





## BOT Work Shop

Eric Hullander

January 26th, 2017

Bellevue, WA









Microsoft Partner

Gold Data Analytics
Gold Cloud Platform

Microsoft Partner of the Year 2015 Finalist
Big Data and Analytics



#### Tools You Will Need

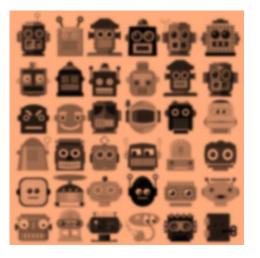
https://docs.botframework.com/en-us/

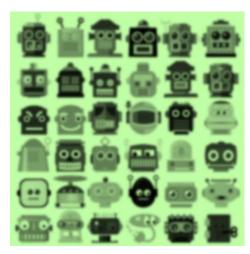
#### Required:

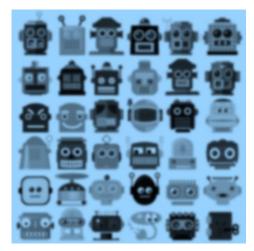
- Microsoft Account
- Visual Studio 2015 or higher
- Microsoft.Bot.Builder ("Manage NuGet Packages" in VS)
- Bot emulator
- Web Browser
- <u>Skype</u>, etc.

#### Optional:

- SQL Management Studio
- Excel
- Notepad
- PowerBl





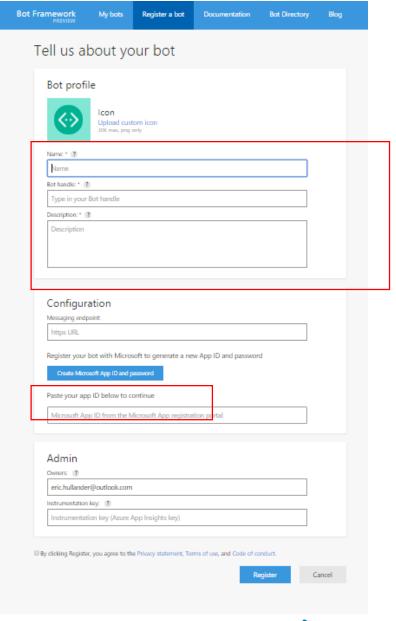






### Bot Framework

- Sign into Azure
- https://dev.botframework.com/
- Click Register a Bot
- Fill in
  - Name
  - Bot Handle
- Click Create Microsoft App ID and password
- Will leave "Messaging Endpoint" Blank





### Bot Framework

 Copy the App ID to notepad for future use

#### Generate App ID and password

App name

EricHullandertest

App ID

c6851ae8-631c-4911-ae11-44a236edc3ad

Generate an app password to continue

English (United States)



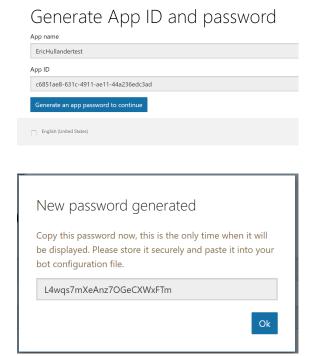
### Bot Framework AppID and Password

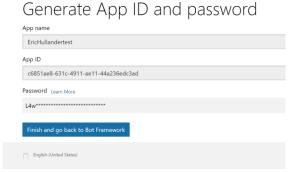
- Copy the App ID to notepad for future use
- Click "Generate an app password..."
- Copy the Password to notepad for future use
- Click "OK"
- "Click Finish and go to Bot Framework"

App name: EricHullandertest

App ID: c6851ae 5edc3ad

App pw: L4wqs7



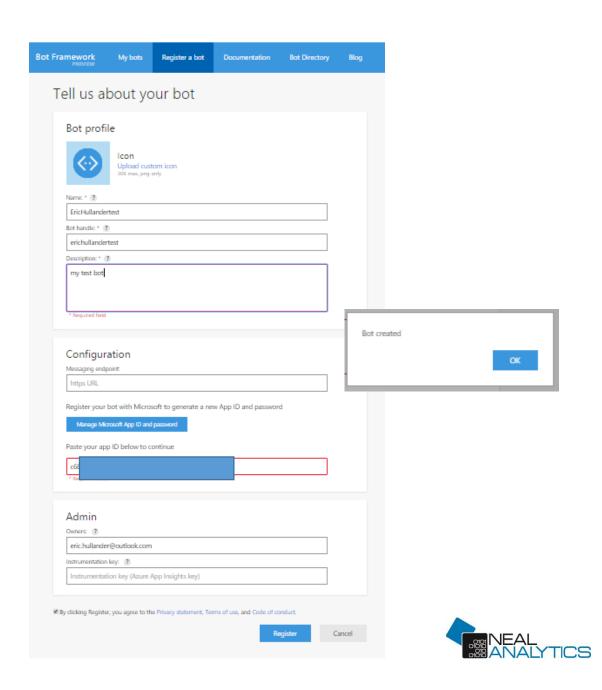




### Bot Framework Registration

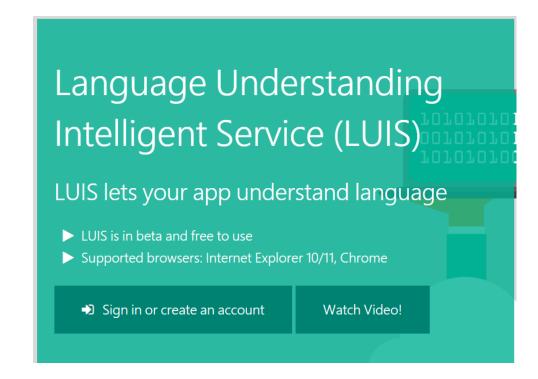
- Add the description if you haven't
- Leave endpoint blank for now
- Click if you agree to the T&Cs
- Click "Register"
- Click "OK" on "Bot created" menu
- You have just taken your first step into a much larger world...

Option: You may add an app icon now or later if you like...



#### LUIS

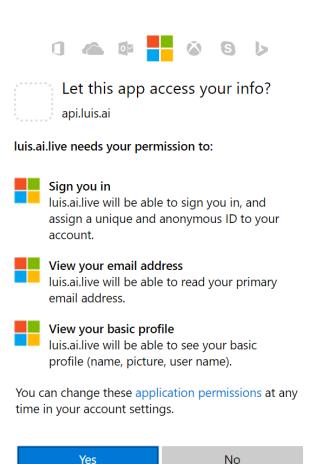
- Sign into Azure
- https://www.luis.ai/
- Sign in with your Microsoft account





#### LUIS

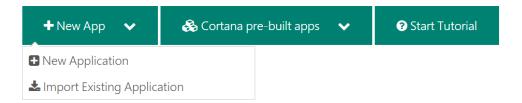
- Sign into Azure
- https://www.luis.ai/
- Sign in with your Microsoft account
- "Yes"





#### My Applications

- New App
- Choose "Import..."



A LUIS Application (model) takes examples of many phrases (utterances) that mean the same thing and maps them to a single intent.

A LUIS Application can have up to 40 unique intents

Given a new utterance, LUIS predicts which of the 40 intents is the best mach

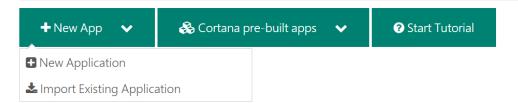
Let's get started

Build a new language understanding application...



#### My Applications

- New App
- Choose "Import..."



Further, entities (nouns, verbs, adjectives) can be inferred from within an utterance

Let's get started

Build a new language understanding application...

#### Example:

I want to buy a house.

I want to buy a car.

Might map to the intent "purchase"

The entity could be "house" or "car"



#### My Applications

- New App
- Choose "Import..."



To work best, LUIS needs many examples to learn from

Fortunately, if you've already trained LUIS before, and you're application will be using the same set of intents and entities you can recycle an existing model and build on it

Let's get started

Build a new language understanding application...



- Once a model has been trained, we can export it as a JSON file
- Click "Choose File" and Navigate to the JSON file provided
- Click "Import"



## Import an existing application

Choose an application JSON file to import your application. Please note that importing an application may take several minutes. You will automatically be directed to your new app when it is successfully imported.

Choose File and enter (optional) imported app name:

Choose File HotelExampleBot.json

Enter optional App name ...

Import



### LUIS JSON File

- Within the JSON file you will find lists of intents and later, text and entities that map to that intent
- You may edit this JSON directly and upload it, or use the interface

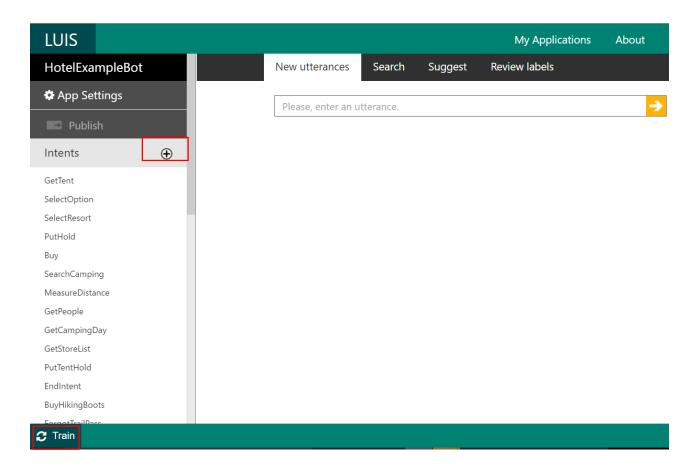
```
HotelExampleBot.json
```

```
"luis_schema_version": "1.3.0",
                                    "text": "camp sites",
"name": "HotelExampleBot",
                                   "intent": "SearchCamping",
"desc": "",
                                   "entities": []
"culture": "en-us",
"intents": [
                                   "text": "camping",
  "name": "Buy"
                                   "intent": "SearchCamping",
                                    "entities": []
  "name": "BuyHikingBoots"
                                    "text": "any hikes",
                                    "intent": "FindHikes",
  "name": "EndIntent"
                                    "entities": []
  "name": "FindHikes"
                                   "text": "do they have nice hikes?",
                                   "intent": "FindHikes",
  "name": "ForgotTrailPass"
```



## LUIS Editing

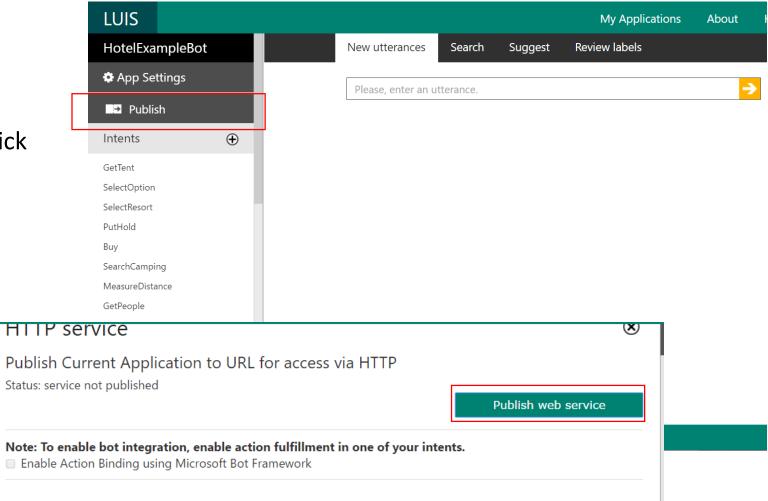
- Once Loaded we see this screen
- The list on the left are the "intents" this model understands
- If we click (+), we can add new intents to the model
- Even though we have imported the file, we still need to train the algorithm to recognize utterances
- Click "Train"





## LUIS Publishing

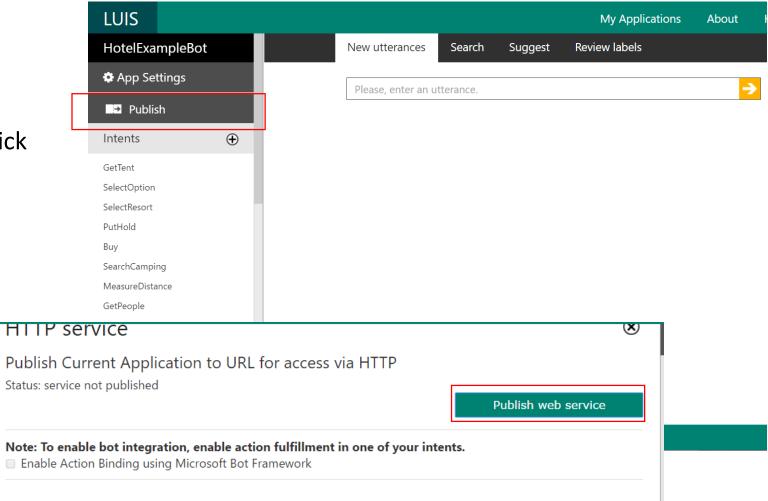
- Training can take some time. Click "Publish
- Click "Publish web Service"





## LUIS Publishing

- Training can take some time. Click "Publish
- Click "Publish web Service"

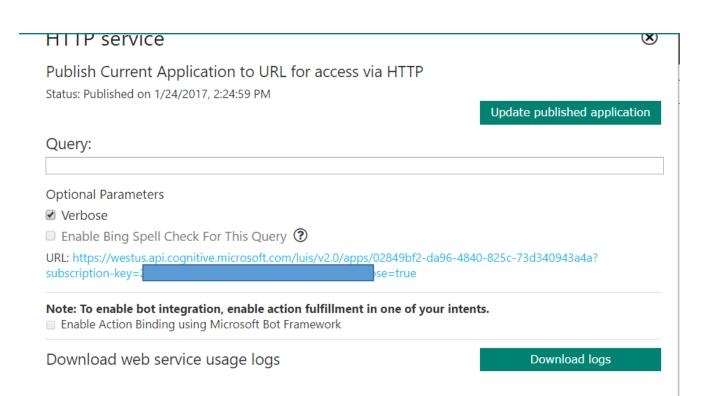




## LUIS Testing

- You can type an utterance into "Query" to see how the model scores it. Given an utterance it will give each possible intent in the model a score
- Example
- Query: "find a trail"

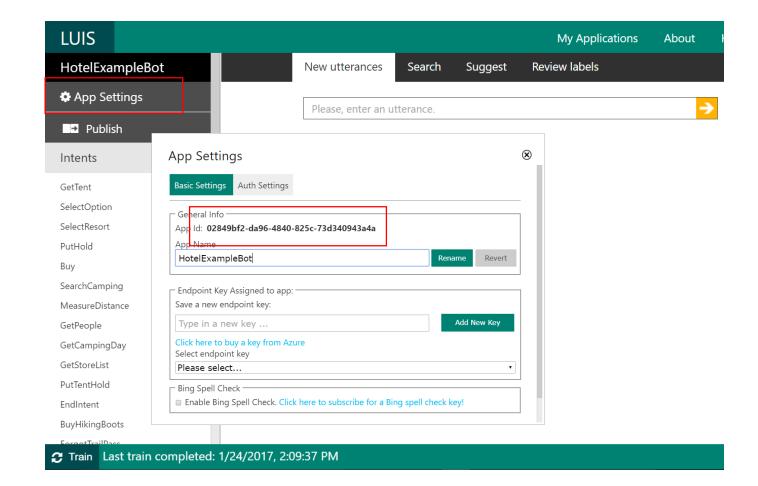
```
{ "query": "find a trail", "topScoringIntent": { "intent": "GetTrailPass", "score": 0.9974881 }, "intents": [ { "intent": "GetTrailPass", "score": 0.9974881 }, { "intent": "None", "score": 0.5163145 }, { "intent": "ForgotTrailPass", "score": 0.0379541256 }, { "intent": "Buy", "score": 0.0100398948 }, { "intent": "PutTentHold", "score": 0.007901444 }, { "intent": "Help", "score": 0.00303268922 }, { "intent": "SelectResort", "score": 0.00238058716 },
```





## LUIS AppID and Key

- Click App Settings
- Copy the App Id to your notepad
- In the top banner, click on your account name





My Applications About Help Docs Support 🌣 Eric Hullander Sign Out

- In the top banner, click on your account name
- Click Subscription Keys
- Copy the API Key to your notepad

App name: EricHullandertest

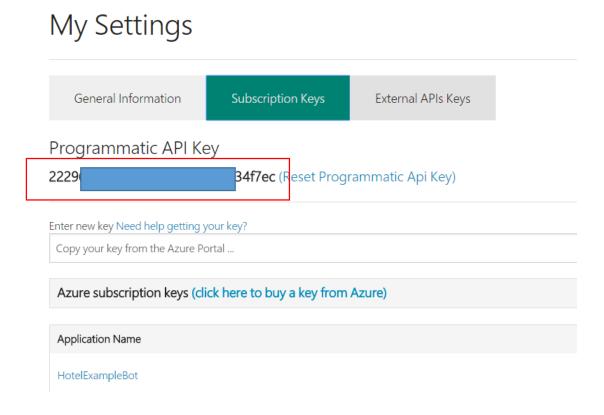
App ID: c6851ae8-631c-4911-ae11-44a236edc3ad

App pw: L4wqs7mXeAnz7OGeCXWxFTm

LUIS App Name: HotelExampleBot

LUID ADD ID: 02849bf2-da96-4840-825c-73d340943a4a

LUID Key: 22296c1f55054d48b514027a0534f7ec





- Unzip and then navigate to the .sln file in the the zip file provided
- Open in Visual Studio
- This can be used as a template for future bot building and will provide a starting point for your exploration
- Some configuration is required

Name	Date modified	Туре	Size
obj	1/24/2017 12:12 AM	File folder	
packages	11/28/2016 11:54 AM	File folder	
Properties	11/28/2016 11:55 AM	File folder	
Scripts	11/28/2016 11:55 AM	File folder	
Service References	11/28/2016 11:55 AM	File folder	
Services	11/28/2016 11:55 AM	File folder	
Views	11/28/2016 11:55 AM	File folder	
odefault.htm	1/24/2017 12:20 AM	Chrome HTML Docu	2 KB
Global.asax	11/28/2016 11:54 AM	ASP.NET Server Appli	1 KB
<b>i</b> Global.asax.cs	11/28/2016 11:54 AM	Visual C# Source File	1 KB
<b>≝</b> Hotel.cs	11/28/2016 11:55 AM	Visual C# Source File	1 KB
<b>≝</b> HotelsQuery.cs	11/28/2016 11:54 AM	Visual C# Source File	1 KB
LuisBot.csproj	1/24/2017 12:12 AM	Visual C# Project file	16 KB
🔊 LuisBot.csproj.user	1/24/2017 12:12 AM	Per-User Project Opti	2 KB
\$ LuisBot.csproj.vspscc	11/28/2016 11:55 AM	Source Control Proje	1 KB
	11/28/2016 11:54 AM	JSON File	5 KB
☐ LuisBot.sIn	11/28/2016 11:54 AM	Visual Studio Solution	2 KB
packages.config	11/28/2016 11:54 AM	XML Configuration File	3 KB
<b>B</b> Parks.cs	11/28/2016 11:54 AM	Visual C# Source File	1 KB
README.md	11/28/2016 11:54 AM	MD File	9 KB
E REIQuery.cs	11/28/2016 11:54 AM	Visual C# Source File	1 KB
<b>≝</b> Weather.cs	11/28/2016 11:54 AM	Visual C# Source File	3 KB
	1/23/2017 11:41 PM	XML Configuration File	6 KB
Web.Debug.config	11/28/2016 11:54 AM	XML Configuration File	2 KB
	11/28/2016 11:54 AM	XML Configuration File	2 KB



- Unzip and then navigate to the .sln file in the the zip file provided
- Open in Visual Studio
- Open Web.config
- Fill in from your notepad
  - BotId
  - MicrosoftAppId
  - MicrosoftAppPassword

```
Solution Explorer
     <?xml version="1.0" encoding="utf-8"?>
                                                                                                                                         ○ ○ ☆ # - \ \( \o \cdot \sigma \cdot \)
       For more information on how to configure your ASP.NET application, please visit
                                                                                                                                          earch Solution Explorer (Ctrl+;
       http://go.microsoft.com/fwlink/?LinkId=301879
                                                                                                                                              App Start
                                                                                                                                               Content
     <configuration>
                                                                                                                                              Controllers
       <appSettings>
                                                                                                                                               Dialogs
         <!-- update these with your BotId, Microsoft App Id and your Microsoft App Password-->
                                                                                                                                                C# FlightsDialog.cs
         <add key="BotId" value="WestDemo2017" />
         <add key="MicrosoftAppId" value="bd50c
                                                                                                                                                 C# HotelsDialog.cs
10
11
         <add key="MicrosoftAppPassword" value=
                                                                                                                                                 C# REIDialog.cs
12
                                                                                   HTYR5jIx1FCzo3A-60fzcE6I" />
         <add kev="WebChatSecret" value="vnCi6C</pre>
                                                                                                                                              ▶ C# RootLuisDialog.cs
13
                                                                                                                                              ▶ C** SupportDialog.cs
14
         This is a free trial Microsoft Bing Spell Check key with limited QPS.
                                                                                                                                              fonts
15
         Please subscribe to create your own key and try it out further.
                                                                                                                                               Models
16
         Subscription URL: https://www.microsoft.com/cognitive-services/en-us/subscriptions?productId=/products/56ec2df6dbe2d91
                                                                                                                                              Scripts
17
                                                                                                                                               Services
18
         <add key="BingSpellCheckApiKey" value="da7b8d56645e4adba07fc26eee6c6d8a" />
                                                                                                                                              Views
19
         <!-- Boolean value to enable correcting the text before processing it-->
                                                                                                                                               default.htm
20
         <add key="IsSpellCorrectionEnabled" value="false" />
21
         <add key="webpages:Version" value="3.0.0.0" />
                                                                                                                                               Global.asax
22
         <add key="webpages:Enabled" value="false" />
                                                                                                                                              C# Hotel.cs
23
         <add key="ClientValidationEnabled" value="true" />
                                                                                                                                              C# HotelsQuery.cs
24
         <add key="UnobtrusiveJavaScriptEnabled" value="true" />
                                                                                                                                               LuisBot.json
25
       </appSettings>
                                                                                                                                               packages.config
26
                                                                                                                                              C# Parks.cs
27
         For a description of web.config changes see http://go.microsoft.com/fwlink/?LinkId=235367.
                                                                                                                                              C# REIQuery.cs
                                                                                                                                              C# Weather.cs
                                                                                                                                              Web.config
```



- Open REIDialog.cs
- Enter the App ID and Password

```
default.htm
                REIDialog.cs ≠ × Web.config
                                                                                                          ▼ Solution Explorer
■ LuisBot
                                  ▼ 1 LuisBot.Dialogs.REIDialog
                                                                      ▼ GetCampingDay(IDialogContext context,
                                                                                                              ○ ○ ☆ # + \ O + $ ♂ ■
            using Microsoft.Bot.Builder.Dialogs;
                                                                                                              Search Solution Explorer (Ctrl+;)
             using Microsoft.Bot.Builder.FormFlow;
             using Microsoft.Bot.Builder.Luis;
                                                                                                                   App_Start
             using Microsoft.Bot.Builder.Luis.Models;
                                                                                                                    Content
             using Microsoft.Bot.Connector;
                                                                                                                    Controllers
             using System;

■ Dialogs

             using System.Collections.Generic;
                                                                                                                   ▶ C# FlightsDialog.cs
             using System.Linq;
                                                                                                                   ▶ C# HotelsDialog.cs
            using System.Threading.Tasks;
                                                                                                                   ▶ C# REIDialog.cs
     10
            using System.Web;
                                                                                                                   ▶ C# RootLuisDialog.cs
     11
     12
           □ namespace LuisBot.Dialogs
                                                                                                                   ▶ C# SupportDialog.cs
     13
                                                                                                                   fonts
     14
                 [LuisModel("124
                                                                2dc", "26
                                                                                                                    Models
                 [Serializable]
     15
                                                                                                                   Scripts
     16
                 public class REIDialog : LuisDialog<object>
                                                                                                                    Services
     17
                                                                                                                   Views
     18
                     [LuisIntent("")]
                                                                                                                    default.htm
     19
                     [LuisIntent("None")]

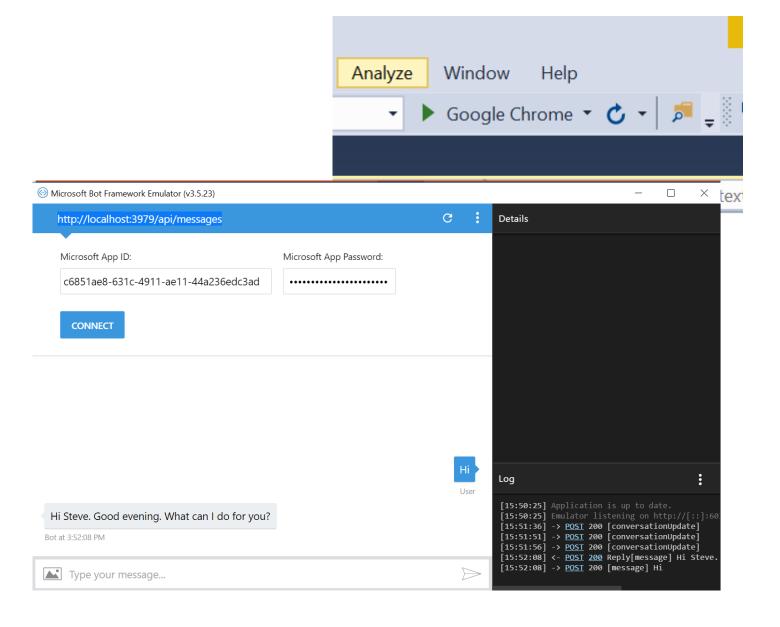
    Global.asax

     20
                     public async Task None(IDialogContext context, LuisResult result)
                                                                                                                   C# Hotel.cs
     21
                                                                                                                   C# HotelsQuerv.cs
100 % - 4
                                                                                                                    Web Publish Activity Error List Output
                                                                                                             Solution Explorer Team Explorer
```



### **Bot Emulation**

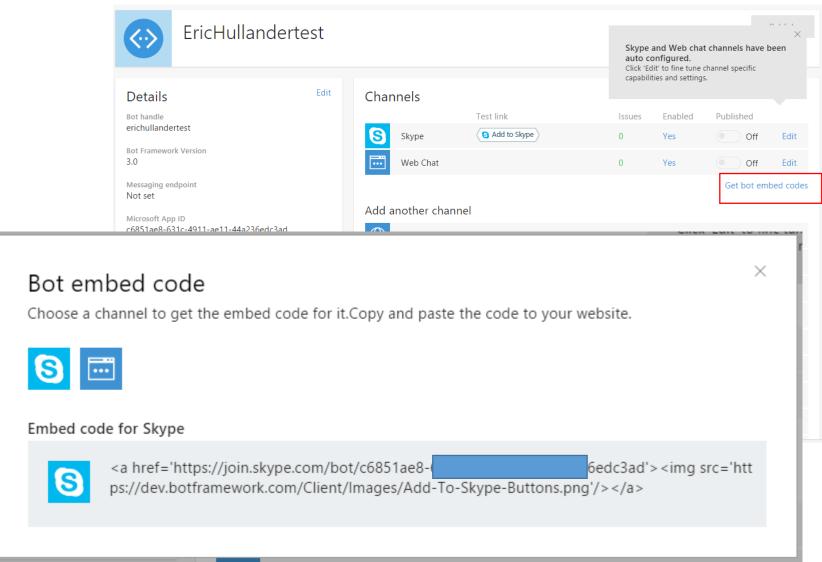
- Before we publish we will test the bot locally using the bot emulator
- Click the Play Button to have the bot run on your local host
- Launch the Bot emulator
- Input the address of your local host
- Input your AppID and PW
- Let the emulator connect
- Say "Hi"





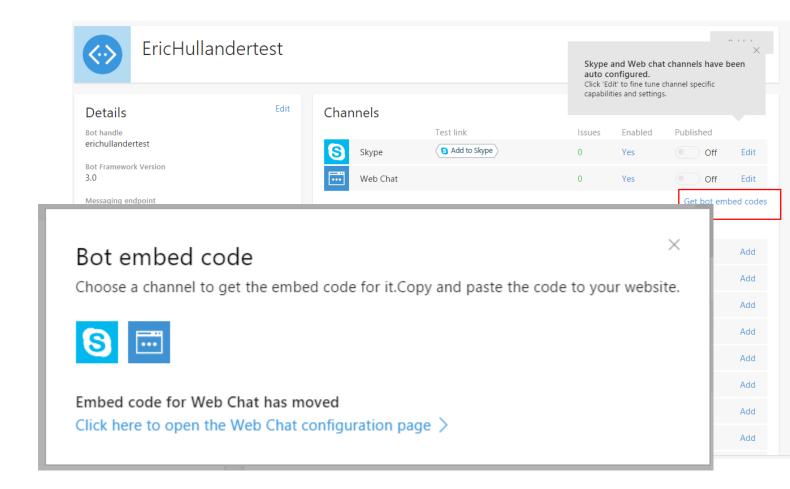
## Bot Publication Skype

- Return to
   https://dev.botframework.c
   om/bots?id=erichullanderte
   st
- Click the light blue Skype icon
- Click "Get bot embed codes"
- Copy the embed code to your notepad



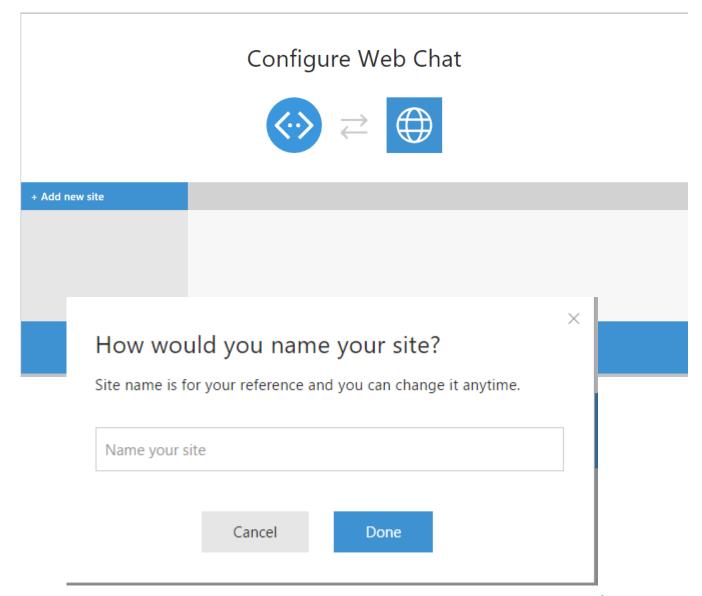


- Click the dark blue web icon icon
- "Click here to open the web..."



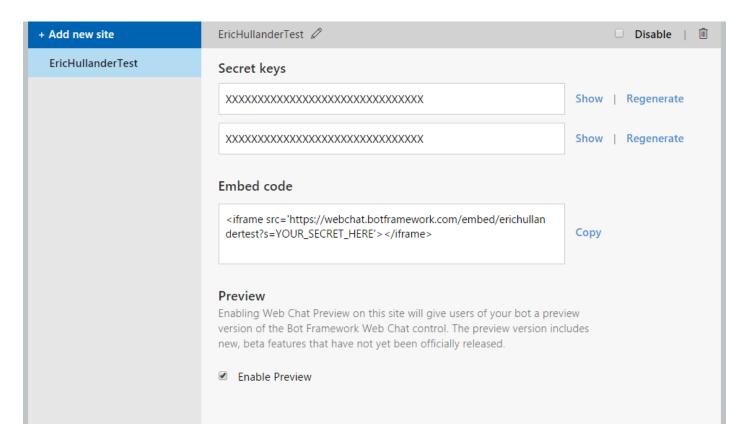


- Click "Add New Site"
- Give your site a name
  - "MySite"
- Click Done





- Show
- Copy Secret to notepad
- Copy Embed Code to notepad
- Replace
   "YOUR\_SECRET\_HERE in
   embed code with your
   secret





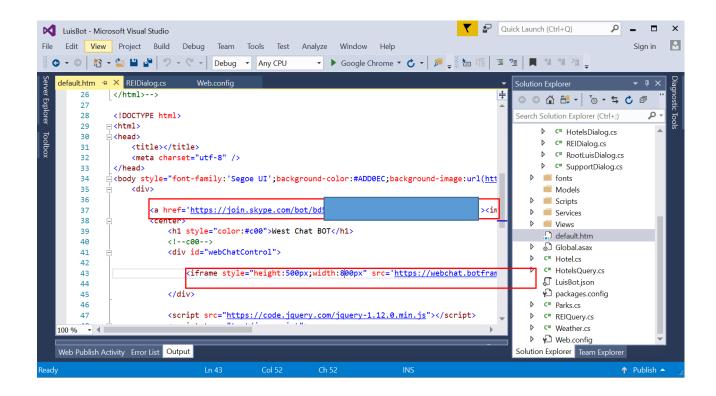
The web secret goes here too

```
default.htm
                                                                                                                                             Solution Explorer
         <?xml version="1.0" encoding="utf-8"?>
                                                                                                                                              ○ ○ ☆ # - \ ~ $ ¢
           For more information on how to configure your ASP.NET application, please visit
                                                                                                                                              Search Solution Explorer (Ctrl+;)
           http://go.microsoft.com/fwlink/?LinkId=301879
                                                                                                                                                  App Start
                                                                                                                                                   Content
          <configuration>
                                                                                                                                                   Controllers
           <appSettings>
                                                                                                                                                   Dialogs
             <!-- update these with your BotId, Microsoft App Id and your Microsoft App Password-->
             <add key="BotId" value="WestDemo2017"</pre>
                                                                                                                                                  ▶ C# FlightsDialog.cs
    10
             <add key="MicrosoftAppId" value="bd50cc</pre>
                                                                                                                                                  ▶ C# HotelsDialog.cs
    11
             <add key="MicrosoftAppPassword" value=
                                                                                                                                                     C# REIDialog.cs
             <add key="WebChatSecret" value="vnCi6CsNC30.cwA.1TE.1L8ZK-U2nkR4XCC1hL1HTYR5jIx1FCzo3A-6OfzcE6I" />
    12
                                                                                                                                                  ▶ C# RootLuisDialog.cs
    13
                                                                                                                                                   ▶ C** SupportDialog.cs
             This is a free trial Microsoft Bing Spell Check key with limited QPS.
    14
                                                                                                                                                  fonts
    15
             Please subscribe to create your own key and try it out further.
                                                                                                                                                    Models
             Subscription URL: https://www.microsoft.com/cognitive-services/en-us/subscriptions?productId=/products/56ec2df6dbe2d91
    16
                                                                                                                                                   Scripts
    17
                                                                                                                                                   Services
    18
             <add key="BingSpellCheckApiKey" value="da7b8d56645e4adba07fc26eee6c6d8a" />
                                                                                                                                                   Views
    19
             <!-- Boolean value to enable correcting the text before processing it-->
                                                                                                                                                   default.htm
             <add key="IsSpellCorrectionEnabled" value="false" />
    20
    21
             <add key="webpages:Version" value="3.0.0.0" />
                                                                                                                                                   22
             <add key="webpages:Enabled" value="false" />
                                                                                                                                                   C# Hotel.cs
             <add key="ClientValidationEnabled" value="true" />
    23
                                                                                                                                                   C# HotelsQuery.cs
    24
             <add key="UnobtrusiveJavaScriptEnabled" value="true" />
                                                                                                                                                   25
           </appSettings>
                                                                                                                                                   packages.config
    26
                                                                                                                                                  C# Parks.cs
    27
             For a description of web.config changes see <a href="http://go.microsoft.com/fwlink/?LinkId=235367">http://go.microsoft.com/fwlink/?LinkId=235367</a>.
                                                                                                                                                  C# REIQuery.cs
                                                                                                                                                C# Weather.cs
             The Carried and American and the same and the state of the same and
                                                                                                                                                   Web.config
```



- Navigate to default.htm in Visual Studio
- Find the <a href> tag and replace with the <a href> tag for Skype in your notepad
- Find the <iframe> tag and replace it with the iframe tag in your notepad

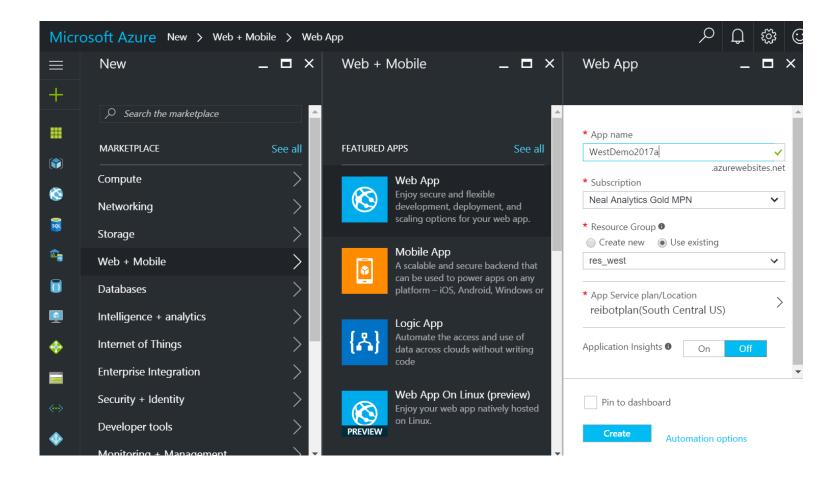
This will enable Skype and the web interface for your bot





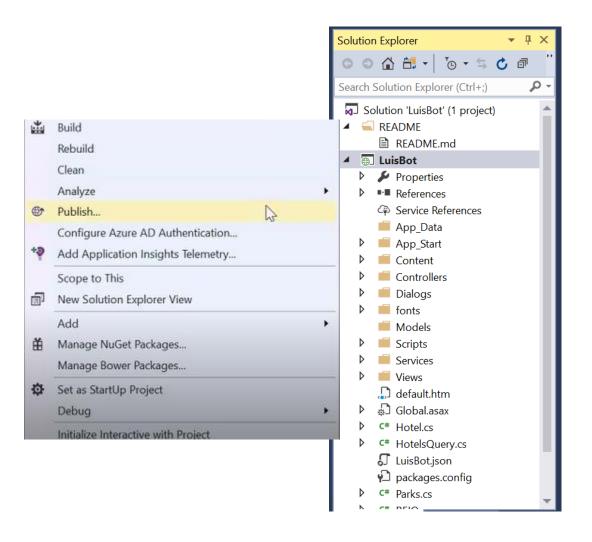
### Bot Publication Azure Portal

- https://portal.azure.com/
- Click +
- Click "Web + Mobile"
- Web App



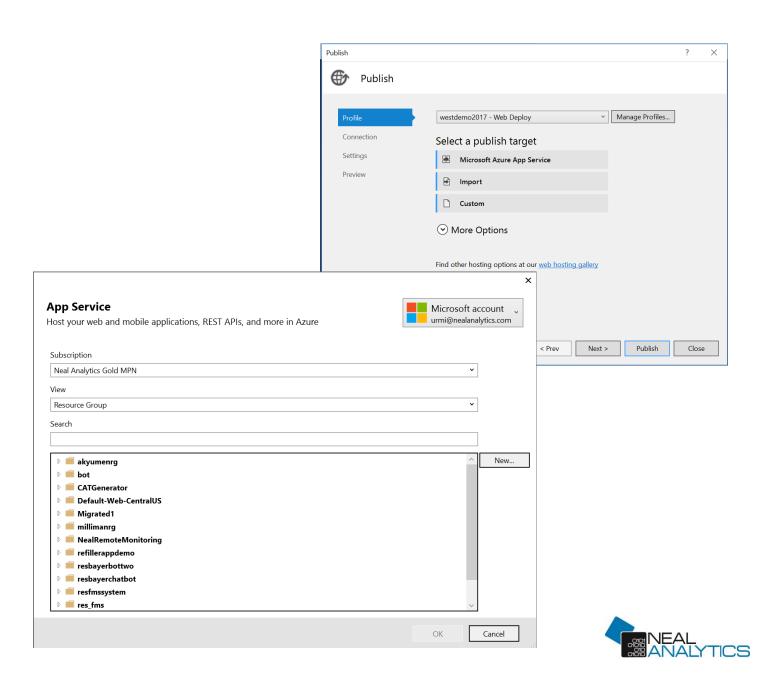


- Right Click on your solution
- Click "Publish"



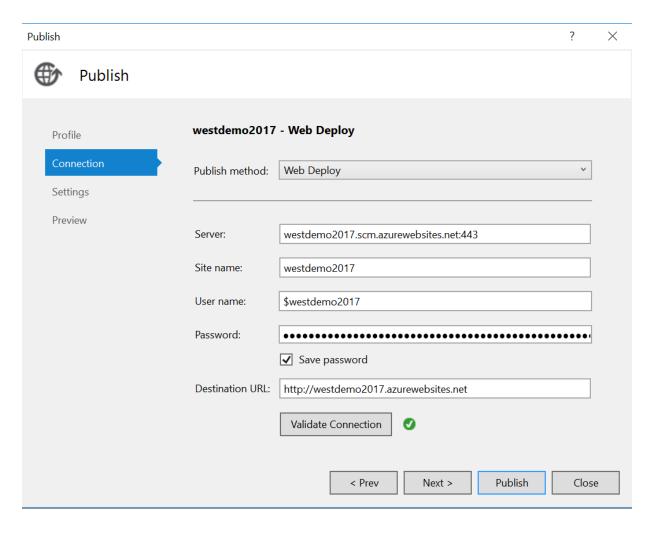


- Click Profile
- Click Manage Profiles
- Remove any profiles (these are unique to the machine)
- Click "Microsoft Azure App Service"
- Select an account and Sign in
- Select the resource group you just created or selected



- Click "Validate Connection"
- Click "Publish"

Security Feature: You can only publish this app from this machine from now on!!!





#### Bot is Live

- Click "Validate Connection"
- Click "Publish"

Security Feature: You can only publish this app from this machine from now on!!!

- Return to
   <u>https://dev.botframework.c</u>
   <u>om/bots?id=erichullanderte</u>
   <u>st</u>
- Click "Edit"
- Specify an endpoint

