

# IPFIX concentrator

<draft-kobayashi-ipfix-concentrator-model-01.txt>  
<draft-kobayashi-ipfix-concentrator-mib-01.txt>

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# Motivation

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- Problems in large-scale networks
  - Too many flow records
    - Too many flow records to handle properly.
    - Single collector can't store and aggregate all records.
  - Scalability
    - Networks have recently become larger and larger.
    - Difficult for the traffic collector's performance to be improved as the network grows.
  
- Using IPFIX concentrator is useful
  - It resolves several problems in a large-scale network.

# Solution: use IPFIX concentrators

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The solution of using concentrators has three features.

## ■ Cascading concentrators

- let us adjust the number of IPFIX concentrators to suit the network size.
- enable step-by-step aggregation of flow records.

## ■ Aggregation method

- reduces flow records according to “dressler-ipfix-aggregation”.
- reduces the load on the Traffic collector.

## ■ Distribution of flow records

- achieves load-balancing of Traffic collector.

# Clarification of IPFIX concentrator

- Reference model of IPFIX concentrators
  - Internal model
    - defines process model of concentrator as internal model.
  - External model
    - clearly shows the method of connecting concentrators which works well as a solution.
  - New information elements
    - provide some of the information lost in the aggregation process.
    - Some examples of these elements are “Minimum active time” and “Maximum active time”.
- Managed objects of IPFIX concentrators
  - Cascading concentrators need to act as a single collector.
    - Components of each concentrator are also controlled and referred to by other nodes through SNMP.
    - The IPFIX concentrator needs MIB objects.
  - The defined MIB objects are divided into two groups.
    - Architecture of concentrator MIB is similar to PSAMP MIB.
    - Collector MIB is used in general collectors.

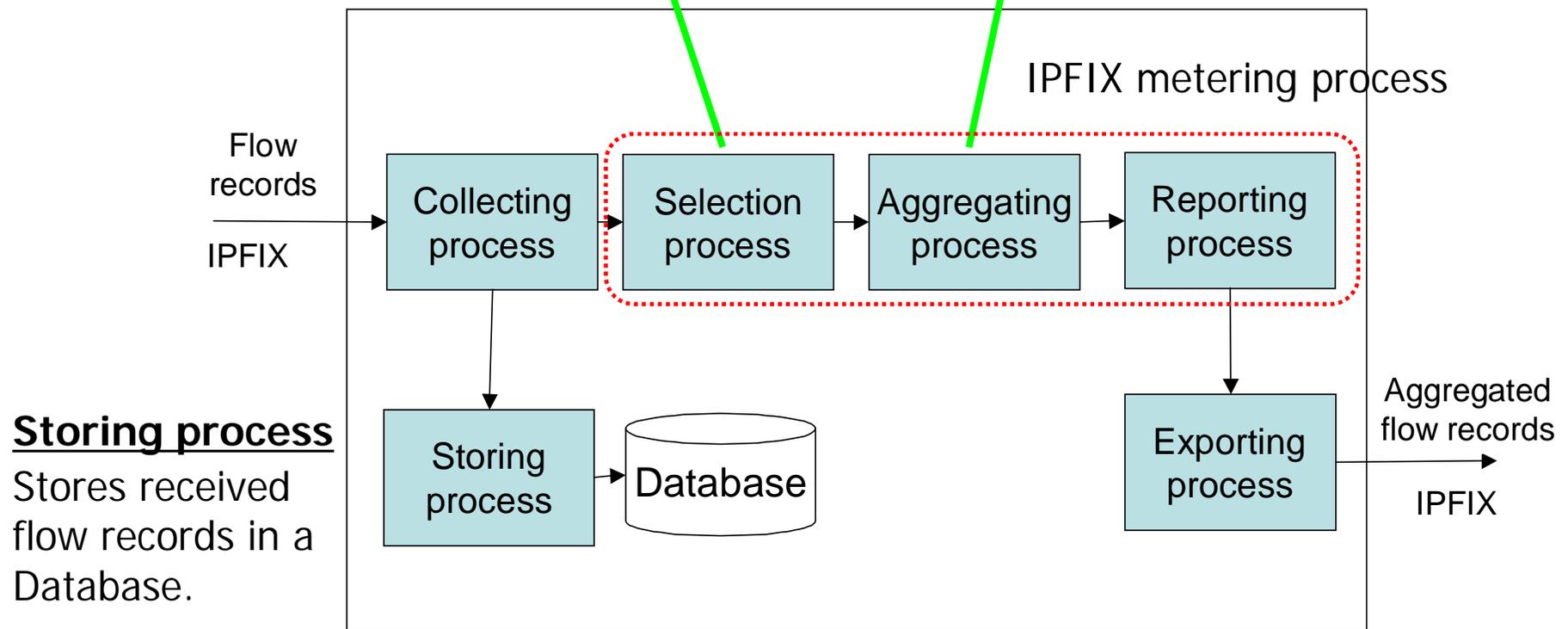
# Internal process model

## Selection process

Has only a filtering function.  
Filter selects flow records based on flow records content.

## Aggregation process

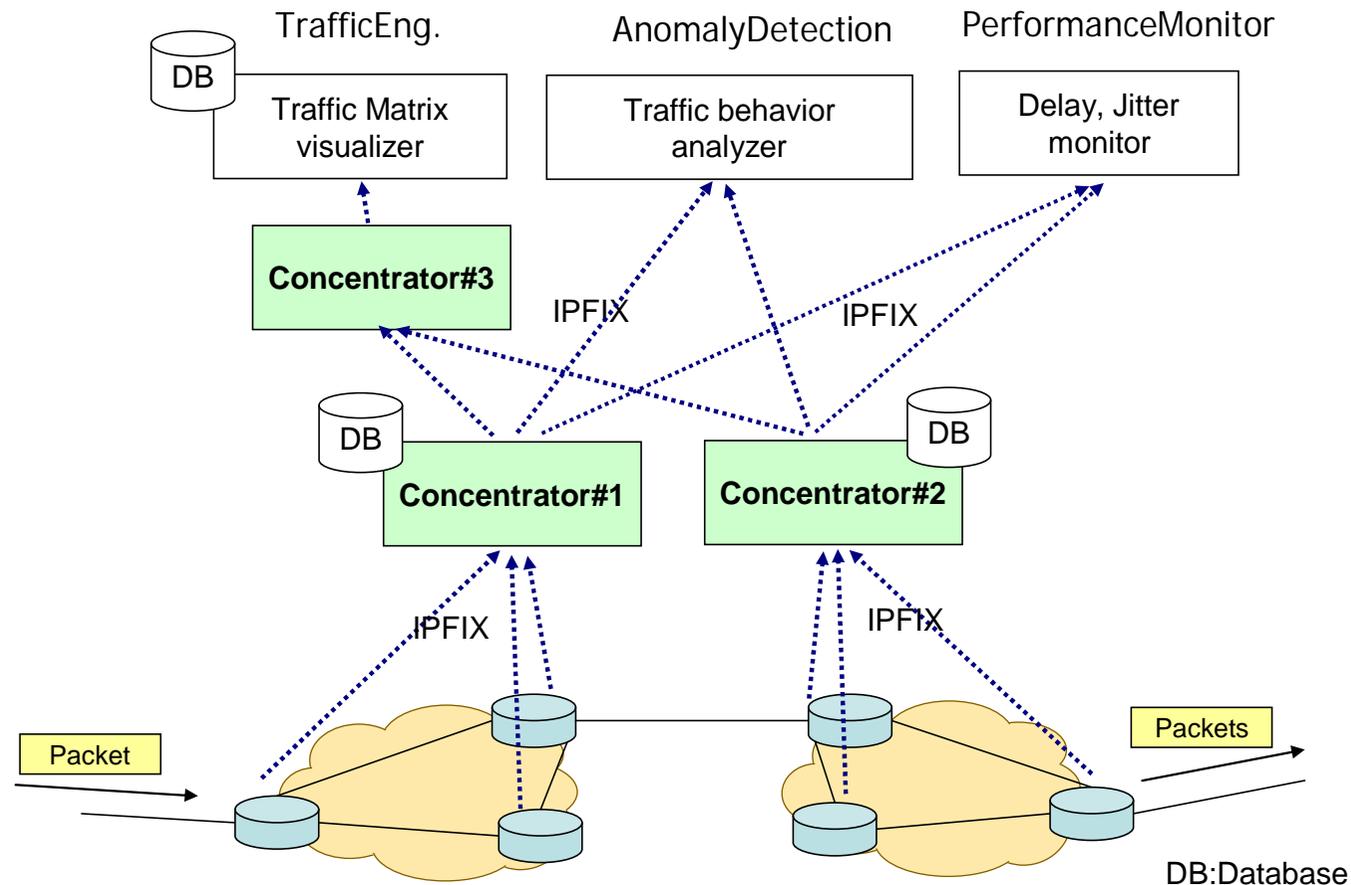
Gathers flow records within a time interval and then merges ones having common properties.  
Adds other information elements in the aggregated flow.



**We can get several solutions with using this IPFIX concentrator.**

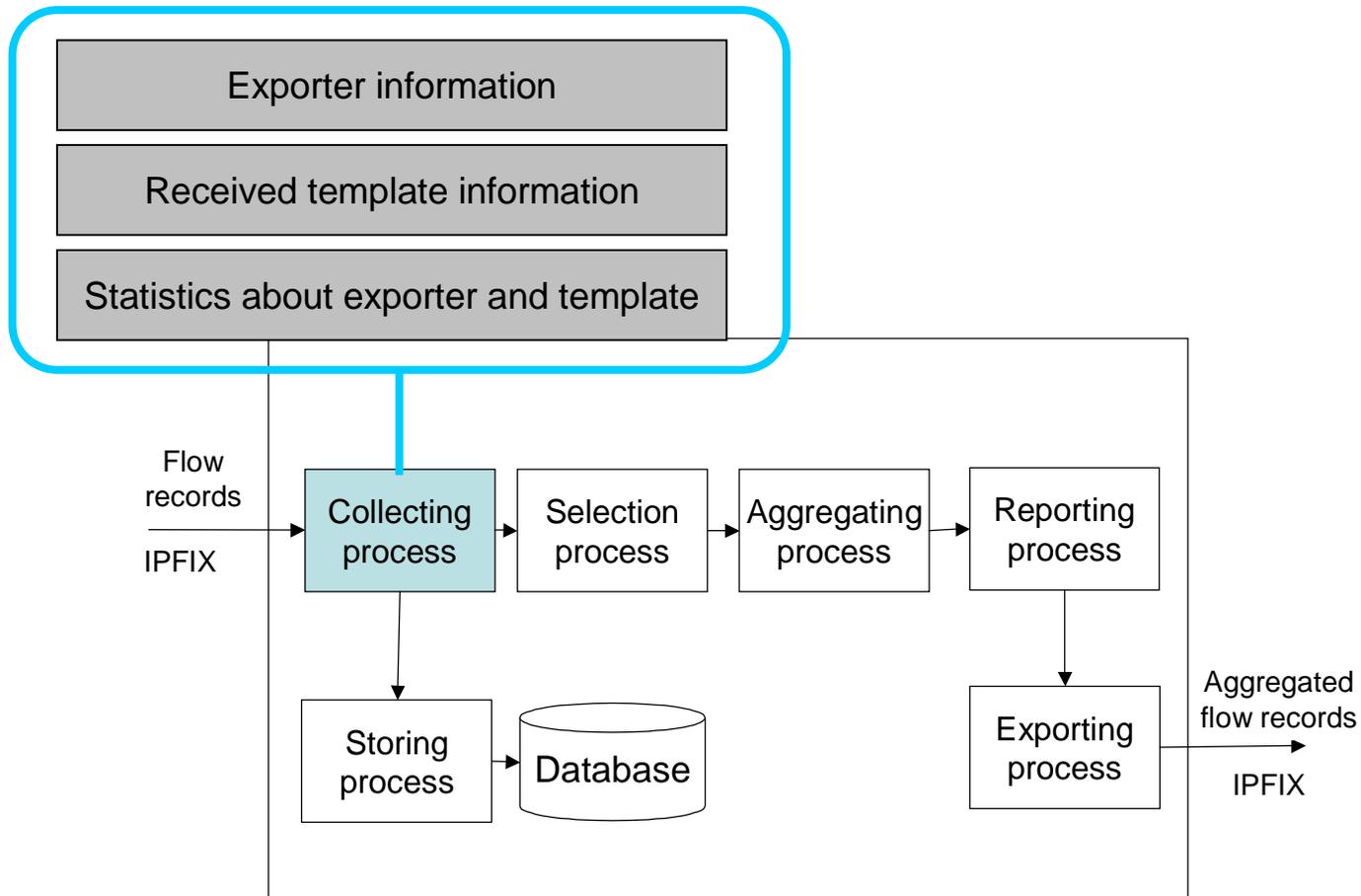
# Solution using IPFIX concentrators

- Hierarchical model of concentrators enables
  - aggregation step by step.
  - distribution flow records based on Traffic Collector role.



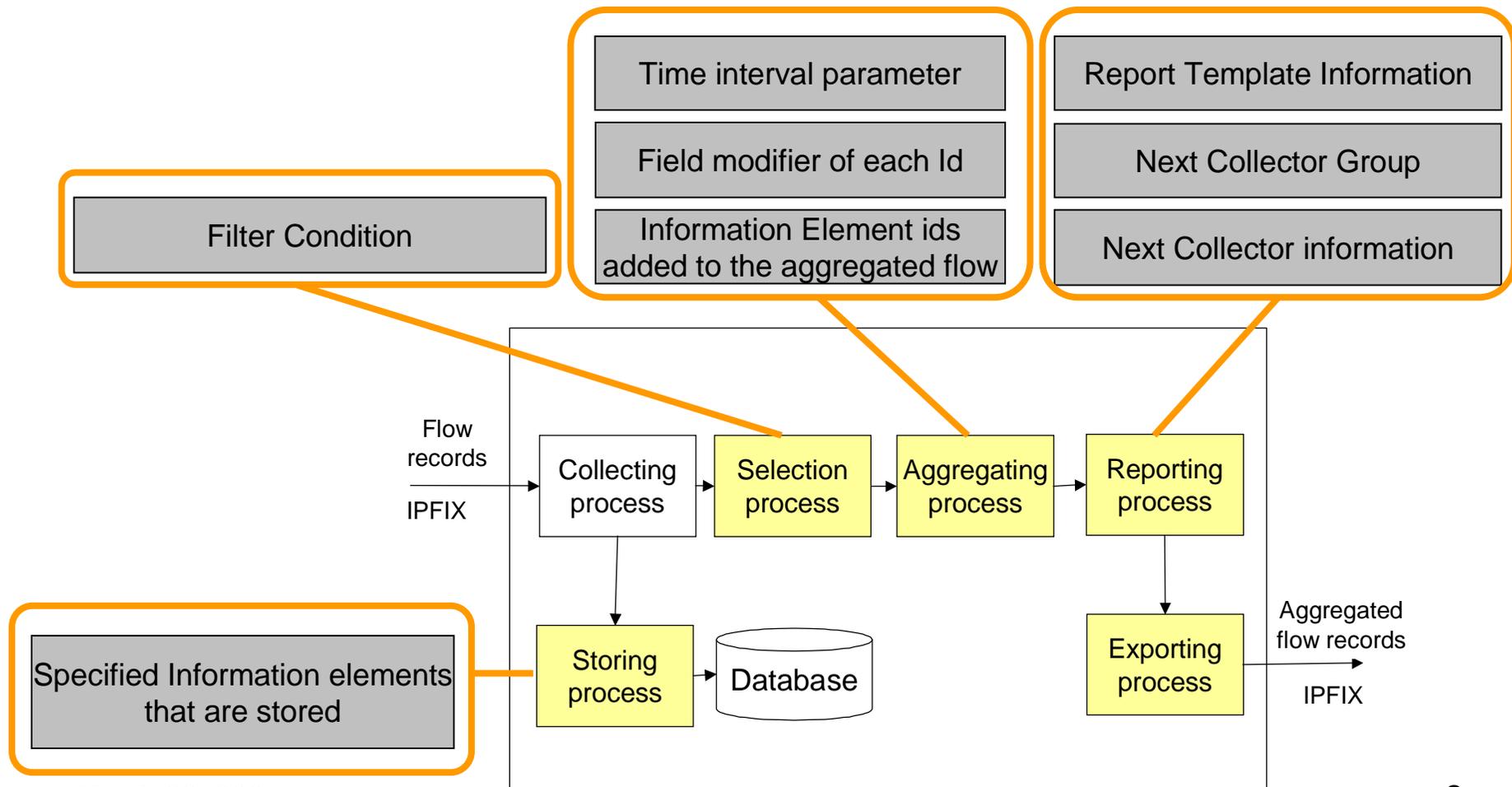
# IPFIX collector MIB

- Collecting process manages collector MIB that has 3 tables.
- They contain Exporter information, Received template information and statistics about Exporter and Templates.



# IPFIX concentrator MIB

- Each process has several objects.
- Base association associates these tables just like PSAMP-MIB.



# Next step

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- Reference model

- There are other processes or other new information elements that should be added to or deleted from IPFIX concentrator.

- MIB objects

- They need refining.
  - Comments are welcome.
- Current draft does not contain whole aggregation-draft.
  - does not take into account “chain of aggregator”.
  - should be revised according as the aggregation-draft progresses.