

— Considerations for Configuration of MinSDU Filtering

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Purpose/Agenda

1. Discuss the configuration of MinSDU Filtering (potential enhancement)
2. Discuss enhancements to the user/network configuration information
3. Support the development of Qek PAR/CDS

References:

- IEEE Std. 802.1Q-2022-REV-D2.1
- Filtering Enhancements for Scheduled Traffic – presented at IEEE 2026 July Plenary
<https://www.ieee802.org/1/files/public/docs2026/new-jabbar-filtering-enhancements-0726-v01.pdf>

Context

- The 802.1 Working Group has established a need for MinSDU filtering as part of PSFP
- A new 802.1 project is being developed to add MinSDU filtering alongside MaxSDU filtering in PSFP – PAR/CSD is under development.
- Need to consider the necessary management and configuration aspects

Managed objects for per-stream classification and metering (12.31)

Table 12-35—Stream Filter Instance Table

This managed resource comprises the following objects:

- a) The Stream Parameter Table (12.31.1)
- b) **The Stream Filter Instance Table (12.31.2)**
- c) The Stream Gate Instance Table (12.31.3)
- d) The Flow Meter Instance Table (12.31.4)
- e) The Scheduler Instance Table (12.31.5)
- f) The Scheduler Group Instance Table (12.31.6)
- g) The Scheduler Port Parameter Table (12.31.7)
- h) The Scheduler Timing Characteristics Table (12.31.8)

Potential Managed objects for MinSDU on Bridges

- MinimumSDUSize,
- PassingSDUCount (modify or add new)
- NotPassingSDUCount (modify or add new)

Name	Data type	Operations supported ^a	Conformance ^b	References
StreamFilterInstance	integer	R	PSFP, ATS, CI	8.6.5.3
StreamHandleSpec	stream_handle specification	RW	PSFP, ATS, CI	8.6.5.3
PrioritySpec	priority specification	RW	PSFP, ATS, CI	8.6.5.3
MaximumSDUSize	integer	RW	PSFP, ATS	8.6.5.3.1, 12.31.2.5
StreamGateInstanceID	integer	RW	PSFP, ATS, CI	8.6.5.2, 8.6.5.4
FlowMeterInstanceID	integer	RW	PSFP, ats	8.6.5.5, 12.31.2.5
FlowMeterEnable	Boolean	RW	PSFP, ats	
SchedulerInstanceID	integer	RW	psfp, ATS	
SchedulerEnable	Boolean	RW	psfp, ATS	
MatchingFramesCount	counter	R	PSFP, ats, ci	8.6.5.3
PassingFramesCount	counter	R	PSFP, ats	8.6.5.3, 8.6.5.4
NotPassingFramesCount	counter	R	PSFP, ats	8.6.5.3, 8.6.5.4
PassingSDUCount	counter	R	PSFP, ats	8.6.5.3, 8.6.5.3.1
NotPassingSDUCount	counter	R	PSFP, ats	8.6.5.3, 8.6.5.3.1
REDFramesCount	counter	R	PSFP, ats	8.6.5.3
StreamBlockedDueToOversizeFrameEnable	Boolean	RW	PSFP, ATS	8.6.5.3, 8.6.5.3.1
StreamBlockedDueToOversizeFrame	Boolean	RW	PSFP, ATS	8.6.5.3, 8.6.5.3.1

TSN Configuration (Clause 46)

The following TSN features can be configured by the CNC using this model:

- a) Credit-based shaper algorithm (8.6.8.2) and its configuration (Clause 34)
- b) Frame preemption (6.7.2)
- c) Scheduled traffic (8.6.8.4, 8.6.9)
- d) Frame Replication and Elimination for Reliability (IEEE Std 802.1CB)
- e) **Per-Stream Filtering and Policing (8.6.5.1)**
- f) Cyclic queuing and forwarding (Annex T)

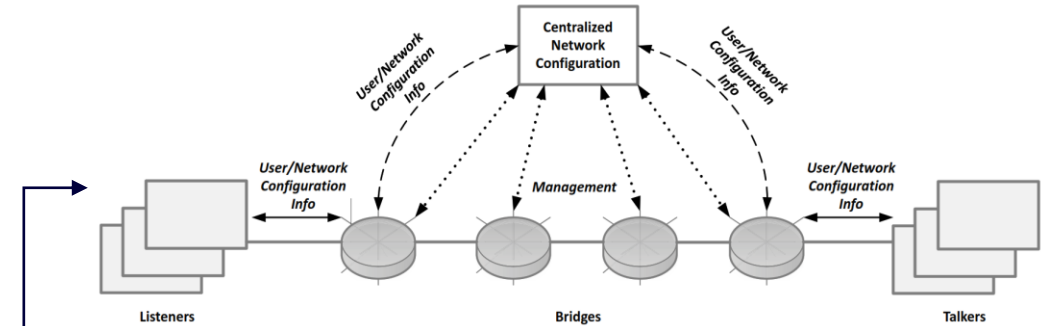


Figure 46-2—Centralized network/distributed user model

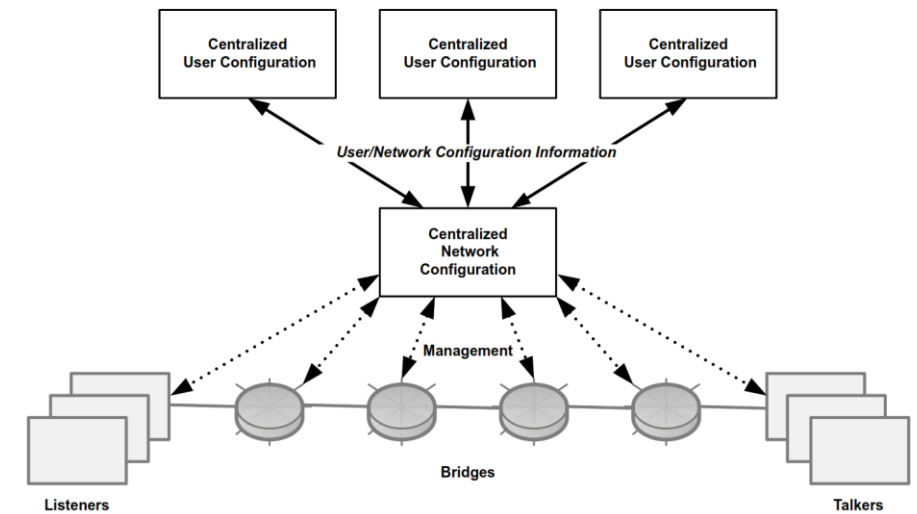


Figure 46-3—Fully centralized model

User/network configuration information (46.2)

46.2.3 Talker Group specifies the stream behavior, requirements from network, and interface capabilities in the following groups:

- StreamID (46.2.3.1)
- StreamRank (46.2.3.2)
- EndStationInterfaces (46.2.3.3)
- DataFrameSpecification (46.2.3.4)
- TrafficSpecification (46.2.3.5)
- UserToNetworkRequirements (46.2.3.6)
- InterfaceCapabilities (46.2.3.7)
- StreamStatus (46.2.3.8)

User/network configuration information (46.2)

The TrafficSpecification group consists of the following:

- a) Its required elements, listed in Table 46-8.

Table 46-8—TrafficSpecification elements

Name	Data type	Reference
Interval	rational	46.2.3.5.1
MaxFramesPerInterval	uint16	46.2.3.5.2
MaxFrameSize	uint16	46.2.3.5.3
TransmissionSelection	uint8	46.2.3.5.4

The talker must specify the MinFrameSize in order for CNC to generate appropriate PSFP configuration

- b) An optional TSpecTimeAware group, whose elements are listed in Table 46-9.

Table 46-9—TSpecTimeAware elements

Name	Data type	Reference
EarliestTransmitOffset	uint32	46.2.3.5.5
LatestTransmitOffset	uint32	46.2.3.5.6
Jitter	uint32	46.2.3.5.7

Summary

1. Configuration and management of MinSDU filtering in PSFP also requires the specification of MinFrameSize in the TrafficSpecification of the Talker.
2. Therefore, the scope of P802.1Qek should include updates to User/Network Configuration Information and the corresponding YANG models.



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