Maintenance Request 363
Maximum SDU Size Filter

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Current text in 802.1Q

– IEEE Std 802.1Q-2022 defines a Maximum SDU size filter as part of the Per-Stream Filtering and Policing feature set.

– Currently IEEE Std 802.1Q 8.6.5.3.1 reads:
  "If the SDU size of a frame exceeds the value of the associated stream filter's Maximum SDU size parameter, the frame is discarded and that stream filter's NotPassingSDUCount is incremented."

– There is no additional information given on what SDU is referring to.

– The lack of precise language on what SDU size refers to has led to some discussions in other organizations.

SDU is MSDU

– Is it enough to state that SDU is MSDU?

> "If the SDU size of a frame exceeds the value of the associated stream filter's Maximum SDU size parameter, the frame is discarded and that stream filter's NotPassingSDUCount is incremented. The Media Access Control Service Data Unit (MSDU) size is used for Maximum SDU size filtering."

– No, the MSDU size changes as the frame is flowing through the bridge. MSDU at the ISS is different than the MSDU at the EISS. There are other tags that are removed after the frame passes the MAC service interface e.g., MACsec, R-tag, …

– Where is the measurement plane for the maximum SDU size filter placed?

There seem to be two feasible approaches:

- At the MAC service interface level
- Wherever the SDU size filter is located

– Simplest approach seems to be at the point the SDU size filter is located

Proposed new text

– Change the following text:

"If the SDU size of a frame exceeds the value of the associated stream filter's Maximum SDU size parameter, the frame is discarded and that stream filter's NotPassingSDUCount is incremented."

– To:

"If the SDU size of a frame exceeds the value of the associated stream filter's Maximum SDU size parameter, the frame is discarded and that stream filter's NotPassingSDUCount is incremented. **The Media Access Control Service Data Unit (MSDU) size at the point the Maximum SDU size filter is placed in the station is used as SDU size for Maximum SDU size filtering.**"

– Add the following note:

"Note—The size of the MSDU can change as the frame is flowing through the bridge. For example, in a C-VLAN bridge, the C-VLAN tag is not part of the MSDU that is evaluated by the Maximum SDU size filter placed inside the C-VLAN bridge component."

Update after September 2024 Meeting

Update after September Discussion

– It was proposed to replace the term SDU with MSDU, this involves the following changes if this is preferred:

– Change the following text:

"If the SDU size of a frame exceeds the value of the associated stream filter's Maximum SDU size parameter, the frame is discarded and that stream filter's NotPassingSDUCount is incremented."

– To:

"If the MSDU size of a frame exceeds the value of the associated stream filter's Maximum MSDU size parameter, the frame is discarded and that stream filter's NotPassingMSDUCount is incremented."

– Add the following note:

"Note—The size of the MSDU of a frame depends on where in the stack the function is located."

Text for 8.6.5.3.1

If the MSDU size of a frame exceeds the value of the associated stream filter's Maximum MSDU size parameter, the frame is discarded and that stream filter's NotPassingMSDUCount is incremented. If the stream filter's StreamBlockedDueToOversizeFrameEnable parameter is configured to be TRUE, the StreamBlockedDueToOversizeFrame parameter is set to TRUE and all subsequent frames will be discarded until StreamBlockedDueToOversizeFrame is administratively reset to FALSE. Otherwise, the stream filter's PassingMSDUCount is incremented (see 8.6.5.3). The default configuration of both StreamBlockedDueToOversizeFrameEnable and StreamBlockedDueToOversizeFrame is FALSE.

NOTE—The Maximum MSDU size is defined per stream filter and can therefore differ from the queueMaxSDU specified in 8.6.8.4.As queueMaxSDU is applied after the flow classification and metering, it is possible that a frame that passes the Maximum MSDU size filter will later be discarded because its SDU size exceeds queueMaxSDU.

NOTE—The size of the MSDU of a frame depends on where in the stack the function is located.

Open Question – How many instances of SDU would need to be changed

Number of changes

- Figure 8-13 (1 instance of SDU)
- 8.6.5.2 b) (2 instances of SDU)
- 8.6.5.2.1 (1 instance of SDU in text, 4 instances of SDU in figure 8-14)
- 8.6.5.2.2 (1 instance of SDU)
- 8.6.5.3 d) (1 instance of SDU)
- 8.6.5.3 d) 1) (2 instances of SDU)
- Figure 8-15 (4 instances of SDU)
- 8.6.5.3 i) PassingSDUCount + 1 instance of SDU
- 8.6.5.3 j) NotPassingSDUCount + 1 instance of SDU
- 8.6.5.3 Note 3: NotPassingSDUCount
- 8.6.5.3.1 -> see slide 7 + 1 instance of SDU in title
- 12.31.2.4 MaxSDUSize (2x) + 2 instances of SDU
- Table 12-35 MaximumSDUSize (inconsistent naming?)
- Table 12-35 PassingSDUCount, NotPassingSDUCount

Number of changes MIB

– MIB: Table 17-30: MaxSDUSize

– MIB: Table 17-30: ieee8021PSFPPassingSDUCount, PassingSDUCount

– MIB: Table 17-30: ieee8021PSFPNotPassingSDUCount, NotPassingSDUCount

– MIB: Table 17-30 note a) 1 instance of SDU

– IEEE8021-PSFP-MIB:

  – Ieee8021PSFPStreamFilterEntry

    – ieee8021PSFPPassingSDUCount

    – ieee8021PSFPNotPassingSDUCount

  – ieee8021PSFPFilterSpecificationList (3 instances of SDU)

  – ieee8021PSFPPassingSDUCount

  – ieee8021PSFPNotPassingSDUCount

  – ieee8021PSFPObjectsGroup

    – ieee8021PSFPPassingSDUCount

    – ieee8021PSFPNotPassingSDUCount

Number of changes YANG and Annex T

– Figure 48-15: max-sdu-size
– 48.5.11 schema: max-sdu-size
– 48.6.11 YANG module
  – list stream-filter-instance-table (1 instance of SDU)
  – leaf max-sdu-size + 2 instances of SDU
  – leaf stream-blocked-due-to-oversize-frame-enabled: max-sdu-size
  – stream-blocked-due-to-oversize-frame: max-sdu-size

– T.3.1 d) 2 instances of SDU

Summary

– Change seems possible but more then 50 changes in text

– Changes in MIB and YANG necessary

– Similar change might be relevant for per queue maximum SDU size?