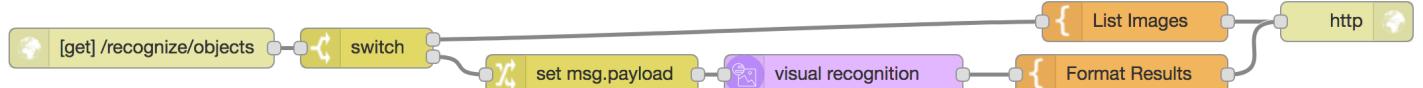
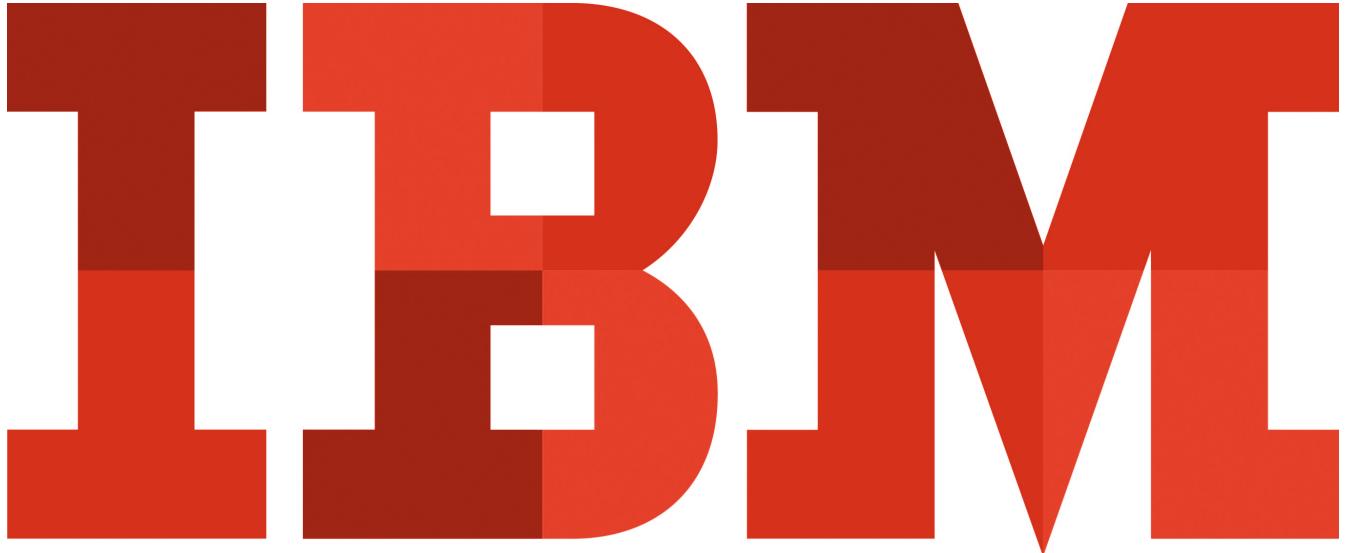


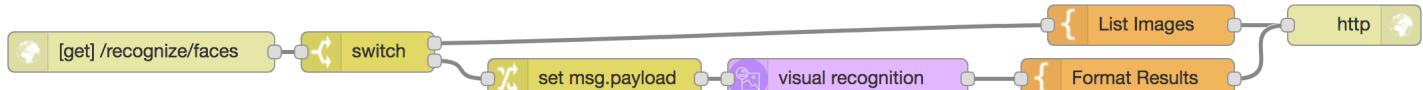
Visual Recognition in Node-RED

Hands-On Lab

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Recognize objects and colors in an image
(see *Recognize Objects and Colors in Node-RED*)

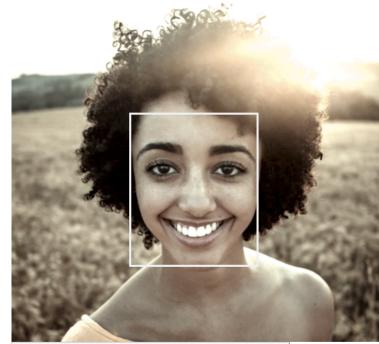


Recognize faces in an image
(see *Recognize Faces in Node-RED*)



default

Class	Score	Type Hierarchy
Harris Tweed (jacket)	0.87	/fabric/Harris Tweed (jacket)
fabric	0.959	
tweed	0.791	/fabric/tweed
Norfolk jacket	0.5	/garment/overgarment/coat/Norfolk jacket
coat	0.509	
overgarment	0.517	
garment	0.518	
clothing	0.8	
gray color	0.946	



Gender	Age Range	Location
FEMALE (0.9998784)	[19-22 (0.9339195)]	[179,171 182X218]



A digital copy of this lab and code snippets can be found at:
<http://ibm.biz/node-red-visual-recognition>



Add Visual Recognition Service in IBM Cloud

The Visual Recognition service analyzes images and classifies objects and faces. This tutorial uses the Node-RED application in IBM Cloud with the Visual Recognition service found under the **Starter Kits** section of the IBM Cloud catalog.

To get started using the Visual Recognition service, you'll need to create service credentials.

1. Click on the **Catalog** link at the top of the IBM Cloud Dashboard. Under the AI section, click on the **Visual Recognition** tile.

The screenshot shows the IBM Cloud Catalog interface. On the left, there's a sidebar with categories like All Categories, Compute, Containers, Networking, Storage, and AI (which is expanded to show Analytics, Databases, Developer Tools, Integration, Internet of Things, Security and Identity, Starter Kits, Web and Mobile, and Web and Application). The main area displays various AI services: Language Translator, Machine Learning, Natural Language Classifier, Natural Language Understanding, Personality Insights, Speech to Text, Text to Speech, Watson Studio, and Visual Recognition. The Visual Recognition tile is highlighted with a blue border and a callout arrow pointing to it from the right side of the screen. The Visual Recognition tile has a sub-callout arrow pointing to its detailed description below.

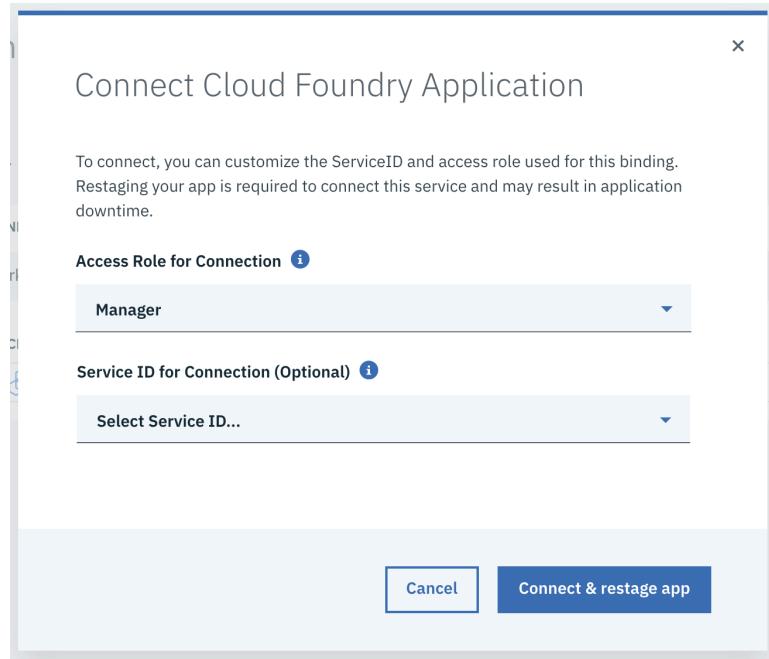
2. You can optionally give the service a custom name or leave it as the one given. Click **Create**.
3. Click on **Connections** in the menu on the left.
4. Click **Create connection** on the right.

Create connection

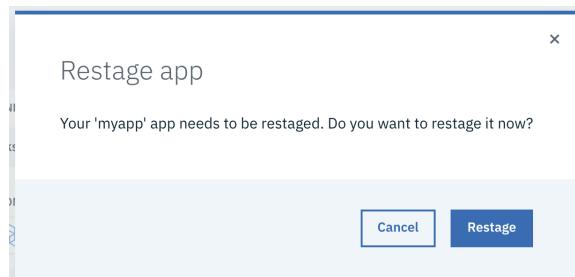
5. Click **Connect** next to the Node-RED application you created earlier.

The screenshot shows the "Connect Existing Cloud Foundry App" dialog box. At the top, it says "REGION: Dallas", "CLOUD FOUNDRY ORG: tutorials", and "CLOUD FOUNDRY SPACE: dev". There's a search bar labeled "Filter by resource name...". Below that is a "CONNECTION LOCATION" section with a dropdown menu showing "dev tutorials // us-south". The main table lists "CLOUD FOUNDRY APPS" (myapp) and "STATUS" (1/1 Running). To the right of the status is a "CONNECT" button. The "CONNECT" button is highlighted with a blue border and a callout arrow pointing to it from the right side of the screen.

6. IBM Cloud will prompt to configure access role for the new connection and service ID. Click **Connect & restage app**.



7. IBM Cloud will prompt to restage the application. Click on **Restage**. The application will restart and include the new service credentials in the environment.

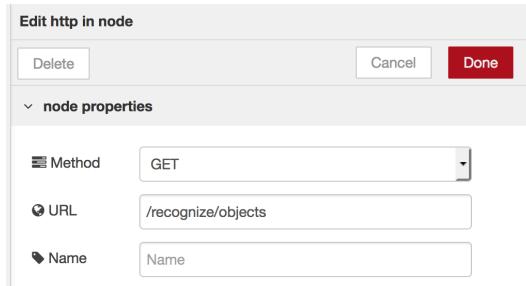


8. When the application has finished restaging, open the Node-RED Flow Editor. If you already have Node-RED open, refresh the page.

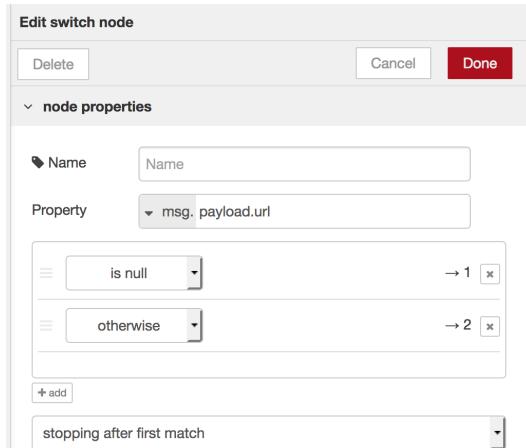
Recognize Objects and Colors in Node-RED

The Watson Visual Recognition service takes either an URL or a file of an image and classifies the objects and colors in the image. In this section, we will analyze an image that is accessible via an URL. Please refer to the [Add Visual Recognition Service in IBM Cloud](#) section to create and bind the Visual Recognition service to your Node-RED application.

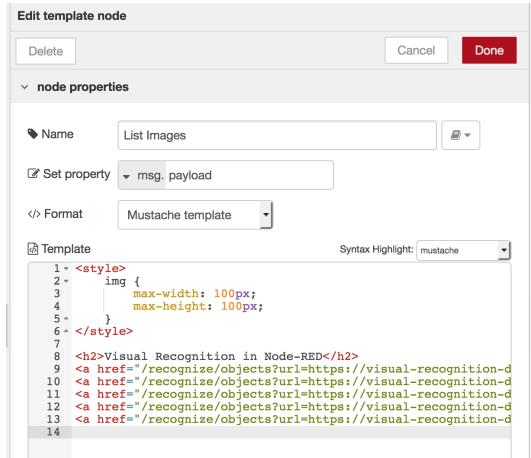
1. Add a  node as shown below.



2. We should check if a *url* query parameter is present. If there is no URL, a webpage containing images will be displayed. If there is a URL, the image will be analyzed by the Visual Recognition service and a results page will be displayed. Add a  node as shown below.



3. For the first case, where there is no URL being passed in, add a  node with the HTML shown below.



The screenshot shows the 'Edit template node' dialog. In the 'node properties' section, the 'Name' is set to 'List Images'. Under 'Set property', 'msg.payload' is selected. The 'Format' is set to 'Mustache template'. The 'Template' section contains the following Mustache code:

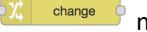
```

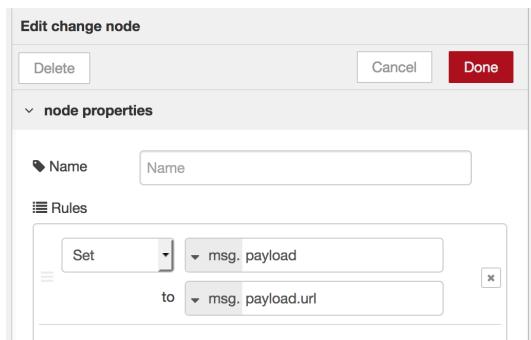
1<> <style>
2<>   img {
3<>     max-width: 100px;
4<>     max-height: 100px;
5<>   }
6<> </style>
7<>
8<> <h2>Visual Recognition in Node-RED</h2>
9<> <a href="/recognize/objects?url=https://visual-recognition-d">
10<> <a href="/recognize/objects?url=https://visual-recognition-d">
11<> <a href="/recognize/objects?url=https://visual-recognition-d">
12<> <a href="/recognize/objects?url=https://visual-recognition-d">
13<> <a href="/recognize/objects?url=https://visual-recognition-d">
14<>

```



Get the code:
ibm.biz/Bdi3Zf

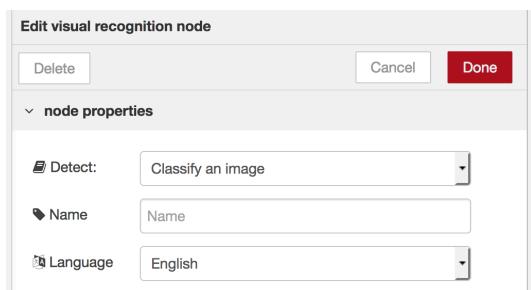
4. For the second case, when a URL is passed in, we need to change the payload value to the URL for the Visual Recognition node to use in the next step. Add a  node as shown below.



The screenshot shows the 'Edit change node' dialog. In the 'node properties' section, the 'Name' is left empty. Under 'Rules', there is one rule defined:

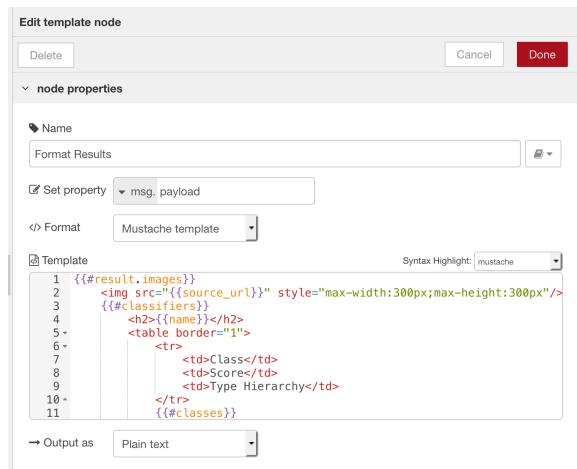
- Set: msg.payload
- to: msg.payload.url

5. Add a  node as shown below.



The screenshot shows the 'Edit visual recognition node' dialog. In the 'node properties' section, the 'Detect' dropdown is set to 'Classify an image'. Other fields include 'Name' and 'Language' (set to English).

6. Add a  node with the HTML shown below.



```

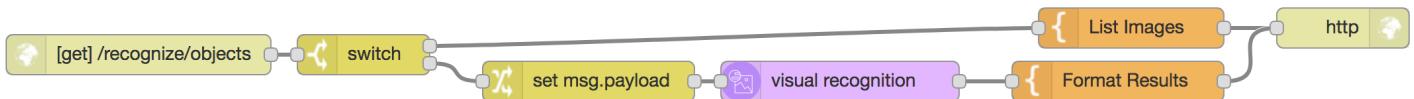
{{#result_images}}
  
  {{#classifiers}}
    <h2>{{name}}</h2>
    <table border="1">
      <tr>
        <td>{{class}}</td>
        <td>{{Score}}</td>
        <td>Type Hierarchy</td>
      </tr>
    {{/tr}}
  {{/classifiers}}
{{/result_images}}

```



Get the code:
ibm.biz/Bdi3ZP

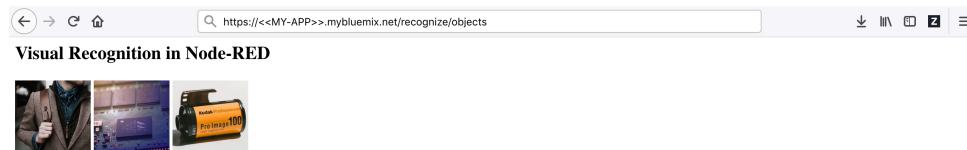
7. Add a  node. Connect the nodes together as shown below.



8. Click on the red  button in the top-right corner of the screen to save and deploy your changes.
 9. Open a browser tab and visit your application's endpoint, appended with /recognize/objects:

<http://<<MY-APP>>.mybluemix.net/recognize/objects>

- Replace <<MY-APP>> with the host of the Node-RED application you chose.
10. Since no *url* parameter was passed in the query string, the list of images is displayed. Select an image from the gallery.



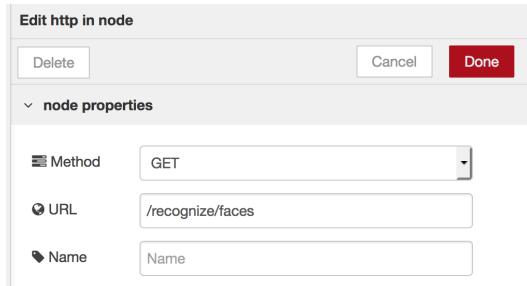
11. Notice the *url* parameter in the query string. Visual Recognition analyzes the image at this URL. The default classifier will return classes and scores, along with type hierarchies of objects in the image. Names of colors are returned appended with *color*.



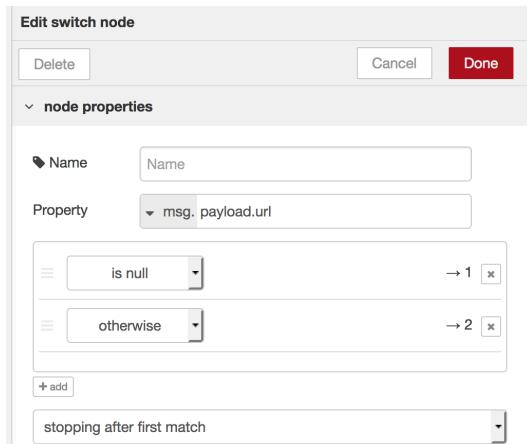
Recognize Faces in Node-RED

The Watson Visual Recognition service takes either an URL or a file of an image and detects faces in the image. In this section, we will analyze an image that is accessible via an URL. Please refer to the **Add Visual Recognition Service in IBM Cloud** section to create and bind the Visual Recognition service to your Node-RED application.

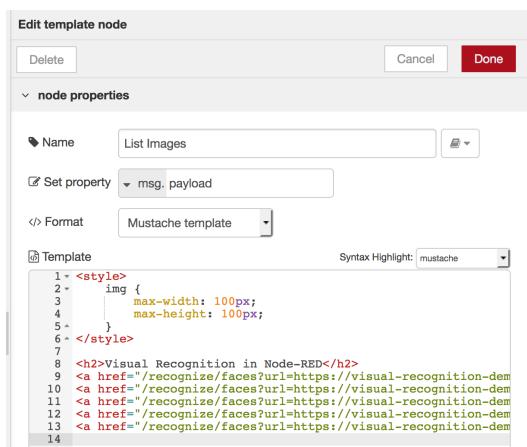
1. Add a  node as shown below.



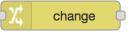
2. We should check if a *url* query parameter is present. If there is no URL, a webpage containing images will be displayed. If there is a URL, the image will be analyzed by the Visual Recognition service and a results page will be displayed. Add a  node as shown below.

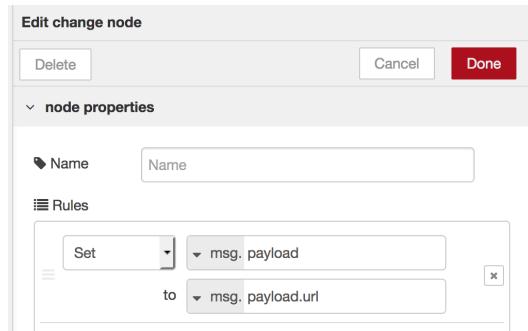


3. For the first case, where there is no URL being passed in, add a  node with the HTML shown below.

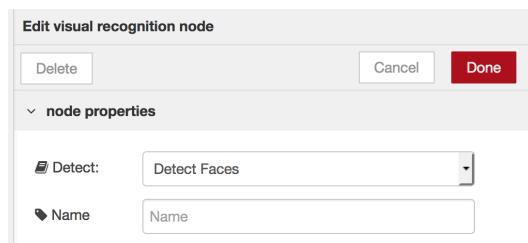


Get the code:
ibm.biz/Bdi3Zy

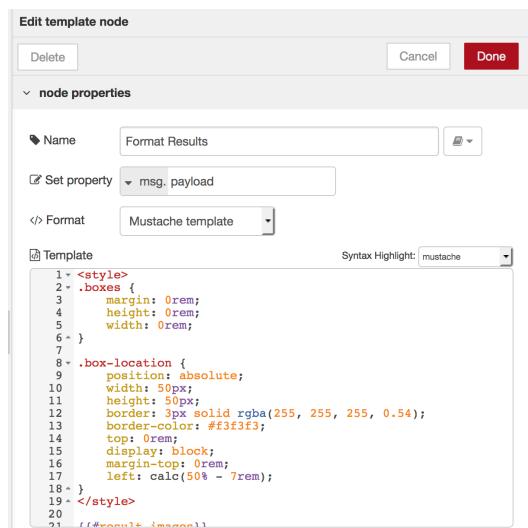
4. For the second case, when a URL is passed in, we need to change the payload value to the URL for the Visual Recognition node to use in the next step. Add a  node as shown below.



5. Add a  node as shown below.

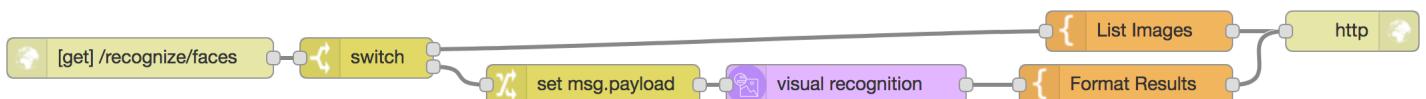


6. Add a  node with the HTML shown below.



Get the code:
ibm.biz/Bdi3ZM

7. Add a  node. Connect the nodes together as shown below.

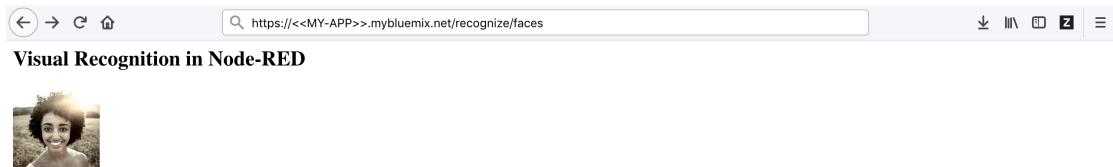


8. Click on the red  Deploy button in the top-right corner of the screen to save and deploy your changes.
9. Open a browser tab and visit your application's endpoint, appended with /recognize/faces:

<https://<<MY-APP>.mybluemix.net/recognize/faces>

- Replace <<MY-APP>> with the host of the Node-RED application you chose.

10. Since no *url* parameter was passed in the query string, the list of images is displayed. Select an image from the gallery.



11. Notice the *url* parameter in the query string. Visual Recognition analyzes the image at this URL. The gender, age range, and location of each face found in the image is listed. The CSS styles in the HTML template have outlined the faces in the image.

