Microsoft

Real-Time Big Data Processing

Lab 4 – Monitoring a Streaming Solution

Overview

In this lab, you will monitor the various Azure resources in your streaming solution.

What You'll Need

To complete the labs, you will need the following:

- A web browser
- A Microsoft account
- A Microsoft Azure subscription
- A Windows, Linux, or Mac OS X computer
- The lab files for this course
- The Azure resources created in the previous labs

Important: If you have not completed labs 1 to 3, or you have deleted the event hub, storage account, IoT hub, and stream analytics jobs you created, complete the previous labs now.

Monitoring an IoT Hub

IoT hubs can process events from multiple devices. Monitoring the diagnostic and operations information for your IoT hubs can help you detect problems and dynamically scale your solution to provide optimal performance.

Start the Streaming Solution

Before you can monitor your IoT hub, you must start some streaming activity. In the previous labs, you built a streaming solution that consists of an IoT hub, an event hub, a blob storage account, and two Stream Analytics jobs.

1. Start both of your analytics jobs and wait for them to start – this can take a minute or so.
2. When the jobs have started, in the Node.JS console, in the **iotdevice** folder, enter the following command to run device simulation script and start submitting messages to the IoT hub:

   ```
   node iotdevice.js
   ```

3. Verify that the script starts submitting simulated device readings, and leave it running.

Enable Diagnostics for the IoT Hub

Diagnostic metrics provide data that can help you assess the overall health of the IoT service and the devices connected to it.

1. In the Azure portal, browse to your IoT hub.
2. In the blade for your IoT hub, click **Diagnostics**.
3. On the Diagnostics blade, click **On**. Then select **Export to storage account** and click **Storage account**.
4. In the **Choose Storage Account** blade, select your storage account.
5. In the Diagnostics blade, under **Metrics**, select 1 minute. Then click **Save** and wait for the setting to be updated.

View IoT Hub Metrics

1. On the **Overview** page of the Iot Hub blade, view the **Usage** and **Monitoring** charts.
2. Click the **Monitoring** chart. Then in the **Metric** blade, click **Edit Chart**.
3. Experiment by selecting different metrics and switching the chart from a line chart to a bar chart, clicking **OK** after each change you want to view.

Monitoring an Event Hub

Event hubs are commonly used in a streaming solution, and it is important to monitor their usage to diagnose problems and plan for scaling.

View Event Hub Activity

Your event hub is used to route high value readings to a Stream Analytics job that generates alerts. You can use the default monitoring charts to view its activity.

1. In the Azure portal, browse to the service bus namespace for your event hub.
2. On the **Overview** page, scroll down and view the default **Monitoring** chart.
3. Click the **Monitoring** chart. Then in the **Metric** blade, click **Edit Chart**.
4. Experiment by selecting different metrics and switching the chart from a line chart to a bar chart, clicking **OK** after each change you want to view.

Explore metrics

You can create custom views of metrics for event hubs and pin them to the portal dashboard.

1. In the blade for your service bus namespace, click **Metrics**.
2. In the Metrics blade, select the **Incoming Messages** metric. Then click **Pin to Dashboard**.
3. Close all open blades and verify that the **Incoming Messages** metric for your service bus namespace is now shown on the dashboard.

Monitoring a Stream Analytics Job

Stream Analytics jobs perform the data processing and filtering in a streaming solution.

1. In the Azure portal, browse to either of your Stream Analytics queries.
2. On the **Overview** page, scroll down and view the default **Monitoring** chart.
3. Click the **Monitoring** chart. Then in the **Metric** blade, click **Edit Chart**.
4. Experiment by selecting different metrics and switching the chart from a line chart to a bar chart, clicking **OK** after each change you want to view.

Stop the Streaming Solution

Now that you have completed the lab, you can stop the streaming process.

1. In the Node.JS console, press CTRL+C to stop the script
2. In the Azure portal, stop both stream analytics jobs.

Note: You have now finished the labs in the course. If you do not plan to experiment further with the solution you have built, you can delete the resources associated with it by deleting the resource group in which they are defined.