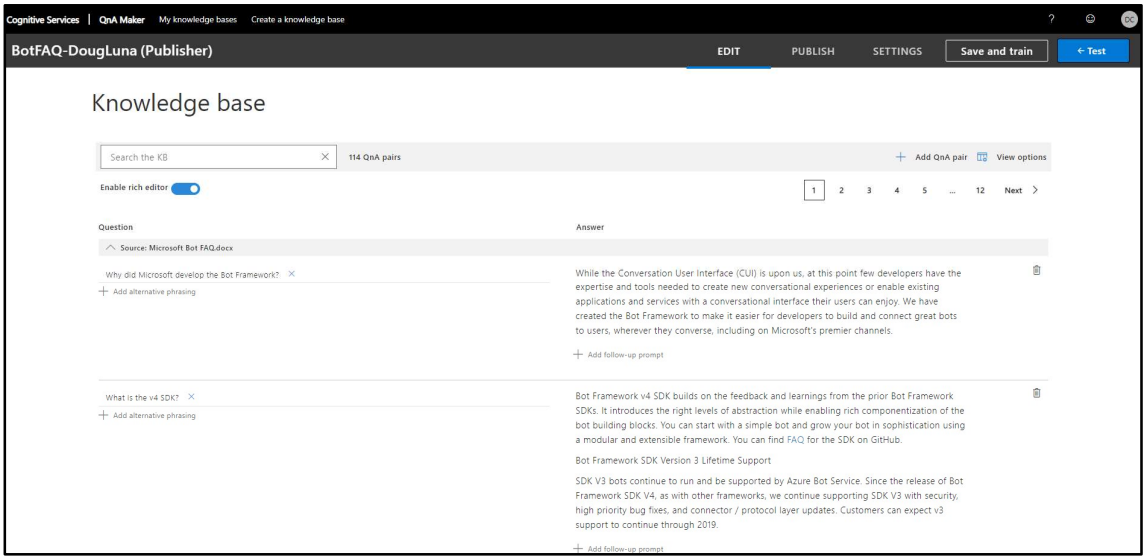
Create your KB

The tool will look through your documents and create a knowledge base for your service. If you are not using an existing document, the tool will create an empty knowledge base table which you can edit.

Create your KB

Publishing a Knowledge Base

Once you have your knowledge base created, you are directed to the knowledge base page where you can evaluate the questions and associated answers that have been created as a part of your efforts. If you imported content from an FAQ document or a URL, you should see that the knowledge base has extracted that content and provide a table-like listing of the questions and answers. You will also notice, at the top of the question column, the original source that was used for the content.



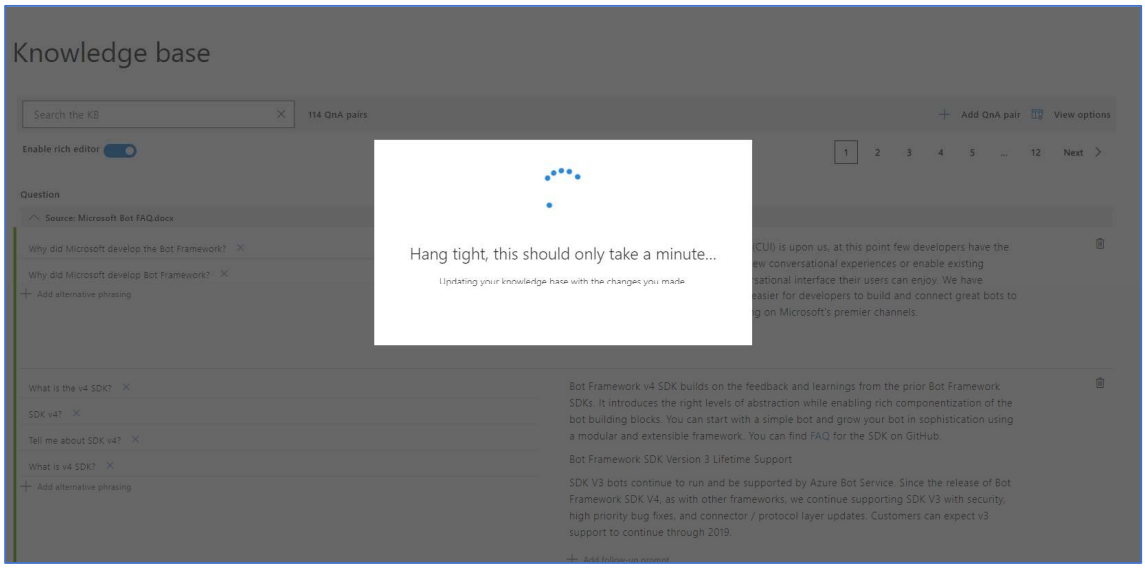
You should review and make any edits to this page prior to publishing your knowledge base. You can perform the following editing options:

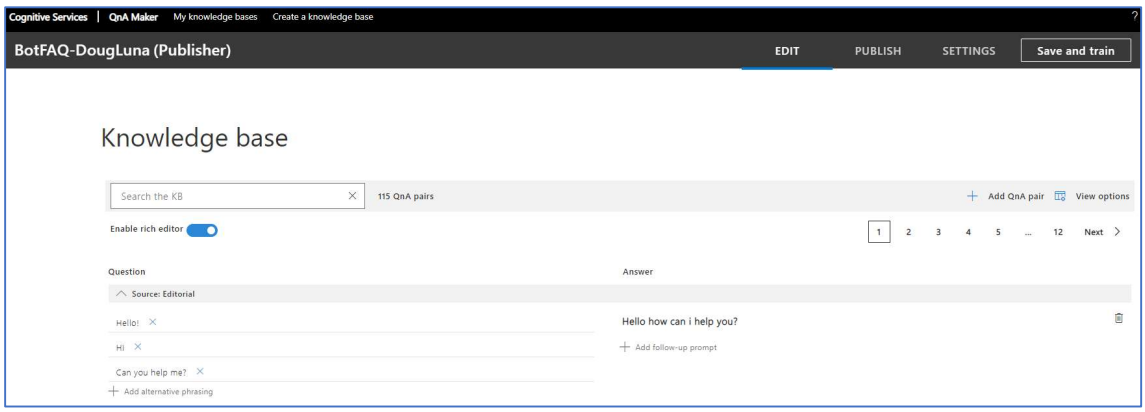
- Add questions related to an answer - immediately to the right if each question is an X that you can use to delete a question but also a plus (+) symbol that you can use to add additional questions, related to the answer

found in the answer column. Recall that you can have the same answer related to multiple questions in an effort to ensure coverage for anticipated questions that are similar

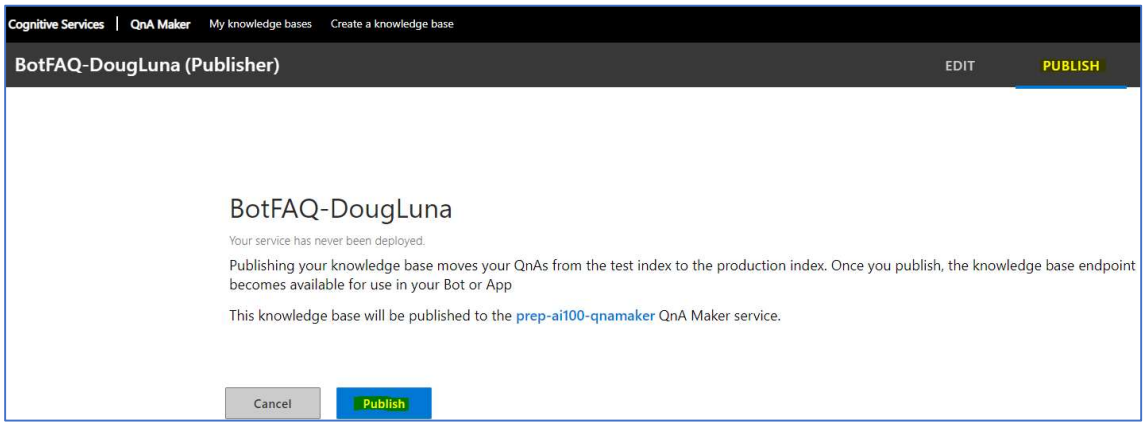
- Delete an answer - you can Click or Select the trash can icon next to an answer to delete a question/answer pair
- Add QnA Pair - Click or Selecting this button, found above the page navigation arrows, allows you to add a new question and answer pair to knowledge base. You would do this if your source document didn't contain all the QnA pairs you need, or to augment the existing list with some new data.
- Show Metadata Tags - initially your QnA pairs may not have any metadata associated with them, Click or Selecting the Show metadata tags icon, will display any metadata tags associated with each QnA pair

Once you are satisfied with your knowledge base, you can then publish it so it becomes available to your Bot. It is recommended that you test your KB with the web Bot that is available on the same page.





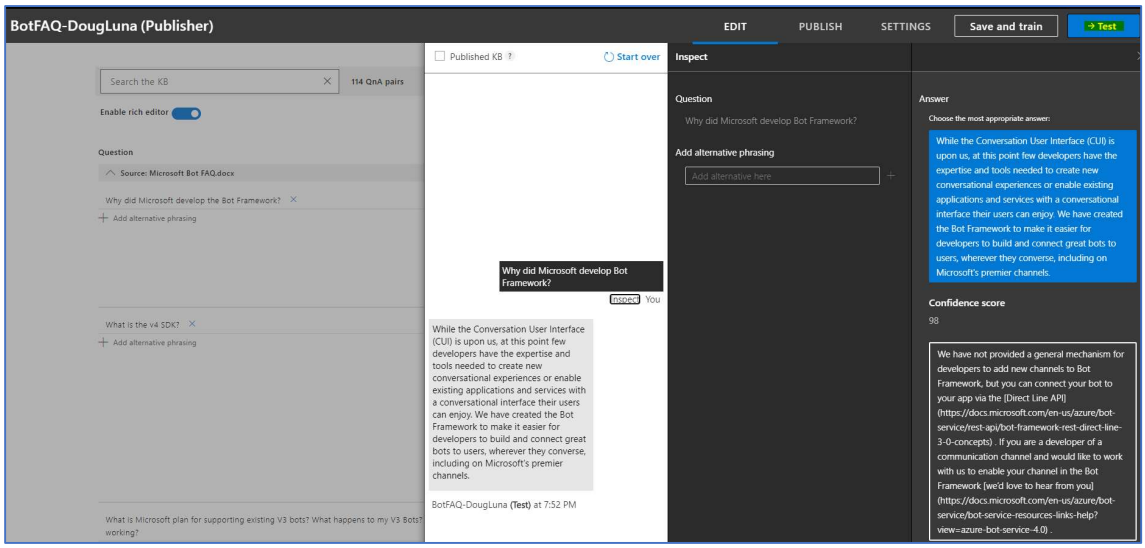
Once you are satisfied with your testing, you can also save and train the knowledge base to help better refine the answers returned when users ask questions. If you are satisfied and ready to make the KB available as an accessible endpoint, Click or Selecting the Publish button will start the publishing process. You will be presented with a notification that the KB will move from a test index to a production index. This is important to understand that there may be cost changes associated with the service once it is published, that are not present during testing.



Once you Click or Select Publish on this page, your KB will have an endpoint that is accessible to the service. You will also be presented with another web page that outlines some important information for accessing your KB and service using HTTP. You will find information for both Postman and Curl usage. You will visit the information on this page later when integrating the bot with the KB and service so you should copy the information down or leave the page open until you have completed the integration component.

Walkthrough - Test your KB

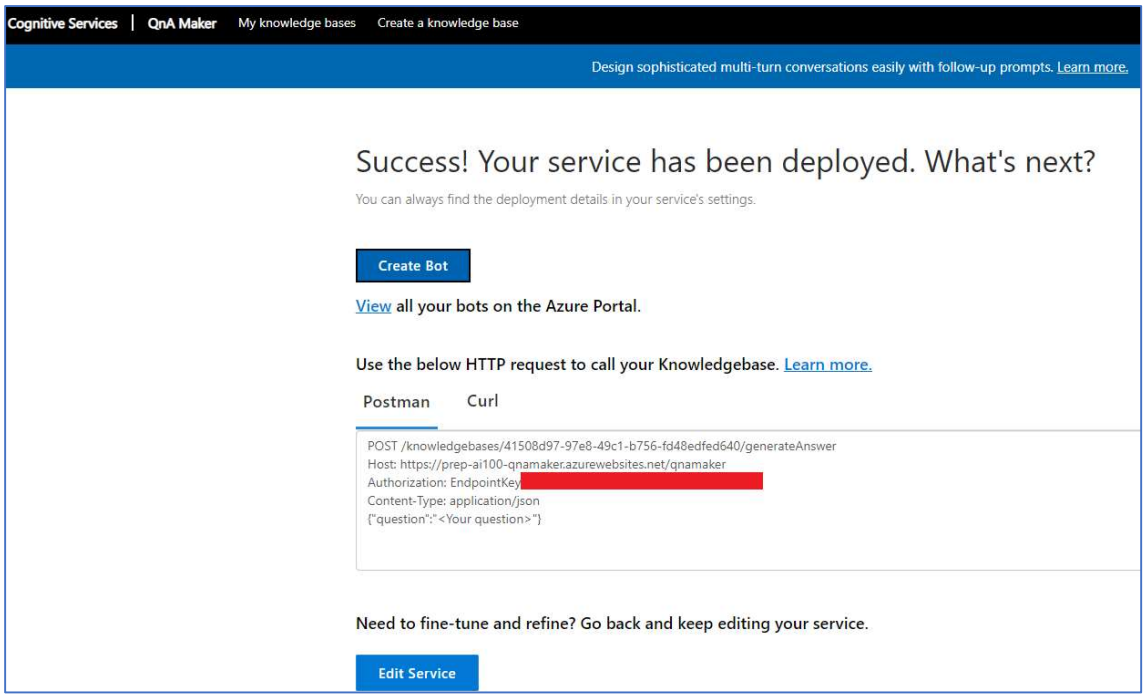
1. To get an idea as to how a Bot may respond to questions, Click or Select Test in the upper right corner
2. A test panel opens waiting for you to enter a question
3. Type Hello and press Enter. QnA should respond with Hello
4. Type ‘when will v3 retire?’ and press Enter
5. QnA responds with a message regarding V3's updates and release information
6. Type in ‘what is included in v4?’ and press Enter
7. You may continue to test the interaction by asking questions and evaluating the responses to get an idea as to how the QnA KB is being polled for answers.

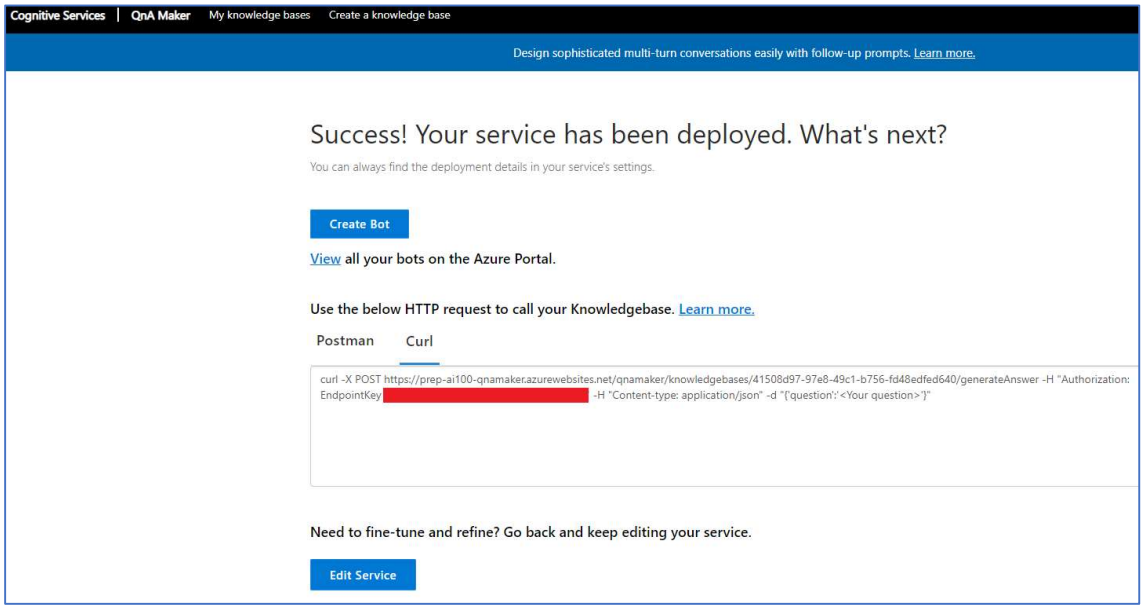


Walkthrough - Publishing the KB

Now that you have a QnA knowledge base created, it's time to publish it so you can access the KB from a client application.

1. On the QnA Maker Knowledge base page, where you were testing in the previous exercise, locate the PUBLISH button in top nav bar
2. Click or Select PUBLISH
3. Read the informative message on the next page that indicates your KB will move from test to production. It also indicates that your KB will be available as an endpoint for use in an app or Bot
4. Click or Select Publish
5. After a short time, a message indicating success will display, assuming no errors were encountered
6. Note the URL information that is displayed. You can choose to test it with Postman or Curl, using the information provided
7. Note that you can also Click or Select Edit Service to go back to the KB and make edits if you require
8. You can also choose to select the Create bot button to create a standard chat bot that will be automatically connected to this knowledge base.






```
dougluna@dip:~$ curl -X POST https://prep-ai100-qnamaker.azurewebsites.net/qnamaker/knowledgebases/41508d97-97e8-49c1-b756-fd48edfed640/generateAnswer -H "Authorization: EndpointKey " -H "Content-type: application/json" -d "{'question':'What is SDK v4?'}"
{"answers":[{"questions":["What is the v4 SDK?","SDK v4?","Tell me about SDK v4?","What is v4 SDK?"],"answer":"Bot Framework v4 SDK builds on the feedback and learnings from the prior Bot Framework SDKs. It introduces the right levels of abstraction while enabling rich componentization of the bot building blocks. You can start with a simple bot and grow your bot in sophistication using a modular and extensible framework. You can find [FAQ](https://github.com/Microsoft/botbuilder-dotnet/wiki/FAQ) for the SDK on GitHub.\n\nBot Framework SDK Version 3 Lifetime Support\n\nSDK V3 bots continue to run and be supported by Azure Bot Service. Since the release of Bot Framework SDK V4, as with other frameworks, we continue supporting SDK V3 with security, high priority bug fixes, and connector / protocol layer updates. Customers can expect v3 support to continue through 2019.","score":99.0,"id":2,"source":"Microsoft Bot FAQ.docx","metadata":[],"context":{"
dougluna@dip:~$
```

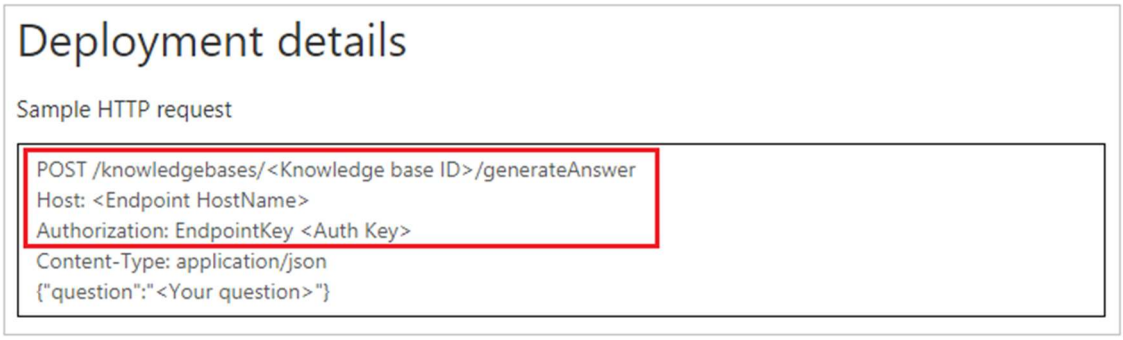
Integrate QnA Maker and a Bot

One of the main reasons you create a QnA Maker service along with an associated knowledge base (KB), is to serve as the foundation for a chat bot. The chat bot can respond to the users' queries by evaluating the questions asked, against the questions listed in the KB, and then return an associated answer. You will need to make the connection between your bot and the service for this effort to work correctly. One of the easiest mechanisms to do this, is with a Web App Bot in the Azure portal. This allows you to test the integration and to understand the key aspects that will be required to make the necessary connections between the bot and the service.

The Web App Bot offers templates that can be used to create bots. The templates undergo changes on a regular basis. For example, a QnA template existed at one time that allowed for an easy connection to your QnA Maker knowledge base using the following information:

- QnAAuthKey - the authorization key that is required to gain access to the endpoint
- QnAEndpointHostName - the endpoint where your bot will look for the service
- QnAKnowledgebaseId - the ID that identifies the specific knowledge base that you want to connect to

This information is found on the deployment details page for your published knowledge base.



Integrating QnA with a bot in this manner, is time consuming and error-prone. As a result, the recommended method is to actually use the QnA Maker portal to make the connection. Your instructor will walk you through this procedure in the next topic.

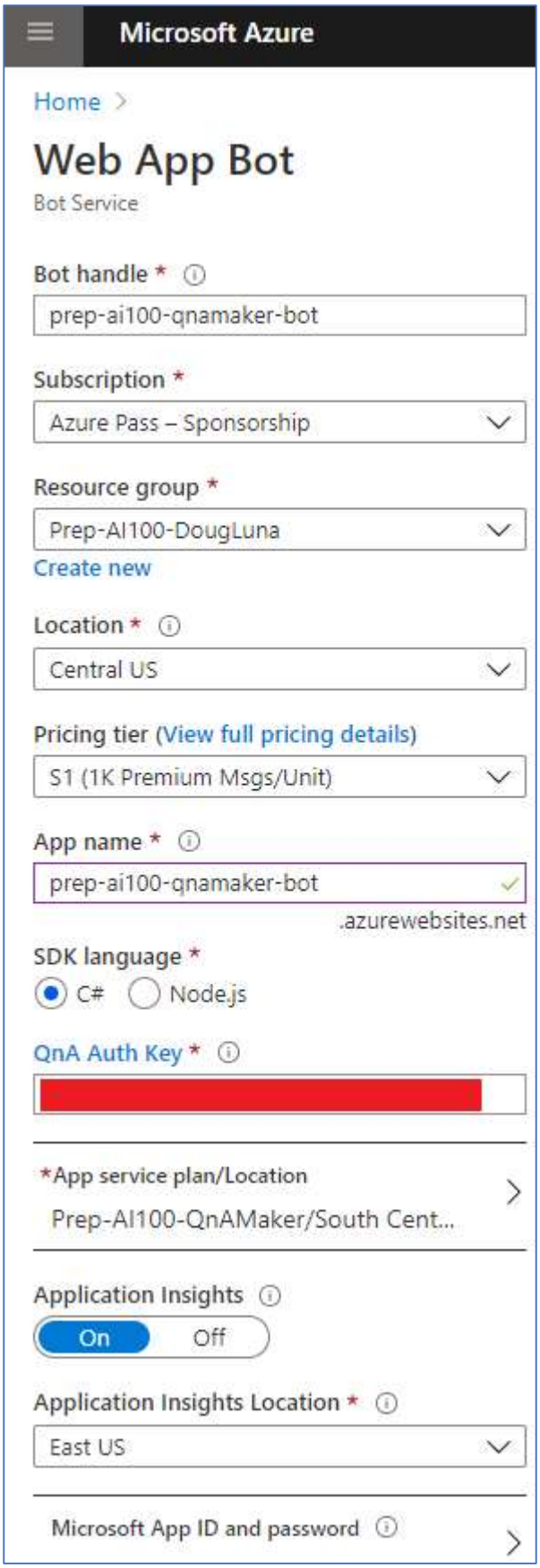
Walkthrough - Integrate Your KB with a Web App Bot

Now that you have a QnA Knowledge base created and published, it's time to learn how to integrate it with a Bot. In this exercise, you will create a simple, web-based chat bot and integrate it with the QnA Maker Knowledge base you created earlier.

Connect the Bot with Your QnA Service

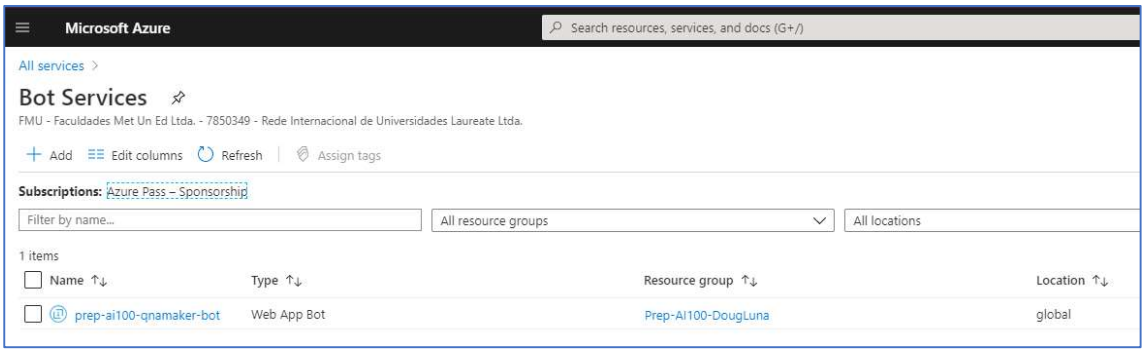
You will now connect your Bot to the QnA Maker service that you created in the previous exercises

1. Open your browser and the tab containing your published service from the previous walkthrough
2. Locate the Create bot button on the page and select it

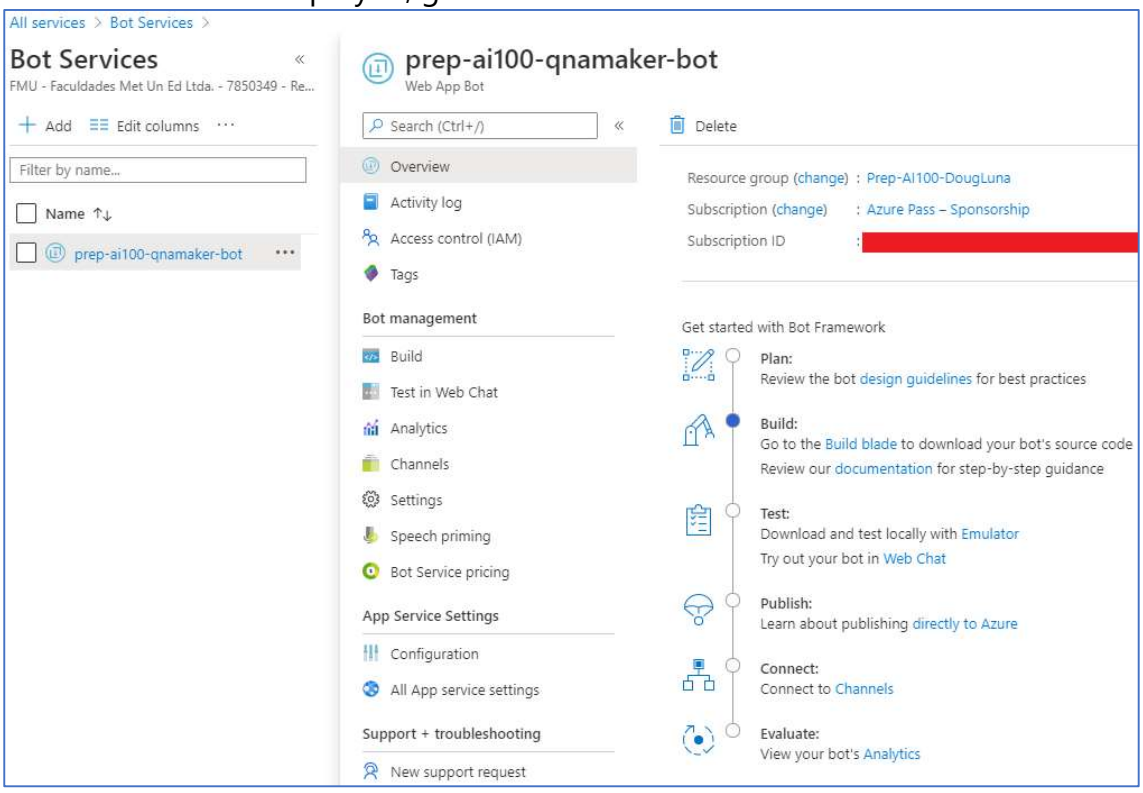


3. You will be redirected to the Azure portal and automatically signed in with the account you have been using

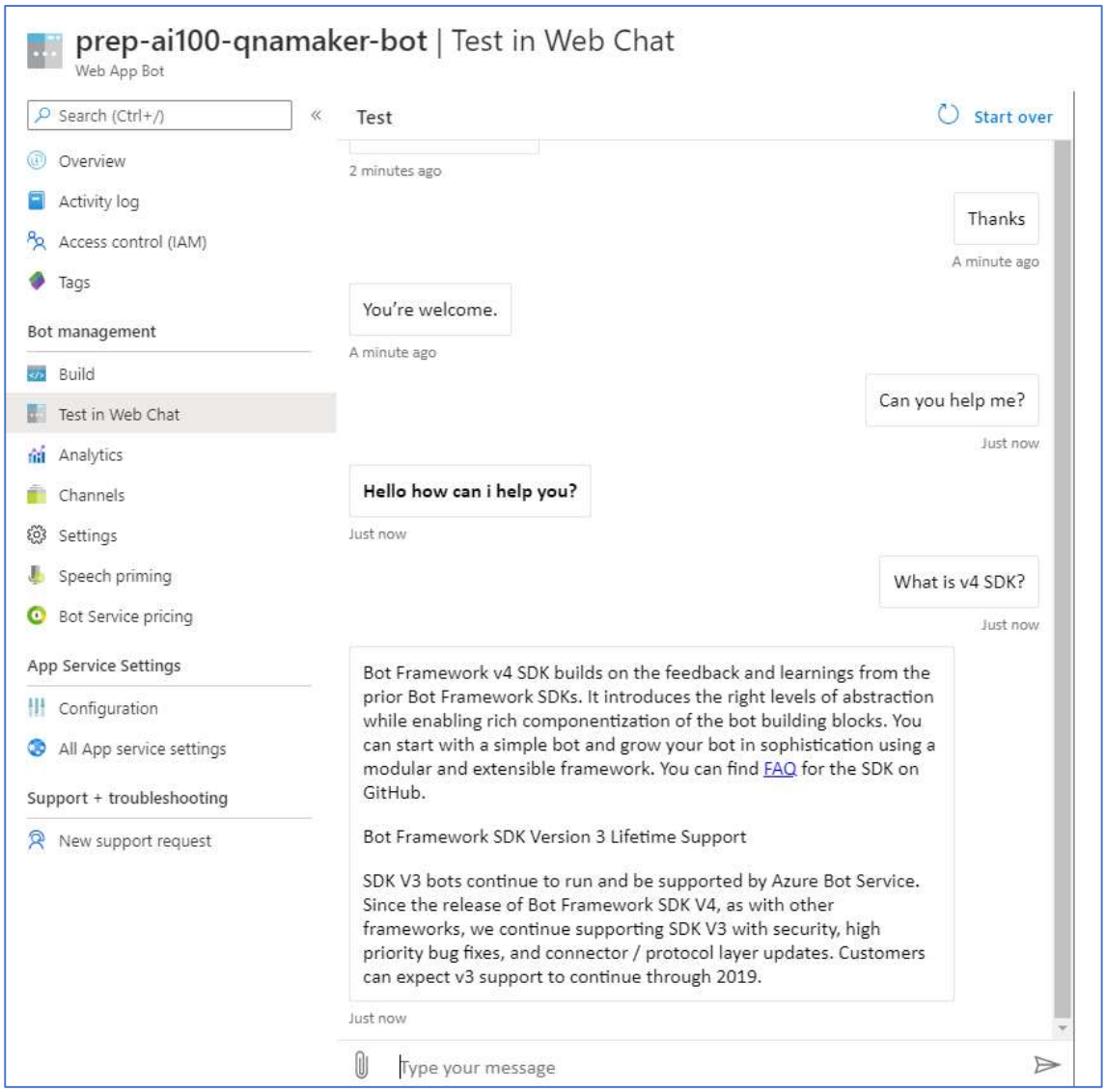
4. The Web App Bot configuration is pretty much completed for you already with information generated from the Qn Maker configurations
5. For this walkthrough, leave the entries as they appear with the exception of Application Insights option. Turn that off
6. Click or select the Create button



7. Azure will perform some validation and then begin the process of creating and deploying the bot
8. Once the bot is deployed, go to the resource



9. Under the Bot management section, select Test in Web Chat



10. Once the test window opens, interact with the bot to see the responses returned from the knowledge base

11. Under App Service Settings, select All App Service Settings
12. A new window opens detailing some statistics for the bot
13. Select the Configuration option, under Settings
14. Note that from the previous topic, we discussed the connection information around the QnA Auth Key, Endpoint, and knowledge base ID
15. We find those settings located on this panel
16. Select the Show values option to see the information used to connect the bot to the QnA Maker knowledge base

17. If you look at the Postman or Curl sample requests on the service deployment page in the QnA Maker site, you will note these values in the request headers

You have now successfully created a QnA Maker service, published it on Azure, created a Web chat Bot, and integrated the Bot with the QnA Maker service to provide a chat-based experience for users to interact with the Microsoft Bot Framework FAQ.

Lab 5: Integrate QnA Maker with a Bot

AdventureWorks wants to use a Bot to allow their customer support FAQ to drive conversations on a Customer Support Bot. A document already exists that contains some questions and answers taken from the FAQ engagements with customers. This will serve as a starting point but may need to be augmented with additional questions and answers.

Lab Objectives

- Create a QnA Service
- Generate a Knowledge Base using a PDF Document (FAQ)
- Connect and Publish the Knowledge Base
- Connect the QnA Service to a Bot

Define questions and answers

Portal QnA Maker: https://www.qnamaker.ai/

https://docs.microsoft.com/en-us/azure/cognitive-services/qnamaker/

https://docs.microsoft.com/en-us/azure/cognitive-services/qnamaker/how-to/multiturn-conversation

After provisioning a QnA Maker resource, you can use the QnA Maker portal to create a knowledge base that consists of question-and-answer pairs. These questions and answers can be:

- Generated from an existing FAQ document or web page.
- Imported from a pre-defined *chit-chat* data source.
- Entered and edited manually.

In many cases, a knowledge base is created using a combination of all of these techniques; starting with a base dataset of questions and answers from an existing FAQ document, adding common conversational exchanges from a chit-chat source, and extending the knowledge base with additional manual entries.

Questions in the knowledge base can be assigned *alternative phrasing* to help consolidate questions with the same meaning. For example, you might include a question like:

What is your head office location?

You can anticipate different ways this question could be asked by adding an alternative phrasing such as:

Where is your head office located?

Train and test the knowledge base

After creating a set of question-and-answer pairs, you must train your knowledge base. This process analyzes your literal questions and answers and applies a built-in natural language processing model to match appropriate answers to questions, even when they are not phrased exactly as specified in your question definitions.

After training, you can use the built-in test interface in the QnA Maker portal to test your knowledge base by submitting questions and reviewing the answers that are returned.

Publish the knowledge base

When you're satisfied with your trained knowledge base, you can publish it so that client applications can use it over its REST interface. To access the knowledge base, client applications require:

- The knowledge base ID
- The knowledge base endpoint
- The knowledge base authorization key

Build a bot with the Azure Bot Service

After you've created and published a knowledge base, you can deliver it to users through a bot.

Create a bot for your knowledge base

You can create a custom bot by using the Microsoft Bot Framework SDK to write code that controls conversation flow and integrates with your QnA Maker knowledge base. However, an easier approach is to use the automatic bot creation functionality of QnA Maker, which enables you create a bot for your published knowledge base and publish it as an Azure Bot Service application with just a few clicks.

Extend and configure the bot

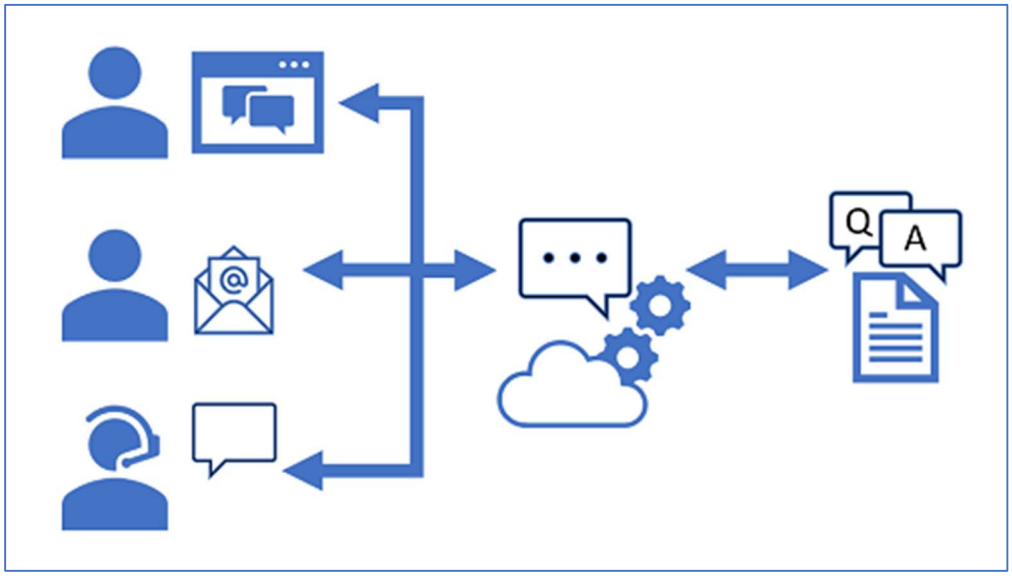
After creating your bot, you can manage it in the Azure portal, where you can:

- Extend the bot's functionality by adding custom code.
- Test the bot in an interactive test interface.
- Configure logging, analytics, and integration with other services.

For simple updates, you can edit bot code directly in the Azure portal. However, for more comprehensive customization, you can download the source code and edit it locally; republishing the bot directly to Azure when you're ready.

Connect channels

When your bot is ready to be delivered to users, you can connect it to multiple *channels*; making it possible for users to interact with it through web chat, email, Microsoft Teams, and other common communication media.



Users can submit questions to the bot through any of its channels, and receive an appropriate answer from the knowledge base on which the bot is based.

Exercise - Create a bot

The best way to learn about building a bot with the QnA Service and the Azure Bot Service is to explore them for yourself.

Before you start

To complete this exercise, you'll need the following:

- A Microsoft Azure subscription. If you don't already have one, you can sign up for a free trial at https://azure.microsoft.com .
- A Visual Studio Codespace based on the **MicrosoftDocs/ai-fundamentals** GitHub repository. This service provides a hosted instance of Visual Studio Code, in which you'll be able to run the notebooks for the lab exercises.

If you haven't already created a Visual Studio Codespace based on the **MicrosoftDocs/ai-fundamentals** repository, follow these steps to create one:

1. Open Visual Studio Codespaces in a new browser tab; and if prompted, sign in using the Microsoft account associated with your Azure subscription.
2. Create a Codespace with the following settings (if you don't already have a Visual Studio Codespaces billing plan, you'll be prompted to create one):
    - **Codespace Name**: *A name for your codespace - for example,* ***ai-fundamentals***.
    - **Git Repository**: MicrosoftDocs/ai-fundamentals
    - **Instance Type**: Standard (Linux) 4 cores, 8GB RAM
    - **Suspend idle Codespace after**: 30 minutes
3. Wait for the codespace to be created. This will take around 3 minutes. You'll see the following things happen:
    - A script will initialize and configure your codespace.
    - A list of notebook (.ipynb) files will appear in the pane on the left.
    - After a few minutes, a file named **z REFRESH NOW!** will appear at the bottom of the list of files. This is your indication that everything has been installed.
4. After the **z REFRESH NOW!** file has appeared, ***refresh the web page*** to ensure all of the required extensions are loaded and set the color scheme to a light background. Then you're ready to start.
5. After you have refreshed the web page, you can close the **Welcome** panes and delete the **z REFRESH NOW** file if you want to. You can also change the color scheme to suit your preference - just click the ⚙ icon at the bottom left and select a new **Color Theme**. A light color theme is recommended to make it easier to read the Python code in the notebooks.

Exercise notebook

After you have set up the Visual Studio environment, open the **QnA Bot.ipynb** notebook to complete the exercise.

Knowledge check

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1. Your organization has an existing frequently asked questions (FAQ) document. You need to create a QnA Maker knowledge base that includes the questions and answers from the FAQ with the least possible effort. What should you do?

Create an empty knowledge base, and then manually copy and paste the FAQ entries into it.

Import the existing FAQ document into a new knowledge base.

Import a pre-defined chit-chat data source.

2. You need to deliver a support bot for internal use in your organization. Some users want to be able to submit questions to the bot using Microsoft Teams, others want to use a web chat interface on an internal web site. What should you do?

Create a knowledge base. Then create a bot for the knowledge base and connect the Web Chat and Microsoft Teams channels for your bot

Create a knowledge base. Then create two bots that use the same knowledge base - one bot connected to the Microsoft Teams channel, and the other to the Web Chat channel.

Create two knowledge bases with the same question and answer pairs. Then create a bot for each knowledge base; one connected to the Microsoft Teams channel, and the other to the

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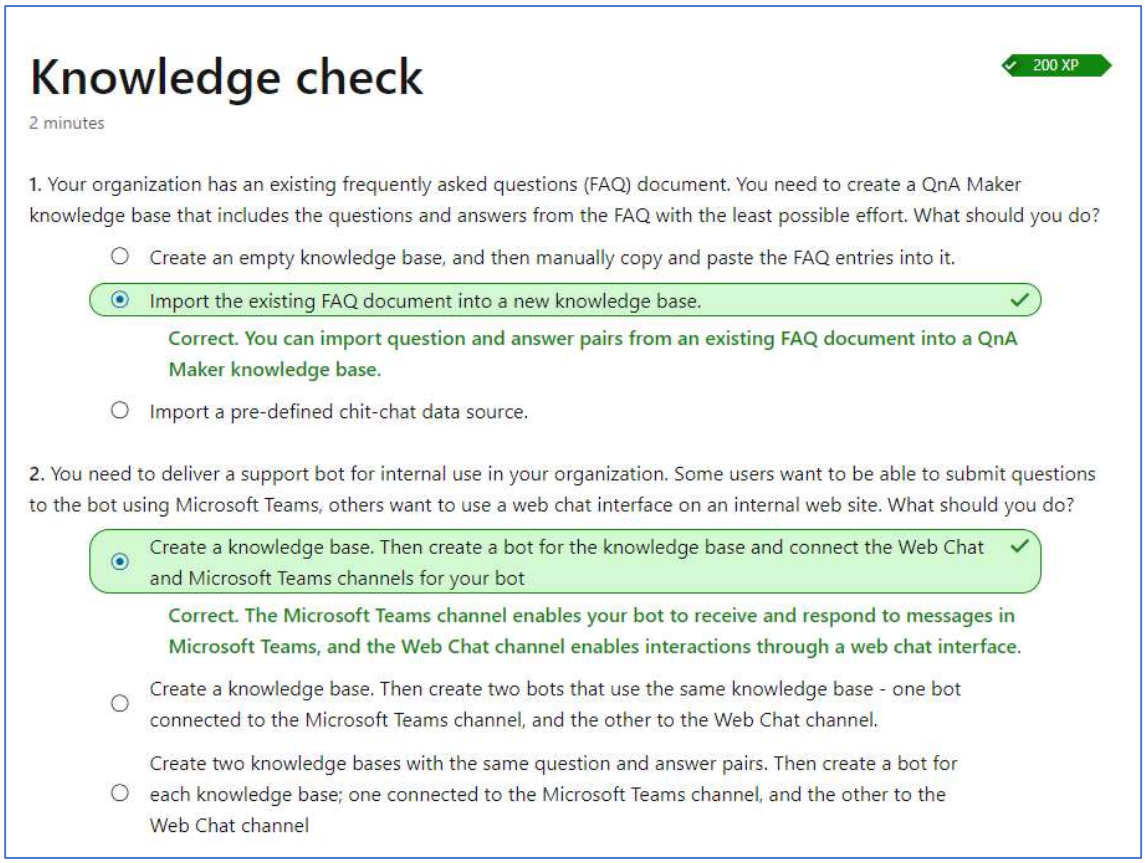

Summary

The QnA Maker service enables you to define and publish a knowledge base of questions and answers with support for natural language querying. When combined with Azure Bot Service, you can use QnA Maker to deliver a bot that responds intelligently to user questions over multiple communication channels.

The ability to create conversational AI solutions with these services makes it possible for AI agents to reduce the support workload for human personnel; enabling organizations to provide user support at global scale.