**Hi Team,**

We’ve updated the design for how events are pulled from the processing queue to make better use of our gateway capacity and improve refresh performance.

**1. Event Categorization**  
 Each event is assigned a **Category** based on the estimated number of rows it contains:

|  |  |  |
| --- | --- | --- |
| **Category** | **Row Count Range** | **Example** |
| **ExtraLarge (XL)** | > 200M rows | ~1–2 per day |
| **Large (L)** | 100–200M rows | few per day |
| **Medium (M)** | 50–100M rows | majority of events |
| **Small (S)** | < 50M rows | second most common |
|  |  |  |

**2. Dedicated Partitions per Category**  
 Each category has a fixed number of Power BI partitions so data is processed in parallel:

|  |  |  |
| --- | --- | --- |
| **Category** | **Partitions per Event** | **Notes** |
| XL | 4 | We only get a couple per day |
| L | 4 | — |
| M | 4 | Most M events are closer to 50M rows → ~12.5M rows per partition |
| S | 2 | Smallest memory footprint |

**3. Pulling Events from the Queue**  
 The queue is processed in **priority order**:  
 **XL → L → M → S**.

* **XL:** Max 1 per cycle (due to size).
* **L:** Max 3 per cycle.
* **M:** Max 10 per cycle (new cap; most are lighter than 100M rows).
* **S:** No fixed cap – pulled whenever budget allows.

**4. Capacity Budget**  
 Each partition consumes a "slot."  
 We set a **MaxSlotsPerCycle** (e.g., 16 or 20) to avoid overloading the gateway.  
 Example:

* M events cost 4 slots each → with a 20-slot budget, we can process 5 M events in one cycle.
* If an XL event is picked (4 slots), the rest of the cycle is filled with small events.

**5. Benefits**

* **Balanced load** – Big events are limited, smaller events fill the gaps.
* **Efficient refreshes** – Uses gateway capacity without overwhelming it.
* **Faster medium-event throughput** – Increased cap for M events ensures they don’t become a backlog.

We’ll monitor performance and adjust the **MaxSlotsPerCycle** or category caps if needed.

**Thanks,**  
 [Your Name]