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Steps to integrate Twitter with Watson Assistant & Watson Discovery using Node-Red

This tutorial goes through the steps to integrate Twitter with Watson Assistant using Node-Red.

What is not covered in this tutorial is setting up skills for a bot in Watson Assistant so the assumption is setting-up a Watson Assistant skill and integrated with Watson Discovery (optional) has been done prior to this tutorial.

Step 1: Set-up Twitter user & Twitter Developer Account

There are two steps outside of IBM Cloud that will need to be done. The first step is to set up a twitter user account for testing purpose so you can test sending a tweet to your "business" twitter handle (i.e. @IBM). The second step is to sign-up for a Twitter Developer account if you don't already have one. You can use the same twitter username for this account.

Twitter User:

Setting up a twitter user account: https://twitter.com . Follow steps to create a standard user account

Twitter Developer:

Setting up twitter developer account, go to https://developer.twitter.com

Once your developer account has been created, you will need to create an application in your twitter developer account as the application is required to foward the question from a twitter user into Watson Assistant.

Example Twitter Developer Application:

Note: Website URL and Callback URL can be functional or non-functional URLs as they will not be used in this example as integrating with Watson Assistant and Twitter.

App Name

DemoTwitterApp-xxx

Description

Demonstration application

Website URL

https://google.com

Sign in with Twitter

Disabled

Callback URL

https://google.com

Terms of service URL

None

Privacy policy URL

None

Organization name

None

Organization website URL

None

App usage

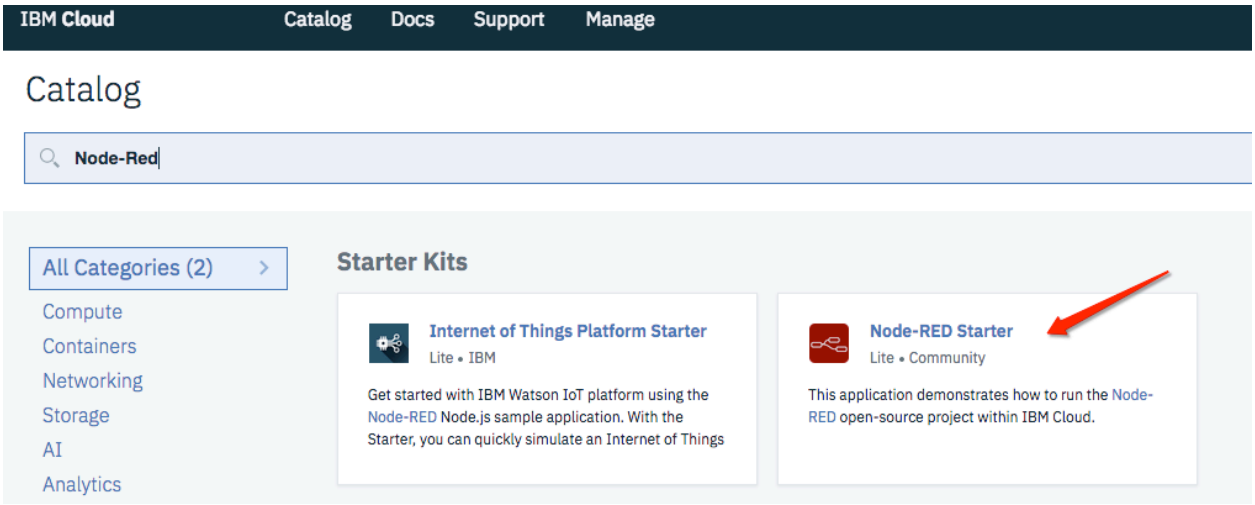
This is being created just for the use of a video to show keys and tokens that are not being utilized

Step 2: Create Node-Red application

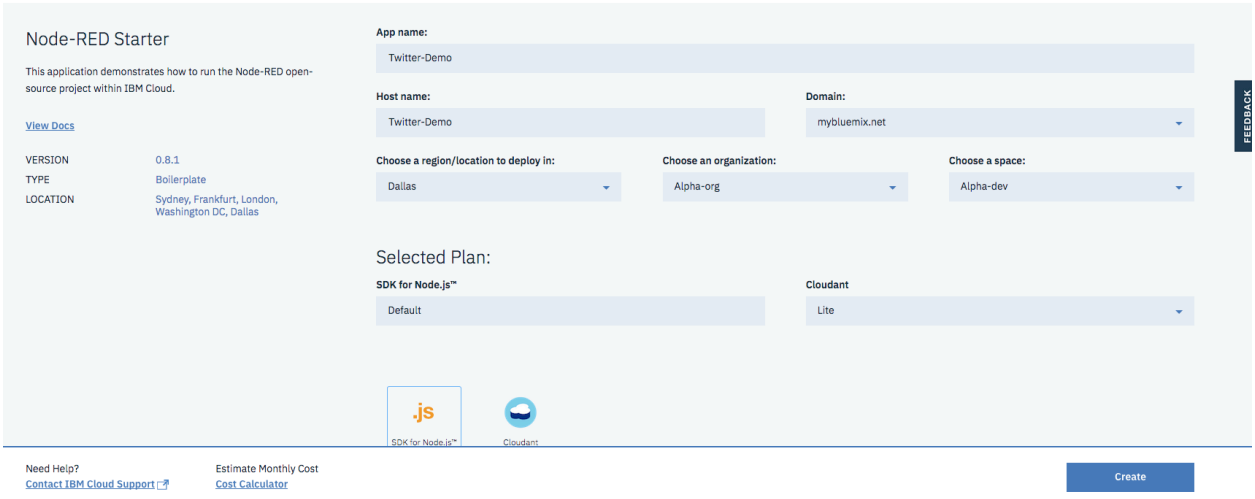
In this step, you need to login to your IBM Cloud account or set-up a new account if you don't already have one at: https://console.bluemix.net

Select "Catalog" and search on Node-Red

Node-Red is a flow-based opensource development tool that can be used to create JavaScript functions wiring together hardware devices, APIs and online services. In this case we will be using Node-Red to integrate Twitter and IBM Watson Assistant.



Example



Note: By default, a Cloudant Database will be installed which is where the Node-Red flow configurations and functions code will be stored. In this example, no twitter information or responses back from Watson Assistant will be stored in the Cloundant Database.

Step 3: Create Node-Red Twitter Flow

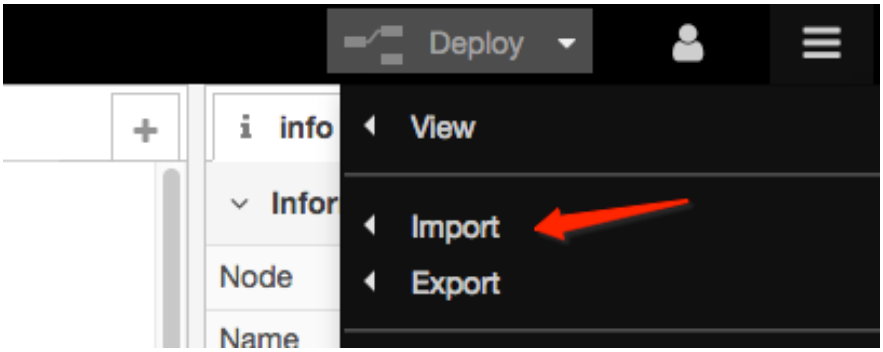
Once the Node-Red Starter application has been created, go to the IBM Cloud Dashboard and open the Node-Red application just created to start building the Node-Red Flow.

There are two options when creating the Node-Red flow for this tutorial. The first option is to copy & paste the file Node-RedFlow from the github repository at: https://github.com/djcarrol/twitterIntegration

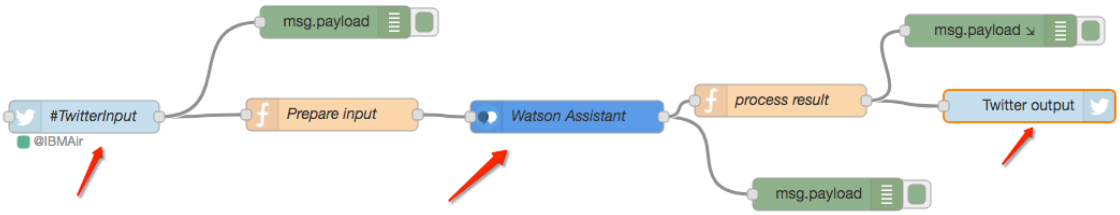
Download Flow from GitHub repository

Select: **Node-RedFlow** and copy entire line in GitHub repository

In Node-Red, select  ➔ Import ➔ Clipboard and paste copied line from github repository into dialog box ➔ Select IMPORT

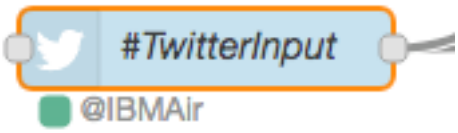


Then edit 3 nodes as show in picture below: (Steps to edit these nodes are in the "Create Node-Red Flow Manually section for the respective nodes (Twitter Input, Watson Assistant, & Twitter Output)

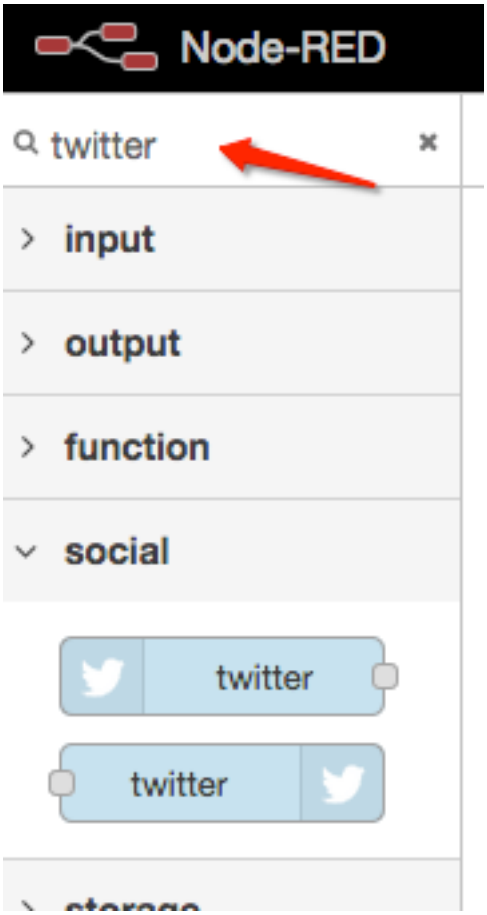


Create Node-Red Flow Manually

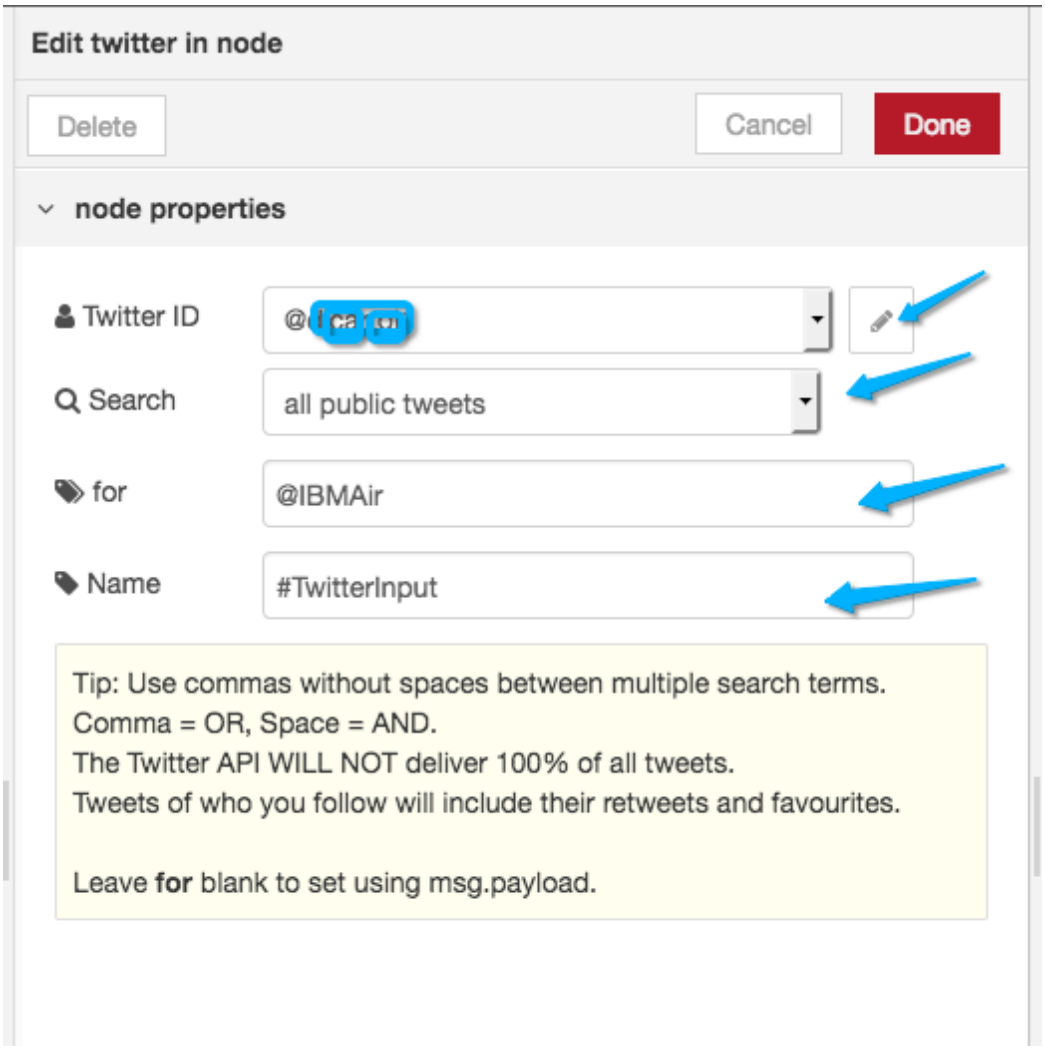
Twitter Input Node



To get started creating the Node-Red flow manually, on the blank flow page in the left hand column there is a search function: search for Twitter



Drag & drop the Twitter Input node onto the flow page. Then select the Twitter Input node & edit it.



Twitter ID: twitter developer ID

Select Edit (pencil symbol) to enter in Keys & Tokens

- Consumer API Key: [found under Keys & Token at developers.twitter.com app created]
- Consumer API Secret Key: [found under Keys & Token at developers.twitter.com app created]
- Access token: [found under Keys & Token at developers.twitter.com app created]
- Access token secret: [found under Keys & Token at developers.twitter.com app created]

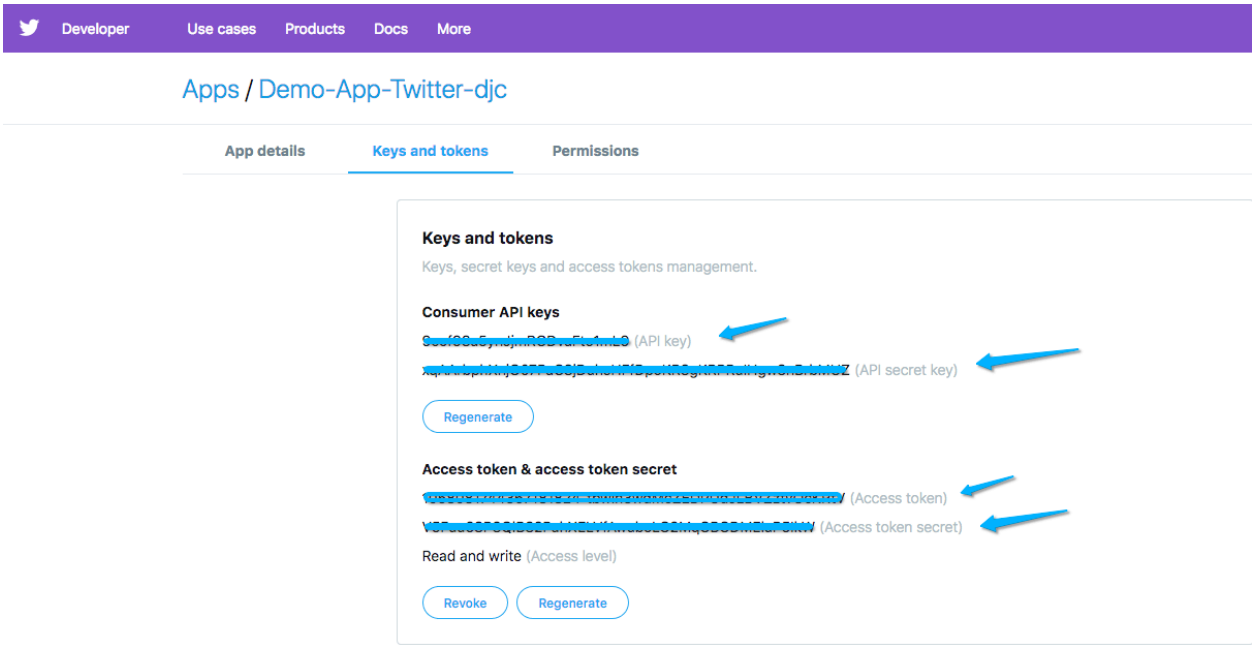
Search: all public tweets

For: [Twitter handle i.e. IBM or in the example @IBMAir]

Name: Name given twitter input node .

The TwitterInput Node will require the Twitter Developer ID and the application Keys and Tokens that were created in the Twitter app you created at https://developer.twitter.com.

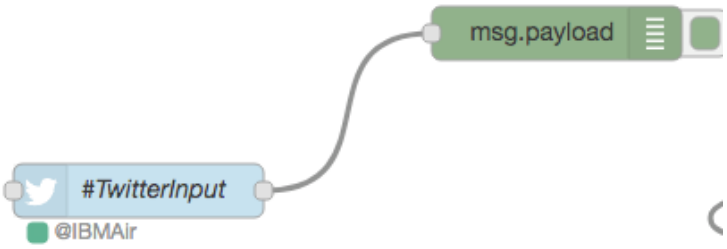
See example below for where to obtain Keys & Tokens:



Debug Node #1

Search on “debug” and drag & drop the debug node onto the page. Wire from Twitter Input to msg.payload “debug” node.

Flow should look as follows at this point



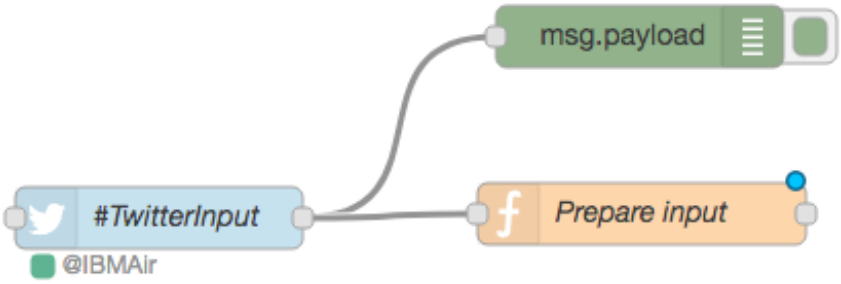
Prepare Input Function Node

Search on Function and drag and drop on flow

Edit the node, provide a name i.e. “Prepare Input” and add the following code.

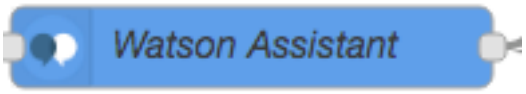
```
if (typeof msg.tweet.retweeted_status == 'undefined')
{
      if (typeof msg.tweet.lang != 'undefined')
   {
      lang=msg.tweet.lang;
   }

      var msg = {
            user: msg.tweet.user.screen_name,
            lang: lang,
            tweet: msg.tweet.text,
            payload: msg.tweet.text
      };
      flow.set('tweet',msg);
}
return msg;
```

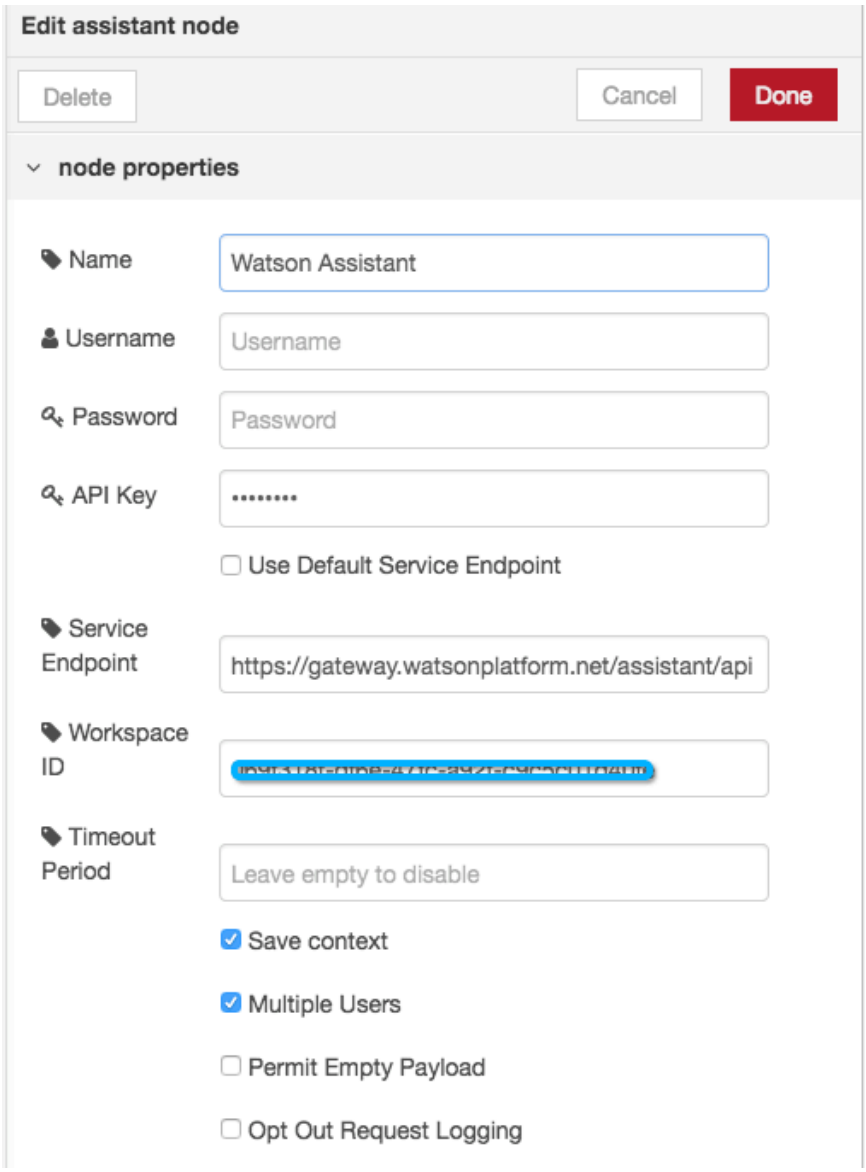
Wire TwitterInput node to Prepare input Node. Flow should appear as follows as this point



Watson Assistant Node

Search on “Watson” and drag & drop the Watson Assistant Node

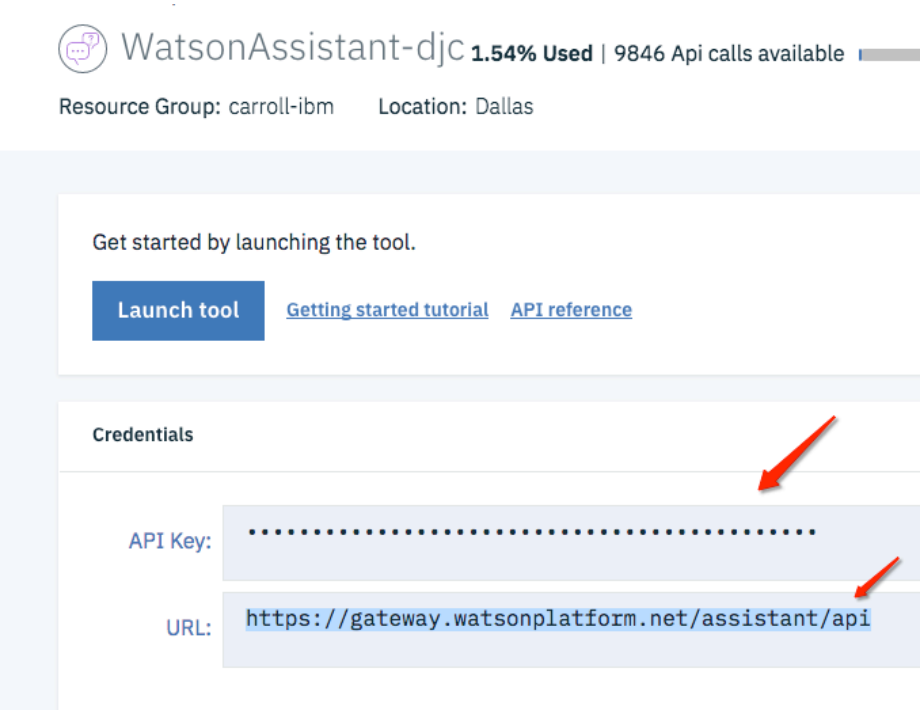




Note: If using Identity Access Management use API Key, otherwise use Username & Password

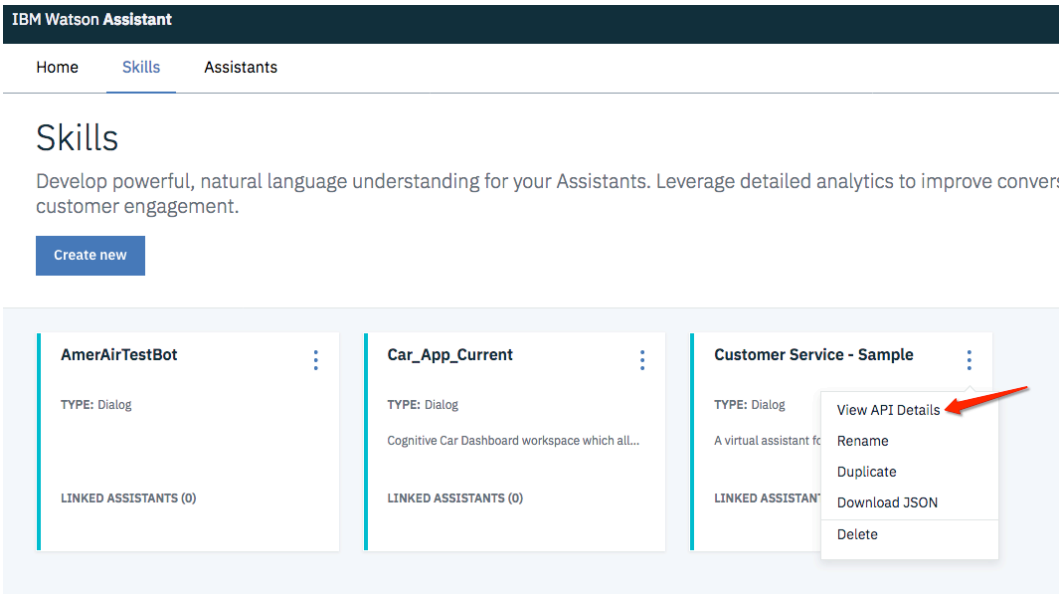
API Key & Service Endpoint URL can be found here:

To obtain the API Key, Service Endpoint and Workspace ID, open the link in the IBM Cloud Dashboard for your account that contains the Watson Assistant created. The first screen will contain the API Key or username/password.

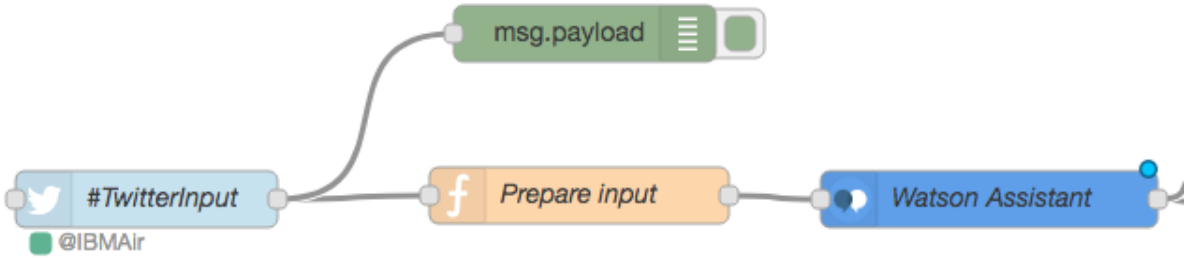


Workspace ID:

Then selecting Launch Tool, select the skill that contains the Intents, Entities and Dialog for your bot and select ➔ View API Details.

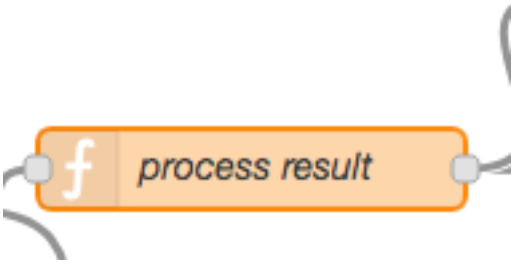


Connect Prepare input to Watson Assistant. Flow should look like the following at this point



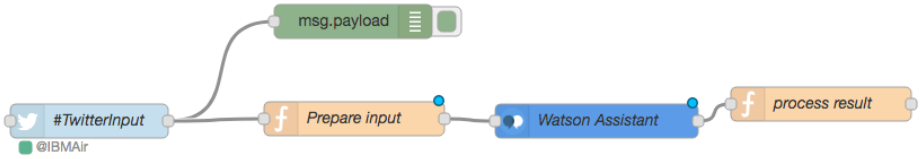
Process Results Node

Search on Function and drag & drop onto the flow. Provide a name, i.e. “process result” and copy the following code into the function node




```
var tweet=flow.get('tweet');
msg.payload="@"+tweet.user+"
"+msg.payload.output.text+"    "+tweet.lang+"
"+Date.now();
return msg;
```

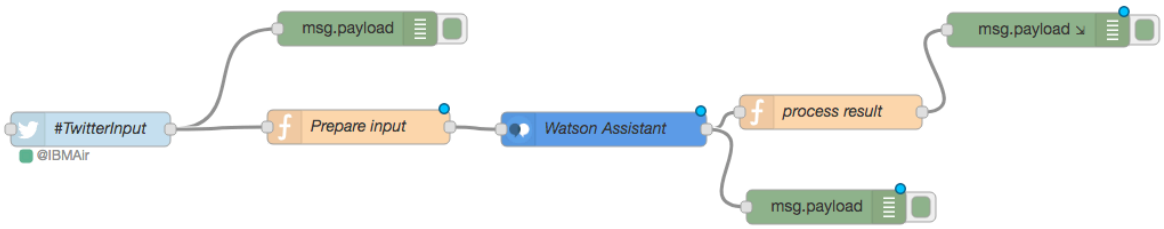
Connect Watson Assistant to Process Results. Flow should appear as follows as this point



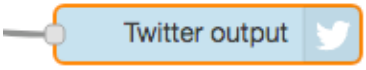
Debug Node #2 & Debug Node #3

Search on “debug” and drag & drop two debug node onto the page. Wire from Watson Assistant Node to the msg.payload “debug” node #2 and wire from process result to msg.payload “debug” node #3

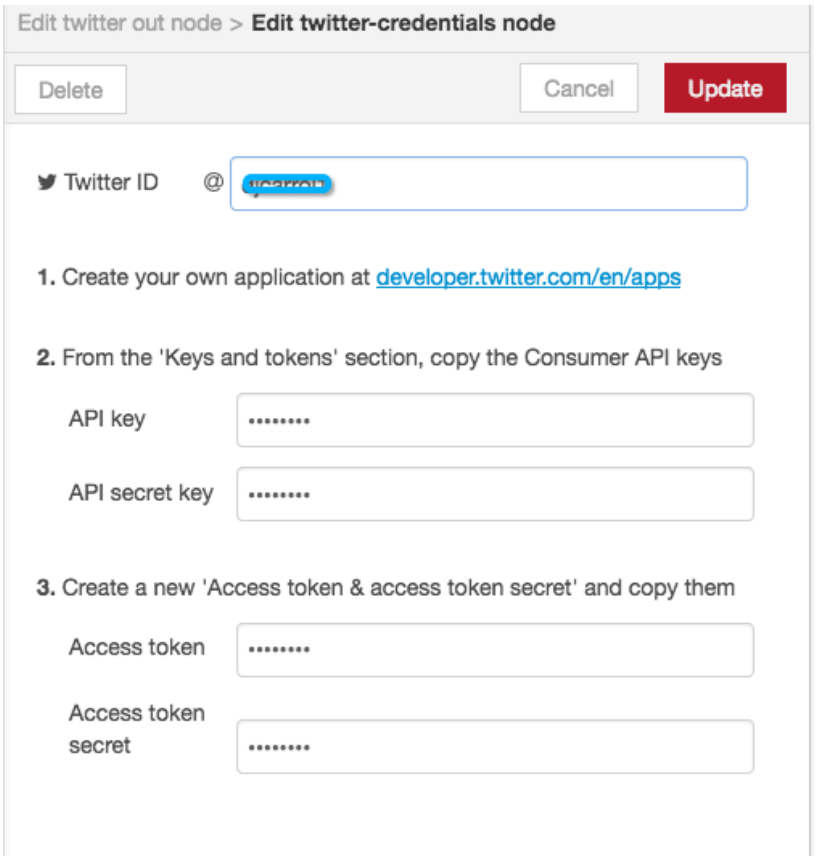
Flow should look as follows at this point



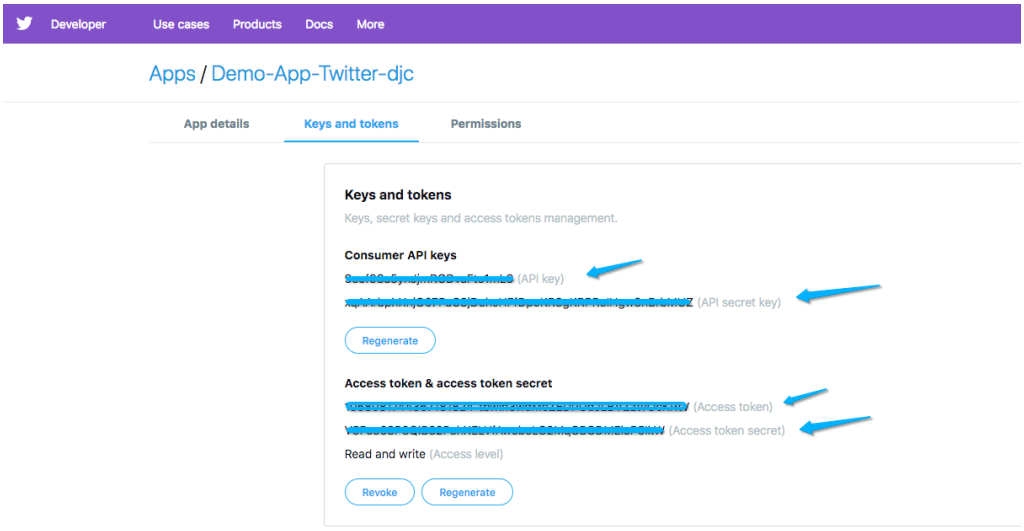
Twitter Output Node



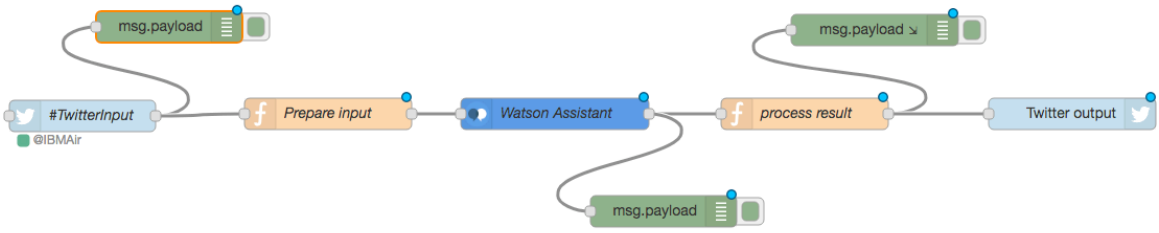
Search on Twitter and drag & drop the Twitter Out node onto the flow. The twitter output node requires the same credentials as the Twitter Input Node.



See example below for where to obtain Keys & Tokens at https://developer.twitter.com/:

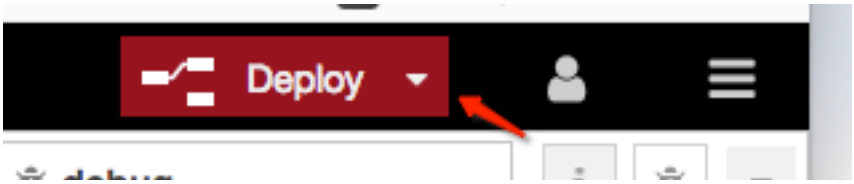


This is the last node in the flow. Wire the process result node to the Twitter Output Node. This is how the final flow should look like.



Deploy Code

Deploy the code in Node-Red after creating a new flow or making changes



Step 4: Testing

Test using user twitter account. Send a message from the twitter user account using the twitter handle created in the TwitterInput flow i.e. @IBM or @IBMAir. You can follow what is happening in Node-Red by opening the "Debug Message" console. See example below