

Challenge 6- 10

Case study lab : Azure Cosmos Db, Azure Sql Database, Stream Analytics and Monitoring

As a data engineer you are required to implement the data platform to achieve real time call records analysis and store the data real time data in raw format for future analytics.

1. Real time analytics:

Process the call records data in real time, perform 5 minutes aggregation query (see below) and store the aggregation results in SQL Azure Database.

As part of this you are required to provision necessary data platform services with least possible capacity.

2. Store the raw data in cosmos:

In addition to this you are also required to store the call records raw data in cosmos db for historical data analysis.

In cosmosdb you must use switchnum as partition key, which is partitioning the data by country.

As part of this you are required to provision necessary data platform services with least possible capacity.

The query to aggregated the call records by country in 5 minutes window:

SELECT

System.Timestamp as IntervalEndsAt, COUNT(*) as CallCount , SwitchNum AS COUNTRY

INTO [[outputalias]]

FROM [[inputalias]] TIMESTAMP BY CallRecTime

GROUP BY TUMBLINGWINDOW(s, 5), SwitchNum

The query to select the raw data:

SELECT

***RecordType,systemIdentity,FileNum,SwitchNum as
switchnum,CallingNum,CallingIMSI,CalledNum,CalledIMSI,DateS,TimeS,TimeType,CallPeriod,CallingC
ellID,CalledCellID,ServiceType,Transfer,callrecTime***

INTO

callrecordsraw

FROM

callrecord TIMESTAMP BY CallRecTime

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The real time data is available in event hub, use the below details to connect to event hub.

Event Hub namespace: evhubtelcodata-demo01

Event Hub name:telcoevents

Authentication mode: Connection String

Event Hub policy name: satelcodata-demo02_callrecords_policy

Event Hub policy Key: ik9B33OWtsuMdjsC/1Nyl8lZ2YFoi0CQyJ+cwiX54zl=

Note :

If you want to setup your own Event Hub for simulation, please use the below link and follow the instructions.

<https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-real-time-fraud-detection>