Flow Selection Techniques

draft-peluso-flowselection-tech-02.txt

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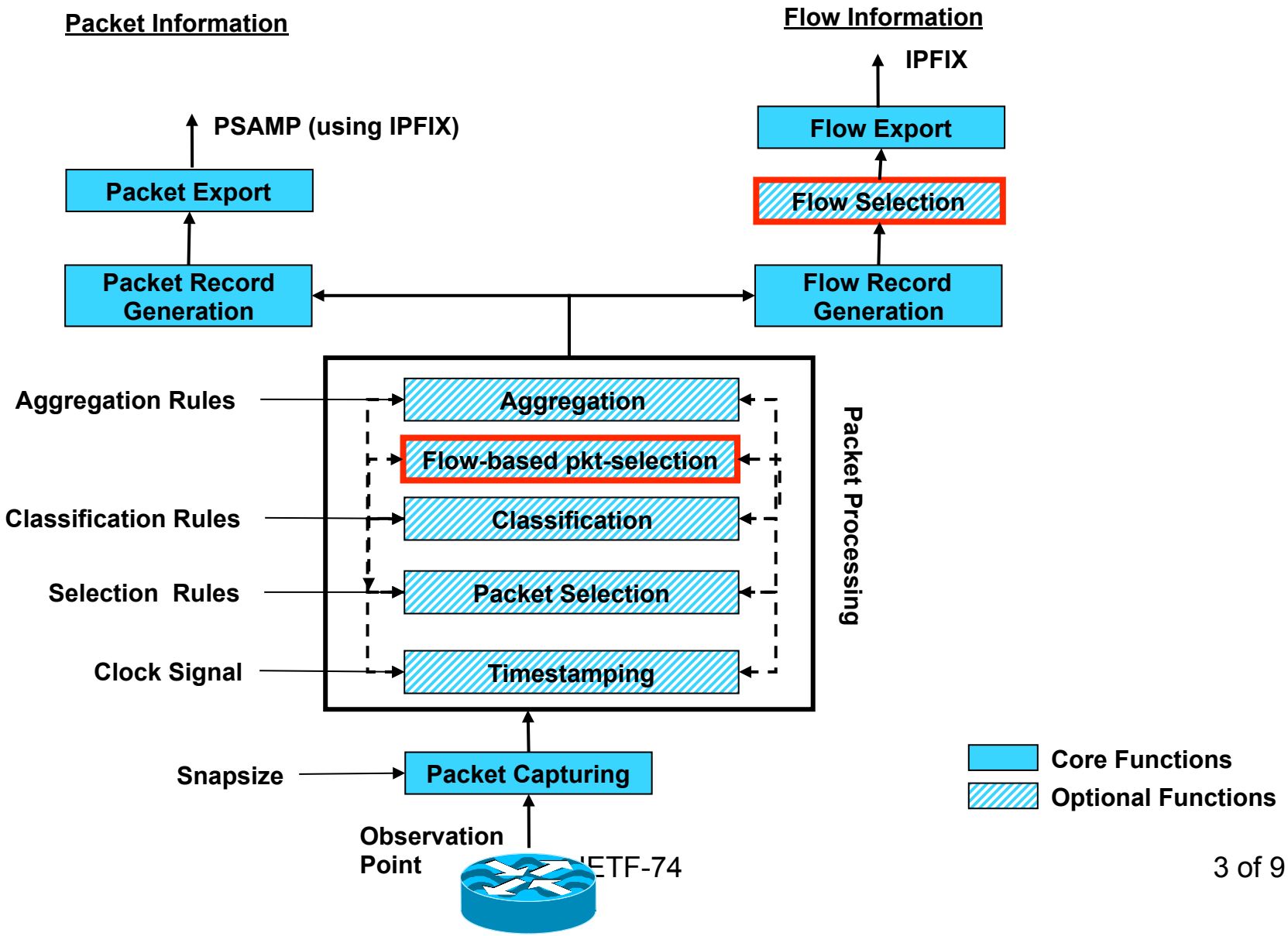
Motivation

- Resource control
  - Traffic highly dynamic
  - Number of flows hard to predict
  - Resources limited
- Selection objectives
  - Limit resource consumption
  - Select only flows of interest (e.g. only large flows)
- An Example: PlanetLab Europe
  - Federated Testbed for Internet research
  - Multiple users sharing measurement device
  - Resource control by selection techniques

Flow Selection vs. Packet Selection



Content

- Terminology
- Position of the Flow Selection Process
- Description of Flow Selection Techniques
- Information Model for Configuration of Flow Selection Techniques
- Information model for Reporting of Flow Selection Information
- Implementation requirements

Position of the Flow Selection Process

- Always ***after*** classification
- Flow-state dependent packet selection
  - Record only a subset of flows by selecting packets
  - Taking the class the packets belong to into account
  - e.g. sample &hold: selection of packets based on flow record status
- During flow recording
  - Record only a subset of flows
  - e.g. based on available memory
- At flow export
  - Export only a subset of flow records
  - e.g. due to transport resource limits
- At collector

Flow Selection Techniques

- Based on flow record content
  - All reported flow characteristics
  - e.g. flow size, flow start time, etc.
- Based on flow record arrival time or sequence
  - Arrival times at collection process
  - Sequence in which flows arrive
- Based on external events
  - Exhaustion of resources
  - E.g., number of entries in flow cache

Configuration of Flow Selection Techniques

- Configuration of flow selection techniques
  - Set selection techniques and parameters
  - Similar to PSAMP
- selectorMethod
  - Flow size count
  - Content property match
  - Record arrival time or sequence
  - External events
- Parameters:
  - flowMaxAdmitFlowRecords: max number records in flow cache
  - flowRecordBytesSize: min number of bytes in flow record
  - flowRecordPacketsSize: min number of packets in flow record
  - flowInactivityTime: time during which flow considered active

Reporting of Flow Selection Information

- From early draft version
- Provide additional information about the selection process
- Cumulative counters
  - of packets and bytes for all flows not exported
- Timestamps
  - of first and last packets belonging to non-exported flow records
- Counter of dropping events and timestamp of first and last dropping event

Status

- Draft status
  - Revision 02: Text for main sections exist
  - Right time: packet selection draft just finished
- Next steps
  - Rework info export section (was from old version)
  - Detailed description of methods with examples
  - More about configuration of methods and parameters

Is it of interest as working group item for the group?

Thank You