Re-Deployment Guide

Business Analytics & AI Bot Demo

# Prerequisites

Before starting, ensure you have the following environment setup:

* Windows Powershell 4.0 or greater (installed on Win10 by default)
  + To make sure your execution policy is correct, run Powershell as admin and execute: Set-ExecutionPolicy -ExecutionPolicy Unsigned (learn more [here](https://technet.microsoft.com/en-us/library/ee176961.aspx))
* Azure Powershell 3.5.0
* Azure subscription with administrator rights (at subscription level)  
  **IMPORTANT:** this solution uses a number of Cognitive Services. The terms of use for each individual service must be manually accepted by the **account administrator** for your Azure subscription (i.e. subscription administrator privileges are not sufficient). To do this, your account admin will need to **create one of each** of the following services through the Azure Portal: LUIS, Bing Speech, Emotion, Face, Speaker Recognition, Recommendations, Computer Vision, Text Translation, and Text Analytics. They can then be deleted. There is a **walkthrough** of the creation process at the end of the doc.
* Dynamics CRM subscription (start with a [trial](https://www.microsoft.com/en-us/dynamics/free-crm-trial.aspx) as it’s not possible to uninstall the customizations; when prompted, do not customize)
* Power BI Pro subscription (can use your corporate subscription & share to others)
* Script files: download from [here](https://cisbotstore.blob.core.windows.net/resources/arm.zip?st=2017-03-24T05%3A22%3A00Z&se=2018-03-25T05%3A22%3A00Z&sp=r&sv=2015-12-11&sr=b&sig=NU%2FtIivCe8g1EcpPGNq%2B1khfSVSM0s6FP7%2F%2BIq9pc1A%3D) and extract into a local directory

# Steps

## 1. Prepare Dynamics CRM

### A. Create secondary user for bot

1. Log into the [Office 365 Portal](https://portal.office.com/adminportal/home) as your trial administrator
2. Under ‘Users’, click ‘Add a user’ and complete as follows:
   1. First name: Customer Service
   2. Last name: Bot
   3. Display name: Customer Service Bot
   4. User name: bot
   5. Product licenses: 1x Dynamics CRM Enterprise

N.B. The password for this account is not used

1. Log into Dynamics CRM as your trial administrator (if you are routed to the mobile view, update the URL path after the domain to /main.aspx)
2. In the top nav bar, click ‘Settings’ and then ‘Security’ (expand the nav bar by clicking the down arrow next to Sales)
3. Click ‘Users’
4. Click on ‘Admin User’
5. Click [here](https://cisbotstore.blob.core.windows.net/resources/jane.jpg?st=2017-02-24T03%3A06%3A00Z&se=2019-02-25T03%3A06%3A00Z&sp=r&sv=2015-12-11&sr=b&sig=fxHRRCbI04lAA%2B00xfdvXokD7VZesebDw20I1dd83Uw%3D) to download the user photo to your local machine
6. Click on the user photo (top right) and upload the image from the previous step
7. Click on ‘Security’ in the nav bar and then ‘Users’
8. Click on ‘Customer Service Bot’
9. Click [here](https://cisbotstore.blob.core.windows.net/resources/chat_person_120x120_whitebackground.png?st=2017-03-23T22%3A33%3A00Z&se=2018-03-24T22%3A33%3A00Z&sp=r&sv=2015-12-11&sr=b&sig=OGg2gfFkCvovZcYXxHILpIMwjQWlzMLkz0Jz6DEajFk%3D) to download the user photo to your local machine
10. Click on the user photo (top right) and upload the image from the previous step
11. Click ‘Manage Roles’
12. Check the box next to ‘System Administrator’, ‘Sales Manager’, and ‘Customer Service Administrator’
13. Click ‘OK’

## 2. Deploy into Azure

### A. Start deployment

1. Open a Powershell window
2. Log into your Azure subscription using Login-AzureRmAccount
3. If you have multiple Azure subscriptions, select the correct one:
   1. Use Get-AzureRmSubscription to list available subscriptions
   2. Use Select-AzureRmSubscription -Name ‘<name>’ to select a subscription
   3. Use Get-AzureRmContext to see the currently selected subscription
4. Run the deployment script and follow the prompts:   
   .\deploy.ps1 -ResourceGroupName <your cisbot RG - will create if not exists> -CrmAdminUserName <your trial username> -CrmAdminPassword <your trial password>
5. When prompted by the script to enter the Direct Line Secret, continue to the next section

### B. Configure Azure Bot Service

1. Open the [Azure Portal](https://portal.azure.com)
2. Open the resource group specified when running the script
3. Open the Azure Bot Service (it’ll be named cisbot-svc-<random chars>)
4. Click ‘Create Microsoft App ID and password’
5. If prompted, sign in with your work account (i.e. @microsoft.com)
6. Click ‘Generate an app password to continue’
7. Select the generated password and copy it to clipboard
8. Click ‘Ok’
9. Click ‘Finish and go back to Bot Framework’
10. Paste the generated password into the indicated field in the Azure Portal
11. Select ‘C#’ as the language
12. Select ‘Basic’ as the template
13. Click ‘Create bot’ (this may take a few minutes)
14. Click on the ‘Channels’ tab
15. Click on ‘Add’ for ‘Direct Line’
16. In the new tab, click ‘Add new site’ and specify a name (e.g. cisbot)
17. Click ‘Done’
18. Click ‘Show’ next to one of the secret keys
19. Select secret key and copy it to clipboard
20. Click ‘I’m done configuring Direct Line’ (at the bottom of the page)
21. Paste the direct line secret value into the script prompt and press enter
22. When prompted by the script to enter the LUIS app ID, continue to the next section

### C. Configure LUIS

1. Open the [LUIS portal](https://www.luis.ai)
2. Click ‘Sign in or create an account’
3. If prompted, sign in with your work account (i.e. @microsoft.com)
4. If this is your first visit to the portal, complete the registration details & tutorial
5. Click ‘Import App’
6. Click [here](https://cisbotstore.blob.core.windows.net/resources/cisBot.json?st=2017-02-24T03%3A06%3A00Z&se=2019-02-25T03%3A06%3A00Z&sp=r&sv=2015-12-11&sr=b&sig=kSRSGDn85LsN4C2omeBk5qQijlizKcpnZmZOs%2FZkcjs%3D) to download the bot file to your local machine
7. Back in the LUIS portal, click ‘Choose file’ and select the file you just downloaded
8. Click ‘Import’ and wait for the import process to complete
9. Click ‘Train & Test’ in the navigation bar
10. Click ‘Train Application’ and wait for it to complete
11. Click ‘Publish App’ in the navigation bar
12. Return to the script prompt and copy the LUIS app key to clipboard
13. Back in the LUIS portal, click ‘Add a new key to your account’
14. Click ‘Add a new key’ and paste the app key into the endpoint key text box
15. Click ‘Save’
16. Return to the previous web page and select the new endpoint key from the drop down
17. Click ‘Publish’
18. From the URL bar, select the GUID and copy it to the clipboad (e.g. in this example, copy the highlighted portion: https://www.luis.ai/application/e12b44c6-2eb0-479a-b1fe-6f3c83c8ed92/…)
19. Close the LUIS portal and return to the script prompt
20. Paste the copied GUID into the script prompt and press enter
21. When prompted by the script to enter the ML Service URL, continue to the next section

### D. Configure Machine Learning

1. Open the [Azure ML studio](https://studio.azureml.net)
2. Click ‘Sign in’ in the upper right corner and use your work account (@microsoft.com)
3. Click on the dropdown in the top navigation bar and ensure you have selected the workspace with the name starting with ‘cisbot’
4. From the ‘Experiments’ tab, click on the ‘CustomerChurnTraining’ link to open it
5. From the designer surface, select the rightmost ‘Train Model’ box
6. In the command bar, click ‘Set up Web Service’ > ‘Predictive Web Service [Recommended]’
7. In the command bar, click ‘Run’ > ‘Run’ and wait for the experiment to complete
8. In the command bar, click ‘Deploy Web Service’ > ‘Deploy Web Service [New] Preview’
9. Wait for the page to finish loading
10. Select the existing price plan from the drop down that starts with ‘cisbot’
11. Click ‘Deploy’ and wait while the new service is initialized
12. Click on the ‘Consume’ tab and copy the Request-Response URL to clipboard, *excluding everything after /execute* (e.g. in this example, copy the highlighted portion: https://ussouthcentral.services.azureml.net/subscriptions/8d5f12c858264cafbe5bb386b2daf671/services/e5fdbf19fc1f421f8648452d222e6a06/execute?api-version=2.0&format=swagger).
13. Return to the script prompt and paste the web service URL then press enter
14. Return to the ML website and copy the Primary Key to clipboard
15. Return to the script prompt and paste the web service key then press enter

### E. Configure Power BI

1. Download the [PBIX file](https://cisbotstore.blob.core.windows.net/resources/Report.pbix?st=2017-03-21T00%3A30%3A00Z&se=2018-03-22T00%3A30%3A00Z&sp=r&sv=2015-12-11&sr=b&sig=liZSWNFzIkm%2FbGAjHp%2F8vyWh8CNFjQX8ZFxJ8slIxgc%3D) and open it in Power BI Desktop
2. Ensure you’re signed in with your corporate credentials (click on the sign in link in the top left if not)
3. Click on ‘File’ > ‘Open’ and select the ‘Report.pbix’ file you downloaded
4. Click the ‘Publish’ button in the ribbon
5. Wait for the upload to complete
6. Open [Power BI](https://app.powerbi.com) in your browser and sign in with your corporate credentials
7. Click on ‘Streaming datasets’ in the left nav panel
8. Click on ‘+ Add streaming dataset’ in the top right
9. Click on the ‘API’ tile and then click ‘Next’
10. For dataset name, enter: customer-satisfaction
11. Add the following data fields: bot (number), email (number), in\_person (number), phone (number), ts (DateTime)
12. Click on the ‘Create’ button
13. Copy the push URL to clipboard
14. Return to the script prompt and paste the push URL then press enter
15. Repeat for the following data sets:
    1. chats-history: maximum (number), minimum (number), goal (number), new\_sessions (number), total\_sessions (number), active\_sessions (number), ts (DateTime)
    2. sales-history: minimum (number), maximum (number), goal (number), incoming\_revenues (number), total\_revenues (number), ts (DateTime)
16. Create a new dashboard by clicking on the ‘+’ icon next to the ‘Dashboards’ section on the left nav panel; name it something like ‘Litware Insurance’
17. Return to the script prompt and wait for remaining deployment tasks to complete (this may take several minutes); once complete, continue to the next section

## 3. Finalize

### A. Update CRM solution

1. Return to Dynamics CRM in your browser
2. In the top nav bar, under ‘Settings’, click ‘Solutions’
3. Click ‘CisBot’
4. Under the navigation tree, expand ‘Entities’
5. Expand ‘Opportunity’
6. Click ‘Forms’
7. Click the name of the first form in the list to open the editor
8. Double-click the rightmost IFRAME area (‘https://cisbot-...’ should be visible in it)
9. Update the URL with the your website URL (this was output by the script; note, it needs to end with ‘/chat’)
10. Click ‘OK’
11. Repeat the above three steps for the IFRAME in the Customer Profile (should end with ‘/api/opportunity/images/customer’) and the IFRAME in the Vehicle Profile (should end with ‘/api/opportunity/images/vehicle’)
12. Click ‘Save’
13. Click ‘Publish’
14. Close the form editor & solution editor

### B. Train CRM recommendations

1. In the top nav bar, under ‘Settings’, click ‘Administration’
2. Click ‘System Settings’
3. Click the ‘Previews’ tab
4. Check the ‘I have read and agree to the license terms’
5. Click ‘Yes’ next to ‘Cross-sell Product Recommendations Preview’
6. Click ‘OK’ when prompted and then ‘OK’ again to close the dialog
7. Refresh your browser
8. Click ‘Azure Machine Learning Recommendation Service Configuration’
9. Click ‘Continue’
10. For ‘Azure Service URL’, enter: https://westus.api.cognitive.microsoft.com/recommendations/v4.0
11. For ‘Azure Account Key’, refer to the key output by the script on the command prompt
12. Click ‘Activate’ (and click ‘Activate’ again when prompted)
13. In the top nav bar, under ‘Settings’, click ‘Product Catalog’
14. Click ‘Product Recommendations’
15. Under ‘Basket Data Entities’, click on the trash can icon next to ‘Order’ and ‘Quote’ (mouse over to see it and confirm when prompted)
16. Under ‘Basket Data Entities’, click on ‘Opportunity’
17. Mouse over ‘Filter Exists’ and click on the filter icon
18. Remove the status filter line by clicking on the down icon and selecting ‘Delete’
19. Click ‘OK’ to remove the line and then ‘OK’ again to close the dialog
20. Click the ‘X’ icon in the top right of the form
21. Click ‘Build Model Version’ and then click ‘OK’ when prompted
22. The ‘Model Versions’ table shows training progress; however, you’ll need to refresh the page to see it update (it will take several minutes)
23. Once the ‘Azure Model Build Status’ shows ‘Success’, click the ‘Recommendation Version’ field and using the search button to select ‘Version 1’
24. Click ‘Activate’ and then ‘OK’ when prompted regarding precision
25. Click ‘Activate’ again when prompted

### B. Power BI

Create a dashboard the looks like the below. Tips:

* The logo tile can use the following icon: https://<your website address here>/assets/images/contoso-logo\_210x250.png (the address is output by the script)
* Tiles *without* the lightning symbol to the left of the title can be pinned from page 1 or 2 of the ‘Report’ report
* Tiles *with* the lightning symbol to the left of the title need to be created from within the dashboard as they use streaming data:
  1. Click the ‘+ Add tile’ button in the top right
  2. Click the ‘Custom streaming data’ tile
  3. Click ‘Next’
  4. Select the appropriate data set:
     + Chats today: chats-history
     + New business today: sales-history
     + Active chats: chats-history
     + Real-time customer satisfaction: customer-satisfaction



## 4. Smoke Test

1. Navigate to the website in Microsoft Edge (the website URL was output by the script); the user/pass is: Bot/Azure
2. Click the ‘Get Started’ button or open the chat window docked below
3. If the bot greets you in the chat window (this may take 20 - 30 seconds the first time), this suggests the deployment was successful; you can now begin a full smoke test by running through the presenter script

# Appendix 1: Cognitive Services walkthrough

This section describes how to create a Cognitive Service in the Azure Portal. This is required for every cognitive service listed in the Prerequisites section. Once this has been done, it applies to the subscription going forward (i.e. if you re-deploy, you won’t need to repeat this piece).

**Important:** This functionality is only available to the **account administrator**. Subscription admin - or co-admin - rights are not sufficient to complete this process. Once the account administrator has completed the task, subscription admins & co-admins can deploy the app.

Steps:

1. Log into the [Azure Portal](https://portal.azure.com)
2. Expand the left nav bar and click ‘+ New’
3. Search for ‘Cognitive Services APIs’ (you’ll specify the exact service later on)
4. Click on ‘Cognitive Services APIs’ in the results panel
5. Click ‘Create’
6. On the create panel, provide the following values:
   1. Account name: choose a name; e.g. cisbot-test-luis
   2. Subscription: select the subscription you want to use to deploy the app
   3. API type: select the API you wish to deploy (as per the list in the prereqs)
   4. Pricing tier: if available, select the free tier; else, select the cheapest paid tier (as soon as it’s created you can delete it)
   5. Resource group: choose an RG. It’s recommended you create a new group for the first service you create as part of this process and then re-use it for the rest as then you can delete all of the new services by deleting the resouce group. Resource group location: accept default
   6. API Setting:
      * If you don’t see this option, then you don’t need to go any further. You can skip this service and proceed to creating the next one.
      * If you do see this option, click on it to expand the new panel and then click on ‘Enable’.
7. Click ‘Create’

For more information, see [here](https://technet.microsoft.com/en-us/library/ee176961.aspx).