

Topologies:

Sub-topology: 0

```
Source: KSTREAM-SOURCE-0000000000 (topics: [ipfix_router, ipfix_olt])
--> KSTREAM-MAPVALUES-0000000001
Processor: KSTREAM-MAPVALUES-0000000001 (stores: [])
--> KSTREAM-FILTER-0000000002
<-- KSTREAM-SOURCE-0000000000
Processor: KSTREAM-FILTER-0000000002 (stores: [])
--> KSTREAM-FILTER-0000000003
<-- KSTREAM-MAPVALUES-0000000001
Processor: KSTREAM-FILTER-0000000003 (stores: [])
--> KSTREAM-KEY-SELECT-0000000004
<-- KSTREAM-FILTER-0000000002
Processor: KSTREAM-KEY-SELECT-0000000004 (stores: [])
--> KSTREAM-FILTER-0000000008
<-- KSTREAM-FILTER-0000000003
Processor: KSTREAM-FILTER-0000000008 (stores: [])
--> KSTREAM-SINK-0000000007
<-- KSTREAM-KEY-SELECT-0000000004
Sink: KSTREAM-SINK-0000000007 (topic:
KSTREAM-AGGREGATE-STATE-STORE-0000000005-repartition)
<-- KSTREAM-FILTER-0000000008
```

Sub-topology: 1

```
Source: KSTREAM-SOURCE-0000000009 (topics:
[KSTREAM-AGGREGATE-STATE-STORE-0000000005-repartition])
--> KSTREAM-AGGREGATE-0000000006
Processor: KSTREAM-AGGREGATE-0000000006 (stores:
[KSTREAM-AGGREGATE-STATE-STORE-0000000005])
--> KTABLE-SUPPRESS-0000000010
<-- KSTREAM-SOURCE-0000000009
Processor: KTABLE-SUPPRESS-0000000010 (stores:
[KTABLE-SUPPRESS-STATE-STORE-0000000011])
--> KTABLE-TOSTREAM-0000000012
<-- KSTREAM-AGGREGATE-0000000006
Processor: KTABLE-TOSTREAM-0000000012 (stores: [])
--> KSTREAM-FLATMAPVALUES-0000000013
<-- KTABLE-SUPPRESS-0000000010
Processor: KSTREAM-FLATMAPVALUES-0000000013 (stores: [])
--> KSTREAM-SINK-0000000014
<-- KTABLE-TOSTREAM-0000000012
Sink: KSTREAM-SINK-0000000014 (topic: enrichedNetflow)
<-- KSTREAM-FLATMAPVALUES-0000000013
```

I have 3 partitions for the source topics bt messages are coming to Partition 1 only

Breakdown of the Topology

Sub-Topology: 0

1. **Source: KSTREAM-SOURCE-0000000000** (topics: [ipfix_router, ipfix_olt])
 - This is the source node that reads data from the Kafka topics `ipfix_router` and `ipfix_olt`.
2. **Processor: KSTREAM-MAPVALUES-0000000001**
 - This processor transforms the values of the records in the stream.
3. **Processor: KSTREAM-FILTER-0000000002**
 - This processor filters records based on a condition, passing through only those that meet the criteria.
4. **Processor: KSTREAM-KEY-SELECT-0000000004**
 - This processor selects a new key for the records in the stream.
5. **Processor: KSTREAM-FILTER-0000000008**
 - Another filtering step, likely with a different condition.
6. **Sink: KSTREAM-SINK-0000000007** (topic: **KSTREAM-AGGREGATE-STATE-STORE-0000000005-repartition**)
 - This is the sink node that writes the processed records to the topic `KSTREAM-AGGREGATE-STATE-STORE-0000000005-repartition`.

Sub-Topology: 1

1. **Source: KSTREAM-SOURCE-0000000009** (topics: **[KSTREAM-AGGREGATE-STATE-STORE-0000000005-repartition]**)
 - This source node reads data from the `KSTREAM-AGGREGATE-STATE-STORE-0000000005-repartition` topic.
2. **Processor: KSTREAM-AGGREGATE-0000000006** (stores: **[KSTREAM-AGGREGATE-STATE-STORE-0000000005]**)
 - This processor performs aggregation operations, storing results in `KSTREAM-AGGREGATE-STATE-STORE-0000000005`.
3. **Processor: KTABLE-SUPPRESS-0000000010** (stores: **[KTABLE-SUPPRESS-STATE-STORE-0000000011]**)
 - This processor suppresses intermediate updates, emitting only the final result after a specified time window or condition.
4. **Processor: KTABLE-TOSTREAM-0000000012**
 - Converts a KTable (which represents the latest state) back into a KStream.
5. **Processor: KSTREAM-FLATMAPVALUES-0000000013**
 - This processor transforms each value into zero or more records, effectively flattening the stream.
6. **Sink: KSTREAM-SINK-0000000014** (topic: **enrichedNetflow**)

- This is the sink node that writes the final processed records to the `enrichedNetflow` topic.

Explanation of Task IDs

- **Tasks and Partitions**
 - Each sub-topology is executed independently on each partition of the input topics. If the input topics have 3 partitions, each sub-topology will be applied to each partition.
- **Task IDs**
 - The format of the task ID is `sub-topology_id_partition_id`.
 - For example:
 - `0_0`, `0_1`, `0_2`: These tasks correspond to Sub-Topology 0, processing partitions 0, 1, and 2, respectively.
 - `1_0`, `1_1`, `1_2`: These tasks correspond to Sub-Topology 1, processing partitions 0, 1, and 2, respectively.

Tasks in Our Application

- **Sub-Topology 0 Tasks:**
 - `0_0`: Processes partition 0 of the `ipfix_router` and `ipfix_olt` topics.
 - `0_1`: Processes partition 1 of the `ipfix_router` and `ipfix_olt` topics.
 - `0_2`: Processes partition 2 of the `ipfix_router` and `ipfix_olt` topics.
- **Sub-Topology 1 Tasks:**
 - `1_0`: Processes partition 0 of the `KSTREAM-AGGREGATE-STATE-STORE-0000000005-repartition` topic.
 - `1_1`: Processes partition 1 of the `KSTREAM-AGGREGATE-STATE-STORE-0000000005-repartition` topic.
 - `1_2`: Processes partition 2 of the `KSTREAM-AGGREGATE-STATE-STORE-0000000005-repartition` topic.

Metrics are as follows from Jconsole

Stream Processor Node Metrics

Task Id

1. 0_1

a. KSTREAM-SOURCE-0000000000

Attribute values	
Name	Value
process-rate	314.792008757526
process-total	403380.0
record-e2e-latency-avg	1.7180023456709612E12
record-e2e-latency-max	1.718002353579E12
record-e2e-latency-min	1.718002329374E12

process-rate - The Average no of calls to process per second

process-total-The total no of calls to process

Record-e2e-latency-avg -The average end to end latency of a record

Record-e2e-latency-max -The maximum end to end latency of a record

Record-e2e-latency-min - The minimum end to end latency of a record

2. 1_0

a. KSTREAM-SOURCE-0000000009

Attribute values	
Name	Value
process-rate	148.9608453141395
process-total	250593.0

b. KTABLE-SUPPRESS-0000000010

Attribute values	
Name	Value
suppression-emit-rate	0.0
suppression-emit-total	12.0

Suppression-emit-rate - The average no of emitted records from the suppression buffer per second

Suppression-emit-total - Total no of emitted records from the suppression buffer

3. 1_1

a. KSTREAM-SOURCE-0000000009

Attribute values	
Name	Value
process-rate	212.56824253688
process-total	423074.0

b. KTABLE-SUPPRESS-0000000010

Attribute values	
Name	Value
suppression-emit-rate	0.0
suppression-emit-total	14.0

4. 1_2

a. KSTREAM-SOURCE-0000000009

Attribute values	
Name	Value
process-rate	75.4779060967986
process-total	126608.0

b. KTABLE-SUPPRESS-0000000010

Attribute values	
Name	Value
suppression-emit-rate	0.0
suppression-emit-total	6.0

Stream State Metrics

1. 1_0

a. KSTREAM-AGGREGATE-STATE-STORE-0000000005

Attribute values	
Name	Value
write-stall-duration-total	0.0
write-stall-duration-avg	0.0
total-sst-files-size	10561
size-all-mem-tables	1010624
restore-rate	0.0
restore-latency-max	NaN
restore-latency-avg	NaN
record-e2e-latency-min	NaN
record-e2e-latency-max	NaN
record-e2e-latency-avg	NaN

Attribute values	
Name	Value
record-e2e-latency-avg	NaN
put-rate	137.91264465895154
put-latency-max	1106560.0
put-latency-avg	20939.72660479505
number-open-files	41.0
number-file-errors-total	0.0
num-running-flushes	0
num-running-compactions	0
num-live-versions	4
num-immutable-mem-table	0
num-entries-imm-mem-tables	0
num-entries-active-mem-table	7758
num-deletes-imm-mem-tables	0
num-deletes-active-mem-table	0
memtable-hit-ratio	0.9992557677995535
memtable-bytes-flushed-total	60168.0
memtable-bytes-flushed-rate	37.95655769114414
mem-table-flush-pending	0
live-sst-files-size	10561
flush-rate	0.0
flush-latency-max	NaN
flush-latency-avg	NaN
fetch-rate	137.91019305293847
fetch-latency-max	1090821.0
fetch-latency-avg	12848.846609951019
estimate-table-readers-mem	1680
estimate-pending-compaction-bytes	0
estimate-num-keys	7794
cur-size-all-mem-tables	1010624
cur-size-active-mem-table	1010624
compaction-pending	0
bytes-written-total	3.8031807E7
bytes-written-rate	19055.867048525673
bytes-written-compaction-rate	0.0
bytes-read-total	2.4199651E7
bytes-read-rate	12150.518333266104
bytes-read-compaction-rate	0.0
block-cache-usage	38640
block-cache-pinned-usage	0
block-cache-index-hit-ratio	0.0
block-cache-filter-hit-ratio	0.0
block-cache-data-hit-ratio	0.8333333333333334
block-cache-capacity	209715200
background-errors	0

b. KTABLE-SUPPRESS-STATE-STORE-0000000011

Attribute values	
Name	Value
suppression-buffer-size-max	1912.0
suppression-buffer-size-avg	1912.0
suppression-buffer-count-max	6.0
suppression-buffer-count-avg	6.0

2. 1_1

a. KSTREAM-AGGREGATE-STATE-STORE-0000000005

Attribute values	
Name	Value
write-stall-duration-total	0.0
write-stall-duration-avg	0.0
total-sst-files-size	5593
size-all-mem-tables	1172512
restore-rate	0.0
restore-latency-max	NaN
restore-latency-avg	NaN
record-e2e-latency-min	NaN
record-e2e-latency-max	NaN
record-e2e-latency-avg	NaN
put-rate	0.0
put-latency-max	NaN
put-latency-avg	NaN
number-open-files	65.0
number-file-errors-total	0.0
num-running-flushes	0
num-running-compactions	0
num-live-versions	4
num-immutable-mem-table	0
num-entries-imm-mem-tables	0
num-entries-active-mem-table	9071
num-deletes-imm-mem-tables	0
num-deletes-active-mem-table	0
memtable-hit-ratio	1.0
memtable-bytes-flushed-total	97296.0
memtable-bytes-flushed-rate	0.0
mem-table-flush-pending	0
live-sst-files-size	5593
flush-rate	0.0
flush-latency-max	NaN
flush-latency-avg	NaN
fetch-rate	0.0
fetch-latency-max	NaN
fetch-latency-avg	NaN
estimate-table-readers-mem	840
estimate-pending-compaction-bytes	0
estimate-num-keys	9092
cur-size-all-mem-tables	1172512
cur-size-active-mem-table	1172512
compaction-pending	0
bytes-written-total	6.2469818E7
bytes-written-rate	1729.8272192764132
bytes-written-compaction-rate	0.0
bytes-read-total	4.0616605E7
bytes-read-rate	1126.880207769722
bytes-read-compaction-rate	0.0
block-cache-usage	73872
block-cache-pinned-usage	0
block-cache-index-hit-ratio	0.0
block-cache-filter-hit-ratio	0.0
block-cache-data-hit-ratio	0.0
block-cache-capacity	209715200
background-errors	0

b. KTABLE-SUPPRESS-STATE-STORE-0000000011

All are Nan

3. 1_2

a. KSTREAM-AGGREGATE-STATE-STORE-0000000005

Attribute values	
Name	Value
write-stall-duration-total	0.0
write-stall-duration-avg	0.0
total-sst-files-size	2945
size-all-mem-tables	700720
restore-rate	0.0
restore-latency-max	NaN
restore-latency-avg	NaN
record-e2e-latency-min	NaN
record-e2e-latency-max	NaN
record-e2e-latency-avg	NaN
put-rate	0.0
put-latency-max	NaN
put-latency-avg	NaN
number-open-files	25.0
number-file-errors-total	0.0
num-running-flushes	0
num-running-c	0
num-live-versions	4
num-immutable-mem-table	0
num-entries-imm-mem-tables	0
num-entries-active-mem-table	4786
num-deletes-imm-mem-tables	0
num-deletes-active-mem-table	0
memtable-hit-ratio	0.0
memtable-bytes-flushed-total	26971.0
memtable-bytes-flushed-rate	0.0
mem-table-flush-pending	0
live-sst-files-size	2945
flush-rate	0.0
flush-latency-max	NaN
flush-latency-avg	NaN
fetch-rate	0.0
fetch-latency-max	NaN
fetch-latency-avg	NaN
estimate-table-readers-mem	560
estimate-pending-compaction-bytes	0
estimate-num-keys	4792
cur-size-all-mem-tables	700720
cur-size-active-mem-table	700720
compaction-pending	0
bytes-written-total	2.0762395E7
bytes-written-rate	0.0
bytes-written-compaction-rate	0.0
bytes-read-total	1.5133484E7
Refresh	
bytes-read-rate	0.0
bytes-read-compaction-rate	0.0
block-cache-usage	11392
block-cache-pinned-usage	0
block-cache-index-hit-ratio	0.0
block-cache-filter-hit-ratio	0.0
block-cache-data-hit-ratio	0.0
block-cache-capacity	209715200
background-errors	0
Refresh	

b. KTABLE-SUPPRESS-STATE-STORE-0000000011

All are Nan

Stream Task Metrics

1. 0_1

Attribute values	
Name	Value
active-buffer-count	0.0
active-process-ratio	1.0
dropped-records-rate	0.0
dropped-records-total	0.0
enforced-processing-rate	0.0
enforced-processing-total	0.0
process-latency-avg	231108.3533651866
process-latency-max	7.7460242E7
process-rate	490.6232317516773
process-total	646030.0
punctuate-latency-avg	NaN
punctuate-latency-max	NaN
punctuate-rate	0.0
punctuate-total	0.0
record-lateness-avg	979.8583079331081
record-lateness-max	2000.0

2. 1_0

Attribute values	
Name	Value
background-errors	0
block-cache-capacity	419430400
block-cache-data-hit-ratio	0.8333333333333334
block-cache-filter-hit-ratio	0.0
block-cache-index-hit-ratio	0.0
block-cache-pinned-usage	0
block-cache-usage	42064
bytes-read-compaction-rate	0.0
bytes-read-rate	11337.239890422887
bytes-read-total	1.6048061E7
bytes-written-compaction-rate	0.0
bytes-written-rate	17776.69127918579
bytes-written-total	2.5226019E7
compaction-pending	0
cur-size-active-mem-table	208264
cur-size-all-mem-tables	208264
estimate-num-keys	1582
estimate-pending-compaction-bytes	0
estimate-table-readers-mem	1680
fetch-latency-avg	7498.866908650938
fetch-latency-max	163137.0
fetch-rate	115.44505360198345
flush-latency-avg	9162326.0
flush-latency-max	9162326.0
flush-rate	0.0202519340597027
live-sst-files-size	10404
mem-table-flush-pending	0
memtable-bytes-flushed-rate	34.14306707062644
memtable-bytes-flushed-total	39483.0
memtable-hit-ratio	0.9992828970957333
num-deletes-active-mem-table	0
num-deletes-imm-mem-tables	0
num-entries-active-mem-table	1547
num-entries-imm-mem-tables	0
num-immutable-mem-table	0
num-live-versions	8
num-running-compactions	0
num-running-flushes	0
number-file-errors-total	0.0
number-open-files	29.0
put-latency-avg	10988.682244404114
put-latency-max	214965.0
put-rate	115.44505360198345
record-e2e-latency-avg	NaN

record-e2e-latency-avg	NaN
record-e2e-latency-max	NaN
record-e2e-latency-min	NaN
restore-latency-avg	NaN
restore-latency-max	NaN
restore-rate	0.0
size-all-mem-tables	208264
total-sst-files-size	10404
write-stall-duration-avg	0.0
write-stall-duration-total	0.0

3. 1_1

Attribute values	
Name	Value
active-buffer-count	0.0
active-process-ratio	NaN
dropped-records-rate	0.0
dropped-records-total	1259.0
enforced-processing-rate	0.0
enforced-processing-total	0.0
process-latency-avg	44217.737220602525
process-latency-max	2.9485234E7
process-rate	211.32400961123776
process-total	403948.0
punctuate-latency-avg	NaN
punctuate-latency-max	NaN
punctuate-rate	0.0
punctuate-total	0.0
record-lateness-avg	930.4178814382896
record-lateness-max	2000.0

4. 1_2

Attribute values	
Name	Value
active-buffer-count	0.0
active-process-ratio	NaN
dropped-records-rate	0.0
dropped-records-total	388.0
enforced-processing-rate	0.0
enforced-processing-total	0.0
process-latency-avg	99366.59891891891
process-latency-max	4.3883488E7
process-rate	42.742941638556445
process-total	119798.0
punctuate-latency-avg	NaN
punctuate-latency-max	NaN
punctuate-rate	0.0
punctuate-total	0.0
record-lateness-avg	970.2702702702703
record-lateness-max	2000.0