YANG Modules for PSFP and ATS

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Introduction

About

• 802.1Qcr (ATS) extends 802.1Qci (PSFP) at certain places

• For 802.1Qcr, it was agreed that
  [http://www.ieee802.org/1/files/private/cr-drafts/d0/802-1Qcr-D0-1-dis.pdf](http://www.ieee802.org/1/files/private/cr-drafts/d0/802-1Qcr-D0-1-dis.pdf)
  1. YANG modules will be provided
  2. PSFP and ATS should be refactored in a later stage to avoid redundancy in 802.1Q

• The 802.1Qcr editor (author of this slide set) developed YANG modules that cover both, ATS and PSFP, in a modular structure.

• The modular structure gives a preview of how the aforementioned refactoring can look like.

• All PSFP-related parts in the YANG modules, as well as this presentation, are an individual contribution by the editor of 802.1Qcr.

Contents

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• Issues and Proposals
Overview of the proposed YANG modules
YANG Module Overview

Three Modules:

1. *ieee802-dot1q-stream-filter-gates*
   The subset of functionality used by both, PSFP and ATS. Augments the bridge component node, as specified in 802.1Qcp.

2. *ieee802-dot1q-psfp*
   Augments *ieee802-dot1q-stream-filter-gates* by the functionality used by PSFP, and not by ATS.

3. *ieee802-dot1q-ats*
   Augments *ieee802-dot1q-stream-filter-gates* by the functionality used by ATS, and not by PSFP.
Common: Graphical Representation

component //802.1Qcp-D1.4, Fig. 48-4

string name;
macAddress address;
...

stream-filters

uint32 max-stream-filter-instances // r

* stream-filter-instance-id

stream-filter-instance

uint32 stream-filter-instance-id // r-w
uint32,wildcard stream-handle-spec // r-w
ipv-type priority-spec // r-w

* index

filter-specification

uint8 index // r-w

stream-gates

uint32 max-stream-gate-instances // r

* stream-gate-instance-id

stream-gate-instance

uint32 stream-gate-instance-id // r-w
boolean gate-enable // r-w
gate-state-value-type admin-gate-state // r-w
ipv-type admin-ipv // r-w

maximum-sdu-size

uint32 maximum-sdu-size // r-w
boolean stream-blocked-due-to-oversize-frame-enabled // r-w
boolean stream-blocked-due-to-oversize-frame // r
PSFP: Graphical Representation

IEEE 802 November Plenary 2017, YANG Modules for PSFP and ATS, Johannes Specht
ATS: Graphical Representation

component //802.1Qcp-D1.4, Fig. 48-4

string name;
macAddress address;
...

shapers

uint32 max-shaper-instances // r

shaper-instance

uint32 shaper-instance-id // r-w
uint64 committed-information-rate // r-w
uint32 committed-burst-size // r-w

filter-specification

uint8 index // r-w

shaper-ref

shaper-group-instance-id

shaper-groups

uint32 max-shaper-group-instances // r

* shaper-instance-id

shaper-group-instance

uint32 shaper-group-instance-id // r-w
uint32 max-residence-time // r-w

* shaper-group-instance-id

shaper-instance-id
Files

• Three files:
  1. ieee802-dot1q-stream-filter-gates.yang
  2. ieee802-dot1q-psfp.yang
  3. ieee802-dot1q-ats.yang

• Location of the files, plus the related clauses is subject to discussion (read on...)

• The files are attached to this slide set:
  • RAW
  • Formatted in a PDF
Issues and Proposals
PSFP: Location?

Description

- Modules `ieee802-dot1q-stream-filter-gates` and `ieee802-dot1q-psfp` contain parts introduced by project 802.1Qci (PSFP).
- Project 802.1Qcw is designated to write YANG modules for PSFP.
- Project 802.1Qcr is designated to write YANG modules for ATS.
- There are shared parts, i.e. `ieee802-dot1q-stream-filter-gates`, which have to be consistent.

Issue

- Where to locate which module due to formal reasons?
- Who is maintaining and improving `ieee802-dot1q-psfp` and `ieee802-dot1q-stream-filter-gates`, plus the related clauses?

Proposal (Discussion)

- Keep `ieee802-dot1q-psfp` and `ieee802-dot1q-stream-filter-gates` in 802.1Qcr drafts for now, at least until project 802.1Qcw starts and has an editor.
- The editor of 802.1Qcr may improve `ieee802-dot1q-psfp` until an editor for 802.1Qcw is in place, if time allows it.
- Improvement of `ieee802-dot1q-psfp`, as well as the related clauses, becomes the response of the editor of 802.1Qcw, once this editor is in place.
Filter Specifications: Cardinality

Description

• The 802.1Qci MIB allows multiple filter instances of the same type associated with one stream_handle for each of the following types:
  1. Max. MTU size filter
  2. Flow Meter reference (MEF 10.3)
• ... so does 802.1Qcr (an ATS shaper just adds another filter type):
  3. ATS shaper reference
• ... so do the preliminary YANG modules

Issue

• More than 1 instance of each type associated with one stream_handle appear unreasonable. Example:
  • 1) Max. MTU size filter with size 1000 Byte
  • 2) Max. MTU size filter with size 500 Byte
  • Whenever filter 2) gets marks a frame red, filter 1) does too.
• The intention/use-case for such setups is unclear to the author.

Proposal for YANG (Discussion)

• Allow only one instance per filter type per stream_handle
Thank you for your Attention!

Questions, Opinions, Ideas?

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