Streaming data processing in Azure and Preparing Dashboard

Services used :

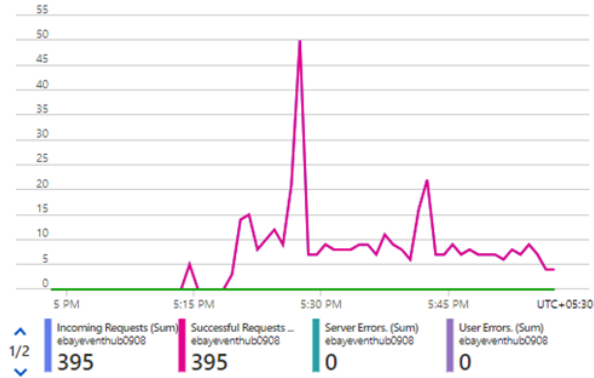- Azure Event hub

- Azure Stream Analytics

- Azure Cosmos DB

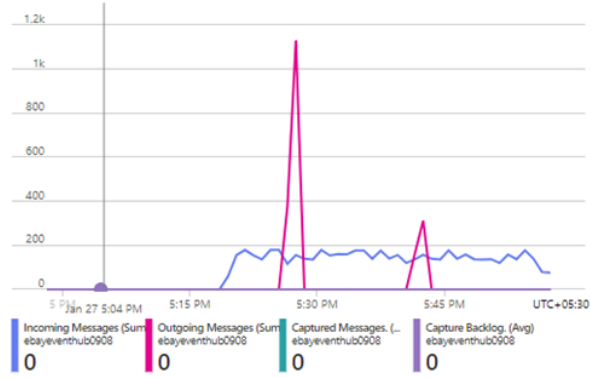- Azure SQL Database

- Tableau

<u>Azure Event Hub</u>

- We created a Eventhub through our python script where it will scrape the data and stream to eventhub in a batches.
- There is a github link for python script "https://github.com/karimulla2praxis/my_new_capstone_repo"
- This will Stream to Eventhub as shown in the picture in next slide.

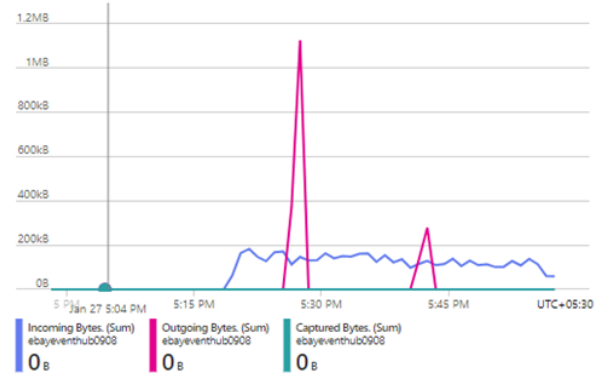# Data that is coming continuously from system to the Eventhub

Data that is sending from Event hub to cosmos DB.

Showing sample events from 'ebay0908input'.

▤ Table   🗐 Raw   ↻ Refresh   🕐 Select time range   ↑ Upload sample input   ↓ Download sample data

Product	PageNumber	eBay item number:	Title	Price (In Dollars)	fetchDate	Condition	Brand	Screen
string	bigint	bigint	string	string	datetime	string	string	string
"laptops"	3	204631786192	"Dell Latitude 7370 La...	"9.99"	"2024-01-27"	"Used"	"Dell"	"13.3\""
"laptops"	3	335227470507	"HP PROBOOK 645 G3...	"124.99"	"2024-01-27"	"Used"	"HP"	"13.9"
"laptops"	3	305356017939	"Dell Latitude 7300 14...	"179.00"	"2024-01-27"	"Used"	"Dell"	"14"
"laptops"	3	166398212604	"Lenovo ThinkPad X39...	"198.00"	"2024-01-27"	"Used"	"Lenovo"	"14"
"laptops"	2	196105330893	"Dell Latitude 5500 15...	"206.95"	"2024-01-27"	"Very Good - Refurbis...	"Dell"	"15"

Data that is send to cosmos DB which is used as OLTP system

SELECT * FROM c   **Edit Filter**

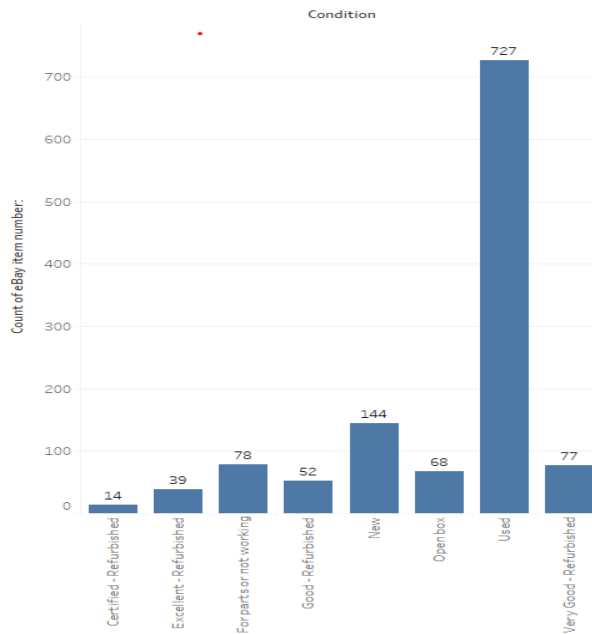| id	/Product
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Load more

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23     "Color": "Gray",
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37     "UPC": "Does not apply",
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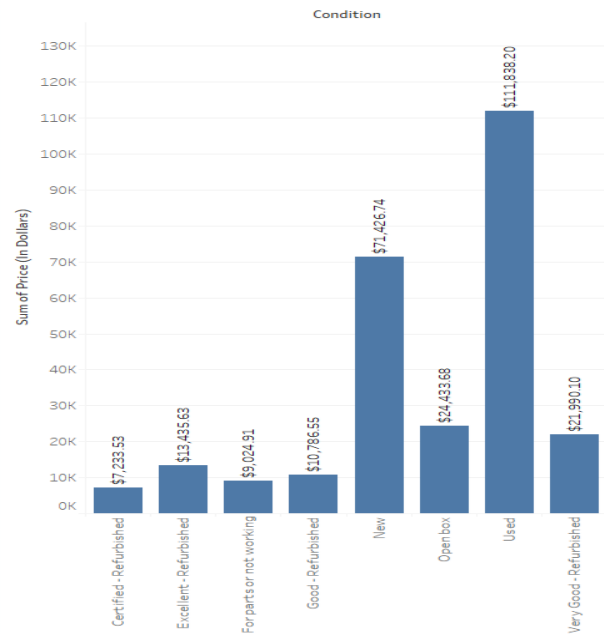# Sending Data from Azure SQL Database which is using as OLAP

	eBay item number:	Title	Price (In Dollars)	Condition	Processor	SSD Capacity	GPU	Screen Size	Color	RAM Size	Pro
1	166294430110	CHUWI 14.1in Lapbook Pro Intel N4100 Laptop Computer 8GB …	151.99	New	Intel Celeron Processor N4100	256	Intel UHD Graphics 600, 650MHz	14.1	Gray	8	
2	256219061604	Acer C738T Chromebook 11.6" 4GB 32GB SSD 2-in-1 TouchScre…	49.99	Used	Intel Celeron	16	Intel HD Graphics	11.6	Black	4	
3	256380688100	Lenovo 15.6" Full-HD TOUCH Laptop Intel Core i7-1065G 3.9…	376.63	Open box	Intel Core i7 10th Gen.	512	NULL	15.6	Abyss Blue	12	
4	166294430115	CHUWI CoreBook X 14" Laptop Win 10 Intel Core i5 Notebook…	283.99	New	Intel Core i5-8259U	512	Intel Iris Plus Graphics 655	14	Gray	8	
5	176191176876	Dell Latitude 5289 2 in 1 Touch Screen Laptop Core i5-720…	179.99	Used	i5-7200U	128	Intel HD Graphics	2	Black	8	
6	235124786473	HP laptop Chromebook 11 G5 N3060 1.60GHz 4GB 16GB SSD 11…	45.59	Used	Intel Celeron	16	Intel HD Graphics	11.6	Black	4	
7	165647944655	Lenovo Yoga 11" Windows 10 Touchscreen Laptop Tablet 2 in…	72.99	Used	Intel Celeron N3160	128	NULL	11.6	Black	NULL	
8	305120534978	Lenovo Ideapad Gaming 3 15.6" FHD Laptop R5-7535HS RTX 20…	496	New	AMD Ryzen 5 7537HS	512	NVIDIA GeForce RTX 2050	15.6	Gray	8	
9	256351335999	HP 14 Chromebook G4 HDMI 16GB SSD 4GB RAM Intel WiFi Web…	23.99	Used	Intel Celeron	16	NULL	14	Grey/Black	16	
10	166534185411	CHUWI 14.1" HD 2.8GHz Laptop - Intel Celeron N4100 with 8…	149.99	New	Intel Celeron N4100	256	Intel UHD Graphics 600	14.1	Gray	8	
11	176130528786	Dell Latitude 5289 2 in 1 TouchScreen Laptop i5-7300n 8GB…	169.99	Used	Intel Core i5 7th Gen.	128	NULL	2	Black	8	
12	175950806045	Dell Latitude 5289 12.5" FHD Touch i5-7300U 2.6GHz 8GB La…	199.99	Used	Intel Core i5 6th Gen.	256	Intel HD Graphics	12.5	Black	8	
13	334846153118	Dell Latitude 14" Gaming Laptop PC Intel Core i7 4.2GHz 6…	399.99	Very Good - Refurbished	Intel Core i7 8th Gen.	NULL	Intel UHD Graphics 620	14	Black	NULL	
14	155739604374	Hp Laptop Stream 11 Pro Pc Notebook Computer 1.6GHz 4GB R…	99.99	Used	Intel Celeron N4020	32	NULL	11.6	White	4	
15	115603286837	HP Chromebook 11 G6 11.6" Intel 2.40 GHz 4GB RAM 16GB eMM…	79.99	Good - Refurbished	Intel Celeron N	NULL	Intel HD Graphics 500	11.6	Black	4	
16	126133000120	HP 15.6" FHD Notebook AMD Ryzen 5 5500U 16GB RAM 512GB SS…	374.99	New	AMD Ryzen 5 5000 Series	512	AMD Radeon Graphics	15.6	Pk	16	
17	225285020534	Dell laptop Latitude 7480 14" i7 2.60GHz 16GB NEW 512GB S…	279.99	Excellent - Refurbished	i7 7th	500	NULL	14	Black	16	

Connecting AZURE Database to Tableau and Build some Dashboard

Conclusion and Impact:

In conclusion, addressing this challenge requires the development of a robust data-driven solution that empowers consumers with accurate and up-to-date information about the features and value propositions of laptops and PCs in the market. By leveraging data engineering principles, we can create a system that aggregates, analyzes, and presents relevant product information, aiding consumers in making well-informed choices that align with their needs and preferences. This not only enhances consumer satisfaction but also fosters a more transparent and competitive electronics market.