Lab 3 Stream Analytics, Blob Storage and Power BI

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This lab assumes you have completed Lab 2.

If you have any issues or concerns, please email: virtualbootcamphelp@microsoft.com.

Execution Time: 30 minutes.

Required Hardware:

- Windows 10 PC
- IoT Hardware kit: https://www.adafruit.com/product/3605 or similar hardware.
- Access to a WiFi network (without a captive portal aka web page login)

Required Operating System:

- Windows 10

Other Requirements:

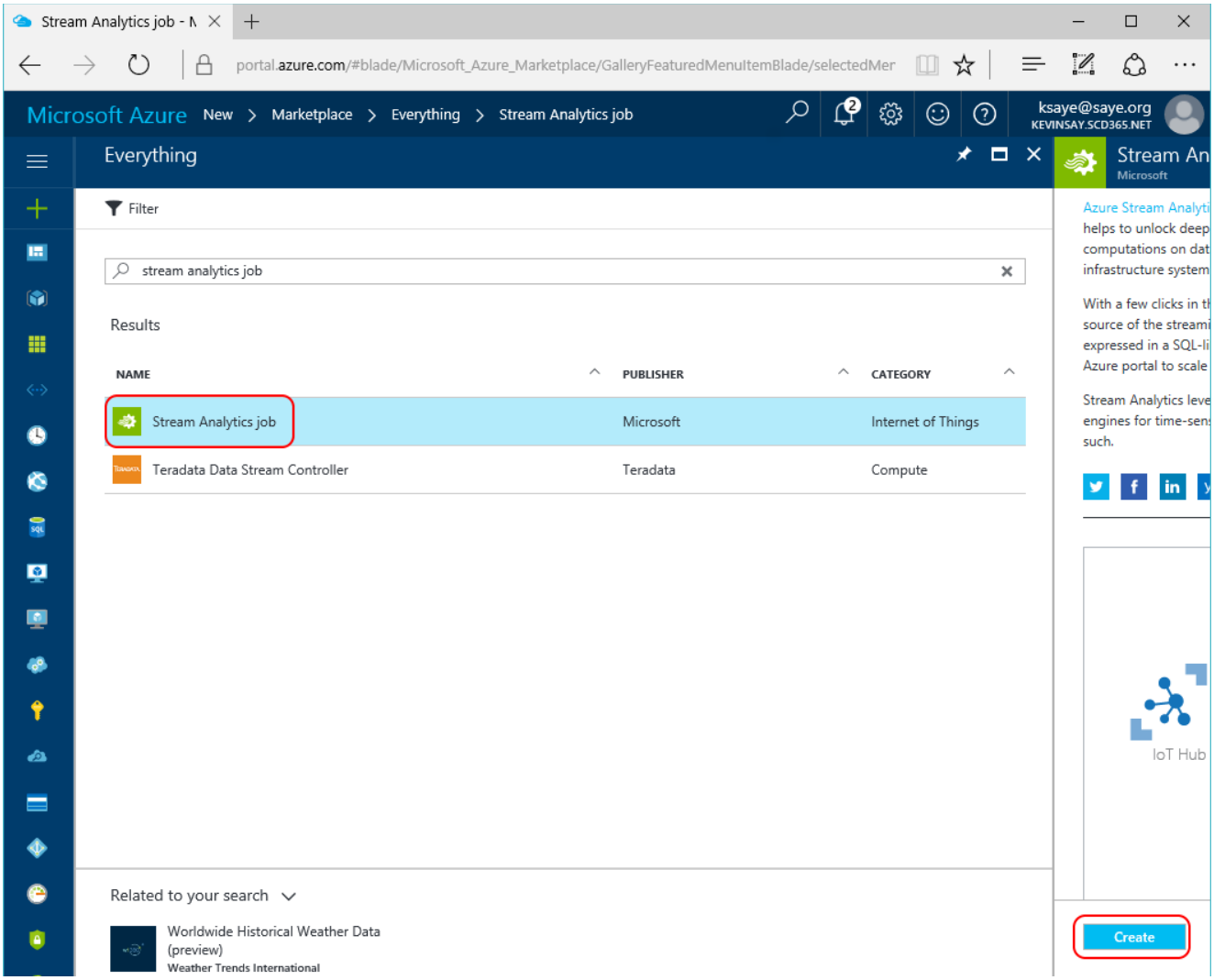
- Azure Subscription

Required Software:

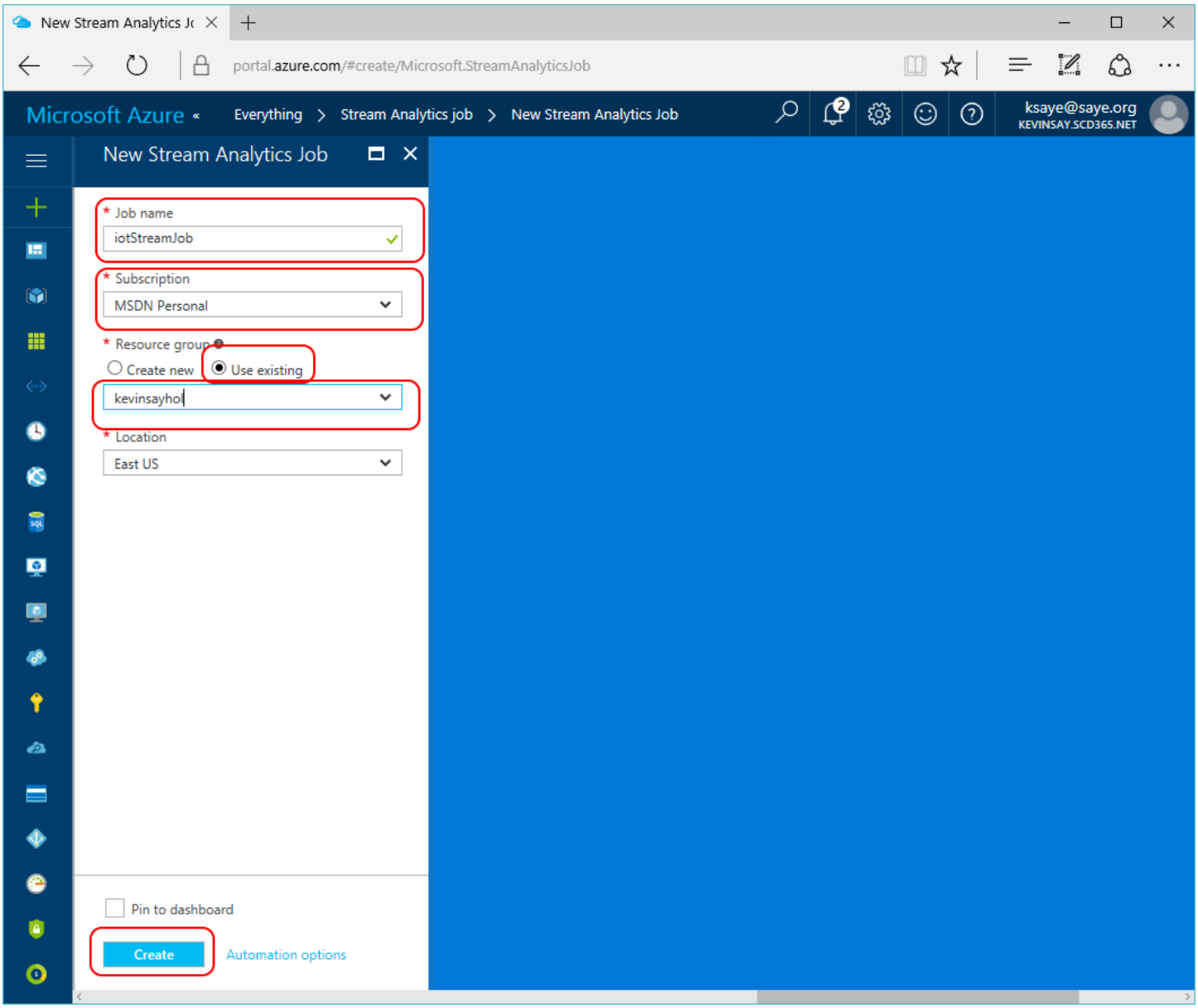
- None

Step 1. Go to http://portal.azure.com, click the Plus sign on the left and search for Stream Analytics Job

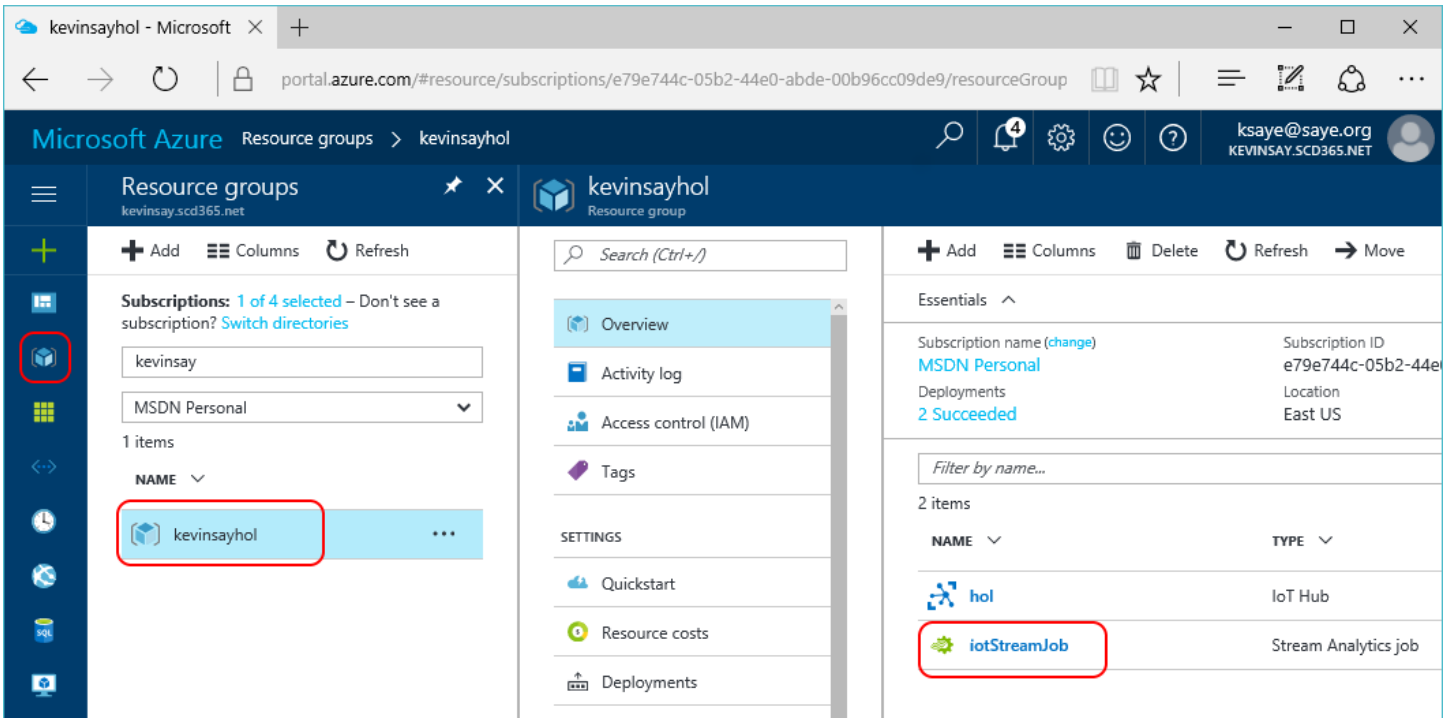
Step 2. Select the Stream Analytics job by Microsoft and click Create.



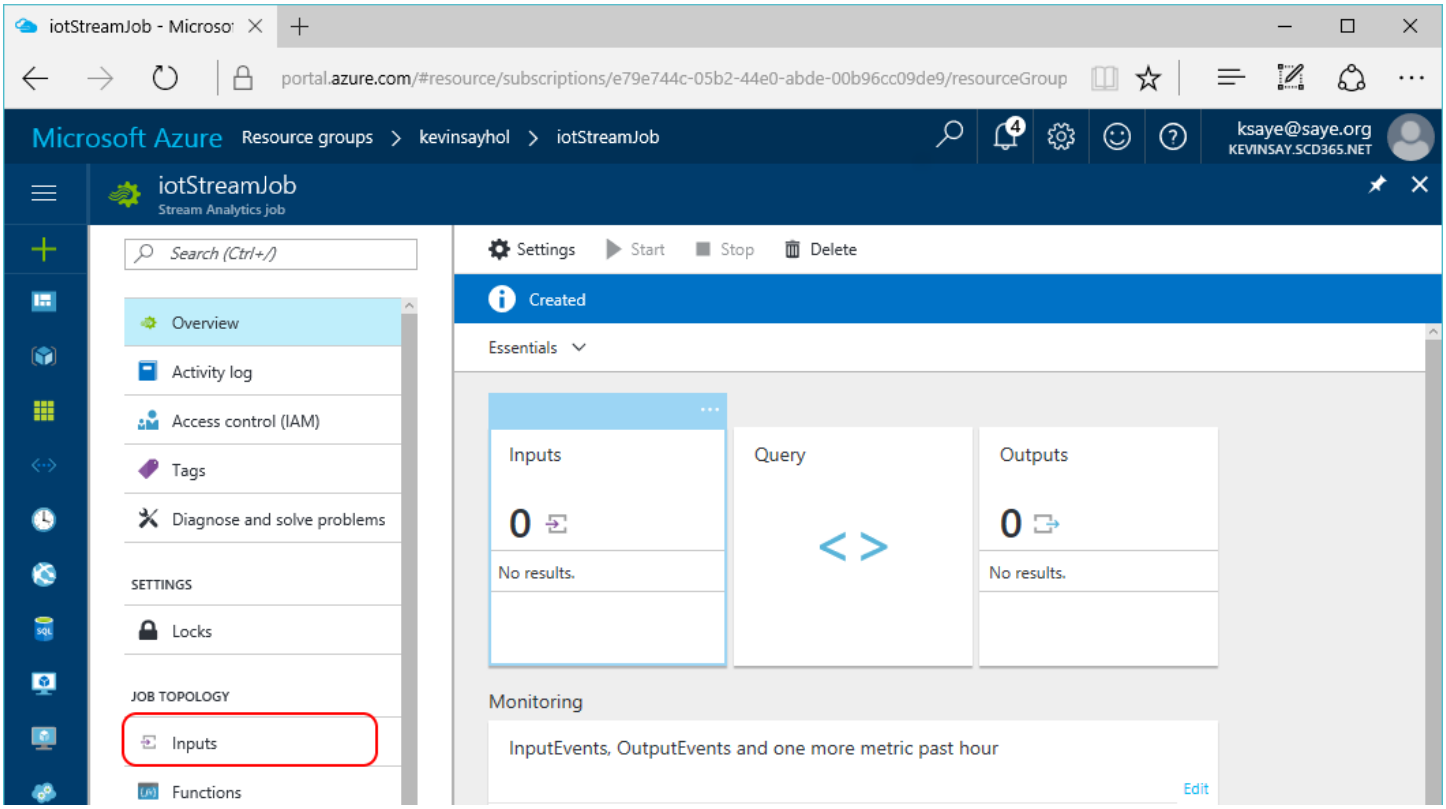
Step 3. Give your job a unique name, select the correct Azure Subscription, select the Resource Group created in the prior lab and click create.



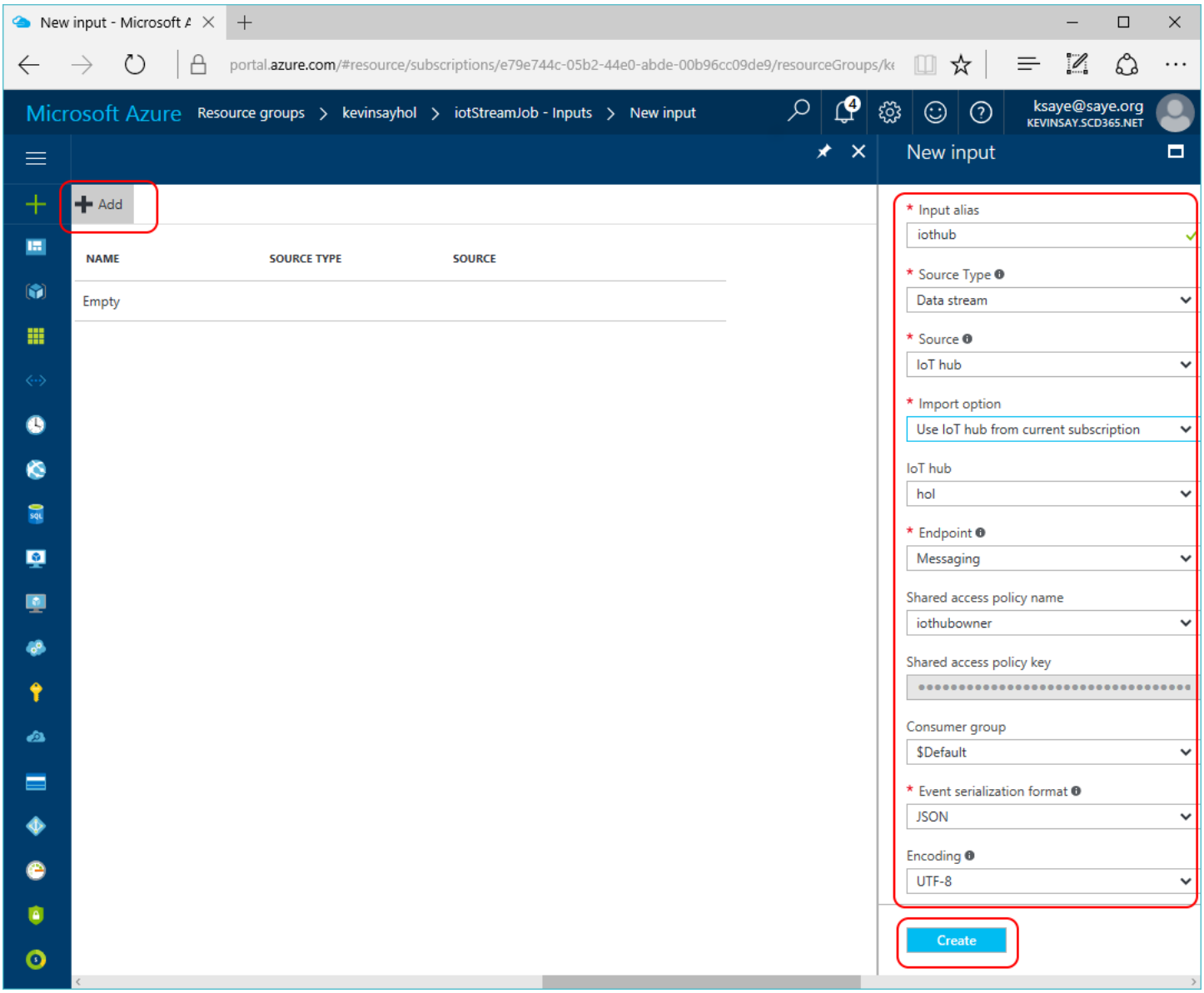
Step 4. Click the Resource Group Icon on the left, select the resource group you just created and click on your Stream Analytics Job just created.



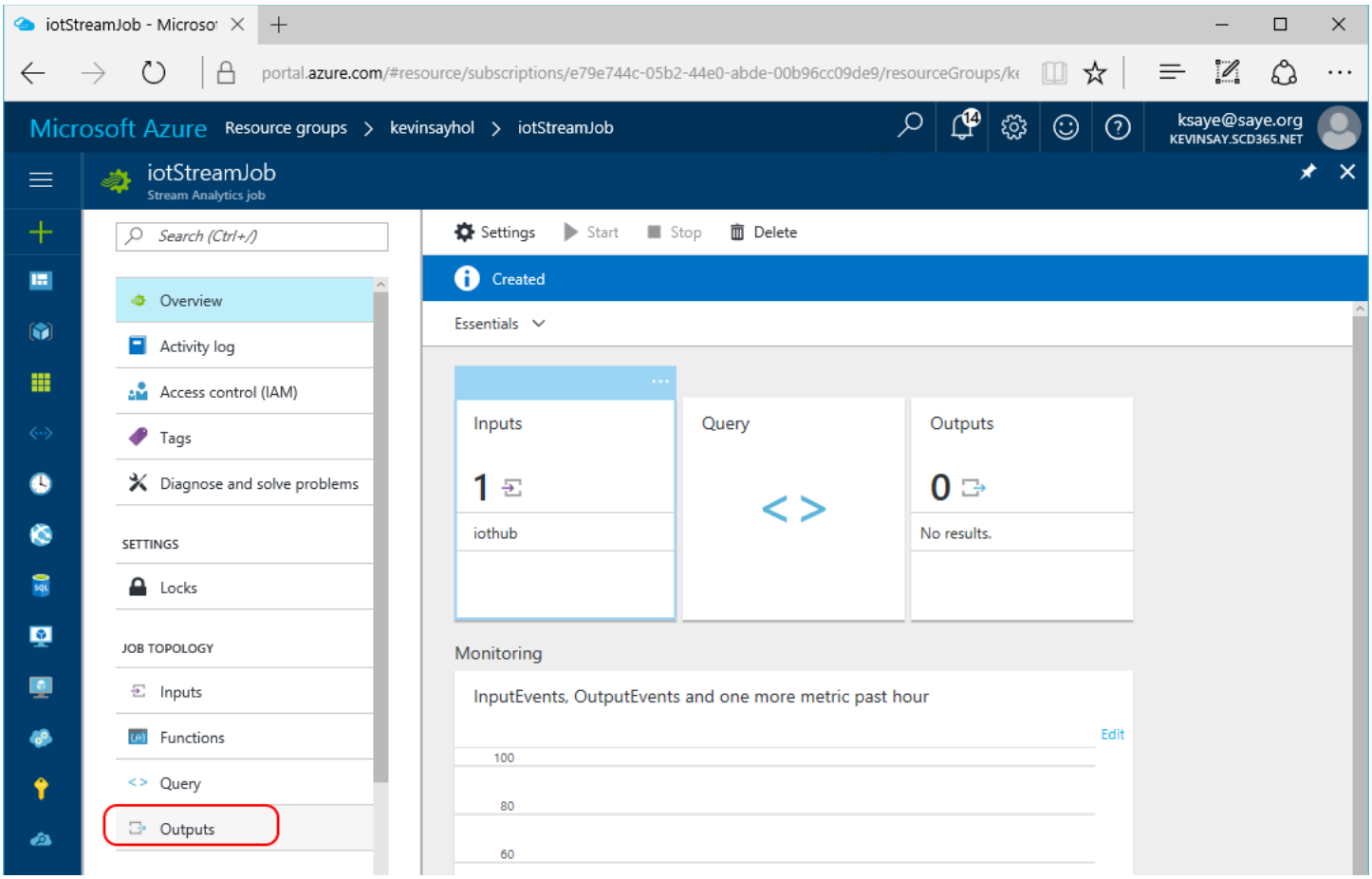
Step 5. Once the Stream Job is crated (less than a minute), click on the Inputs icon.



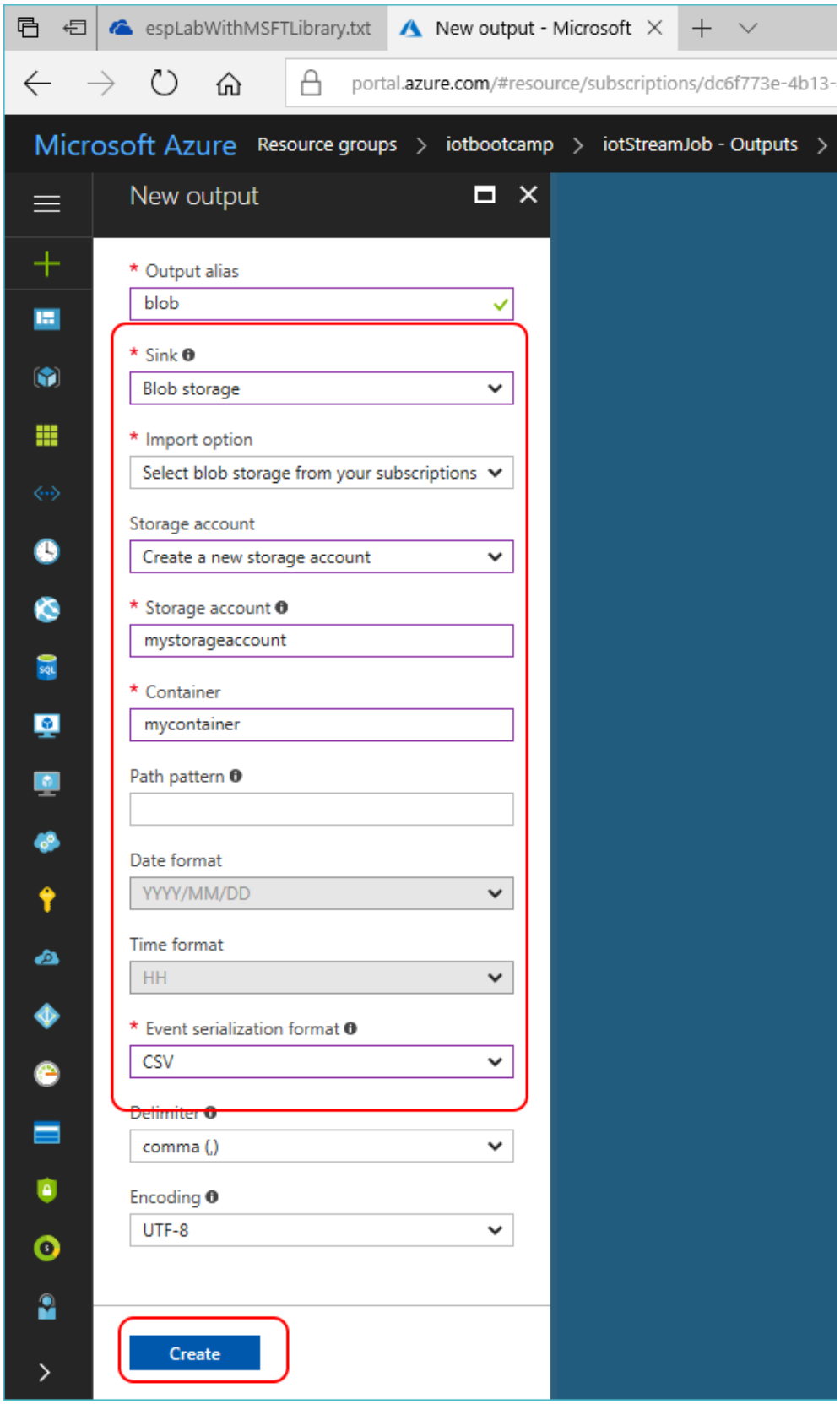
Step 6. Click the Add button then on the right, create the alias iothub, Source Type: Data stream, Source: IoT hub, Import option: “Use IoT hub from current subscription”, IoT hub: the hub created earlier.



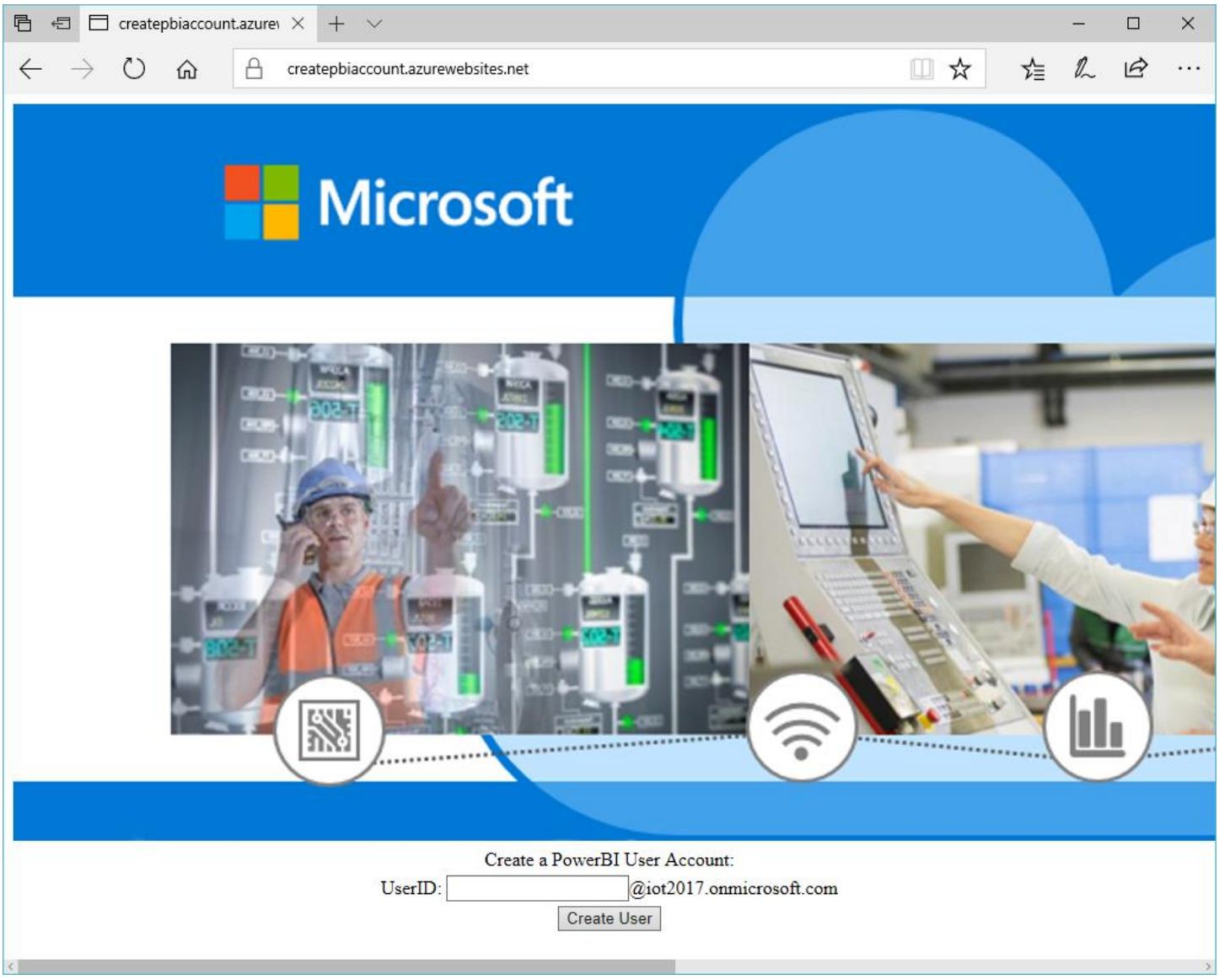
Step 7. Back at Stream Job, select Outputs.



Step 8. Click Outputs → Add and select and existing or create a unique blob storage account, as shown below. Be sure to select CSV for later use

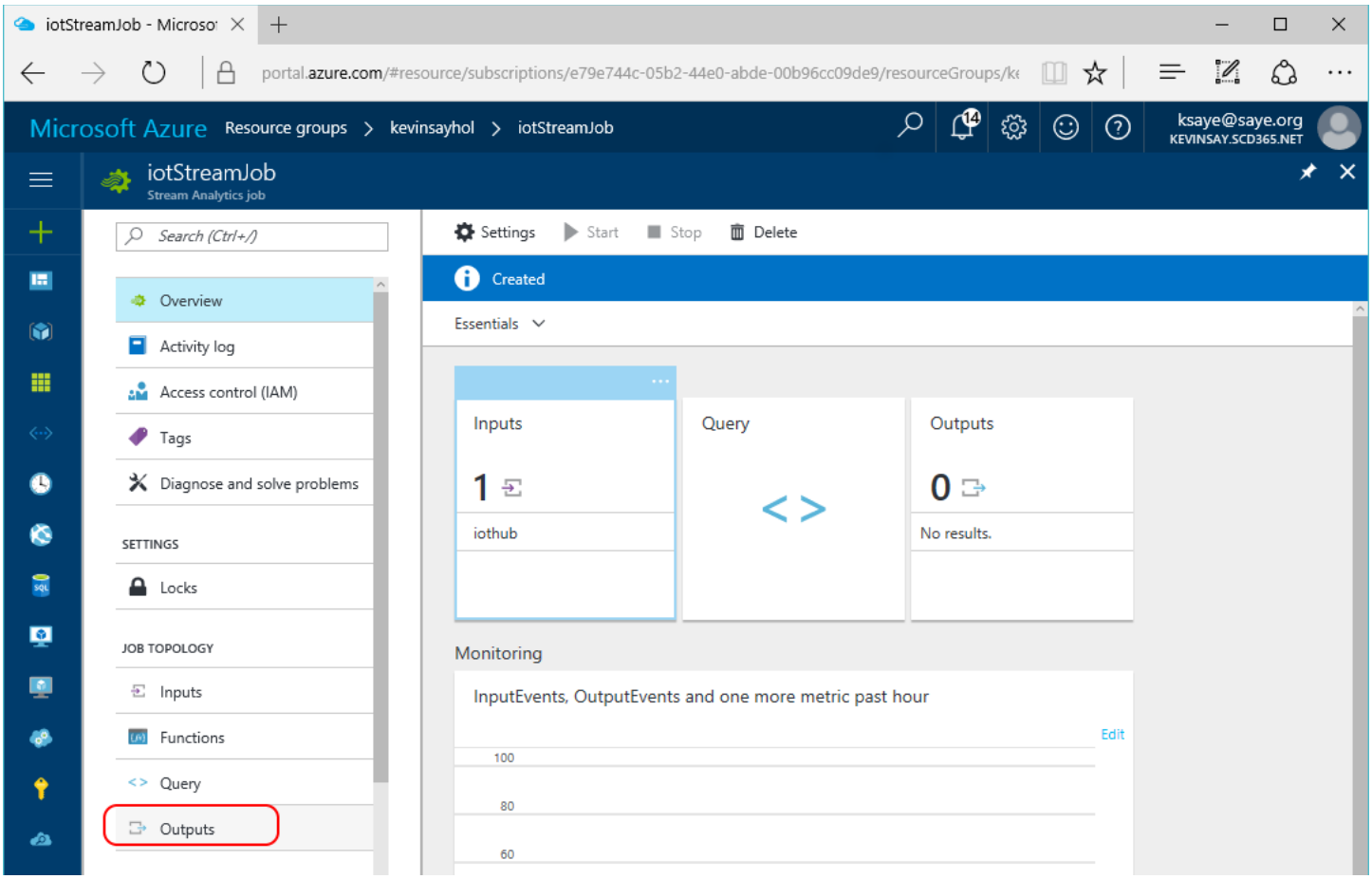


Step 9. Open a new window and create a Power BI Account by accessing: https://createpbiaccount.azurewebsites.net/. Note, you can use an existing PBI account if you have one.

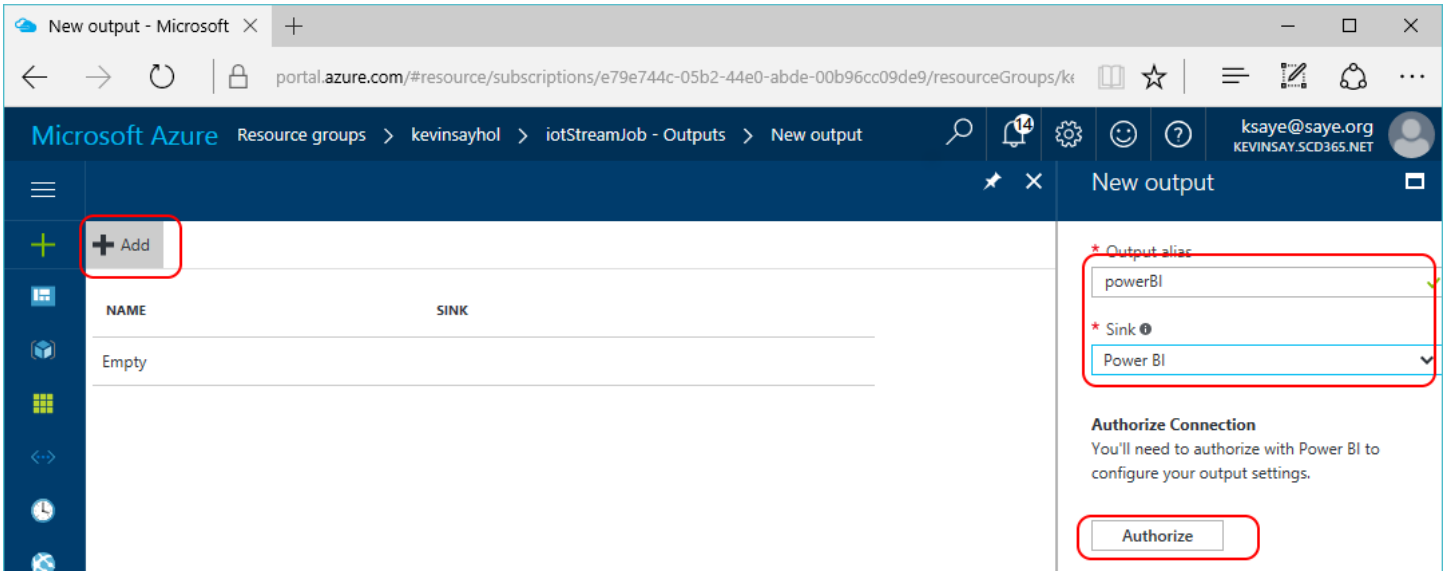


Step 10. Log into http://powerbi.com as the account you just created to complete the setup, which may include changing password etc. Skip the invitation portion. Note, these demonstration accounts will be deleted at a later time.

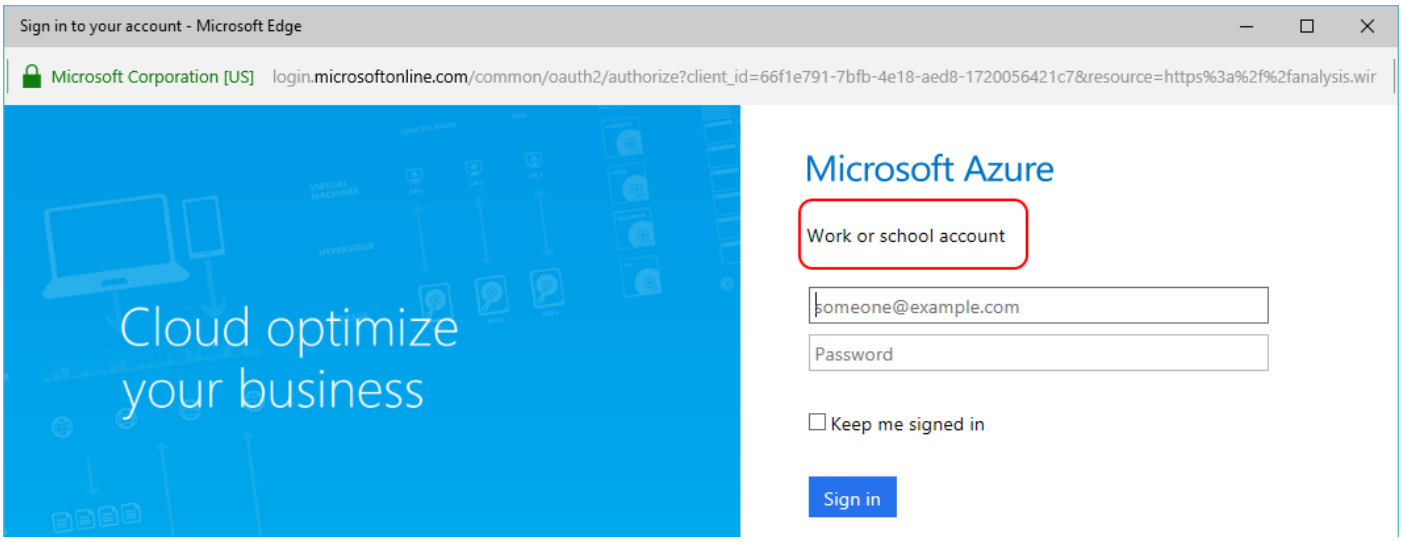
Step 11. Back at Stream Job, select Outputs.



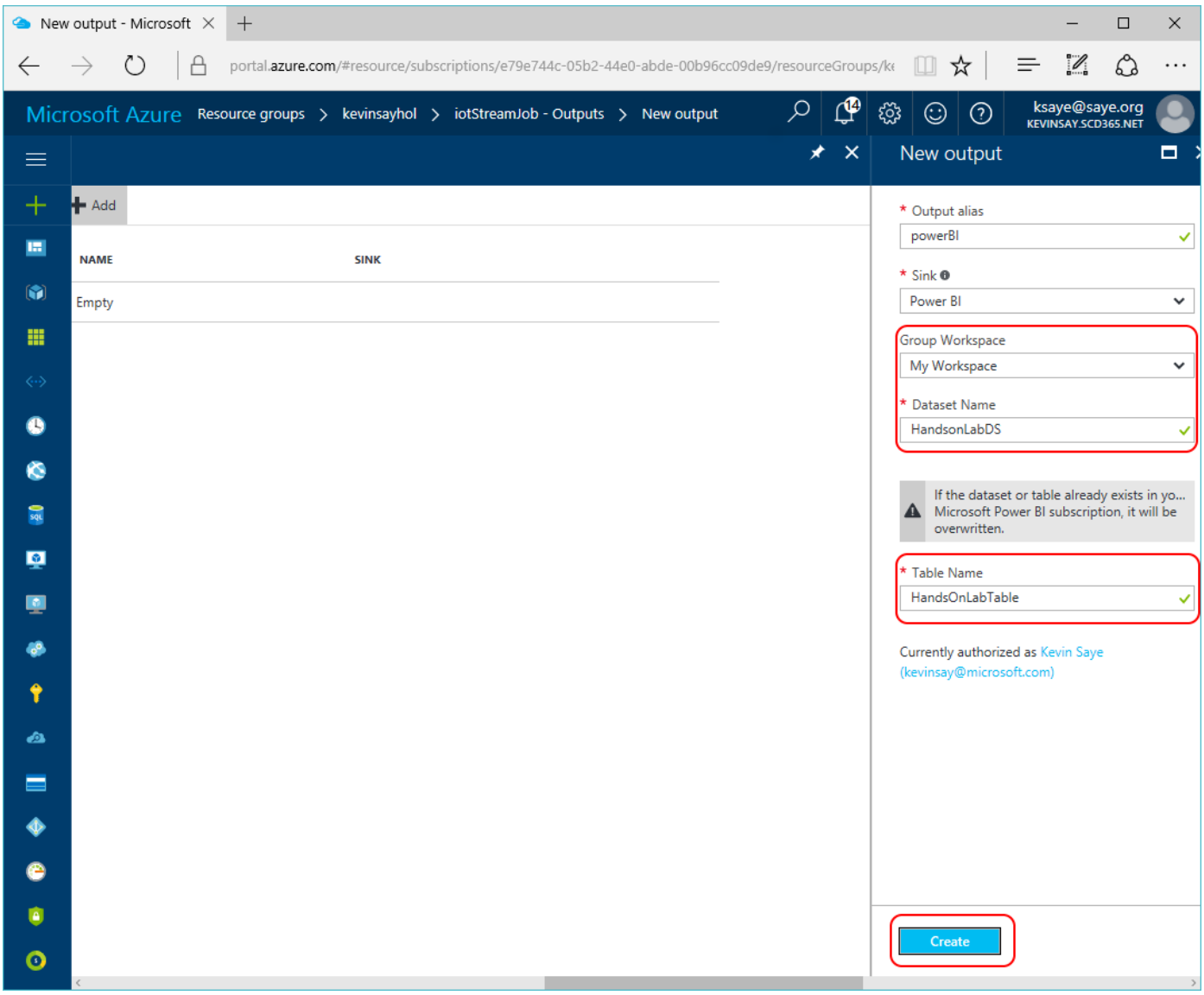
Step 12. Name the alias powerBI, select the Sink to be Power BI and click the Authorize button.



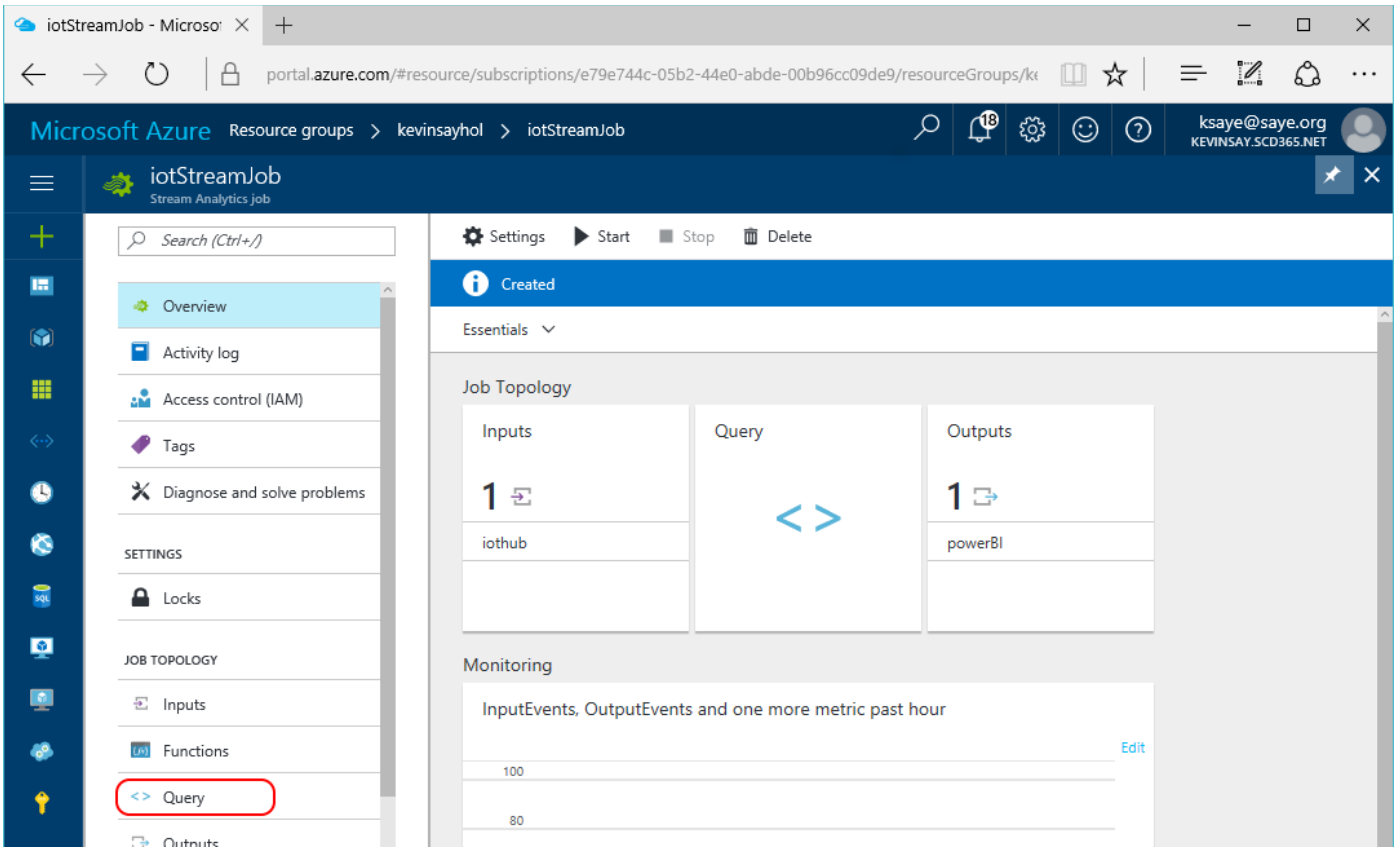
Step 13. At the Power BI Authorize screen, you will need your "Organization Id" created in step 9. Power BI does not allow a consumer id (example: xxx@live.com, xxx@msn.com, xxx@hotmail.com, etc).



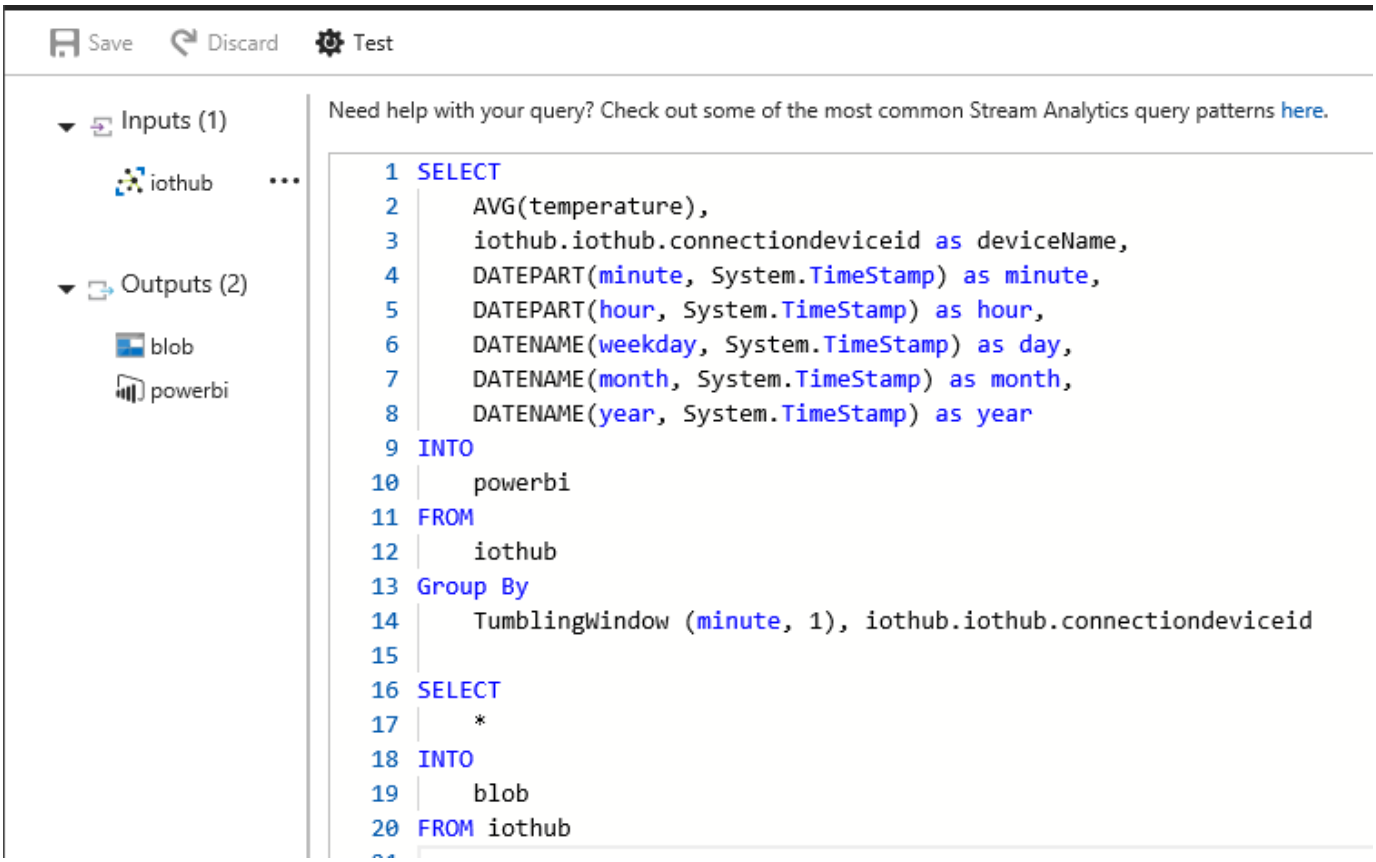
Step 14. Once authorized, name the Dataset: HandsonLabDS, the table HandsOnLabTable and click create.



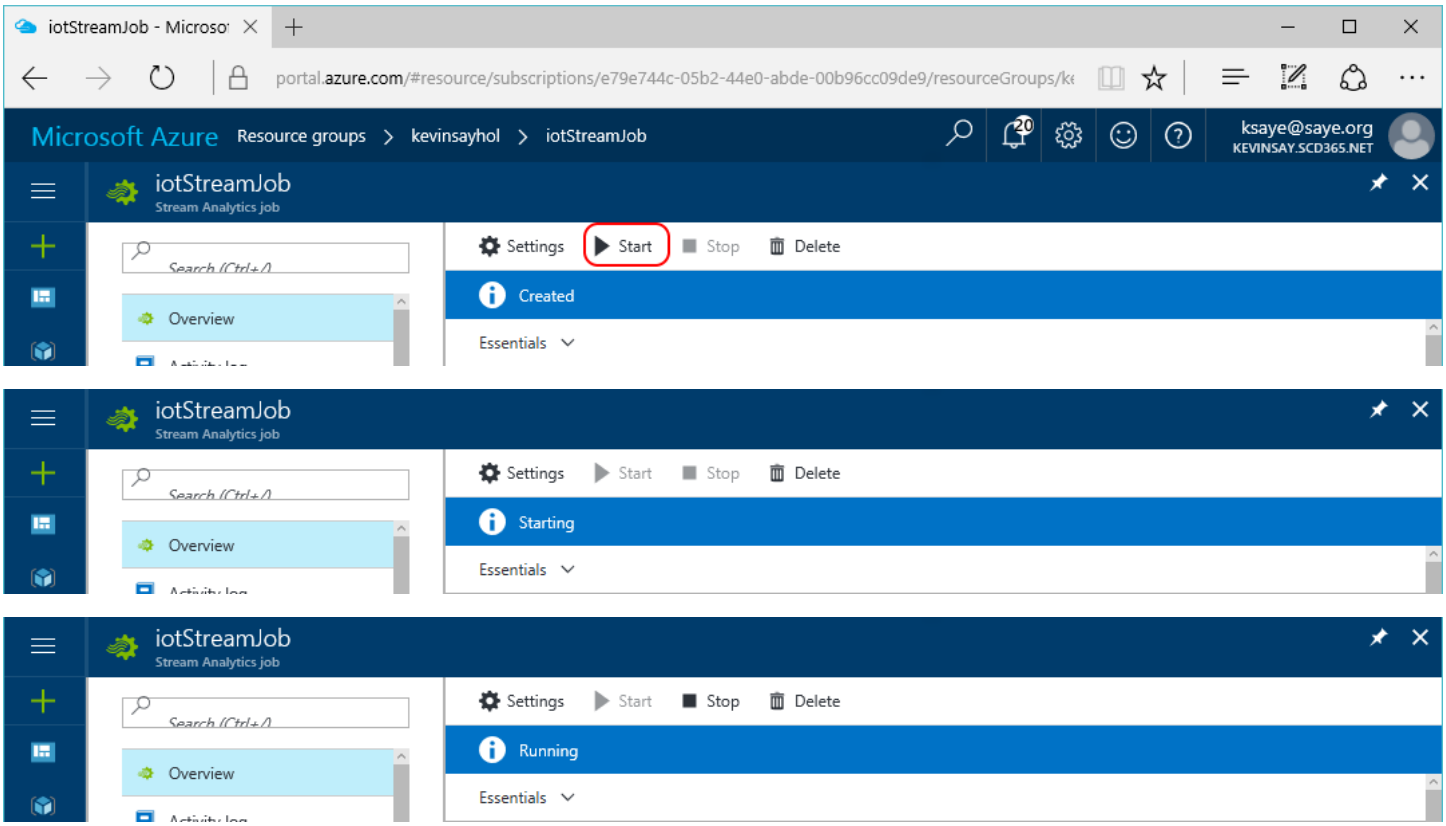
Step 15. Back at Stream Job, select Query.



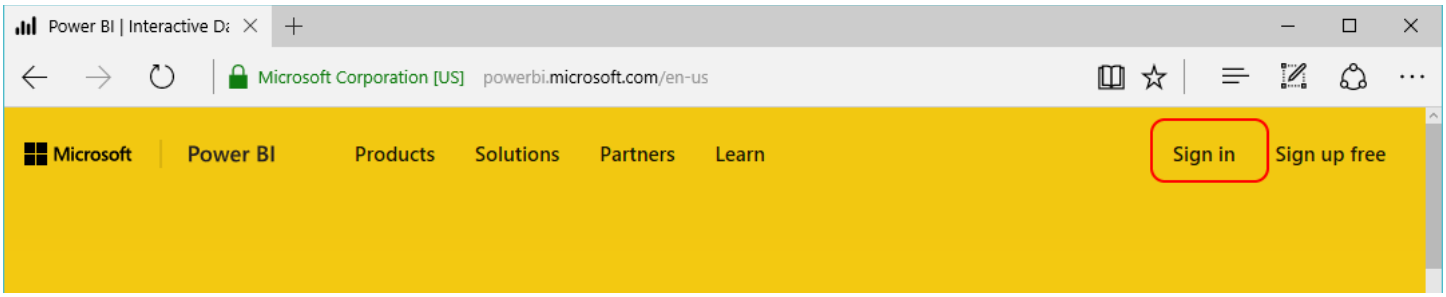
Step 16. In the Query window, type the following query and click save. You can copy and paste from: https://tinyurl.com/IOTVBCStream.



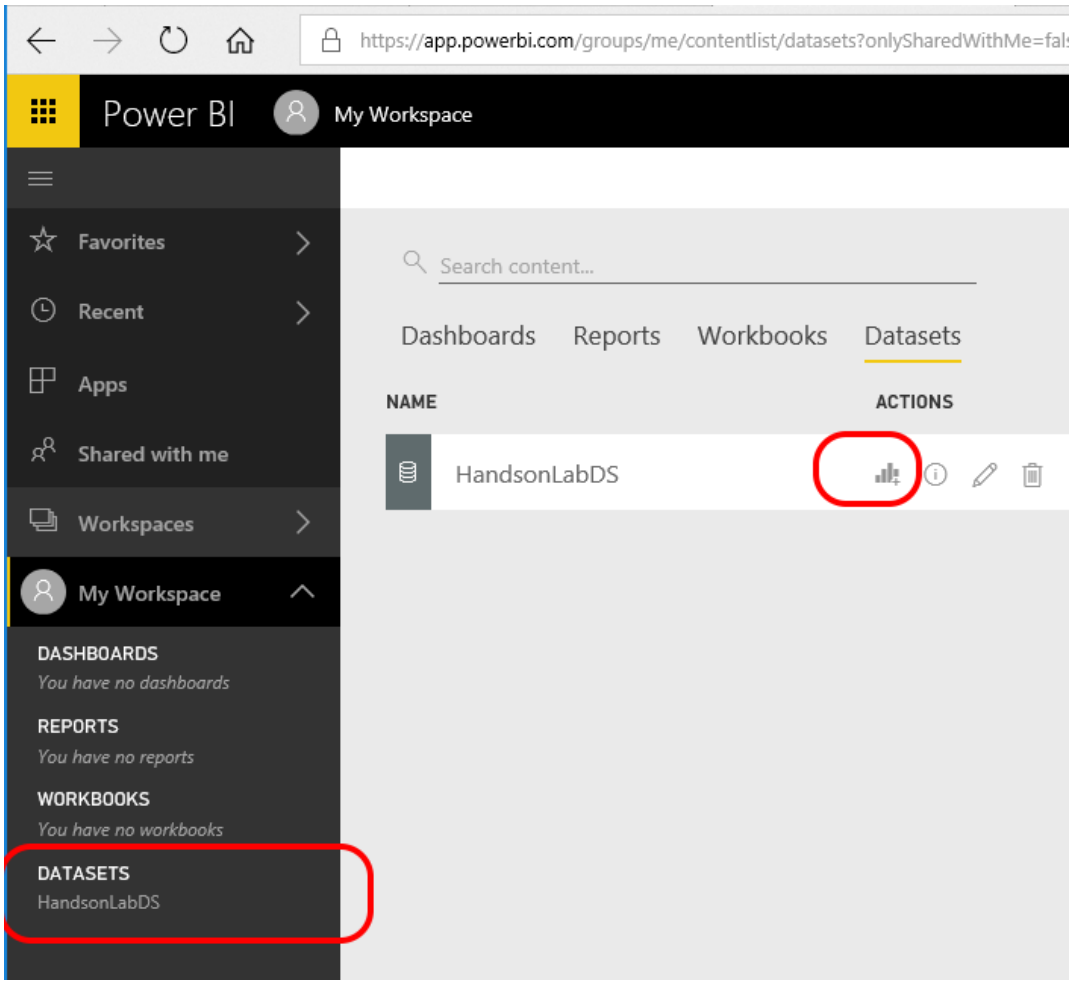
Step 17. Back at Stream, click Start and watch the process go from Starting to Running. Note, make sure your Device Explorer is not monitoring your Huzzah device, else you may get a conflict (consumer group).



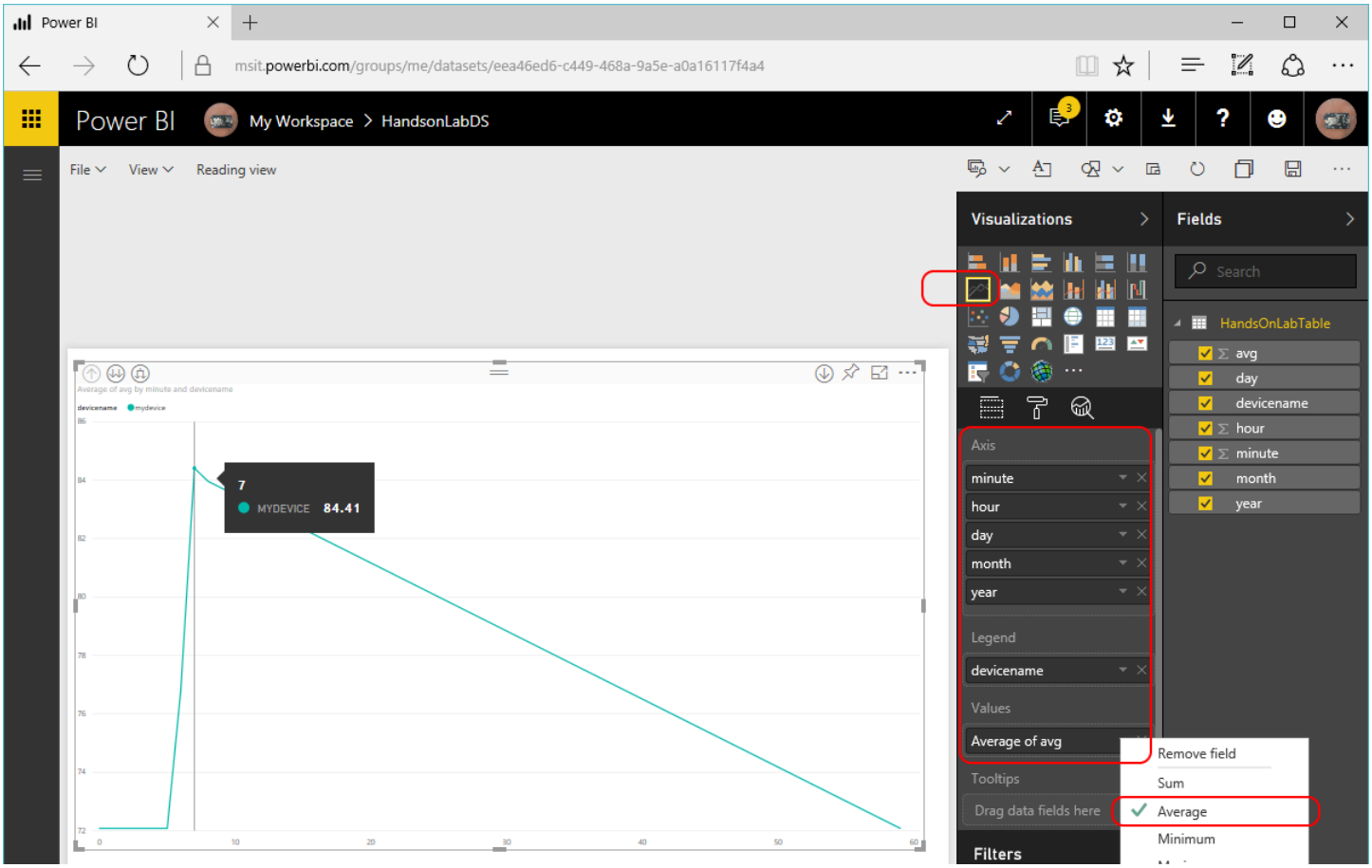
Step 18. Go to http://powerbi.com/, and click Sign in.



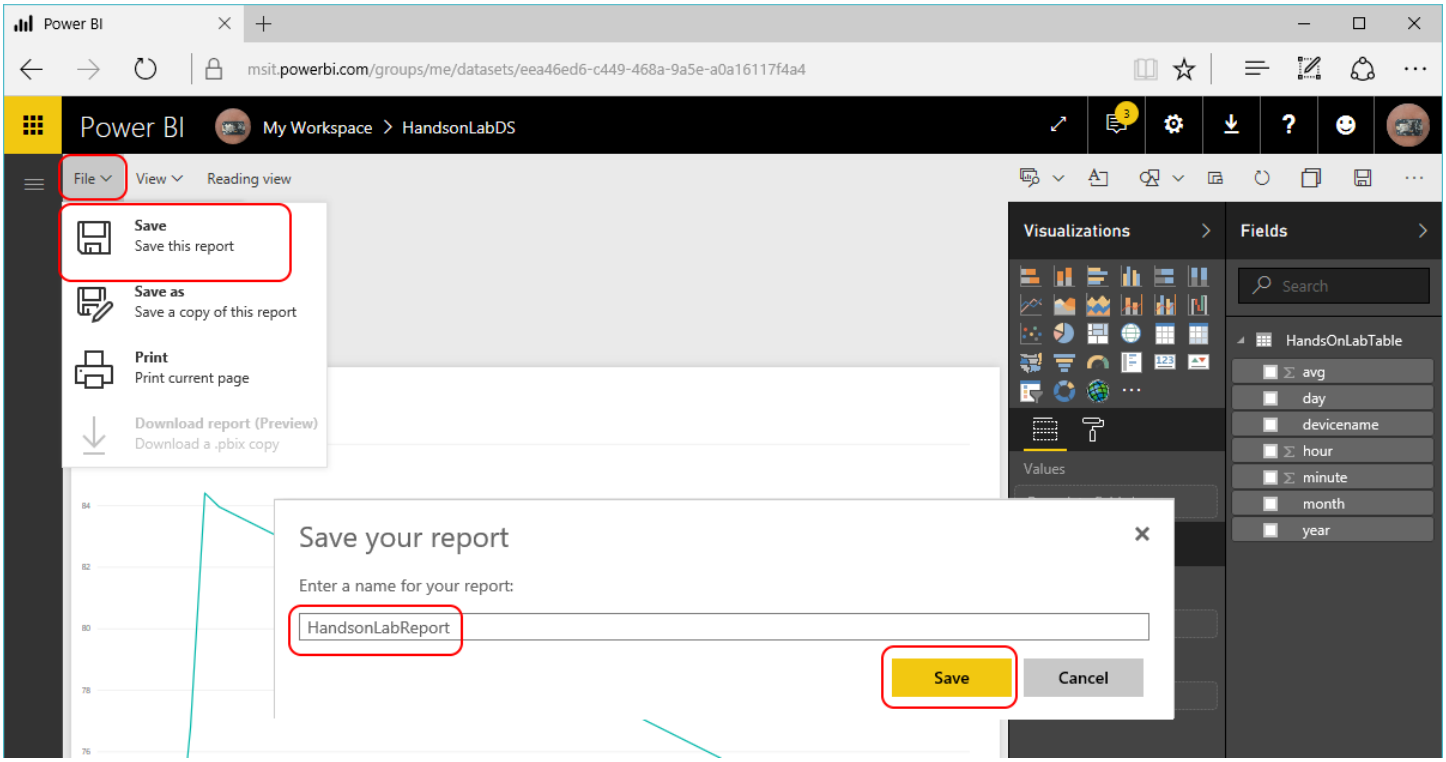
Step 19. In Power BI, select "My Workspace". Under Datasets, click Streaming dataset and then click the Create Report on the table "HandsonLabDS.



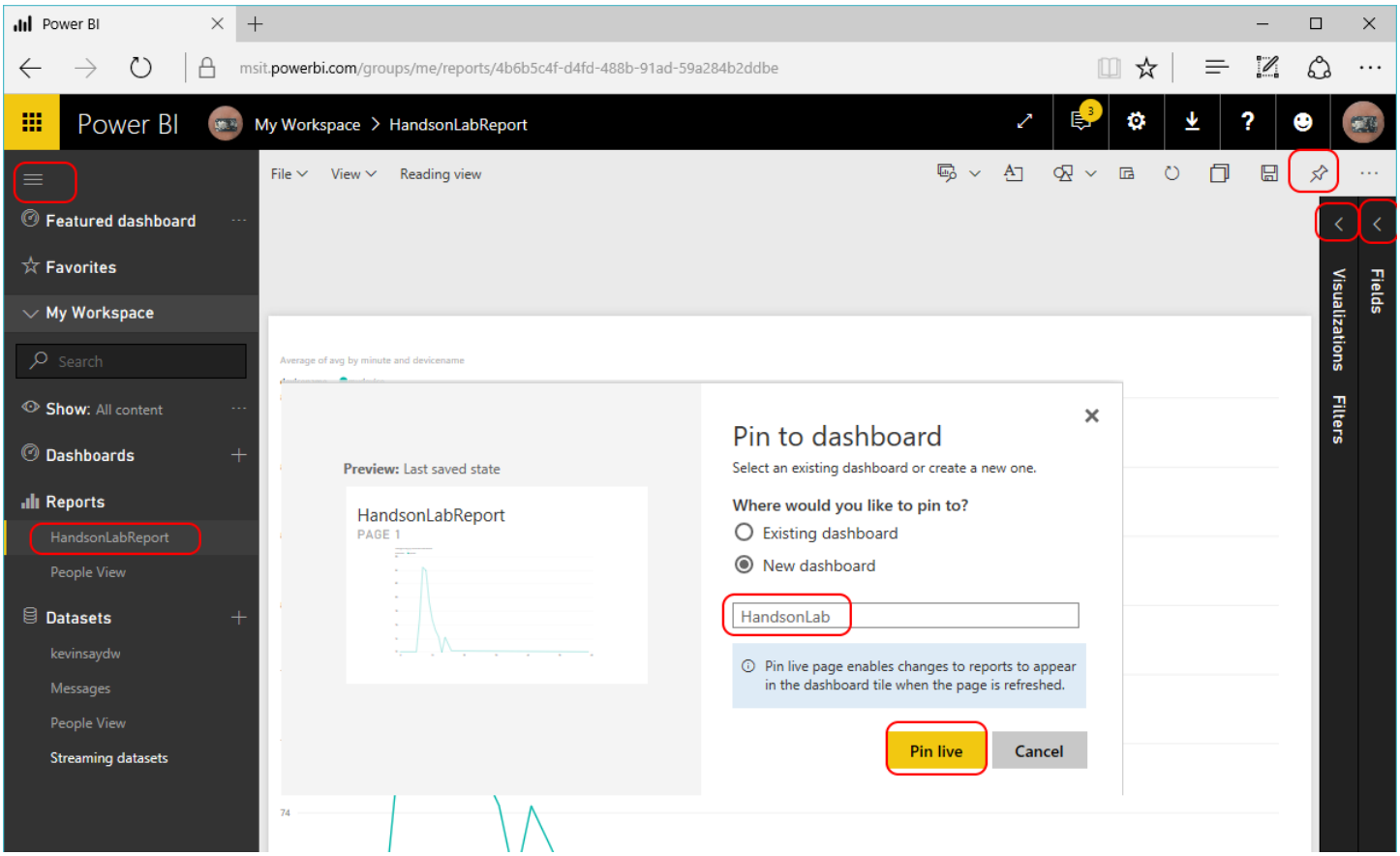
Step 20. In Power BI, create a Line chart, using deviceName as the Legend and minute, hour day, month and year as the Axis. Lastly, change the val to Average of avg. Holding your hand over the sensor for over a minute will show the difference seen below.



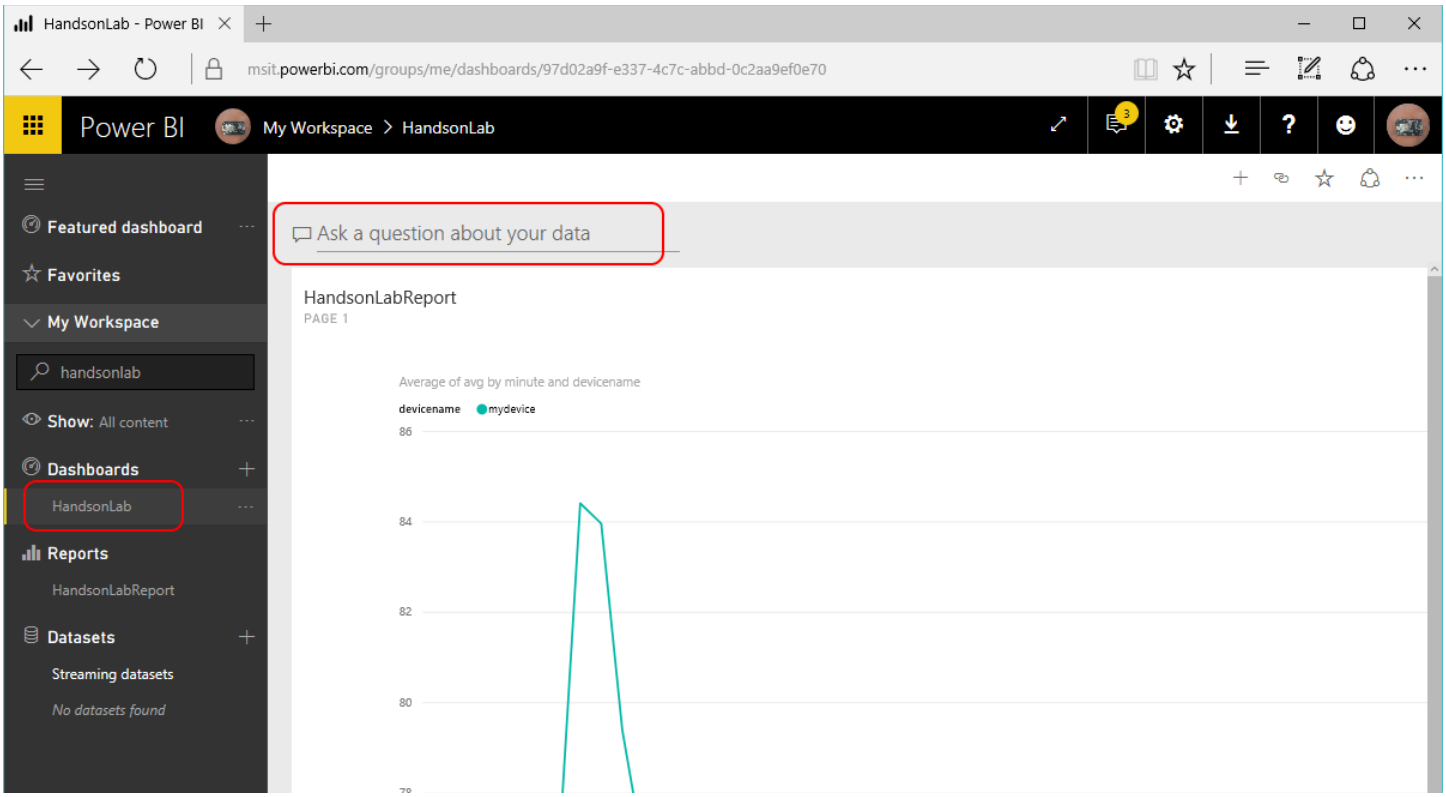
Step 21. Click File and save the report as HandsonLabReport.

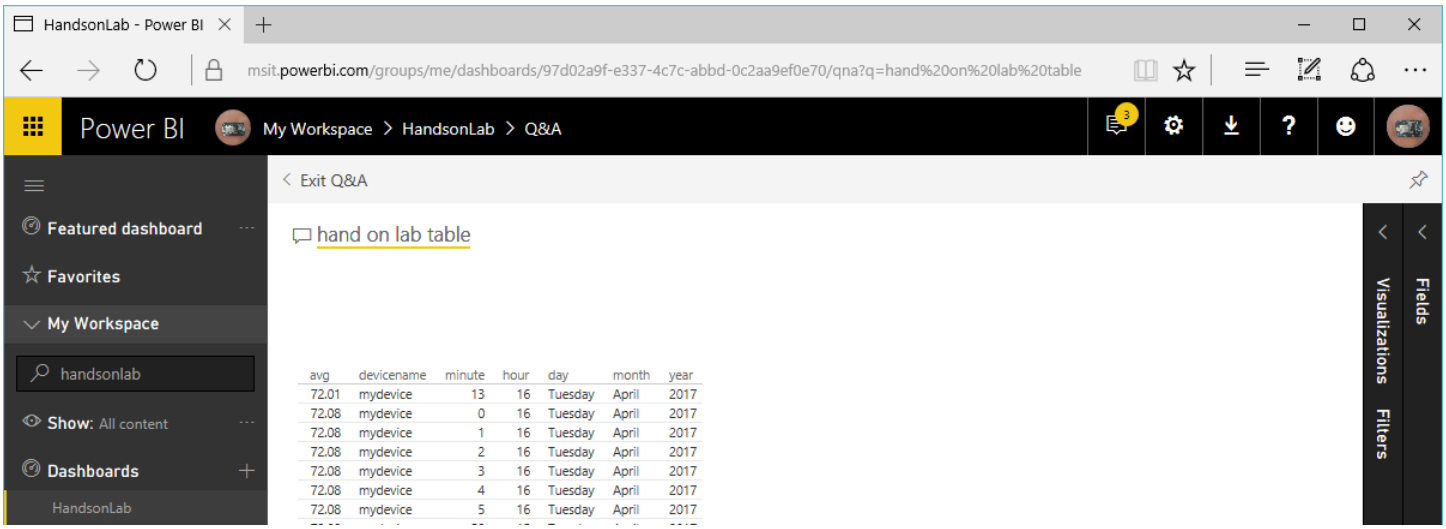


Step 22. Expand the left navigation bar by clicking the icon at the top. Then select the report "HandsonLabReport" and at the top left, click the pin to dashboard icon. Lastly, name the report and "pin live".



Step 23. You now have a Dashboard that you can ask questions by clicking in the ask a question area.





Step 24. Ask Power BI a few questions like:

- what is the average avg
- what is the average avg by day
- what is the average avg by minute
- what is the count of avg
- avg

While we did not view the data in the Storage account, if time permits you can download and view the content of the CSV file.

This concludes this lab.