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Mirror On Drop in SAI

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Agenda

• Mirror On Drop
• Stateful and Stateless MoD
• MoD object in TAM
Mirror On Drop - Problem

- Packets MAY get dropped for many reasons in network

  - H/W fault – Parity errors etc
  - Link capacity and bottlenecks
  - Network congestion
  - Incorrect FEC
  - Explicit rules
  - ....and many many more

Mirror On Drop - Problem

- Very hard for administrator to figure out where and why packets are dropped in the network
- NOS keeps track of dropped packets by keeping track of hardware drop counts
- Impact of drop is very hard to qualify on an application

Mirror On Drop - Stateless

- Simple solution is to trap dropped packet, drop reason and send the packet (with drop reason) to external collector or local NOS
- Provides atomic information about the drop and the packet
- Do not provide information about the lifecycle of drop as an event for a given flow

Mirror On Drop - Stateful

- Keep track of per flow per drop reasons drops
- Flow or Flow group can be monitored explicitly for any or set of drop reasons
- Flow has a clear life drop event lifecycle

SAI TAMv2 Architecture

- **Generic TAM Objects**
  - *Telemetry Streaming object is a collection of data, transport, report and collector*
  - *All telemetry data is characterized in single consistent way*

- **Generic Reporting**
  - *Data serialization used to parametrize a report*
  - *Reporting object consists of serialization protocol*
  - *Serialization/Deserialization is done using protocol compiler*
  - *Seamlessly consumed by collector*

- **Generic Event Framework**
  - *All events are a collection of event type and action*
  - *Event action can be report or a feedback loop*

- **Mixed vendor deployment**
  - *No chip specific API*
  - *Extensible Telemetry object, report types, and events*

- **Advanced analytics**
  - *Thresholding, triggered streaming (threshold breach)*
  - *Running average/mean/mode*
  - *Histograms*
SAI TAMv2 Architecture....contd

TAM as a Unified Object
Mirror On Drop in SAI

- TAM provides basic infrastructure for streaming and events
- Extend TAM to support stateful/stateless MoD

Call to Action

• SAI working group for MoD

• Targeted SAI Release ??
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