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IEEE Standard for Local and Metropolitan Area Networks— Bridges and Bridged Networks

Amendment 36: YANG Data Models for Scheduled Traffic, Frame Preemption, and Per-Stream Filtering and Policing

IEEE Computer Society

Developed by the
LAN/MAN Standards Committee

IEEE Std 802.1Qcw™-2023
(Amendment to IEEE Std 802.1Q™-2018
as amended by IEEE Std 802.1Qcz™-2023)

IEEE

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IEEE Standard for Local and Metropolitan Area Networks—

Bridges and Bridged Networks

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IEEE SA Standards Board

Abstract: This amendment specifies YANG data models that allow configuration and status reporting for Bridges and Bridge components with the capabilities of scheduled traffic, frame preemption, and Per-Stream Filtering and Policing.

Keywords: amendment, Bridged Local Area Networks, frame preemption, IEEE 802.1Q™, IEEE 802.1Qcw™, Local Area Networks (LANs), MAC Bridges, Per-Stream Filtering and Policing, scheduled traffic, traffic shaping, Virtual Bridged Local Area Networks (virtual LANs), YANG

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Introduction

This introduction is not part of IEEE Std 802.1Qcw™-2023, IEEE Standard for Local and Metropolitan Area Networks—Bridges and Bridged Networks—Amendment 36: YANG Data Models for Scheduled Traffic, Frame Preemption, and Per-Stream Filtering and Policing.

IEEE Std 802.1Qcw™-2023: YANG Data Models for Scheduled Traffic, Frame Preemption, and Per-Stream Filtering and Policing supports configuration and status reporting for Bridges and Bridge components with the capabilities of scheduled traffic, frame preemption, and per-stream filtering and policing.

This standard contains state-of-the-art material. The area covered by this standard is undergoing evolution. Revisions are anticipated within the next few years to clarify existing material, to correct possible errors, and to incorporate new related material. Information on the current revision state of this and other IEEE 802 standards may be obtained from

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IEEE Standard for
Local and Metropolitan Area Networks—

Bridges and Bridged Networks

Amendment 36: YANG Data Models for Scheduled Traffic, Frame Preemption, and Per-Stream Filtering and Policing

(This amendment is based on IEEE Std 802.1Q™-2022 as amended by IEEE Std 802.1Qcz-2023.)

NOTE—The editing instructions contained in this amendment define how to merge the material contained therein into the existing base standard and its amendments to form the comprehensive standard.

The editing instructions are shown in ***bold italics***. Four editing instructions are used: change, delete, insert, and replace. ***Change*** is used to make corrections in existing text or tables. The editing instruction specifies the location of the change and describes what is being changed by using ~~strikethrough~~ (to remove old material) and underscore (to add new material). ***Delete*** removes existing material. ***Insert*** adds new material without disturbing the existing material. Deletions and insertions may require renumbering. If so, renumbering instructions are given in the editing instruction. ***Replace*** is used to make changes in figures or equations by removing the existing figure or equation and replacing it with a new one. Editing instructions, change markings, and this note will not be carried over into future editions because the changes will be incorporated into the base standard. [6]

[6] Notes in text, tables, and figures are given for information only and do not contain requirements needed to implement the standard.

1. Overview

1.3 Introduction

Insert new list item cs) after item cr) in 1.3 and renumber the subsequent list items accordingly:

cs) Define YANG configuration and operational state models (Clause 48) in support of scheduled traffic, frame preemption, and Per-Stream Filtering and Policing.

12. Bridge management

12.29 Managed objects for scheduled traffic

12.29.1 The Gate Parameter Table

Insert two new rows at the end of Table 12-32 as follows (unchanged rows not shown):

Table 12-32—The Gate Parameter Table

Name	Data type	Operations supported[a]	Conformance[b]	References
SupportedCycleMax	RationalNumber (seconds)	R	B, E	8.6.8.4, 12.29.1.3, 12.29.1.6
SupportedIntervalMax	Integer	R	B, E	8.6.8.4, 12.29.1.7

[a] R= Read only access; RW = Read/Write access.

[b] B = Required for Bridge or Bridge component support of enhancements for scheduled traffic; E = Required for end station support of enhancements for scheduled traffic.

12.29.1.2 The gate control list structure and data types

12.29.1.2.1 GateControlEntry

Change 12.29.1.2.1 as follows:

A GateControlEntry consists of an operation name, followed by ~~up to~~ 2 parameters associated with the operation, as detailed in Table 8-7. The first parameter~~, if present,~~ is a gateStatesValue (12.29.1.2.2); the second parameter~~, if present,~~ is a timeIntervalValue (12.29.1.2.3).

Insert 12.29.1.6 and 12.29.1.7 after 12.29.1.5 as follows:

12.29.1.6 SupportedCycleMax

The maximum value supported by this Port of the AdminCycleTime (8.6.9.4.3) and OperCycleTime (8.6.9.4.19) parameters.

12.29.1.7 SupportedIntervalMax

The maximum value supported by this Port of the timeIntervalValue (12.29.1.2.3) parameter.

12.31 Managed objects for per-stream classification and metering

12.31.1 The Stream Parameter Table

Insert two new rows at the end of Table 12-34 as follows (unchanged rows not shown):

Table 12-34—The Stream Parameter Table

Name	Data type	Operations supported[a]	Conformance[b]	References
SupportedCycleMax	RationalNumber (seconds)	R	PSFP, ATS	8.6.5.4, 12.29.1.3, 12.29.1.6
SupportedIntervalMax	Integer	R	PSFP, ATS	8.6.5.4, 12.29.1.7

[a] R= Read only access; RW = Read/Write access.

[b] PSFP = Required for Bridge, Bridge component, or end station support of PSFP.
psfp = Optional for Bridge, Bridge component, or end station support of PSFP.
ATS = Required for Bridge or Bridge component support of ATS.
ats = Optional for Bridge or Bridge component support of ATS.
CI = Required for Bridge or Bridge component support of CI.

Insert 12.31.1.7 and 12.31.1.8 after 12.31.1.6 as follows:

12.31.1.7 SupportedCycleMax

The maximum value supported by this Port of the AdminCycleTime (8.6.9.4.3) and OperCycleTime (8.6.9.4.19) parameters.

12.31.1.8 SupportedIntervalMax

The maximum value supported by this Bridge component of the timeIntervalValue (12.31.3.2.4) parameter.

12.31.3 The Stream Gate Instance Table

12.31.3.2 The gate control list structure and data types

12.31.3.2.2 StreamGateControlEntry

Change 12.31.3.2.2 as follows:

A StreamGateControlEntry consists of an operation name, followed by three mandatory parameters and one optional parameter associated with the operation, as detailed in Table 8-4. The first parameter is a StreamGateStatesValue (8.6.10.5, 12.31.3.2.1); the second parameter is an IPV value (8.6.10.7, 12.31.3.2.3)~~,~~ ~~and~~; the third parameter is a timeIntervalValue (8.6.9.4.23, 12.31.3.2.4); and the fourth parameter is an IntervalOctetMaxValue (8.6.10.1, 12.31.3.2.5). IntervalOctetMaxValue is optional.

Insert 12.31.3.2.5 after 12.31.3.2.4 as follows:

12.31.3.2.5 IntervalOctetMaxValue

An unsigned integer, denoting an IntervalOctetMax in MSDU octets (see IntervalOctetMax in Table 8-4).

17. Management Information Base (MIB)

17.2 Structure of the MIB

17.2.22 Structure of the IEEE8021-ST-MIB

Insert three new rows at the end of Table 17-28 as follows (unchanged rows not shown):

Table 17-28—IEEE8021-ST-MIB structure

IEEE8021-ST-MIB table/object	Reference
ieee8021STSupportedCycleMaxNumerator	SupportedCycleMax, 12.29.1.6
ieee8021STSupportedCycleMaxDenominator	SupportedCycleMax, 12.29.1.6
ieee8021STSupportedIntervalMax	SupportedIntervalMax, 12.29.1.7

17.2.24 Structure of the IEEE8021-PSFP-MIB

Insert three new rows at the end of Table 17-30 as follows (unchanged rows not shown):

Table 17-30—IEEE8021-PSFP-MIB structure

IEEE8021-PSFP-MIB table/object	Reference
ieee8021PSFPSupportedCycleMaxNumerator	SupportedCycleMax, 12.31.1.7
ieee8021PSFPSupportedCycleMaxDenominator	SupportedCycleMax, 12.31.1.7
ieee8021PSFPSupportedIntervalMax	SupportedIntervalMax, 12.31.1.8

17.7 MIB modules[7] [8]

17.7.14 Definitions for the IEEE8021-SRP-MIB module

Change 17.7.14 as follows:

```
IEEE8021-SRP-MIB DEFINITIONS ::= BEGIN

-- =============================================================
-- MIB for support of IEEE 802.1Qat Stream Reservation Protocol
-- (SRP) in IEEE 802.1Q Bridges.
-- =============================================================

IMPORTS
    MODULE-IDENTITY,
    OBJECT-TYPE,
    Counter64,
    Unsigned32
        FROM SNMPv2-SMI
    MacAddress,
    TEXTUAL-CONVENTION,
    TruthValue
        FROM SNMPv2-TC
    MODULE-COMPLIANCE,
    OBJECT-GROUP
        FROM SNMPv2-CONF
    ieee802dot1mibs,
~~    IEEE8021PriorityCodePoint,~~
    IEEE8021VlanIndex
        FROM IEEE8021-TC-MIB
    IEEE8021FqtssTrafficClassValue
        FROM IEEE8021-FQTSS-MIB
    ieee8021BridgeBaseComponentId,
    ieee8021BridgeBaseEntry,
    ieee8021BridgeBasePort,
    ieee8021BridgeBasePortEntry
        FROM IEEE8021-BRIDGE-MIB

    ;

ieee8021SrpMib MODULE-IDENTITY
    LAST-UPDATED ~~"202211080000Z" -- November 8, 2022~~"202309260000Z" -- September 26, 2023
    ORGANIZATION "IEEE 802.1 Working Group"
    CONTACT-INFO
        "  WG-URL: http://www.ieee802.org/1/
         WG-EMail: stds-802-1-l@ieee.org
          Contact: IEEE 802.1 Working Group Chair
           Postal: C/O IEEE 802.1 Working Group
                   IEEE Standards Association
                   445 Hoes Lane
                   Piscataway, NJ 08854
                   USA
           E-mail: stds-802-1-chairs@ieee.org"
    DESCRIPTION
        "The Bridge MIB module for managing devices that support
        the IEEE Std 802.1Q Stream Reservation Protocol.

        Unless otherwise indicated, the references in this MIB
        module are to IEEE Std 802.1Q-2022.

        Copyright (C) IEEE (~~2022~~2023).
        This version of this MIB module is part of IEEE Std 802.1Q;
        see that standard for full legal notices."
```

[7] *Copyright release for MIBs:* Users of this standard may freely reproduce the MIB modules in this standard so that they can be used for their intended purpose.

[8] An ASCII version of this MIB module is attached to the PDF version of this standard, and can be obtained by Web browser from the IEEE 802.1 Website at https://1.ieee802.org/mib-modules/.

```
    REVISION "202309260000Z" -- September 26, 2023
    DESCRIPTION
            "Published as part of IEEE 802.1Qcw.
            Changed the applicable SYNTAX of object definitions
              ieee8021SrpStreamDataFramePriority, and
              ieee8021SrpStreamPreloadDataFramePriority
            from IEEE8021PriorityCodePoint to INTEGER
            to correct an error identifying PCP encoding SYNTAX
            instead of PCP values as intended."

    REVISION "202211080000Z" -- November 8, 2022
    DESCRIPTION
            "Published as part of IEEE Std 802.1Q-2022.
            Cross references and contact information updated."

    REVISION "201810040000Z" -- October 4, 2018
    DESCRIPTION
            "Published as part of IEEE 802.1Qcc-2018.
                       Added managed objects for Stream Reservation
                       Protocol (SRP) Enhancements and Performance
                       Improvements"

    REVISION "201806280000Z" -- June 28, 2018
    DESCRIPTION
            "Published as part of IEEE Std 802.1Q 2018.
            Cross references updated. "

    REVISION "201512020000Z" -- December 2, 2015
    DESCRIPTION
            "Published as part of IEEE Std 802.1Q-2014 Cor-1.
            ieee8021SrpReservationFailureBridgeId changed to
            ieee8021SrpReservationFailureSystemId."

    REVISION "201412150000Z" -- December 15, 2014
    DESCRIPTION
            "Published as part of IEEE Std 802.1Q 2014 revision.
            Cross references updated and corrected."

    REVISION     "201102270000Z" -- February 27, 2011
    DESCRIPTION
         "Minor edits to contact information etc. as part of
          2011 revision of Std 802.1Q."

    REVISION     "201004190000Z" -- April 19, 2010
    DESCRIPTION
         "Initial revision, included in IEEE 802.1Qat"
    ::= { ieee802dot1mibs 19 }

-- =============================================================
-- Textual Conventions
-- =============================================================

IEEE8021SrpStreamRankValue ::= TEXTUAL-CONVENTION
    STATUS       current
    DESCRIPTION
        "An 802.1 SRP Stream Rank value. This is an integer,
         with the following interpretation placed on the value:

         0: Emergency, high-rank stream,
         1: Non-emergency stream."
    REFERENCE    "35.2.2.8.5b"
    SYNTAX       INTEGER {
                     emergency(0),
                     nonEmergency(1)
                 }


IEEE8021SrpStreamIdValue ::= TEXTUAL-CONVENTION
    DISPLAY-HINT "1x:1x:1x:1x:1x:1x.1x:1x"
    STATUS       current
    DESCRIPTION
```

```
            "Represents an SRP Stream ID, which is often defined
            as a MAC Address followed by a unique 16-bit ID."
    SYNTAX       OCTET STRING (SIZE (8))

IEEE8021SrpReservationDirectionValue ::= TEXTUAL-CONVENTION
    STATUS       current
    DESCRIPTION
        "An 802.1 SRP Stream Reservation Direction value. This is
         an integer, with the following interpretation placed on
         the value:

         0: Talker registrations,
         1: Listener registrations."
    REFERENCE    "35.2.1.2"
    SYNTAX       INTEGER {
                     talkerRegistrations(0),
                     listenerRegistrations(1)
                 }


IEEE8021SrpReservationDeclarationTypeValue ::= TEXTUAL-CONVENTION
    STATUS       current
    DESCRIPTION
        "An 802.1 SRP Stream Reservation Declaration Type value.
         This is an integer, with the following interpretation
         placed on the value:

         0: Talker Advertise,
         1: Talker Failed,
         2: Listener Asking Failed,
         3: Listener Ready,
         4: Listener Ready Failed."
    REFERENCE    "35.2.1.3"
    SYNTAX       INTEGER {
                     talkerAdvertise(0),
                     talkerFailed(1),
                     listenerAskingFailed(2),
                     listenerReady(3),
                     listenerReadyFailed(4)
                 }


IEEE8021SrpReservationFailureCodeValue ::= TEXTUAL-CONVENTION
    STATUS       current
    DESCRIPTION
        "An 802.1 SRP Stream Reservation Failure Code value.
         This is an integer, with the following interpretation
         placed on the value:

         0: No failure,
         1: Insufficient bandwidth,
         2: Insufficient Bridge resources,
         3: Insufficient bandwidth for Traffic Class,
         4: StreamID in use by another Talker,
         5: Stream destination address already in use,
         6: Stream pre-empted by higher rank,
         7: Reported latency has changed,
         8: Egress port is not AVBCapable,
         9: Use a different destination_address,
         10: Out of MSRP resources,
         11: Out of MMRP resources,
         12: Cannot store destination_address,
         13: Requested priority is not an SR Class priority,
         14: MaxFrameSize is too large for media,
         15: maxFanInPorts limit has been reached,
         16: Changes in FirstValue for a registered StreamID,
         17: VLAN is blocked on this egress port (Registration Forbidden),
         18: VLAN tagging is disabled on this egress port (untagged set),
         19: SR class priority mismatch."
    REFERENCE    "35.2.2.8.7"
    SYNTAX       INTEGER {
                    noFailure(0),
                    insufficientBandwidth(1),
                    insufficientResources(2),
                    insufficientTrafficClassBandwidth(3),
                    streamIDInUse(4),
                    streamDestinationAddressInUse(5),
                    streamPreemptedByHigherRank(6),
                    latencyHasChanged(7),
                    egressPortNotAVBCapable(8),
                    useDifferentDestinationAddress(9),
                    outOfMSRPResources(10),
                    outOfMMRPResources(11),
                    cannotStoreDestinationAddress(12),
                    priorityIsNoAnSRCLass(13),
                    maxFrameSizeTooLarge(14),
                    maxFanInPortsLimitReached(15),
                    firstValueChangedForStreamID(16),
                    vlanBlockedOnEgress(17),
                    vlanTaggingDisabledOnEgress(18),
                    srClassPriorityMismatch(19)
                }


-- =============================================================
-- subtrees in the SRP MIB
-- =============================================================

ieee8021SrpNotifications
    OBJECT IDENTIFIER ::= { ieee8021SrpMib 0 }

ieee8021SrpObjects
    OBJECT IDENTIFIER ::= { ieee8021SrpMib 1 }

ieee8021SrpConformance
    OBJECT IDENTIFIER ::= { ieee8021SrpMib 2 }

ieee8021SrpConfiguration
    OBJECT IDENTIFIER ::= { ieee8021SrpObjects 1 }

ieee8021SrpLatency
    OBJECT IDENTIFIER ::= { ieee8021SrpObjects 2 }

ieee8021SrpStreams
    OBJECT IDENTIFIER ::= { ieee8021SrpObjects 3 }

ieee8021SrpReservations
    OBJECT IDENTIFIER ::= { ieee8021SrpObjects 4 }


-- =============================================================
-- The ieee8021SrpConfiguration subtree
-- This subtree defines the objects necessary for the
-- operational management of SRP.
-- =============================================================

ieee8021SrpBridgeBaseTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Ieee8021SrpBridgeBaseEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A table for SRP main control and status information.
        All writable objects in this table must be persistent
        over power up restart/reboot.  These objects augment
        the ieee8021BridgeBasePortTable."
    ::= { ieee8021SrpConfiguration 1 }

ieee8021SrpBridgeBaseEntry OBJECT-TYPE
    SYNTAX      Ieee8021SrpBridgeBaseEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "SRP control and status information for a Bridge."
    AUGMENTS { ieee8021BridgeBaseEntry }
    ::= { ieee8021SrpBridgeBaseTable 1 }

Ieee8021SrpBridgeBaseEntry ::=
    SEQUENCE {
         ieee8021SrpBridgeBaseMsrpEnabledStatus
            TruthValue,
         ieee8021SrpBridgeBaseMsrpTalkerPruning
            TruthValue,
         ieee8021SrpBridgeBaseMsrpMaxFanInPorts
            Unsigned32,
         ieee8021SrpBridgeBaseMsrpLatencyMaxFrameSize
            Unsigned32,
         ieee8021SrpBridgeBaseMsrpTalkerVlanPruning
            TruthValue,
         ieee8021SrpBridgeBaseMsrpMaxSRClasses
            Unsigned32
    }

ieee8021SrpBridgeBaseMsrpEnabledStatus OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The administrative status requested by management for
        MSRP.  The value true(1) indicates that MSRP should
        be enabled on this device, in all VLANs, on all ports
        for which it has not been specifically disabled.  When
        false(2), MSRP is disabled, in all VLANs and on all
        ports, and all MSRP frames will be forwarded
        transparently.  This objects affects both Applicant and
        Registrar state machines.  A transition from false(2)
        to true(1) will cause a reset of all MSRP state
        machines on all ports.

        This object may be modified while the corresponding
        instance of ieee8021BridgeBaseRowStatus is active(1).

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "35.2.1.4d"
    DEFVAL      { true }
    ::= { ieee8021SrpBridgeBaseEntry 1 }

ieee8021SrpBridgeBaseMsrpTalkerPruning OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The value of the talkerPruning parameter, which
        controls the propagation of Talker declarations.
        The value true(1) indicates that Talker attributes
        are only declared on ports that have the Stream
        destination_address registered in the MMRP MAC
        Address Registration Entries.  When false(2),
        Talker attribute are declared on all egress ports
        in the active topology.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "12.22.1, 35.2.1.4b, 35.2.4.3.1"
    DEFVAL      { false }
    ::= { ieee8021SrpBridgeBaseEntry 2 }

ieee8021SrpBridgeBaseMsrpMaxFanInPorts OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The value of the msrpMaxFanInPorts parameter, which
        limits the total number of ports on a Bridge that
        are allowed to establish reservations for inbound
        Streams.  A value of zero (0) indicates no fan-in
        limit is being specified and calculations involving
        fan-in will only be limited by the number of MSRP
        enabled ports.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "12.22.1, 35.2.1.4f"
    DEFVAL      { 0 }
    ::= { ieee8021SrpBridgeBaseEntry 3 }

ieee8021SrpBridgeBaseMsrpLatencyMaxFrameSize OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The value of msrpLatencyMaxFrameSize parameter
        which is used in the calculation of the maximum
        latency through a Bridge.  The maximum size is
        defined to be 2000 octets by default, but may be
        set to a smaller or larger value dependent on the
        particular Bridge configuration. This parameter
        does not imply any type of policing of frame size,
        it is only used in the latency calculations.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "12.22.1, 35.2.1.4g"
    DEFVAL      { 2000 }
    ::= { ieee8021SrpBridgeBaseEntry 4 }

ieee8021SrpBridgeBaseMsrpTalkerVlanPruning OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "This parameter allows to limit the Talker declaration
        to ports, that have the Stream's VLAN identifier
        registered as a member in the VLAN Registration
        Entries. The value true(1) indicates that Talker
        declarations are only sent out on ports, that have the
        Stream's VLAN identifier registered as a member in the
        VLAN Registration Entries. When false(2), Talker
        declarations are propagated according to the VLAN
        spanning tree."
    REFERENCE   "12.22.1, 35.2.1.4l"
    DEFVAL      { false }
    ::= { ieee8021SrpBridgeBaseEntry 5 }

ieee8021SrpBridgeBaseMsrpMaxSRClasses OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This attribute provides the maximum number of SR classes
        supported by the Bridge."
    REFERENCE   "12.22.1, 35.2.1.4m"
    ::= { ieee8021SrpBridgeBaseEntry 6 }


ieee8021SrpBridgePortTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Ieee8021SrpBridgePortEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A table for SRP control and status information about
        every Bridge Port.  Augments the ieee8021BridgeBasePortTable."
    ::= { ieee8021SrpConfiguration 2 }

ieee8021SrpBridgePortEntry OBJECT-TYPE
    SYNTAX      Ieee8021SrpBridgePortEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "SRP control and status information for a Bridge Port."
    AUGMENTS { ieee8021BridgeBasePortEntry }
    ::= { ieee8021SrpBridgePortTable 1 }

Ieee8021SrpBridgePortEntry ::=
    SEQUENCE {
        ieee8021SrpBridgePortMsrpEnabledStatus
            TruthValue,
        ieee8021SrpBridgePortMsrpFailedRegistrations
            Counter64,
        ieee8021SrpBridgePortMsrpLastPduOrigin
            MacAddress,
        ieee8021SrpBridgePortSrPvid
            IEEE8021VlanIndex,
        ieee8021SrpBridgePortMsrpTalkerPrunningPerPort
        TruthValue
    }

ieee8021SrpBridgePortMsrpEnabledStatus OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The administrative state of MSRP operation on this port.  The
        value true(1) indicates that MSRP is enabled on this port
        in all VLANs as long as ieee8021BridgeMsrpEnabledStatus is
        also true(1).  A value of false(2) indicates that MSRP is
        disabled on this port in all VLANs: any MSRP frames received
        will be silently discarded, and no MSRP registrations will be
        propagated from other ports.  Setting this to a value of
        true(1) will be stored by the agent but will only take
        effect on the MSRP protocol operation if
        ieee8021BridgeMsrpEnabledStatus
        also indicates the value true(1).  This object affects
        all MSRP Applicant and Registrar state machines on this
        port.  A transition from false(2) to true(1) will
        cause a reset of all MSRP state machines on this port.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "35.2.1.4e"
    DEFVAL      { true }
    ::= { ieee8021SrpBridgePortEntry 1 }

ieee8021SrpBridgePortMsrpFailedRegistrations OBJECT-TYPE
    SYNTAX      Counter64
    UNITS       "failed MSRP registrations"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The total number of failed MSRP registrations, for any
        reason, in all VLANs, on this port.

        Discontinuities in the value of the counter can occur at
        re-initialization of the management system, and at other
        times as indicated by the value of ifCounterDiscontinuityTime
        object of the associated interface (if any)."
    REFERENCE   "10.7.12.1"
    ::= { ieee8021SrpBridgePortEntry 2 }

ieee8021SrpBridgePortMsrpLastPduOrigin OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The Source MAC Address of the last MSRP message
        received on this port."
    REFERENCE   "10.7.12.2"
    ::= { ieee8021SrpBridgePortEntry 3 }

ieee8021SrpBridgePortSrPvid OBJECT-TYPE
```

```
    SYNTAX      IEEE8021VlanIndex
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The default VLAN ID that Streams are assigned to.
        Talkers learn this VID from the SRP Domain attribute
        and tag Streams accordingly.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "35.2.2.8.3b"
    DEFVAL      { 2 }
    ::= { ieee8021SrpBridgePortEntry 4}

ieee8021SrpBridgePortMsrpTalkerPrunningPerPort OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "This parameter controls the forwarding behavior for
        Talker declarations on the port when the TalkerPruning
        parameter is disabled for the bridge. The value true(1)
        indicates, that Talker declarations are only forwarded
        on that port, if the destination_address of the Stream
        is found in the MAC Address Registration Entries for the
        port. When false(2), Talker declarations are forwarded
        on that port regardless of the destination address."
    REFERENCE   "12.22.2, 35.2.1.4k"
    DEFVAL      { false }
    ::= { ieee8021SrpBridgePortEntry 5 }

-- =============================================================
-- The ieee8021SrpLatency subtree
-- This subtree defines the objects necessary for retrieving
-- the latency of the various traffic classes on a port.
-- =============================================================

-- =============================================================
-- the ieee8021SrpLatencyTable
-- =============================================================
ieee8021SrpLatencyTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Ieee8021SrpLatencyEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A table containing a set of latency measurement
        parameters for each traffic class."
    REFERENCE   "35.2.2.8.6"
    ::= { ieee8021SrpLatency 1 }

ieee8021SrpLatencyEntry OBJECT-TYPE
    SYNTAX      Ieee8021SrpLatencyEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A list of objects containing latency information
        for each traffic class. Rows in the table are
        automatically created for ports that are not an
        SRP domain boundary port (i.e., SRPdomainBoundaryPort
        is FALSE). See 35.1.4, 8.8.2, 12.22.3."
    INDEX  { ieee8021BridgeBaseComponentId,
             ieee8021BridgeBasePort,
             ieee8021SrpTrafficClass  }
    ::= { ieee8021SrpLatencyTable 1 }

Ieee8021SrpLatencyEntry ::=
    SEQUENCE {
        ieee8021SrpTrafficClass
            IEEE8021FqtssTrafficClassValue,
        ieee8021SrpPortTcLatency
            Unsigned32
        }
```

```
ieee8021SrpTrafficClass OBJECT-TYPE
    SYNTAX      IEEE8021FqtssTrafficClassValue
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The traffic class number associated with the
        row of the table.

        Rows in the table are automatically created for
        ports that are not an SRP domain boundary port
        (i.e., SRPdomainBoundaryPort is FALSE)."
    REFERENCE   "35.1.4, 8.8.2, 12.22.3"
    ::= { ieee8021SrpLatencyEntry 1 }


ieee8021SrpPortTcLatency OBJECT-TYPE
    SYNTAX      Unsigned32
    UNITS       "nano-seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The value of the portTcMaxLatency parameter for the
        traffic class.  This value is expressed in
        nano-seconds."
    REFERENCE   "35.2.1.4, 35.2.2.8.6"
    ::= { ieee8021SrpLatencyEntry 2 }


-- ================================================================
-- The ieee8021SrpStreams subtree
-- This subtree defines the objects necessary for retrieving
-- the characteristics of the various Streams currently registered.
-- ================================================================

-- ================================================================
-- the ieee8021SrpStreamTable
-- ================================================================
ieee8021SrpStreamTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Ieee8021SrpStreamEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A table containing a set of characteristics
        for each registered Stream."
    REFERENCE   "35.2.2.8"
    ::= { ieee8021SrpStreams 1 }

ieee8021SrpStreamEntry OBJECT-TYPE
    SYNTAX      Ieee8021SrpStreamEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A list of objects containing characteristics
        for each registered Stream. Rows in the table are
        automatically created for Streams registered on any
        port of a Bridge."
    INDEX  { ieee8021SrpStreamId }
    ::= { ieee8021SrpStreamTable 1 }

Ieee8021SrpStreamEntry ::=
    SEQUENCE {
        ieee8021SrpStreamId
            IEEE8021SrpStreamIdValue,
        ieee8021SrpStreamDestinationAddress
            MacAddress,
        ieee8021SrpStreamVlanId
            IEEE8021VlanIndex,
        ieee8021SrpStreamTspecMaxFrameSize
            Unsigned32,
        ieee8021SrpStreamTspecMaxIntervalFrames
            Unsigned32,
        ieee8021SrpStreamDataFramePriority
            INTEGER~~IEEE8021PriorityCodePoint~~,
        ieee8021SrpStreamRank
            IEEE8021SrpStreamRankValue
        }

ieee8021SrpStreamId OBJECT-TYPE
    SYNTAX      IEEE8021SrpStreamIdValue
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The Stream ID associated with the row of the table.

        Rows in the table are automatically created when
        Streams are registered via MSRP."
    REFERENCE   "35.2.2.8.2"
    ::= { ieee8021SrpStreamEntry 1 }

ieee8021SrpStreamDestinationAddress OBJECT-TYPE
    SYNTAX      MacAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The MAC destination address for the Stream described
        by this reservation."
    REFERENCE   "35.2.2.8.3a"
    ::= { ieee8021SrpStreamEntry 2}

ieee8021SrpStreamVlanId OBJECT-TYPE
    SYNTAX      IEEE8021VlanIndex
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The VLAN ID associated with the MSRP registration
        for this Stream."
    REFERENCE   "35.2.2.8.3b"
    ::= { ieee8021SrpStreamEntry 3}

ieee8021SrpStreamTspecMaxFrameSize OBJECT-TYPE
    SYNTAX      Unsigned32 (0..65535)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The maximum size frame that will be sent by
        a Talker for this Stream. This value is part
        of the Traffic Specification for the Stream."
    REFERENCE   "35.2.2.8.4a"
    ::= { ieee8021SrpStreamEntry 4}

ieee8021SrpStreamTspecMaxIntervalFrames OBJECT-TYPE
    SYNTAX      Unsigned32 (0..65535)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The maximum number of frame that will be sent
        during a class measurement interval (L.2).  This
        value is part of the Traffic Specification for
        the Stream."
    REFERENCE   "35.2.2.8.4b, L.2"
    ::= { ieee8021SrpStreamEntry 5}

ieee8021SrpStreamDataFramePriority OBJECT-TYPE
    SYNTAX      INTEGER (0..7)~~IEEE8021PriorityCodePoint~~
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The Priority Code Point (PCP) value that the
        referenced Stream will be tagged with. This value
        is used to distinguish Class A and Class B traffic."
    REFERENCE   "35.2.2.8.5a"
    ::= { ieee8021SrpStreamEntry 6}
```

```
ieee8021SrpStreamRank OBJECT-TYPE
    SYNTAX      IEEE8021SrpStreamRankValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "SRP supports emergency and non-emergency.
        Emergency traffic will interrupt non-emergency
        traffic if there is insufficient bandwidth or
        resources available for the emergency traffic."
    REFERENCE   "35.2.2.8.5b"
    ::= { ieee8021SrpStreamEntry 7}


    -- =============================================================
    -- the ieee8021SrpStreamPreloadTable
    -- =============================================================
    ieee8021SrpStreamPreloadTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF Ieee8021SrpStreamPreloadEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "A table containing a set of parameters for each StreamID
            that is preloaded on the Bridge as it initializes."
        REFERENCE   "12.22.6"
        ::= { ieee8021SrpStreams 2 }

    ieee8021SrpStreamPreloadEntry OBJECT-TYPE
        SYNTAX      Ieee8021SrpStreamPreloadEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "A list of objects containing characteristics
            for each registered Stream. Rows in the table are
            automatically created for Streams registered on any
            port of a Bridge."
        INDEX  { ieee8021SrpStreamPreloadId }
        ::= { ieee8021SrpStreamPreloadTable 1 }

    Ieee8021SrpStreamPreloadEntry ::=
        SEQUENCE {
            ieee8021SrpStreamPreloadId
                IEEE8021SrpStreamIdValue,
            ieee8021SrpStreamPreloadDestinationAddress
                MacAddress,
            ieee8021SrpStreamPreloadVlanId
                IEEE8021VlanIndex,
            ieee8021SrpStreamPreloadTspecMaxFrameSize
                Unsigned32,
            ieee8021SrpStreamPreloadTspecMaxIntervalFrames
                Unsigned32,
            ieee8021SrpStreamPreloadDataFramePriority
                INTEGER~~IEEE8021PriorityCodePoint~~,
            ieee8021SrpStreamPreloadRank
                IEEE8021SrpStreamRankValue
            }

    ieee8021SrpStreamPreloadId OBJECT-TYPE
        SYNTAX      IEEE8021SrpStreamIdValue
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
            "The 64-bit StreamID is used to match Talker
            registrations with their corresponding Listener
            registrations(35.2.4)."
        REFERENCE   "12.22.6, 35.2.2.8.2"
        ::= { ieee8021SrpStreamPreloadEntry 1 }

    ieee8021SrpStreamPreloadDestinationAddress OBJECT-TYPE
        SYNTAX      MacAddress
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
```

```
            "The MAC destination address for the Stream described
            by this reservation."
        REFERENCE   "12.22.6, 35.2.2.8.3a"
        ::= { ieee8021SrpStreamPreloadEntry 2}

    ieee8021SrpStreamPreloadVlanId OBJECT-TYPE
        SYNTAX      IEEE8021VlanIndex
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "The VLAN ID associated with the MSRP registration
            for this Stream."
        REFERENCE   "12.22.6, 35.2.2.8.3b"
        ::= { ieee8021SrpStreamPreloadEntry 3}

    ieee8021SrpStreamPreloadTspecMaxFrameSize OBJECT-TYPE
        SYNTAX      Unsigned32 (0..65535)
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "The maximum size frame that will be sent by
            a Talker for this Stream. This value is part
            of the Traffic Specification for the Stream."
        REFERENCE   "12.22.6, 35.2.2.8.4a"
        ::= { ieee8021SrpStreamPreloadEntry 4}

    ieee8021SrpStreamPreloadTspecMaxIntervalFrames OBJECT-TYPE
        SYNTAX      Unsigned32 (0..65535)
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "The maximum number of frames that the Talker may
            transmit in one classMeasurementInterval (34.3).
            This value is part of the Traffic Specification
            for the Stream."
        REFERENCE   "12.22.6, 35.2.2.8.4b"
        ::= { ieee8021SrpStreamPreloadEntry 5}

    ieee8021SrpStreamPreloadDataFramePriority OBJECT-TYPE
        SYNTAX      INTEGER (0..7)~~IEEE8021PriorityCodePoint~~
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "The Priority Code Point (PCP) value that the
            referenced Stream will be tagged with. This value
            is used to distinguish Class A and Class B traffic."
        REFERENCE   "12.22.6, 35.2.2.8.5a"
        ::= { ieee8021SrpStreamPreloadEntry 6}

    ieee8021SrpStreamPreloadRank OBJECT-TYPE
        SYNTAX      IEEE8021SrpStreamRankValue
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
            "SRP supports emergency and non-emergency.
            Emergency traffic will interrupt non-emergency
            traffic if there is insufficient bandwidth or
            resources available for the emergency traffic."
        REFERENCE   "12.22.6, 35.2.2.8.5b"
        ::= { ieee8021SrpStreamPreloadEntry 7}


-- =============================================================
-- The ieee8021SrpReservations subtree
-- This subtree defines the objects necessary for retrieving
-- the Stream attribute registrations on each port of a Bridge.
-- =============================================================

-- =============================================================
-- the ieee8021SrpReservationsTable
-- =============================================================
ieee8021SrpReservationsTable OBJECT-TYPE
```

```
    SYNTAX      SEQUENCE OF Ieee8021SrpReservationsEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A table containing Stream attribute
        registrations per port."
    REFERENCE   "35.2.4"
    ::= { ieee8021SrpReservations 1 }

ieee8021SrpReservationsEntry OBJECT-TYPE
    SYNTAX      Ieee8021SrpReservationsEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A list of objects containing Stream attribute
        registrations per port. Rows in the table are
        automatically created for Streams registered on any
        port of a Bridge."
    INDEX  { ieee8021SrpReservationStreamId,
             ieee8021SrpReservationDirection,
             ieee8021BridgeBaseComponentId,
             ieee8021BridgeBasePort }
    ::= { ieee8021SrpReservationsTable 1 }

Ieee8021SrpReservationsEntry ::=
    SEQUENCE {
        ieee8021SrpReservationStreamId
            IEEE8021SrpStreamIdValue,
        ieee8021SrpReservationDirection
            IEEE8021SrpReservationDirectionValue,
        ieee8021SrpReservationDeclarationType
            IEEE8021SrpReservationDeclarationTypeValue,
        ieee8021SrpReservationAccumulatedLatency
            Unsigned32,
        ieee8021SrpReservationFailureSystemId
            OCTET STRING,
        ieee8021SrpReservationFailureCode
            IEEE8021SrpReservationFailureCodeValue,
        ieee8021SrpReservationDroppedStreamFrames
            Counter64,
        ieee8021SrpReservationStreamAge
            Unsigned32
        }

ieee8021SrpReservationStreamId OBJECT-TYPE
    SYNTAX      IEEE8021SrpStreamIdValue
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The Stream ID associated with the row of the table.

        Rows in the table are automatically created when
        Streams are registered via MSRP."
    REFERENCE   "35.2.2.8.2"
    ::= { ieee8021SrpReservationsEntry 1 }

ieee8021SrpReservationDirection OBJECT-TYPE
    SYNTAX      IEEE8021SrpReservationDirectionValue
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The source of this Stream registration, either
        Talker or Listener."
    REFERENCE   "35.2.1.2"
    ::= { ieee8021SrpReservationsEntry 2 }

ieee8021SrpReservationDeclarationType OBJECT-TYPE
    SYNTAX      IEEE8021SrpReservationDeclarationTypeValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The type of Talker or Listener registration."
    REFERENCE   "35.2.1.3"
    ::= { ieee8021SrpReservationsEntry 3 }

ieee8021SrpReservationAccumulatedLatency OBJECT-TYPE
    SYNTAX      Unsigned32
    UNITS       "nano-seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The Accumulated Latency associated with the current
        registration.

        For Talker registrations this represents the accumulated
        latency from the Talker to the ingress port of this
        Bridge.

        For Listener registrations this represents the accumulated
        latency to the ingress port of the neighbor Bridge or
        end stations. This include the latency of the media
        attached to this egress port."
    REFERENCE   "35.2.2.8.6"
    ::= { ieee8021SrpReservationsEntry 4 }

ieee8021SrpReservationFailureSystemId OBJECT-TYPE
    SYNTAX      OCTET STRING(SIZE(8))
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The first system that changes a Talker Advertise to a
        Talker Failed registration will report its System
        Identification in this field. That single System
        Identification is then propagated from system to system."
    REFERENCE   "35.2.2.8.7a"
    ::= { ieee8021SrpReservationsEntry 5 }

ieee8021SrpReservationFailureCode OBJECT-TYPE
    SYNTAX      IEEE8021SrpReservationFailureCodeValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The first Bridge that changes a Talker Advertise to a
        Talker Failed registration will report the Failure Code
        in this field. That single Failure Code is then propagated
        from Bridge to Bridge."
    REFERENCE   "35.2.2.8.7b"
    ::= { ieee8021SrpReservationsEntry 6 }

ieee8021SrpReservationDroppedStreamFrames OBJECT-TYPE
    SYNTAX      Counter64
    UNITS       "frames"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "A count of the number of data stream frames that have
        been dropped for whatever reason.  These are not MSRP
        frames, but the stream data frames that are carried by
        the MSRP Reservation.

        Discontinuities in the value of the counter can occur at
        re-initialization of the management system, and at other
        times as indicated by the value of ifCounterDiscontinuityTime
        object of the associated interface (if any)."
     REFERENCE   "35.2.5.1"
    ::= { ieee8021SrpReservationsEntry 7 }

ieee8021SrpReservationStreamAge OBJECT-TYPE
    SYNTAX      Unsigned32
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The number of seconds since the reservation was established
        on this port."
    REFERENCE   "35.2.1.4c"
    ::= { ieee8021SrpReservationsEntry 8 }


-- ================================================================
-- the ieee8021SrpReservationsPreloadTable
-- ================================================================
ieee8021SrpReservationsPreloadTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Ieee8021SrpReservationsPreloadEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A table containing Stream attribute
        registrations per port."
    REFERENCE   "12.22.7"
    ::= { ieee8021SrpReservations 2 }

ieee8021SrpReservationsPreloadEntry OBJECT-TYPE
    SYNTAX      Ieee8021SrpReservationsPreloadEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A list of objects containing Stream attribute
        registrations per port. Rows in the table are
        automatically created for Streams registered on any
        port of a Bridge."
    INDEX  { ieee8021SrpReservationsPreloadStreamId,
             ieee8021SrpReservationPreloadDirection,
             ieee8021BridgeBaseComponentId,
             ieee8021BridgeBasePort }
    ::= { ieee8021SrpReservationsPreloadTable 1 }

Ieee8021SrpReservationsPreloadEntry ::=
    SEQUENCE {
        ieee8021SrpReservationsPreloadStreamId
            IEEE8021SrpStreamIdValue,
        ieee8021SrpReservationPreloadDirection
            IEEE8021SrpReservationDirectionValue,
        ieee8021SrpReservationPreloadAccumulatedLatency
            Unsigned32
        }

ieee8021SrpReservationsPreloadStreamId OBJECT-TYPE
    SYNTAX      IEEE8021SrpStreamIdValue
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The 64-bit StreamID is used to match Talker
        registrations with their corresponding Listener
        registrations(35.2.4)."
    REFERENCE   "12.22.7, 35.2.2.8.2"
    ::= { ieee8021SrpReservationsPreloadEntry 1 }

ieee8021SrpReservationPreloadDirection OBJECT-TYPE
    SYNTAX      IEEE8021SrpReservationDirectionValue
    MAX-ACCESS  not-accessible~~read-write~~
    STATUS      current
    DESCRIPTION
        "The source of this Stream registration, either
        Talker or Listener"
    REFERENCE   "12.22.7, 35.2.1.1"
    ::= { ieee8021SrpReservationsPreloadEntry 2 }

ieee8021SrpReservationPreloadAccumulatedLatency OBJECT-TYPE
    SYNTAX      Unsigned32
    UNITS       "nano-seconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The Accumulated Latency associated with the current
        registration.
        For Talker registrations this represents the accumulated
        latency from the Talker to the ingress port of this
        Bridge.

        For Listener registrations this represents the accumulated
        latency to the ingress port of the neighbor Bridge or
        end stations. This include the latency of the media
        attached to this egress port."
    REFERENCE   "12.22.7, 35.2.2.8.6"
    ::= { ieee8021SrpReservationsPreloadEntry 3 }


-- =============================================================
-- IEEE8021 SRP MIB - Conformance Information
-- =============================================================

ieee8021SrpCompliances
    OBJECT IDENTIFIER ::= { ieee8021SrpConformance 1 }
ieee8021SrpGroups
    OBJECT IDENTIFIER ::= { ieee8021SrpConformance 2 }

-- =============================================================
-- units of conformance
-- =============================================================

-- =============================================================
-- the ieee8021SrpConfiguration group
-- =============================================================

ieee8021SrpConfigurationGroup OBJECT-GROUP
    OBJECTS {
        ieee8021SrpBridgeBaseMsrpEnabledStatus,
        ieee8021SrpBridgeBaseMsrpTalkerPruning,
        ieee8021SrpBridgeBaseMsrpMaxFanInPorts,
        ieee8021SrpBridgeBaseMsrpLatencyMaxFrameSize,
        ieee8021SrpBridgeBaseMsrpTalkerVlanPruning,
        ieee8021SrpBridgeBaseMsrpMaxSRClasses,
        ieee8021SrpBridgePortMsrpEnabledStatus,
        ieee8021SrpBridgePortMsrpFailedRegistrations,
        ieee8021SrpBridgePortMsrpLastPduOrigin,
        ieee8021SrpBridgePortSrPvid,
        ieee8021SrpBridgePortMsrpTalkerPrunningPerPort
    }
    STATUS      current
    DESCRIPTION
        "Objects that define configuration of SRP."
    ::= { ieee8021SrpGroups 1 }

-- =============================================================
-- the ieee8021SrpLatency group
-- =============================================================

ieee8021SrpLatencyGroup OBJECT-GROUP
    OBJECTS {
        ieee8021SrpPortTcLatency
    }
    STATUS      current
    DESCRIPTION
        "Objects that define latency for SRP."
    ::= { ieee8021SrpGroups 2 }

-- =============================================================
-- the ieee8021SrpStreams group
-- =============================================================

ieee8021SrpStreamsGroup OBJECT-GROUP
    OBJECTS {
        -- ieee8021SrpStreamId,
        ieee8021SrpStreamDestinationAddress,
        ieee8021SrpStreamVlanId,
        ieee8021SrpStreamTspecMaxFrameSize,
        ieee8021SrpStreamTspecMaxIntervalFrames,
        ieee8021SrpStreamDataFramePriority,
        ieee8021SrpStreamRank
    }
    STATUS      current
    DESCRIPTION
        "Objects that define Streams for SRP."
    ::= { ieee8021SrpGroups 3 }

-- ================================================================
-- the ieee8021SrpReservations group
-- ================================================================

ieee8021SrpReservationsGroup OBJECT-GROUP
    OBJECTS {
        -- ieee8021SrpReservationStreamId,
        -- ieee8021SrpReservationDirection,
        ieee8021SrpReservationDeclarationType,
        ieee8021SrpReservationAccumulatedLatency,
        ieee8021SrpReservationFailureSystemId,
        ieee8021SrpReservationFailureCode,
        ieee8021SrpReservationDroppedStreamFrames,
        ieee8021SrpReservationStreamAge
    }
    STATUS      current
    DESCRIPTION
        "Objects that define Stream Reservations for SRP."
    ::= { ieee8021SrpGroups 4 }

-- ================================================================
-- the ieee8021SrpConfigurationPruning group
-- ================================================================

ieee8021SrpConfigurationPruningGroup OBJECT-GROUP
    OBJECTS {
        ieee8021SrpBridgeBaseMsrpTalkerVlanPruning,
        ieee8021SrpBridgePortMsrpTalkerPrunningPerPort
    }
    STATUS      current
    DESCRIPTION
        "Objects that allow configuration of pruning behavior
        for SRP."
    ::= { ieee8021SrpGroups 5 }

-- ================================================================
-- the ieee8021SrpMonitoringSRclasses group
-- ================================================================

ieee8021SrpMonitoringSRclassesGroup OBJECT-GROUP
    OBJECTS {
        ieee8021SrpBridgeBaseMsrpMaxSRClasses
    }
    STATUS      current
    DESCRIPTION
        "Objects that provides information on the maximum number
        of SR classes supported on the Bridge."
    ::= { ieee8021SrpGroups 6 }

-- ================================================================
-- the ieee8021SrpStreamsPreload group
-- ================================================================

ieee8021SrpStreamsPreloadGroup OBJECT-GROUP
    OBJECTS {
        ~~ieee8021SrpStreamPreloadId,~~
        ieee8021SrpStreamPreloadDestinationAddress,
        ieee8021SrpStreamPreloadVlanId,
        ieee8021SrpStreamPreloadTspecMaxFrameSize,
        ieee8021SrpStreamPreloadTspecMaxIntervalFrames,
        ieee8021SrpStreamPreloadDataFramePriority,
        ieee8021SrpStreamPreloadRank
    }
    STATUS      current
    DESCRIPTION
        "Objects that allow to preload parameters for each
        StreamId on Bridge Ports as the Bridge initializes."
    ::= { ieee8021SrpGroups 7 }

-- =============================================================
-- the ieee8021SrpReservationsPreload group
-- =============================================================

ieee8021SrpReservationsPreloadGroup OBJECT-GROUP
    OBJECTS {
        ~~ieee8021SrpReservationsPreloadStreamId,~~
        ~~ieee8021SrpReservationPreloadDirection,~~
        ieee8021SrpReservationPreloadAccumulatedLatency
    }
    STATUS      current
    DESCRIPTION
        "Objects that allow to initialize Streams within each
        Bridge as it powers up, to preload the Stream
        registrations that will later be provided by operation
        of SRP."
    ::= { ieee8021SrpGroups 8 }

-- =============================================================
-- compliance statements
-- =============================================================

ieee8021SrpCompliance MODULE-COMPLIANCE
    STATUS      current
    DESCRIPTION
        "The compliance statement for devices supporting
        Stream Reservation Protocol.

        Support of the objects defined in the IEEE8021-SRP MIB
        also requires support of the IEEE8021-BRIDGE-MIB; the
        provisions of 17.3.2 apply to implementations claiming
        support of the IEEE8021-SRP MIB."

    MODULE -- this module
        MANDATORY-GROUPS {
            ieee8021SrpConfigurationGroup,
            ieee8021SrpLatencyGroup,
            ieee8021SrpStreamsGroup,
            ieee8021SrpReservationsGroup
        }

    GROUP   ieee8021SrpConfigurationPruningGroup
    DESCRIPTION
        "Implementation of this group is optional. Implementation
        will allow configuration of pruning behavior for SRP."

    GROUP   ieee8021SrpMonitoringSRclassesGroup
    DESCRIPTION
        "Implementation of this group is optional. Implementation
        will allow configuration of pruning behavior for SRP."

    GROUP   ieee8021SrpStreamsPreloadGroup
    DESCRIPTION
        "Implementation of this group is optional. Implementation
        will allow to preload parameters for each StreamId on
        Bridge Ports as the Bridge initializes."

    GROUP   ieee8021SrpReservationsPreloadGroup
    DESCRIPTION
        "Implementation of this group is optional. Implementation
        will allow to initialize Streams within each Bridge as it
        powers up, to preload the Stream registrations that will
        later be provided by operation of SRP."

    ::= { ieee8021SrpCompliances 1 }
```

```
END
```

17.7.22 Definitions for the IEEE8021-ST-MIB module

Change 17.7.22 as follows:

```
IEEE8021-ST-MIB DEFINITIONS ::= BEGIN

-- ==============================================================
-- MIB for support of the Scheduled Traffic Enhancements
-- for IEEE 802.1Q Bridges.
-- ==============================================================


IMPORTS
    MODULE-IDENTITY,
    OBJECT-TYPE,
    Unsigned32,
    Counter64
        FROM SNMPv2-SMI
    TEXTUAL-CONVENTION,
    TruthValue
        FROM SNMPv2-TC
    MODULE-COMPLIANCE,
    OBJECT-GROUP
        FROM SNMPv2-CONF
    ieee802dot1mibs
        FROM IEEE8021-TC-MIB
    ieee8021BridgeBaseComponentId,
    ieee8021BridgeBasePort
        FROM IEEE8021-BRIDGE-MIB
    ;

ieee8021STMib MODULE-IDENTITY
    LAST-UPDATED ~~"202211080000Z" -- November 8, 2022~~"202309260000Z" -- September 26, 2023
    ORGANIZATION "IEEE 802.1 Working Group"
    CONTACT-INFO
        "  WG-URL: http://www.ieee802.org/1/
         WG-EMail: stds-802-1-l@ieee.org
          Contact: IEEE 802.1 Working Group Chair
           Postal: C/O IEEE 802.1 Working Group
                   IEEE Standards Association
                   445 Hoes Lane
                   Piscataway, NJ 08854
                   USA
           E-mail: stds-802-1-chairs@ieee.org"
    DESCRIPTION
        "The Bridge MIB module for managing devices that support
        the Scheduled Traffic Enhancements
        for IEEE 802.1Q Bridges.

        Unless otherwise indicated, the references in this MIB
        module are to IEEE Std 802.1Q-2022 as amended by
        IEEE Std 802.1Qcz and IEEE Std 802.1Qcw.

        Copyright (C) IEEE (~~2022~~2023).
        This version of this MIB module is part of IEEE Std 802.1Q;
        see that standard for full legal notices."

    REVISION "202309260000Z" -- September 26, 2023
    DESCRIPTION
            "Update to include SupportedCycleMax and
            SupportedIntervalMax parameters.
            Published as part of IEEE Std 802.1Qcw-2023."

    REVISION "202211080000Z" -- November 8, 2022
    DESCRIPTION
            "Published as part of IEEE Std 802.1Q-2022.
            Cross references and contact information updated."

    REVISION "201807010000Z" -- July 1, 2018
    DESCRIPTION
```

```
            "Published as part of IEEE Std 802.1Q 2018 revision.
            Cross references updated and corrected."

    REVISION "201608150000Z" -- August 15, 2016
    DESCRIPTION
        "Revised to include Set-And-Hold-MAC and
        Set-And-Release-MAC in the description of
        ieee8021STAdminControlList and
        ieee8021STOperControlList.
        Published as part of IEEE Std 802.1Qbu."

REVISION "201602190000Z" -- February 19, 2016
    DESCRIPTION
            "Initial version published as part of IEEE Std 802.1Qbv."

       ::= { ieee802dot1mibs 30 }

-- =============================================================
-- Textual Conventions
-- =============================================================

IEEE8021STTrafficClassValue ::= TEXTUAL-CONVENTION
    DISPLAY-HINT "d"
    STATUS      current
    DESCRIPTION
        "A traffic class value.
        This is the numerical value associated with a traffic
        class in a Bridge. Larger values are associated with
        higher priority traffic classes."
    REFERENCE   "12.29.1"
    SYNTAX      Unsigned32 (0..7)

IEEE8021STPTPtimeValue ::= TEXTUAL-CONVENTION
    STATUS      current
    DESCRIPTION
        "A PTPtime value, represented as a 48-bit unsigned integer
        number of seconds and a 32-bit unsigned integer number of
        nanoseconds.
        The first 6 octets represent the number of seconds: the
        first octet is the most significant
        octet of the 48-bit seconds value and the sixth octet
        is the least significant octet of the seconds value.
        The remaining octets, 7 through 10,  represent the
        number of nanoseconds: the seventh octet
        is the most significant octet of the 32-bit nanoseconds
        value and the tenth octet is the
        least significant octet of the nanoseconds value."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    SYNTAX      OCTET STRING (SIZE(10))


-- =============================================================
-- subtrees in the ST MIB
-- =============================================================

ieee8021STNotifications
    OBJECT IDENTIFIER ::= { ieee8021STMib 0 }

ieee8021STObjects
    OBJECT IDENTIFIER ::= { ieee8021STMib 1 }

ieee8021STConformance
    OBJECT IDENTIFIER ::= { ieee8021STMib 2 }

ieee8021STMaxSDUSubtree
    OBJECT IDENTIFIER ::= { ieee8021STObjects 1 }

ieee8021STParameters
    OBJECT IDENTIFIER ::= { ieee8021STObjects 2 }

-- =============================================================
-- The ieee8021STMaxSDUSubtree subtree
-- This subtree defines the objects necessary for the management
-- of the max SDU size parameters for each traffic class on a Port.
-- =============================================================

-- =============================================================
-- the ieee8021STMaxSDUTable
-- =============================================================

ieee8021STMaxSDUTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Ieee8021STMaxSDUEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A table containing a set of max SDU
        parameters, one for each traffic class.
        All writable objects in this table must be
        persistent over power up restart/reboot."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    ::= { ieee8021STMaxSDUSubtree 1 }

ieee8021STMaxSDUEntry OBJECT-TYPE
    SYNTAX      Ieee8021STMaxSDUEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A list of objects containing Max SDU size
        for each traffic class supported by the Port."
    INDEX  { ieee8021BridgeBaseComponentId,
             ieee8021BridgeBasePort,
             ieee8021STTrafficClass  }
    ::= { ieee8021STMaxSDUTable 1 }

Ieee8021STMaxSDUEntry ::=
    SEQUENCE {
        ieee8021STTrafficClass
            IEEE8021STTrafficClassValue,
        ieee8021STMaxSDU
            Unsigned32,
        ieee8021TransmissionOverrun
            Counter64
        }

ieee8021STTrafficClass OBJECT-TYPE
    SYNTAX      IEEE8021STTrafficClassValue
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The traffic class number associated with the row of
        the table.

        A row in this table is created for each traffic class
        that is supported by the Port"
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    ::= { ieee8021STMaxSDUEntry 1 }


ieee8021STMaxSDU OBJECT-TYPE
    SYNTAX      Unsigned32
    UNITS       "octets"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The value of the MaxSDU parameter for the traffic class.
        This value is represented as an unsigned integer. A value
        of 0 is interpreted as the max SDU size supported by
        the underlying MAC.

        The default value of the MaxSDU parameter is 0.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    DEFVAL { 0 }
    ::= { ieee8021STMaxSDUEntry 2}


ieee8021TransmissionOverrun OBJECT-TYPE
    SYNTAX      Counter64
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "A counter of transmission overrun events, where
        a PDU is still being transmitted by a MAC at the
        time when the transmission gate for the queue closed."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1, 12.29.1.1.2"
    DEFVAL { 0 }
    ::= { ieee8021STMaxSDUEntry 3}


-- =============================================================
-- The ieee8021STParameters subtree
-- This subtree defines the objects necessary for the management
-- of the traffic scheduling mechanism for IEEE Std 802.1Q.
-- =============================================================

-- =============================================================
-- the ieee8021STParametersTable
-- =============================================================

ieee8021STParametersTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Ieee8021STParametersEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A table that contains the per-port manageable parameters for
        traffic scheduling.

        For a given Port, a row in the table exists.

        All writable objects in this table must be
        persistent over power up restart/reboot."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    ::= { ieee8021STParameters 1 }

ieee8021STParametersEntry OBJECT-TYPE
    SYNTAX      Ieee8021STParametersEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A list of objects that contains the manageable parameters for
        traffic scheduling for a port."
    INDEX  { ieee8021BridgeBaseComponentId,
             ieee8021BridgeBasePort
           }
    ::= { ieee8021STParametersTable 1 }

Ieee8021STParametersEntry ::=
    SEQUENCE {
        ieee8021STGateEnabled
            TruthValue,
        ieee8021STAdminGateStates
            OCTET STRING,
        ieee8021STOperGateStates
            OCTET STRING,
        ieee8021STAdminControlListLength
            Unsigned32,
        ieee8021STOperControlListLength
            Unsigned32,
        ieee8021STAdminControlList
            OCTET STRING,
        ieee8021STOperControlList
            OCTET STRING,
        ieee8021STAdminCycleTimeNumerator
            Unsigned32,
        ieee8021STAdminCycleTimeDenominator
            Unsigned32,
        ieee8021STOperCycleTimeNumerator
            Unsigned32,
        ieee8021STOperCycleTimeDenominator
            Unsigned32,
        ieee8021STAdminCycleTimeExtension
            Unsigned32,
        ieee8021STOperCycleTimeExtension
            Unsigned32,
        ieee8021STAdminBaseTime
            IEEE8021STPTPtimeValue,
        ieee8021STOperBaseTime
            IEEE8021STPTPtimeValue,
        ieee8021STConfigChange
            TruthValue,
        ieee8021STConfigChangeTime
            IEEE8021STPTPtimeValue,
        ieee8021STTickGranularity
            Unsigned32,
        ieee8021STCurrentTime
            IEEE8021STPTPtimeValue,
        ieee8021STConfigPending
            TruthValue,
        ieee8021STConfigChangeError
            Counter64,
        ieee8021STSupportedListMax
            Unsigned32,
        ieee8021STSupportedCycleMaxNumerator
            Unsigned32,
        ieee8021STSupportedCycleMaxDenominator
            Unsigned32,
        ieee8021STSupportedIntervalMax
            Unsigned32
            }

ieee8021STGateEnabled OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The GateEnabled parameter determines whether traffic scheduling
        is active (true) or inactive (false).

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    DEFVAL { false }
    ::= { ieee8021STParametersEntry 1 }

ieee8021STAdminGateStates OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(1))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The administrative value of the GateStates parameter for the Port.
        The bits of the octet represent the gate states for the
        corresponding traffic classes; the MS bit corresponds to traffic class 7,
        the LS bit to traffic class 0. A bit value of 0 indicates closed; a
        bit value of 1 indicates open.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    ::= { ieee8021STParametersEntry 2 }

ieee8021STOperGateStates OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(1))
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The operational value of the GateStates parameter for the Port.
        The bits of the octet represent the gate states for the
        corresponding traffic classes; the MS bit corresponds to traffic class 7,
        the LS bit to traffic class 0. A bit value of 0 indicates closed; a
        bit value of 1 indicates open."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    ::= { ieee8021STParametersEntry 3 }

ieee8021STAdminControlListLength OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The administrative value of the ListMax parameter for the Port.
        The integer value indicates the number of entries (TLVs) in the
        AdminControlList.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    ::= { ieee8021STParametersEntry 4 }

ieee8021STOperControlListLength OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The operational value of the ListMax parameter for the Port.
        The integer value indicates the number of entries (TLVs) in the
        OperControlList."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    ::= { ieee8021STParametersEntry 5 }

ieee8021STAdminControlList OBJECT-TYPE
    SYNTAX      OCTET STRING
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The administrative value of the ControlList parameter for the Port.
        The octet string value represents the contents of the control list as
        an ordered list of entries, each encoded as a TLV, as follows.
        The first octet  of each TLV is interpreted as an
        unsigned integer representing a gate operation name:
            0: SetGateStates
            1: Set-And-Hold-MAC
            2: Set-And-Release-MAC
            3-255: Reserved for future gate operations

        The second octet of the TLV is the length field,
        interpreted as an unsigned integer, indicating the number of
        octets of the value that follows the length. A length of
        zero indicates that there is no value
        (i.e., the gate operation has no parameters).

        The third through (3 + length -1)th octets encode the
        parameters of the gate operation, in the order that they
        appear in the definition of the operation
        in Table 8-6. Two parameter types are currently defined:

        - GateState:
            A GateState parameter is encoded in a single octet.
            The bits of the octet represent the gate states for the
            corresponding traffic classes; the MS bit corresponds
            to traffic class 7,
            the LS bit to traffic class 0. A bit value of 0 indicates
            closed; a bit value of 1 indicates open.

        - TimeInterval:
            A TimeInterval is encoded in 4 octets as a 32-bit
            unsigned integer, representing a number of nanoseconds.
            The first octet encodes the most significant 8 bits of the
            integer, and the fourth octet encodes the least
            significant 8 bits.
        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    ::= { ieee8021STParametersEntry 6 }

ieee8021STOperControlList OBJECT-TYPE
    SYNTAX      OCTET STRING
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The operational value of the ListMax parameter for the Port.
        The octet string value represents the contents of the control list as
        an ordered list of TLVs, as follows.
        The first octet  of each TLV is interpreted as a gate operation name:
            0: SetGateStates
            1: Set-And-Hold-MAC
            2: Set-And-Release-MAC
            3-255: Reserved for future gate operations

        The second octet of the TLV is the length field,
        interpreted as an unsigned integer,
        indicating the number of octets of the value that follows
        the length. A length of zero indicates that there is no value
        (i.e., the gate operation has no parameters).

        The third through (3 + length -1)th octets encode the
        parameters of the gate operation, in the order that they
        appear in the definition of the operation
        in Table 8-6. Two parameter types are currently defined:

        - GateState:
            A GateState parameter is encoded in a single octet.
            The bits of the octet represent the gate states for the
            corresponding traffic classes; the MS bit corresponds to
            traffic class 7, the LS bit to traffic class 0.
            A bit value of 0 indicates closed; a
            bit value of 1 indicates open.

        - TimeInterval:
            A TimeInterval is encoded in 4 octets as a 32-bit
            unsigned integer, representing
            a number of nanoseconds. The first octet encodes the
            most significant 8 bits of the integer, and the fourth
            octet encodes the least significant 8 bits."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    ::= { ieee8021STParametersEntry 7 }

ieee8021STAdminCycleTimeNumerator OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The administrative value of the numerator of the CycleTime
        parameter for the Port.
        The numerator and denominator together represent the cycle time as
        a rational number of seconds.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    ::= { ieee8021STParametersEntry 8 }

ieee8021STAdminCycleTimeDenominator OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The administrative value of the denominator of the
        CycleTime parameter for the Port.
        The numerator and denominator together represent the cycle time as
        a rational number of seconds.
        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    ::= { ieee8021STParametersEntry 9 }

ieee8021STOperCycleTimeNumerator OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The operational value of the numerator of the
        CycleTime parameter for the Port.
        The numerator and denominator together represent the cycle
        time as a rational number of seconds."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    ::= { ieee8021STParametersEntry 10 }

ieee8021STOperCycleTimeDenominator OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The operational value of the denominator of the
        CycleTime parameter for the Port.
        The numerator and denominator together represent the
        cycle time as a rational number of seconds."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    ::= { ieee8021STParametersEntry 11 }

ieee8021STAdminCycleTimeExtension OBJECT-TYPE
    SYNTAX      Unsigned32
    UNITS       "nanoseconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The administrative value of the CycleTimeExtension
        parameter for the Port.
        The value is an unsigned integer number of nanoseconds.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    ::= { ieee8021STParametersEntry 12 }

ieee8021STOperCycleTimeExtension OBJECT-TYPE
    SYNTAX      Unsigned32
    UNITS       "nanoseconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The operational value of the CycleTimeExtension parameter for the Port.
        The value is an unsigned integer number of nanoseconds."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    ::= { ieee8021STParametersEntry 13 }

ieee8021STAdminBaseTime OBJECT-TYPE
    SYNTAX      IEEE8021STPTPtimeValue
    UNITS       "PTP time"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The administrative value of the BaseTime parameter for the Port.
        The value is a representation of a PTPtime value,
        consisting of a 48-bit integer
        number of seconds and a 32-bit integer number of nanoseconds.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    ::= { ieee8021STParametersEntry 14 }
```

```
ieee8021STOperBaseTime OBJECT-TYPE
    SYNTAX      IEEE8021STPTPtimeValue
    UNITS       "PTP time"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The ~~operationsl ~~operational value of the BaseTime parameter for the Port.
        The value is a representation of a PTPtime value,
        consisting of a 48-bit integer
        number of seconds and a 32-bit integer number of nanoseconds."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    ::= { ieee8021STParametersEntry 15 }

ieee8021STConfigChange OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The ConfigChange parameter signals the start of a
        configuration change
        when it is set to TRUE. This should only be done
        when the various administrative parameters
        are all set to appropriate values."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    ::= { ieee8021STParametersEntry 16 }

ieee8021STConfigChangeTime OBJECT-TYPE
    SYNTAX      IEEE8021STPTPtimeValue
    UNITS       "PTP time"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The PTPtime at which the next config change is scheduled to occur.
        The value is a representation of a PTPtime value,
        consisting of a 48-bit integer
        number of seconds and a 32-bit integer number of nanoseconds.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    ::= { ieee8021STParametersEntry 17 }

    ieee8021STTickGranularity OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The granularity of the cycle time clock, represented as an
        unsigned number of tenths of nanoseconds.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    ::= { ieee8021STParametersEntry 18 }

 ieee8021STCurrentTime OBJECT-TYPE
    SYNTAX      IEEE8021STPTPtimeValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The current time, in PTPtime, as maintained by the local system.
        The value is a representation of a PTPtime value,
        consisting of a 48-bit integer
        number of seconds and a 32-bit integer number of nanoseconds."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    ::= { ieee8021STParametersEntry 19 }

 ieee8021STConfigPending OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
```

```
        "The value of the ConfigPending state machine variable.
        The value is TRUE if a configuration change is in progress
        but has not yet completed."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.29.1"
    ::= { ieee8021STParametersEntry 20 }

 ieee8021STConfigChangeError OBJECT-TYPE
    SYNTAX      Counter64
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "A counter of the number of times that a re-configuration
        of the traffic schedule has been requested with the old
        schedule still running and the requested base time was
        in the past."
    REFERENCE   "8.6.8.4, 8.6.9.3, 12.29.1"
    ::= { ieee8021STParametersEntry 21 }

ieee8021STSupportedListMax OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The maximum value supported by this Port of the
        AdminControlListLength and OperControlListLength
        parameters."
    REFERENCE   "12.29.1.5"
    ::= { ieee8021STParametersEntry 22 }

ieee8021STSupportedCycleMaxNumerator OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The numerator of the SupportedCycleMax parameter for
    the Port. The numerator and denominator together
    represent the maximum value supported by this Port of
    the AdminCycleTime and OperCycleTime parameters"
    REFERENCE   "12.29.1.6"
    ::= { ieee8021STParametersEntry 23 }

ieee8021STSupportedCycleMaxDenominator OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The denominator of the SupportedCycleMax parameter for
    the Port. The numerator and denominator together
    represent the maximum value supported by this Port of
    the AdminCycleTime and OperCycleTime parameters"
    REFERENCE   "12.29.1.6"
    ::= { ieee8021STParametersEntry 24 }

ieee8021STSupportedIntervalMax OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The maximum value supported by this Port of the
    TimeIntervalValue parameter."
    REFERENCE   "12.29.1.7"
    ::= { ieee8021STParametersEntry 25 }

-- =============================================================
-- IEEE8021 ST~~FQTSS~~ MIB - Conformance Information
-- =============================================================

ieee8021STCompliances
    OBJECT IDENTIFIER ::= { ieee8021STConformance 1 }
ieee8021STGroups
    OBJECT IDENTIFIER ::= { ieee8021STConformance 2 }
```

```
-- =============================================================
-- units of conformance
-- =============================================================

-- =============================================================
-- the ieee8021STObjectsGroup group
-- =============================================================

ieee8021STObjectsGroup OBJECT-GROUP
    OBJECTS {
        ieee8021STMaxSDU,
        ieee8021TransmissionOverrun,
        ieee8021STGateEnabled,
        ieee8021STAdminGateStates,
        ieee8021STOperGateStates,
        ieee8021STAdminControlListLength,
        ieee8021STOperControlListLength,
        ieee8021STAdminControlList,
        ieee8021STOperControlList,
        ieee8021STAdminCycleTimeNumerator,
        ieee8021STAdminCycleTimeDenominator,
        ieee8021STOperCycleTimeNumerator,
        ieee8021STOperCycleTimeDenominator,
        ieee8021STAdminCycleTimeExtension,
        ieee8021STOperCycleTimeExtension,
        ieee8021STAdminBaseTime,
        ieee8021STOperBaseTime,
        ieee8021STConfigChange,
        ieee8021STConfigChangeTime,
        ieee8021STTickGranularity,
        ieee8021STCurrentTime,
        ieee8021STConfigPending,
        ieee8021STConfigChangeError,
        ieee8021STSupportedListMax,
        ieee8021STSupportedCycleMaxNumerator,
        ieee8021STSupportedCycleMaxDenominator,
        ieee8021STSupportedIntervalMax
    }
    STATUS      current
    DESCRIPTION
        "Objects that allow management of scheduled traffic."
    ::= { ieee8021STGroups 1 }


-- =============================================================
-- compliance statements
-- =============================================================

ieee8021STCompliance MODULE-COMPLIANCE
    STATUS      current
    DESCRIPTION
        "The compliance statement for devices supporting
        scheduled traffic.

        Support of the objects defined in this MIB module
        also requires support of the IEEE8021-BRIDGE-MIB; the
        provisions of 17.3.2 apply to implementations claiming
        support of this MIB. "

    MODULE -- this module
        MANDATORY-GROUPS {
            ieee8021STObjectsGroup
        }

    ::= { ieee8021STCompliances 1 }

END
```

17.7.24 Definitions for the IEEE8021-PSFP-MIB module

Change 17.7.24 as follows:

```
IEEE8021-PSFP-MIB DEFINITIONS ::= BEGIN

-- =============================================================
-- MIB for support of the Per-Stream Filtering and Policing
-- Enhancements for IEEE 802.1Q Bridges.
-- =============================================================

IMPORTS
    MODULE-IDENTITY,
    OBJECT-TYPE,
    Unsigned32,
    Integer32,
    Counter64
        FROM SNMPv2-SMI
    TruthValue, RowStatus
        FROM SNMPv2-TC
    MODULE-COMPLIANCE,
    OBJECT-GROUP
        FROM SNMPv2-CONF
    ieee802dot1mibs
        FROM IEEE8021-TC-MIB
    ieee8021BridgeBaseComponentId
        FROM IEEE8021-BRIDGE-MIB
    IEEE8021STPTPtimeValue
        FROM IEEE8021-ST-MIB
    ;

ieee8021PSFPMib MODULE-IDENTITY
    LAST-UPDATED ~~"202201130000Z" -- January 13, 2022~~"202309260000Z" -- September 26, 2023
    ORGANIZATION "IEEE 802.1 Working Group"
    CONTACT-INFO
        "  WG-URL: http://www.ieee802.org/1/
         WG-EMail: stds-802-1-l@ieee.org
          Contact: IEEE 802.1 Working Group Chair
           Postal: C/O IEEE 802.1 Working Group
                   IEEE Standards Association
                   445 Hoes Lane
                   Piscataway, NJ 08854
                   USA
           E-mail: stds-802-1-chairs@ieee.org"
    DESCRIPTION
        "The Bridge MIB module for managing devices that support
        the Per-Stream Filtering and Policing enhancements
        for IEEE 802.1Q Bridges.

        Unless otherwise indicated, the references in this MIB
        module are to IEEE Std 802.1Q-2022.

        Copyright (C) IEEE (~~2022~~2023).
        This version of this MIB module is part of IEEE Std 802.1Q;
        see that standard for full legal notices."

    REVISION "202309260000Z" -- September 26, 2023
    DESCRIPTION
            "Update to include SupportedCycleMax and 
            SupportedIntervalMax parameters. 
            Published as part of IEEE Std 802.1Qcw-2023."

    REVISION "202201130000Z" -- January 13, 2022
    DESCRIPTION
            "Published as part of IEEE Std 802.1Q-2022.
            Cross references and contact information updated."

    REVISION "202011060000Z" -- November 6, 2020
    DESCRIPTION
            "Published as part of IEEE Std 802.1Qcr-2020.
            Cross references and contact information updated."

    REVISION "201807010000Z" -- July 1, 2018
    DESCRIPTION
            "Published as part of IEEE Std 802.1Q 2018 revision.
            Cross references updated and corrected."

    REVISION "201709080000Z" -- September 29, 2017
    DESCRIPTION
            "Initial version published as part of IEEE Std 802.1Qci."

       ::= { ieee802dot1mibs 31 }


-- =============================================================
-- subtrees in the PSFP MIB
-- =============================================================

ieee8021PSFPNotifications
    OBJECT IDENTIFIER ::= { ieee8021PSFPMib 0 }

ieee8021PSFPObjects
    OBJECT IDENTIFIER ::= { ieee8021PSFPMib 1 }

ieee8021PSFPConformance
    OBJECT IDENTIFIER ::= { ieee8021PSFPMib 2 }

ieee8021PSFPStreamFilterParameters
    OBJECT IDENTIFIER ::= { ieee8021PSFPObjects 1 }

ieee8021PSFPStreamGateParameters
    OBJECT IDENTIFIER ::= { ieee8021PSFPObjects 2 }

ieee8021PSFPFlowMeterParameters
    OBJECT IDENTIFIER ::= { ieee8021PSFPObjects 3 }

ieee8021PSFPStreamParameters
    OBJECT IDENTIFIER ::= { ieee8021PSFPObjects 4 }


-- =============================================================
-- The ieee8021PSFPStreamFilterParameters subtree
-- This subtree defines the objects necessary for the management
-- of the stream filters for IEEE Std 802.1Q.
-- =============================================================

-- =============================================================
-- the ieee8021PSFPStreamFilterTable
-- =============================================================

ieee8021PSFPStreamFilterTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Ieee8021PSFPStreamFilterEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A table that contains the per-filter instance
        manageable parameters for stream filters.

        A row in the table exists for each stream filter instance.
        associated with a Bridge component.

        All writable objects in this table must be
        persistent over power up restart/reboot."
    REFERENCE   "8.6.5.2.1, 8.6.5.3, 12.31.2"
    ::= { ieee8021PSFPStreamFilterParameters 1 }

ieee8021PSFPStreamFilterEntry OBJECT-TYPE
    SYNTAX      Ieee8021PSFPStreamFilterEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A list of objects that contains the manageable parameters for
        stream filters for a Bridge component."
    INDEX  { ieee8021BridgeBaseComponentId,
             ieee8021PSFPStreamFilterInstance
           }
    ::= { ieee8021PSFPStreamFilterTable 1 }

Ieee8021PSFPStreamFilterEntry ::=
    SEQUENCE {
        ieee8021PSFPStreamFilterInstance
            Unsigned32,
        ieee8021PSFPStreamHandleSpec
            Integer32,
        ieee8021PSFPPrioritySpec
            Integer32,
        ieee8021PSFPStreamGateInstanceID
            Unsigned32,
        ieee8021PSFPFilterSpecificationList
            OCTET STRING,
        ieee8021PSFPMatchingFramesCount
            Counter64,
        ieee8021PSFPPassingFramesCount
            Counter64,
        ieee8021PSFPNotPassingFramesCount
            Counter64,
        ieee8021PSFPPassingSDUCount
            Counter64,
        ieee8021PSFPNotPassingSDUCount
            Counter64,
        ieee8021PSFPREDFramesCount
            Counter64,
        ieee8021PSFPStreamBlockedDueToOversizeFrameEnable
            TruthValue,
        ieee8021PSFPStreamBlockedDueToOversizeFrame
            TruthValue,
        ieee8021PSFPStreamFilterEntryRowStatus
            RowStatus
             }

ieee8021PSFPStreamFilterInstance OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The StreamFilterInstance parameter is an index into the
        StreamFilterTable.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.5.2.1, 8.6.5.3, 12.31.2"
    ::= { ieee8021PSFPStreamFilterEntry 1}

ieee8021PSFPStreamHandleSpec OBJECT-TYPE
    SYNTAX      Integer32 (-1..2147483647)
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The StreamHandleSpec parameter contains a stream identifier
        specification value. A value of -1 denotes the wild card value;
        all positive values denote stream identifier values.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.5.2.1, 8.6.5.3, 12.31.2"
    ::= { ieee8021PSFPStreamFilterEntry 2}

ieee8021PSFPPrioritySpec OBJECT-TYPE
    SYNTAX      Integer32 (-1..2147483647)
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The PrioritySpec parameter contains a priority
        specification value. A value of -1 denotes the wild card value;
        zero or positive values denote priority values.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.5.2.1, 8.6.5.3, 12.31.2"
    ::= { ieee8021PSFPStreamFilterEntry 3}

ieee8021PSFPStreamGateInstanceID OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The StreamGateInstance parameter contains the index of an
        entry in the Stream Gate Table.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.5.2.1, 8.6.5.3, 12.31.2"
    ::= { ieee8021PSFPStreamFilterEntry 4}

ieee8021PSFPFilterSpecificationList OBJECT-TYPE
    SYNTAX      OCTET STRING
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The FilterSpecificationList parameter contains a list of
        filter specifications associated with this stream filter.

        The octet string value represents the contents of the list as
        an ordered list of entries, each encoded as a TLV, as follows.

        The first octet  of each TLV is interpreted as an
        unsigned integer representing a filter specification type:
            0: Maximum SDU Size.
            1: Flow meter instance identifier.
            2-255: Reserved for future filter specification types

        The second and third octets of the TLV are the length field,
        interpreted as an unsigned integer, indicating the number of
        octets of the value that follows the length. A length of
        zero indicates that there is no value
        (i.e., the filter specification has no parameters).

        The fourth through (4 + length -1)th octets encode the
        parameters of the filter specification, as defined for each
        filter specification type.

        - Maximum SDU Size:
            A single SDU size parameter is encoded in four octets, and
            is interpreted as an unsigned integer value.

        - Flow meter instance identifier:
            A single flow meter instance identifier is encoded in
            four octets, and is interpreted as an unsigned integer value.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.5.2.1, 8.6.5.3, 12.31.2"
    ::= { ieee8021PSFPStreamFilterEntry 5}

ieee8021PSFPMatchingFramesCount OBJECT-TYPE
    SYNTAX      Counter64
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The MatchingFramesCount counter counts received frames that
        match this stream filter.
        "
    REFERENCE   "8.6.5.2.1, 8.6.5.3, 12.31.2"
    ::= { ieee8021PSFPStreamFilterEntry 6}

ieee8021PSFPPassingFramesCount OBJECT-TYPE
```

```
    SYNTAX      Counter64
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The PassingFramesCount counter counts received frames that
        pass the gate associated with this stream filter.
        "
    REFERENCE   "8.6.5.2.1, 8.6.5.3, 12.31.2"
    ::= { ieee8021PSFPStreamFilterEntry 7}

ieee8021PSFPNotPassingFramesCount OBJECT-TYPE
    SYNTAX      Counter64
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The NotPassingFramesCount counter counts received frames that
        do not pass the gate associated
        with this stream filter.
        "
    REFERENCE   "8.6.5.2.1, 8.6.5.3, 12.31.2"
    ::= { ieee8021PSFPStreamFilterEntry 8}

ieee8021PSFPPassingSDUCount OBJECT-TYPE
    SYNTAX      Counter64
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The  PassingSDUCount counter counts received frames that
        pass the maximum SDU size filter specification associated
        with this stream filter.
        "
    REFERENCE   "8.6.5.2.1, 8.6.5.3, 12.31.2"
    ::= { ieee8021PSFPStreamFilterEntry 9}

ieee8021PSFPNotPassingSDUCount OBJECT-TYPE
    SYNTAX      Counter64
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The  NotPassingSDUCount counter counts received frames that
        do not pass the maximum SDU size filter specification associated
        with this stream filter.
        "
    REFERENCE   "8.6.5.2.1, 8.6.5.3, 12.31.2"
    ::= { ieee8021PSFPStreamFilterEntry 10}

ieee8021PSFPREDFramesCount OBJECT-TYPE
    SYNTAX      Counter64
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The REDFramesCount counter counts received
         frames that were discarded as a result of the
         operation of the flow meter.
        "
    REFERENCE   "8.6.5.2.1, 8.6.5.3, 12.31.2"
    ::= { ieee8021PSFPStreamFilterEntry 11}

ieee8021PSFPStreamBlockedDueToOversizeFrameEnable OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The ieee8021PSFPStreamBlockedDueToOversizeFrameEnable object
        contains a Boolean value that indicates whether the
        StreamBlockedDueToOversizeFrame function is
        enabled (TRUE) or disabled (FALSE).

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.5.2.1, 8.6.5.3, 12.31.2"
    DEFVAL { false }
    ::= { ieee8021PSFPStreamFilterEntry 12 }

ieee8021PSFPStreamBlockedDueToOversizeFrame OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The ieee8021PSFPStreamBlockedDueToOversizeFrame object
        contains a Boolean value that indicates whether, if the
        StreamBlockedDueToOversizeFrame function is
        enabled, all frames are to be discarded (TRUE)
        or not (FALSE).

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.5.2.1, 8.6.5.3, 12.31.2"
    DEFVAL { false }
    ::= { ieee8021PSFPStreamFilterEntry 13 }

ieee8021PSFPStreamFilterEntryRowStatus OBJECT-TYPE
    SYNTAX      RowStatus
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The status of the row.

         The writable columns in a row cannot be changed if the row
         is active. All columns MUST have a valid value before a row
         can be activated.
        "
    ::= { ieee8021PSFPStreamFilterEntry 14 }


-- =============================================================
-- The ieee8021PSFPStreamGateParameters subtree
-- This subtree defines the objects necessary for the management
-- of the stream gate scheduling mechanism for IEEE Std 802.1Q.
-- =============================================================

-- =============================================================
-- the ieee8021PSFPStreamGateTable
-- =============================================================

ieee8021PSFPStreamGateTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Ieee8021PSFPStreamGateEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A table that contains the per-gate instance
        manageable parameters for stream gate scheduling.

        For a given Bridge component, a row in the table exists for
        each stream gate instance.

        All writable objects in this table must be
        persistent over power up restart/reboot."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.31.3"
    ::= { ieee8021PSFPStreamGateParameters 1 }

ieee8021PSFPStreamGateEntry OBJECT-TYPE
    SYNTAX      Ieee8021PSFPStreamGateEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A list of objects that contains the manageable parameters for
        stream gate scheduling for a Bridge component."
    INDEX  { ieee8021BridgeBaseComponentId,
             ieee8021PSFPStreamGateInstance
           }
    ::= { ieee8021PSFPStreamGateTable 1 }

Ieee8021PSFPStreamGateEntry ::=
    SEQUENCE {
        ieee8021PSFPStreamGateInstance
            Unsigned32,
        ieee8021PSFPGateEnabled
            TruthValue,
        ieee8021PSFPAdminGateStates
            INTEGER,
        ieee8021PSFPOperGateStates
            INTEGER,
        ieee8021PSFPAdminControlListLength
            Unsigned32,
        ieee8021PSFPOperControlListLength
            Unsigned32,
        ieee8021PSFPAdminControlList
            OCTET STRING,
        ieee8021PSFPOperControlList
            OCTET STRING,
        ieee8021PSFPAdminCycleTimeNumerator
            Unsigned32,
        ieee8021PSFPAdminCycleTimeDenominator
            Unsigned32,
        ieee8021PSFPOperCycleTimeNumerator
            Unsigned32,
        ieee8021PSFPOperCycleTimeDenominator
            Unsigned32,
        ieee8021PSFPAdminCycleTimeExtension
            Unsigned32,
        ieee8021PSFPOperCycleTimeExtension
            Unsigned32,
        ieee8021PSFPAdminBaseTime
            IEEE8021STPTPtimeValue,
        ieee8021PSFPOperBaseTime
            IEEE8021STPTPtimeValue,
        ieee8021PSFPConfigChange
            TruthValue,
        ieee8021PSFPConfigChangeTime
            IEEE8021STPTPtimeValue,
        ieee8021PSFPTickGranularity
            Unsigned32,
        ieee8021PSFPCurrentTime
            IEEE8021STPTPtimeValue,
        ieee8021PSFPConfigPending
            TruthValue,
        ieee8021PSFPConfigChangeError
            Counter64,
        ieee8021PSFPAdminIPV
            Integer32,
        ieee8021PSFPOperIPV
            Integer32,
        ieee8021PSFPGateClosedDueToInvalidRxEnable
            TruthValue,
        ieee8021PSFPGateClosedDueToInvalidRx
            TruthValue,
        ieee8021PSFPGateClosedDueToOctetsExceededEnable
            TruthValue,
        ieee8021PSFPGateClosedDueToOctetsExceeded
            TruthValue,
ieee8021PSFPStreamGateEntryRowStatus
            RowStatus
            }

ieee8021PSFPStreamGateInstance OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The StreamGateInstance parameter is an index into the
        StreamGateTable.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.5.2.1, 8.6.5.4, 12.31.3"
    ::= { ieee8021PSFPStreamGateEntry 1}

ieee8021PSFPGateEnabled OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The GateEnabled parameter determines whether the stream gate
        is active (true) or inactive (false).

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.31.3"
    DEFVAL { false }
    ::= { ieee8021PSFPStreamGateEntry 2}

ieee8021PSFPAdminGateStates OBJECT-TYPE
    SYNTAX      INTEGER { open(1), closed(2) }
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The administrative value of the GateStates parameter for the
        stream gate.
        The open value indicates that the gate is open,
        the closed value indicates that the gate is closed.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.31.3"
    ::= { ieee8021PSFPStreamGateEntry 3 }

ieee8021PSFPOperGateStates OBJECT-TYPE
    SYNTAX      INTEGER { open(1), closed(2) }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The operational value of the GateStates parameter for the
        stream gate.
        The open value indicates that the gate is open,
        the closed value indicates that the gate is closed.
"
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.31.3"
    ::= { ieee8021PSFPStreamGateEntry 4 }

ieee8021PSFPAdminControlListLength OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The administrative value of the ListMax parameter for the gate.
        The integer value indicates the number of entries (TLVs) in the
        AdminControlList.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.31.3"
    ::= { ieee8021PSFPStreamGateEntry 5 }

ieee8021PSFPOperControlListLength OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The operational value of the ListMax parameter for the gate.
        The integer value indicates the number of entries (TLVs) in the
        OperControlList."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.31.3"
    ::= { ieee8021PSFPStreamGateEntry 6 }

ieee8021PSFPAdminControlList OBJECT-TYPE
    SYNTAX      OCTET STRING
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The administrative value of the ControlList parameter for the gate.
        The octet string value represents the contents of the control list as
        an ordered list of entries, each encoded as a TLV, as follows.
        The first octet  of each TLV is interpreted as an
        unsigned integer representing a gate operation name:
            0: SetGateAndIPV
            1-255: Reserved for future gate operations

        The second octet of the TLV is the length field,
        interpreted as an unsigned integer, indicating the number of
        octets of the value that follows the length. A length of
        zero indicates that there is no value
        (i.e., the gate operation has no parameters).

        The third through (3 + length -1)th octets encode the
        parameters of the gate operation, in the order that they
        appear in the definition of the operation in Table 8-4.
        ~~Three parameter types are defined:~~
        The first parameter is a StreamGateState value; the second
        parameter is an IPV value; the third parameter is a
        TimeInterval value; and the fourth parameter is an
        IntervalOctetMax value. IntervalOctetMax is optional.

        - StreamGateState:
            A GateState parameter is encoded in a single octet, and
            is interpreted as an integer value.
            The value 1 indicates open; the value 2 indicates closed.

        - IPV:
            An IPV is encoded in four octets as a 32-bit
            signed integer. A negative denotes the null value;
            zero or positive values denote internal priority values.

        - TimeInterval:
            A TimeInterval is encoded in 4 octets as a 32-bit
            unsigned integer, representing a number of nanoseconds.
            The first octet encodes the most significant 8 bits of the
            integer, and the fourth octet encodes the least
            significant 8 bits.
        - IntervalOctetMax:
            An integer representing the maximum number of MSDU octets
            that are permitted to ~~pas ~~pass the gate during the specified
            TimeInterval. If this parameter is omitted, there is
            no maximum.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.31.3"
    ::= { ieee8021PSFPStreamGateEntry 7 }

ieee8021PSFPOperControlList OBJECT-TYPE
    SYNTAX      OCTET STRING
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The operational value of the ControlList parameter for the gate.
        The octet string value represents the contents of the control list as
        an ordered list of entries, each encoded as a TLV, as follows.
        The first octet  of each TLV is interpreted as an
        unsigned integer representing a gate operation name:
            0: SetGateAndIPV
            1-255: Reserved for future gate operations

        The second octet of the TLV is the length field,
        interpreted as an unsigned integer, indicating the number of
        octets of the value that follows the length. A length of
        zero indicates that there is no value
        (i.e., the gate operation has no parameters).

        The third through (3 + length -1)th octets encode the
        parameters of the gate operation, in the order that they
        appear in the definition of the operation in Table 8-4.
        ~~Three parameter types are defined:~~
        The first parameter is a StreamGateState value; the second
        parameter is an IPV value; the third parameter is a
        TimeInterval value; and the fourth parameter is an
        IntervalOctetMax value. IntervalOctetMax is optional.

        - StreamGateState:
            A GateState parameter is encoded in a single octet, and
            is interpreted as an integer value.
            The value 1 indicates open; the value 2 indicates closed.

        - IPV:
            An IPV is encoded in four octets as a 32-bit
            signed integer. A negative value denotes the null value;
            zero and positive values denote internal priority values.

        - TimeInterval:
            A TimeInterval is encoded in 4 octets as a 32-bit
            unsigned integer, representing
            a number of nanoseconds. The first octet encodes the
            most significant 8 bits of the integer, and the fourth
            octet encodes the least significant 8 bits.
        - IntervalOctetMax:
            An integer representing the maximum number of MSDU octets
            that are permitted to ~~pas~~ pass the gate during the specified
            TimeInterval. If this parameter is omitted, there is
            no maximum.
        "
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.31.3"
    ::= { ieee8021PSFPStreamGateEntry 8 }

ieee8021PSFPAdminCycleTimeNumerator OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The administrative value of the numerator of the CycleTime
        parameter for the gate.
        The numerator and denominator together represent the cycle time as
        a rational number of seconds.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.31.3"
    ::= { ieee8021PSFPStreamGateEntry 9 }

ieee8021PSFPAdminCycleTimeDenominator OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The administrative value of the denominator of the
        CycleTime parameter for the gate.
        The numerator and denominator together represent the cycle time as
        a rational number of seconds.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.31.3"
    ::= { ieee8021PSFPStreamGateEntry 10 }

ieee8021PSFPOperCycleTimeNumerator OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The operational value of the numerator of the
        CycleTime parameter for the gate.
        The numerator and denominator together represent the cycle
        time as a rational number of seconds."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.31.3"
    ::= { ieee8021PSFPStreamGateEntry 11 }

ieee8021PSFPOperCycleTimeDenominator OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The operational value of the denominator of the
        CycleTime parameter for the gate.
        The numerator and denominator together represent the
        cycle time as a rational number of seconds."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.31.3"
    ::= { ieee8021PSFPStreamGateEntry 12 }

ieee8021PSFPAdminCycleTimeExtension OBJECT-TYPE
    SYNTAX      Unsigned32
    UNITS       "nanoseconds"
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The administrative value of the CycleTimeExtension
        parameter for the gate.
        The value is an unsigned integer number of nanoseconds.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.31.3"
    ::= { ieee8021PSFPStreamGateEntry 13 }

ieee8021PSFPOperCycleTimeExtension OBJECT-TYPE
    SYNTAX      Unsigned32
    UNITS       "nanoseconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The operational value of the CycleTimeExtension
        parameter for the gate.
        The value is an unsigned integer number of nanoseconds."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.31.3"
    ::= { ieee8021PSFPStreamGateEntry 14 }

ieee8021PSFPAdminBaseTime OBJECT-TYPE
    SYNTAX      IEEE8021STPTPtimeValue
    UNITS       "PTP time"
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The administrative value of the BaseTime parameter for the gate.
        The value is a representation of a PTPtime value,
        consisting of a 48-bit integer
        number of seconds and a 32-bit integer number of nanoseconds.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.31.3"
    ::= { ieee8021PSFPStreamGateEntry 15 }

ieee8021PSFPOperBaseTime OBJECT-TYPE
    SYNTAX      IEEE8021STPTPtimeValue
    UNITS       "PTP time"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The ~~operationsl ~~operational value of the BaseTime parameter for the gate.
        The value is a representation of a PTPtime value,
        consisting of a 48-bit integer
        number of seconds and a 32-bit integer number of nanoseconds."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.31.3"
    ::= { ieee8021PSFPStreamGateEntry 16 }

ieee8021PSFPConfigChange OBJECT-TYPE
```

```
    SYNTAX      TruthValue
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The ConfigChange parameter signals the start of a
        configuration change for the gate
        when it is set to TRUE. This should only be done
        when the various administrative parameters
        are all set to appropriate values."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.31.3"
    ::= { ieee8021PSFPStreamGateEntry 17 }

ieee8021PSFPConfigChangeTime OBJECT-TYPE
    SYNTAX      IEEE8021STPTPtimeValue
    UNITS       "PTP time"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The PTPtime at which the next config change is scheduled to occur.
        The value is a representation of a PTPtime value,
        consisting of a 48-bit integer
        number of seconds and a 32-bit integer number of nanoseconds.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.31.3"
    ::= { ieee8021PSFPStreamGateEntry 18 }

    ieee8021PSFPTickGranularity OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The granularity of the cycle time clock, represented as an
        unsigned number of tenths of nanoseconds.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.31.3"
    ::= { ieee8021PSFPStreamGateEntry 19 }

 ieee8021PSFPCurrentTime OBJECT-TYPE
    SYNTAX      IEEE8021STPTPtimeValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The current time, in PTPtime, as maintained by the local system.
        The value is a representation of a PTPtime value,
        consisting of a 48-bit integer
        number of seconds and a 32-bit integer number of nanoseconds."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.31.3"
    ::= { ieee8021PSFPStreamGateEntry 20 }

 ieee8021PSFPConfigPending OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The value of the ConfigPending state machine variable.
        The value is TRUE if a configuration change is in progress
        but has not yet completed."
    REFERENCE   "8.6.8.4, 8.6.9.4, 12.31.3"
    ::= { ieee8021PSFPStreamGateEntry 21 }

 ieee8021PSFPConfigChangeError OBJECT-TYPE
    SYNTAX      Counter64
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "A counter of the number of times that a re-configuration
        of the traffic schedule has been requested with the old
        schedule still running and the requested base time was
        in the past."
    REFERENCE   "8.6.8.4, 8.6.9.3, 12.31.3"
    ::= { ieee8021PSFPStreamGateEntry 23 }

ieee8021PSFPAdminIPV OBJECT-TYPE
    SYNTAX      Integer32 (-1..2147483647)
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The administrative value of the IPV parameter for the gate.
        A value of -1 denotes the null value.
        "
    REFERENCE   "8.6.5.4, 8.6.10, 12.31.3"
    ::= { ieee8021PSFPStreamGateEntry 24 }

ieee8021PSFPOperIPV OBJECT-TYPE
    SYNTAX      Integer32 (-1..2147483647)
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The operational value of the IPV parameter for the gate.
        A value of -1 denotes the null value.
        "
    REFERENCE   "8.6.5.4, 8.6.10, 12.31.3"
    ::= { ieee8021PSFPStreamGateEntry 25 }

ieee8021PSFPGateClosedDueToInvalidRxEnable OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The PSFPGateClosedDueToInvalidRxEnable object contains
        a Boolean value that indicates whether the
        GateClosedDueToInvalidRx function is enabled (TRUE) or
        disabled (FALSE).

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.5.4, 12.31.3"
    DEFVAL { false }
    ::= { ieee8021PSFPStreamGateEntry 26}

ieee8021PSFPGateClosedDueToInvalidRx OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The PSFPGateClosedDueToInvalidRx object contains
        a Boolean value that indicates whether, if the
        GateClosedDueToInvalidRx function is enabled,
        all frames are to be discarded (TRUE) or not (FALSE).

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.5.4, 12.31.3"
    DEFVAL { false }
    ::= { ieee8021PSFPStreamGateEntry 27}

ieee8021PSFPGateClosedDueToOctetsExceededEnable OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The PSFPGateClosedDueToOctetsExceededEnable object contains
        a Boolean value that indicates whether the
        GateClosedDueToOctetsExceeded function is enabled (TRUE)
        or disabled (FALSE).

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.5.4, 12.31.3"
    DEFVAL { false }
    ::= { ieee8021PSFPStreamGateEntry 28}

ieee8021PSFPGateClosedDueToOctetsExceeded OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The PSFPGateClosedDueToOctetsExceeded parameter contains
        a Boolean value that indicates whether, if the
        GateClosedDueToOctetsExceeded function is enabled, all
        frames are to be discarded (TRUE) or not (FALSE).

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.5.4, 12.31.3"
    DEFVAL { false }
    ::= { ieee8021PSFPStreamGateEntry 29}


ieee8021PSFPStreamGateEntryRowStatus OBJECT-TYPE
    SYNTAX      RowStatus
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The status of the row.

         The writable columns in a row cannot be changed if the row
         is active. All columns MUST have a valid value before a row
         can be activated.
        "
    ::= { ieee8021PSFPStreamGateEntry 30 }



-- =============================================================
-- The ieee8021PSFPFlowMeterParameters subtree
-- This subtree defines the objects necessary for the management
-- of the flow meters for IEEE Std 802.1Q.
-- =============================================================

-- =============================================================
-- the ieee8021PSFPFlowMeterTable
-- =============================================================

ieee8021PSFPFlowMeterTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Ieee8021PSFPFlowMeterEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A table that contains the per-meter instance
        manageable parameters for flow meters.

        For a given Bridge component, a row in the table exists for
        each flow meter instance.

        All writable objects in this table must be
        persistent over power up restart/reboot."
    REFERENCE   "8.6.5.5, 12.31.4"
    ::= { ieee8021PSFPFlowMeterParameters 1 }

ieee8021PSFPFlowMeterEntry OBJECT-TYPE
    SYNTAX      Ieee8021PSFPFlowMeterEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A list of objects that contains the manageable parameters for
        flow meters for a Bridge component."
    INDEX  { ieee8021BridgeBaseComponentId,
             ieee8021PSFPFlowMeterInstance
           }
    ::= { ieee8021PSFPFlowMeterTable 1 }
```

```
Ieee8021PSFPFlowMeterEntry ::=
    SEQUENCE {
        ieee8021PSFPFlowMeterInstance
            Unsigned32,
        ieee8021PSFPFlowMeterCIR
            Unsigned32,
        ieee8021PSFPFlowMeterCBS
            Unsigned32,
        ieee8021PSFPFlowMeterEIR
            Unsigned32,
        ieee8021PSFPFlowMeterEBS
            Unsigned32,
        ieee8021PSFPFlowMeterCF
            Integer32,
        ieee8021PSFPFlowMeterCM
            INTEGER,
        ieee8021PSFPFlowMeterDropOnYellow
            TruthValue,
        ieee8021PSFPFlowMeterMarkAllFramesRedEnable
            TruthValue,
        ieee8021PSFPFlowMeterMarkAllFramesRed
            TruthValue,
        ieee8021PSFPFlowMeterEntryRowStatus
            RowStatus
             }

ieee8021PSFPFlowMeterInstance OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The FlowMeterInstance parameter is an index into the
        FlowMeterTable.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.5.5, 12.31.4"
    ::= { ieee8021PSFPFlowMeterEntry 1}

ieee8021PSFPFlowMeterCIR OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The FlowMeterCIR parameter contains an integer value that
        represents the CIR value for the flow meter, in bit/second.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.5.5, 12.31.4"
    ::= { ieee8021PSFPFlowMeterEntry 2}

ieee8021PSFPFlowMeterCBS OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The FlowMeterCBS parameter contains an integer value that
        represents the CBS value for the flow meter, in octets.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.5.5, 12.31.4"
    ::= { ieee8021PSFPFlowMeterEntry 3}

ieee8021PSFPFlowMeterEIR OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The FlowMeterEIR parameter contains an integer value that
        represents the EIR value for the flow meter, in bit/second.
        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.5.5, 12.31.4"
    ::= { ieee8021PSFPFlowMeterEntry 4}

ieee8021PSFPFlowMeterEBS OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The FlowMeterEBS parameter contains an integer value that
        represents the EBS value for the flow meter, in octets.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.5.5, 12.31.4"
    ::= { ieee8021PSFPFlowMeterEntry 5}

ieee8021PSFPFlowMeterCF OBJECT-TYPE
    SYNTAX      Integer32 (0..1)
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The FlowMeterCF parameter contains an integer value that
        represents the CF value for the flow meter, as an integer
        value 0 or 1.

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.5.5, 12.31.4"
    ::= { ieee8021PSFPFlowMeterEntry 6}

ieee8021PSFPFlowMeterCM OBJECT-TYPE
    SYNTAX      INTEGER  {colorBlind(1), colorAware(2)}
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The FlowMeterCM parameter contains an integer value that
        represents the CM value for the flow meter, as an enumerated
        value indicating colorBlind(1) or colorAware(2).

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.5.5, 12.31.4"
    ::= { ieee8021PSFPFlowMeterEntry 7}

ieee8021PSFPFlowMeterDropOnYellow OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The FlowMeterDropOnYellow parameter contains a Boolean value that
        indicates whether yellow frames are dropped (TRUE) or
        have drop_eligible set to TRUE (FALSE).

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.5.5, 12.31.4"
    ::= { ieee8021PSFPFlowMeterEntry 8}

ieee8021PSFPFlowMeterMarkAllFramesRedEnable OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The FlowMeterMarkAllFramesRedEnable parameter contains
        a Boolean value that indicates whether the MarkAllFramesRed
        function is enabled (TRUE) or disabled (FALSE).

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.5.5, 12.31.4"
    DEFVAL { false }
    ::= { ieee8021PSFPFlowMeterEntry 9}

ieee8021PSFPFlowMeterMarkAllFramesRed OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The FlowMeterMarkAllFramesRed parameter contains
        a Boolean value that indicates whether, if the
        MarkAllFramesRed function is enabled, all frames are to
        be discarded (TRUE) or not (FALSE).

        The value of this object MUST be retained across
        reinitializations of the management system."
    REFERENCE   "8.6.5.5, 12.31.4"
    DEFVAL { false }
    ::= { ieee8021PSFPFlowMeterEntry 10}

ieee8021PSFPFlowMeterEntryRowStatus OBJECT-TYPE
    SYNTAX      RowStatus
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The status of the row.

         The writable columns in a row cannot be changed if the row
         is active. All columns MUST have a valid value before a row
         can be activated.
        "
    ::= { ieee8021PSFPFlowMeterEntry 11 }




-- =============================================================
-- The ieee8021PSFPStreamParameters subtree
-- This subtree defines the objects necessary for the management
-- of the flow meters for IEEE Std 802.1Q.
-- =============================================================

-- =============================================================
-- the ieee8021PSFPStreamParameterTable
-- =============================================================

ieee8021PSFPStreamParameterTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF Ieee8021PSFPStreamParameterEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A table that contains per-Bridge component
        manageable parameters for PSFP.

        A row in the table exists for each Bridge component.

        All writable objects in this table must be
        persistent over power up restart/reboot."
    REFERENCE   "8.6.5.2, 12.31.1"
    ::= { ieee8021PSFPStreamParameters 1 }

ieee8021PSFPStreamParameterEntry OBJECT-TYPE
    SYNTAX      Ieee8021PSFPStreamParameterEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A list of objects that contains the manageable parameters for
        flow meters for a Bridge component."
    INDEX  { ieee8021BridgeBaseComponentId
           }
    ::= { ieee8021PSFPStreamParameterTable 1 }
```

```
Ieee8021PSFPStreamParameterEntry ::=
    SEQUENCE {
        ieee8021PSFPMaxStreamFilterInstances
            Unsigned32,
        ieee8021PSFPMaxStreamGateInstances
            Unsigned32,
        ieee8021PSFPMaxFlowMeterInstances
            Unsigned32,
        ieee8021PSFPSupportedListMax
            Unsigned32,
        ieee8021PSFPSupportedCycleMaxNumerator
            Unsigned32,
        ieee8021PSFPSupportedCycleMaxDenominator
            Unsigned32,
        ieee8021PSFPSupportedIntervalMax
            Unsigned32
             }

ieee8021PSFPMaxStreamFilterInstances OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The MaxStreamFilterInstances parameter defines the
        maximum number of stream filter instances that are
        supported by this Bridge component."
    REFERENCE   "8.6.5.3, 12.31.2"
    ::= { ieee8021PSFPStreamParameterEntry 1}

ieee8021PSFPMaxStreamGateInstances OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The MaxStreamGateInstances parameter defines the
        maximum number of stream gate instances that are
        supported by this Bridge component."
    REFERENCE   "8.6.5.4, 12.31.3"
    ::= { ieee8021PSFPStreamParameterEntry 2}

ieee8021PSFPMaxFlowMeterInstances OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The MaxFlowMeterInstances parameter defines the
        maximum number of flow meter instances that are
        supported by this Bridge component."
    REFERENCE   "8.6.5.5, 12.31.4"
    ::= { ieee8021PSFPStreamParameterEntry 3}

ieee8021PSFPSupportedListMax OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The SupportedListMax parameter defines the
        The maximum value supported by this Bridge component of
        the AdminControlListLength and
        OperControlListLength parameters."
    REFERENCE   "8.6.5.4, 12.31.3"
    ::= { ieee8021PSFPStreamParameterEntry 4}

ieee8021PSFPSupportedCycleMaxNumerator OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The numerator of the SupportedCycleMax parameter for
        the Bridge component. The numerator and denominator
        together represent the maximum value supported of
        the AdminCycleTime and OperCycleTime parameters"
    REFERENCE   "12.31.1.7"
    ::= { ieee8021PSFPStreamParameterEntry 5}

ieee8021PSFPSupportedCycleMaxDenominator OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The denominator of the SupportedCycleMax parameter for
        the Bridge component. The numerator and denominator
        together represent the maximum value supported of
        the AdminCycleTime and OperCycleTime parameters"
    REFERENCE   "12.31.1.7"
    ::= { ieee8021PSFPStreamParameterEntry 6}

ieee8021PSFPSupportedIntervalMax OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The maximum value supported by this Bridge component
        of the TimeIntervalValue parameter."
    REFERENCE   "12.31.1.8"
    ::= { ieee8021PSFPStreamParameterEntry 7}


-- =============================================================
-- IEEE8021 PSFP MIB - Conformance Information
-- =============================================================

ieee8021PSFPCompliances
    OBJECT IDENTIFIER ::= { ieee8021PSFPConformance 1 }
ieee8021PSFPGroups
    OBJECT IDENTIFIER ::= { ieee8021PSFPConformance 2 }

-- =============================================================
-- units of conformance
-- =============================================================

-- =============================================================
-- the ieee8021PSFPObjectsGroup group
-- =============================================================

ieee8021PSFPObjectsGroup OBJECT-GROUP
    OBJECTS {
        ieee8021PSFPStreamHandleSpec,
        ieee8021PSFPPrioritySpec,
        ieee8021PSFPStreamGateInstanceID,
        ieee8021PSFPFilterSpecificationList,
        ieee8021PSFPMatchingFramesCount,
        ieee8021PSFPPassingFramesCount,
        ieee8021PSFPNotPassingFramesCount,
        ieee8021PSFPPassingSDUCount,
        ieee8021PSFPNotPassingSDUCount,
        ieee8021PSFPREDFramesCount,
        ieee8021PSFPStreamBlockedDueToOversizeFrameEnable,
        ieee8021PSFPStreamBlockedDueToOversizeFrame,
        ieee8021PSFPStreamFilterEntryRowStatus,
        ieee8021PSFPGateEnabled,
        ieee8021PSFPAdminGateStates,
        ieee8021PSFPOperGateStates,
        ieee8021PSFPAdminControlListLength,
        ieee8021PSFPOperControlListLength,
        ieee8021PSFPAdminControlList,
        ieee8021PSFPOperControlList,
        ieee8021PSFPAdminCycleTimeNumerator,
        ieee8021PSFPAdminCycleTimeDenominator,
        ieee8021PSFPOperCycleTimeNumerator,
        ieee8021PSFPOperCycleTimeDenominator,
        ieee8021PSFPAdminCycleTimeExtension,
        ieee8021PSFPOperCycleTimeExtension,
        ieee8021PSFPAdminBaseTime,
        ieee8021PSFPOperBaseTime,
        ieee8021PSFPConfigChange,
        ieee8021PSFPConfigChangeTime,
        ieee8021PSFPTickGranularity,
        ieee8021PSFPCurrentTime,
        ieee8021PSFPConfigPending,
        ieee8021PSFPConfigChangeError,
        ieee8021PSFPAdminIPV,
        ieee8021PSFPOperIPV,
        ieee8021PSFPGateClosedDueToInvalidRxEnable,
        ieee8021PSFPGateClosedDueToInvalidRx,
        ieee8021PSFPGateClosedDueToOctetsExceededEnable,
        ieee8021PSFPGateClosedDueToOctetsExceeded,
        ieee8021PSFPStreamGateEntryRowStatus,
        ieee8021PSFPFlowMeterCIR,
        ieee8021PSFPFlowMeterCBS,
        ieee8021PSFPFlowMeterEIR,
        ieee8021PSFPFlowMeterEBS,
        ieee8021PSFPFlowMeterCF,
        ieee8021PSFPFlowMeterCM,
        ieee8021PSFPFlowMeterDropOnYellow,
        ieee8021PSFPFlowMeterMarkAllFramesRedEnable,
        ieee8021PSFPFlowMeterMarkAllFramesRed,
        ieee8021PSFPFlowMeterEntryRowStatus,
        ieee8021PSFPMaxStreamFilterInstances,
        ieee8021PSFPMaxStreamGateInstances,
        ieee8021PSFPMaxFlowMeterInstances,
        ieee8021PSFPSupportedListMax,
        ieee8021PSFPSupportedCycleMaxNumerator,
        ieee8021PSFPSupportedCycleMaxDenominator,
        ieee8021PSFPSupportedIntervalMax
        }

    STATUS      current
    DESCRIPTION
        "Objects that allow management of PSFP."
    ::= { ieee8021PSFPGroups 1 }


-- =============================================================
-- compliance statements
-- =============================================================

ieee8021PSFPCompliance MODULE-COMPLIANCE
    STATUS      current
    DESCRIPTION
        "The compliance statement for devices supporting
        PSFP.

        Support of the objects defined in this MIB module
        also requires support of the IEEE8021-BRIDGE-MIB; the
        provisions of 17.3.2 apply to implementations claiming
        support of this MIB. "

    MODULE -- this module
        MANDATORY-GROUPS {
            ieee8021PSFPObjectsGroup
        }

    ::= { ieee8021PSFPCompliances 1 }

END
```

35. Stream Reservation Protocol (SRP)

35.2 Definition of the MSRP application

35.2.2 Definition of MRP elements

35.2.2.8 MSRP FirstValue definitions (Stream reservations, original)

35.2.2.8.4 TSpec

Change item b) of 35.2.2.8.4 as follows:

b) **MaxIntervalFrames:** The 16-bit unsigned MaxIntervalFrames component is used to allocate resources and adjust queue selection parameters in order to supply the QoS requested by an MSRP Talker Declaration. It represents the maximum number of frames that the Talker ~~may transmit~~ can initiate in one classMeasurementInterval (34.3).

46. Time-Sensitive Networking (TSN) configuration

46.2 User/network configuration information

46.2.3 Talker

46.2.3.5 TrafficSpecification

46.2.3.5.2 MaxFramesPerInterval

Change 46.2.3.5.2 as follows:

MaxFramesPerInterval specifies the maximum number of ~~frames~~ frame transmissions that the Talker can ~~transmit~~ initiate in one Interval.

48. YANG Data Models

48.2 IEEE 802.1Q YANG models

48.2.1 VLAN Bridge components model

Replace Figure 48-5 with the figure on the following page:

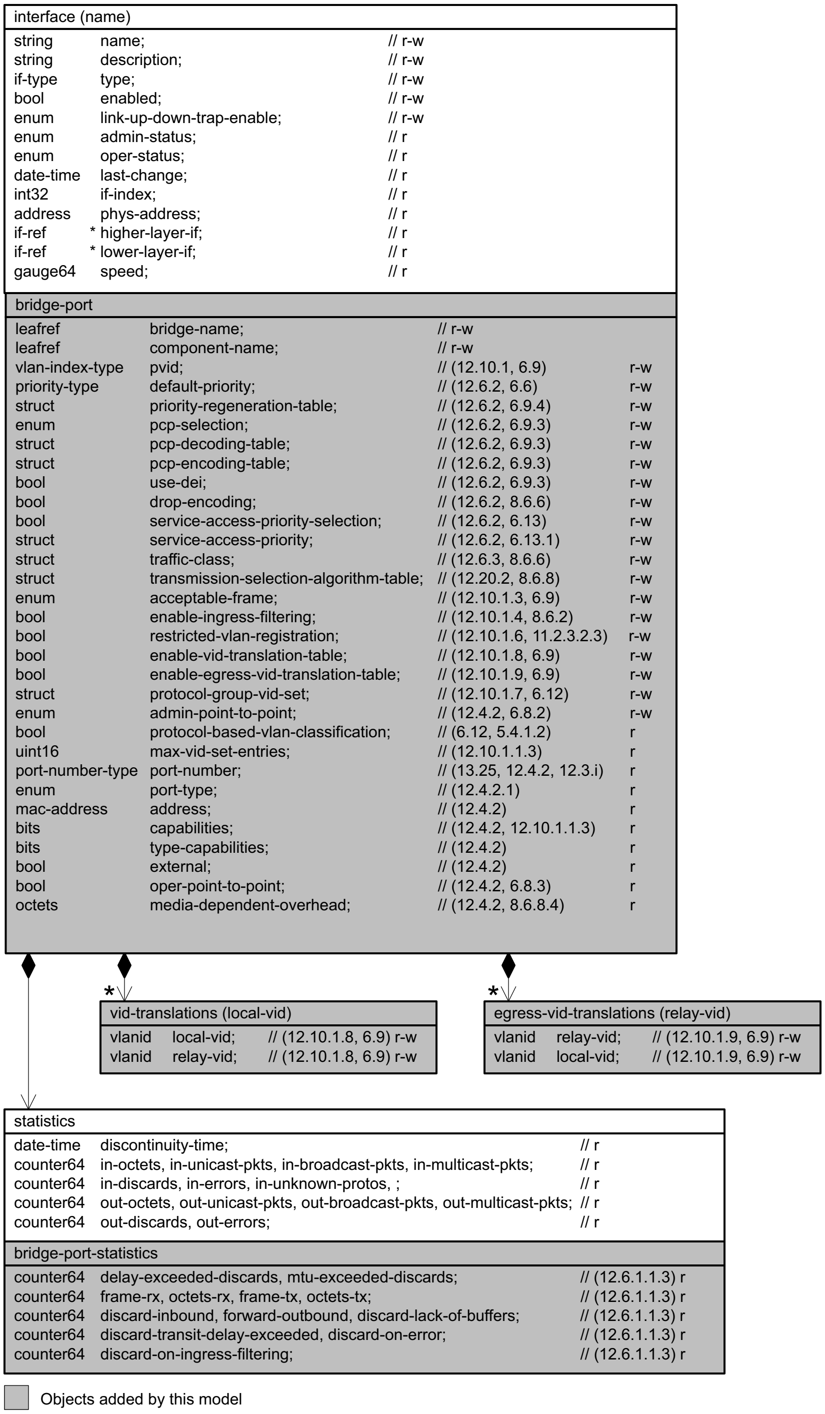
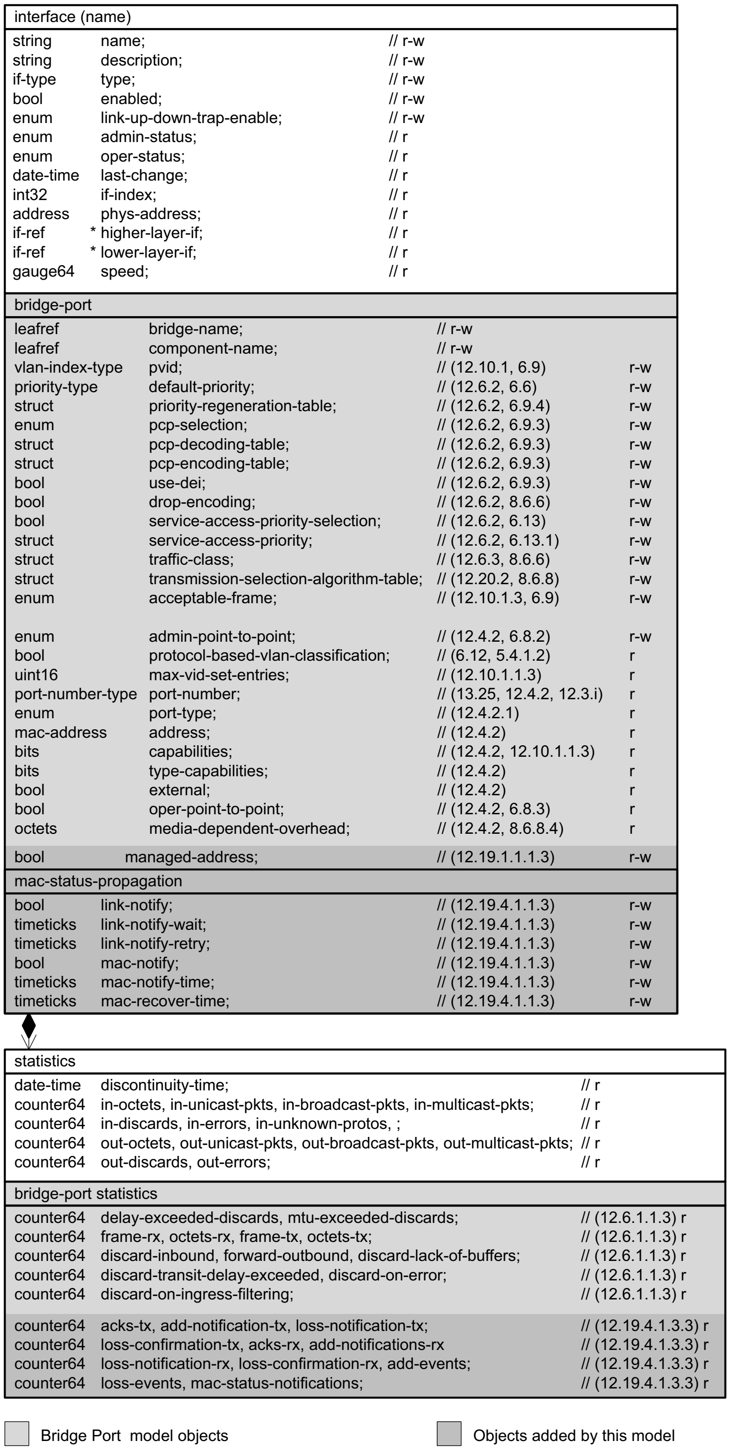

interface (name)
string name; // r-w
string description; // r-w
if-type type; // r-w
bool enabled; // r-w
enum link-up-down-trap-enable; // r-w
enum admin-status; // r
enum oper-status; // r
date-time last-change; // r
int32 if-index; // r
address phys-address; // r
if-ref * higher-layer-if; // r
if-ref * lower-layer-if; // r
gauge64 speed; // r
bridge-port
leafref bridge-name; // r-w
leafref component-name; // r-w
vlan-index-type pvid; // (12.10.1, 6.9) r-w
priority-type default-priority; // (12.6.2, 6.6) r-w
struct priority-regeneration-table; // (12.6.2, 6.9.4) r-w
enum pcp-selection; // (12.6.2, 6.9.3) r-w
struct pcp-decoding-table; // (12.6.2, 6.9.3) r-w
struct pcp-encoding-table; // (12.6.2, 6.9.3) r-w
bool use-dei; // (12.6.2, 6.9.3) r-w
bool drop-encoding; // (12.6.2, 8.6.6) r-w
bool service-access-priority-selection; // (12.6.2, 6.13) r-w
struct service-access-priority; // (12.6.2, 6.13.1) r-w
struct traffic-class; // (12.6.3, 8.6.6) r-w
struct transmission-selection-algorithm-table; // (12.20.2, 8.6.8) r-w
enum acceptable-frame; // (12.10.1.3, 6.9) r-w
bool enable-ingress-filtering; // (12.10.1.4, 8.6.2) r-w
bool restricted-vlan-registration; // (12.10.1.6, 11.2.3.2.3) r-w
bool enable-vid-translation-table; // (12.10.1.8, 6.9) r-w
bool enable-egress-vid-translation-table; // (12.10.1.9, 6.9) r-w
struct protocol-group-vid-set; // (12.10.1.7, 6.12) r-w
enum admin-point-to-point; // (12.4.2, 6.8.2) r-w
bool protocol-based-vlan-classification; // (6.12, 5.4.1.2) r
uint16 max-vid-set-entries; // (12.10.1.1.3) r
port-number-type port-number; // (13.25, 12.4.2, 12.3.i) r
enum port-type; // (12.4.2.1) r
mac-address address; // (12.4.2) r
bits capabilities; // (12.4.2, 12.10.1.1.3) r
bits type-capabilities; // (12.4.2) r
bool external; // (12.4.2) r
bool oper-point-to-point; // (12.4.2, 6.8.3) r
octets media-dependent-overhead; // (12.4.2, 8.6.8.4) r
*
vid-translations (local-vid)
vlanid local-vid; // (12.10.1.8, 6.9) r-w
vlanid relay-vid; // (12.10.1.8, 6.9) r-w
*
egress-vid-translations (relay-vid)
vlanid relay-vid; // (12.10.1.9, 6.9) r-w
vlanid local-vid; // (12.10.1.9, 6.9) r-w
statistics
date-time discontinuity-time; // r
counter64 in-octets, in-unicast-pkts, in-broadcast-pkts, in-multicast-pkts; // r
counter64 in-discards, in-errors, in-unknown-protos, ; // r
counter64 out-octets, out-unicast-pkts, out-broadcast-pkts, out-multicast-pkts; // r
counter64 out-discards, out-errors; // r
bridge-port-statistics
counter64 delay-exceeded-discards, mtu-exceeded-discards; // (12.6.1.1.3) r
counter64 frame-rx, octets-rx, frame-tx, octets-tx; // (12.6.1.1.3) r
counter64 discard-inbound, forward-outbound, discard-lack-of-buffers; // (12.6.1.1.3) r
counter64 discard-transit-delay-exceeded, discard-on-error; // (12.6.1.1.3) r
counter64 discard-on-ingress-filtering; // (12.6.1.1.3) r
▨ Objects added by this model

Figure 48-5—Bridge Port model

48.2.2 Two-Port MAC Relay (TPMR) model

Replace Figure 48-7 with the following figure:



```
interface (name)
string       name;                               // r-w
string       description;                        // r-w
if-type      type;                               // r-w
bool         enabled;                            // r-w
enum         link-up-down-trap-enable;           // r-w
enum         admin-status;                       // r
enum         oper-status;                        // r
date-time    last-change;                        // r
int32        if-index;                           // r
address      phys-address;                       // r
if-ref     * higher-layer-if;                    // r
if-ref     * lower-layer-if;                     // r
gauge64      speed;                              // r

bridge-port
leafref            bridge-name;                           // r-w
leafref            component-name;                        // r-w
vlan-index-type    pvid;                                  // (12.10.1, 6.9)          r-w
priority-type      default-priority;                      // (12.6.2, 6.6)           r-w
struct             priority-regeneration-table;           // (12.6.2, 6.9.4)         r-w
enum               pcp-selection;                         // (12.6.2, 6.9.3)         r-w
struct             pcp-decoding-table;                    // (12.6.2, 6.9.3)         r-w
struct             pcp-encoding-table;                    // (12.6.2, 6.9.3)         r-w
bool               use-dei;                               // (12.6.2, 6.9.3)         r-w
bool               drop-encoding;                         // (12.6.2, 8.6.6)         r-w
bool               service-access-priority-selection;     // (12.6.2, 6.13)          r-w
struct             service-access-priority;               // (12.6.2, 6.13.1)        r-w
struct             traffic-class;                         // (12.6.3, 8.6.6)         r-w
struct             transmission-selection-algorithm-table; // (12.20.2, 8.6.8)       r-w
enum               acceptable-frame;                      // (12.10.1.3, 6.9)        r-w

enum               admin-point-to-point;                  // (12.4.2, 6.8.2)         r-w
bool               protocol-based-vlan-classification;    // (6.12, 5.4.1.2)         r
uint16             max-vid-set-entries;                   // (12.10.1.3)             r
port-number-type   port-number;                           // (13.25, 12.4.2, 12.3.i) r
enum               port-type;                             // (12.4.2.1)              r
mac-address        address;                               // (12.4.2)                r
bits               capabilities;                          // (12.4.2, 12.10.1.1.3)   r
bits               type-capabilities;                     // (12.4.2)                r
bool               external;                              // (12.4.2)                r
bool               oper-point-to-point;                   // (12.4.2, 6.8.3)         r
octets             media-dependent-overhead;              // (12.4.2, 8.6.8.4)       r
bool             managed-address;                         // (12.19.1.1.3)           r-w

mac-status-propagation
bool         link-notify;                                 // (12.19.4.1.1.3)         r-w
timeticks    link-notify-wait;                            // (12.19.4.1.1.3)         r-w
timeticks    link-notify-retry;                           // (12.19.4.1.1.3)         r-w
bool         mac-notify;                                  // (12.19.4.1.1.3)         r-w
timeticks    mac-notify-time;                             // (12.19.4.1.1.3)         r-w
timeticks    mac-recover-time;                            // (12.19.4.1.1.3)         r-w

statistics
date-time    discontinuity-time;                                              // r
counter64    in-octets, in-unicast-pkts, in-broadcast-pkts, in-multicast-pkts;    // r
counter64    in-discards, in-errors, in-unknown-protos, ;                     // r
counter64    out-octets, out-unicast-pkts, out-broadcast-pkts, out-multicast-pkts; // r
counter64    out-discards, out-errors;                                        // r

bridge-port statistics
counter64    delay-exceeded-discards, mtu-exceeded-discards;                  // (12.6.1.1.3) r
counter64    frame-rx, octets-rx, frame-tx, octets-tx;                        // (12.6.1.1.3) r
counter64    discard-inbound, forward-outbound, discard-lack-of-buffers;      // (12.6.1.1.3) r
counter64    discard-transit-delay-exceeded, discard-on-error;                // (12.6.1.1.3) r
counter64    discard-on-ingress-filtering;                                    // (12.6.1.1.3) r

counter64    acks-tx, add-notification-tx, loss-notification-tx;              // (12.19.4.1.3.3) r
counter64    loss-confirmation-tx, acks-rx, add-notifications-rx              // (12.19.4.1.3.3) r
counter64    loss-notification-rx, loss-confirmation-rx, add-events;          // (12.19.4.1.3.3) r
counter64    loss-events, mac-status-notifications;                           // (12.19.4.1.3.3) r
```

Figure 48-7—TPMR Port model

48.2.4 Provider Bridge model

Replace Figure 48-9 and Figure 48-10 with the figures on the following two pages:

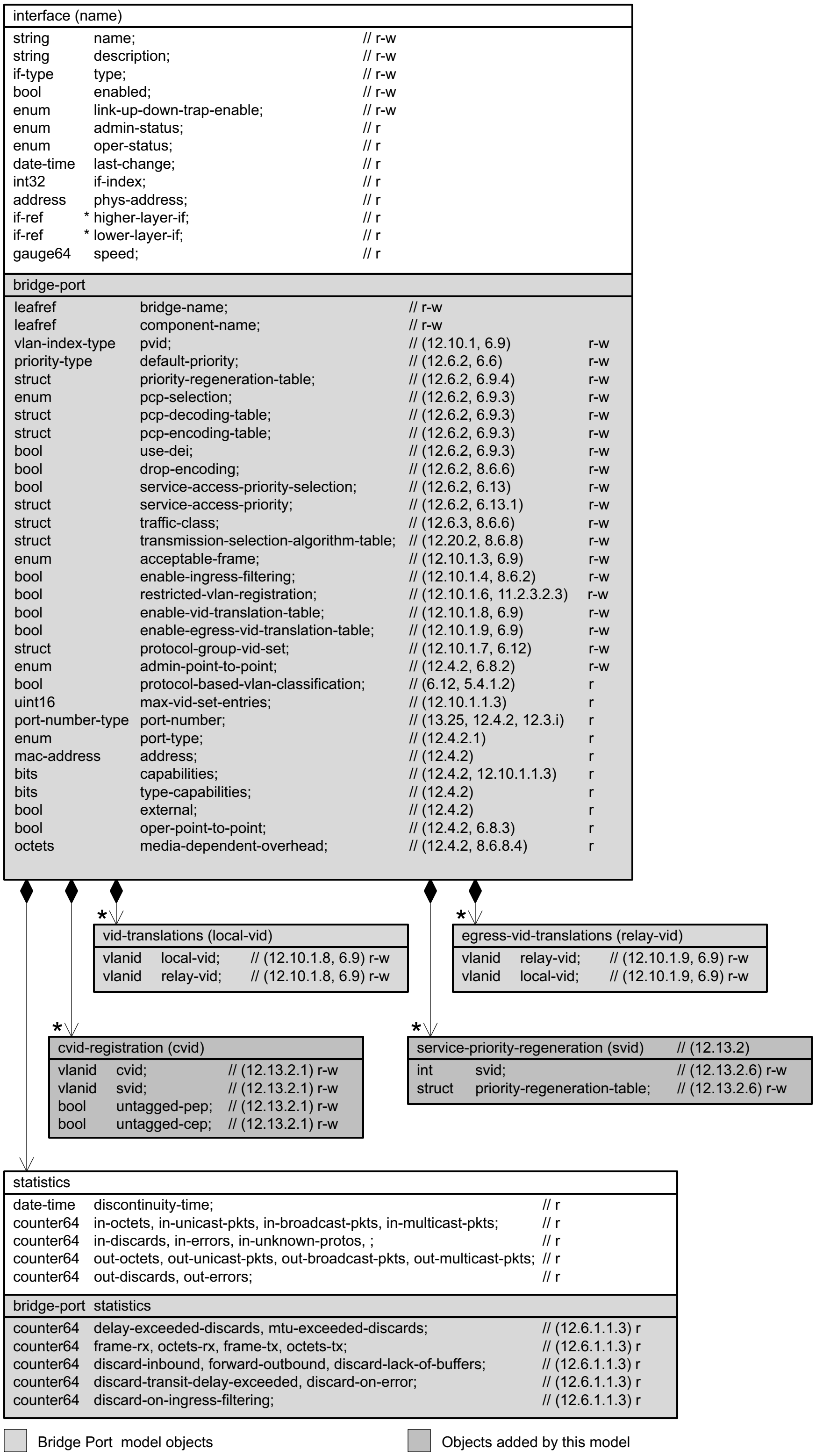

interface (name)
string name; // r-w
string description; // r-w
if-type type; // r-w
bool enabled; // r-w
enum link-up-down-trap-enable; // r-w
enum admin-status; // r
enum oper-status; // r
date-time last-change; // r
int32 if-index; // r
address phys-address; // r
if-ref * higher-layer-if; // r
if-ref * lower-layer-if; // r
gauge64 speed; // r
bridge-port
leafref bridge-name; // r-w
leafref component-name; // r-w
vlan-index-type pvid; // (12.10.1, 6.9) r-w
priority-type default-priority; // (12.6.2, 6.6) r-w
struct priority-regeneration-table; // (12.6.2, 6.9.4) r-w
enum pcp-selection; // (12.6.2, 6.9.3) r-w
struct pcp-decoding-table; // (12.6.2, 6.9.3) r-w
struct pcp-encoding-table; // (12.6.2, 6.9.3) r-w
bool use-dei; // (12.6.2, 6.9.3) r-w
bool drop-encoding; // (12.6.2, 8.6.6) r-w
bool service-access-priority-selection; // (12.6.2, 6.13) r-w
struct service-access-priority; // (12.6.2, 6.13.1) r-w
struct traffic-class; // (12.6.3, 8.6.6) r-w
struct transmission-selection-algorithm-table; // (12.20.2, 8.6.8) r-w
enum acceptable-frame; // (12.10.1.3, 6.9) r-w
bool enable-ingress-filtering; // (12.10.1.4, 8.6.2) r-w
bool restricted-vlan-registration; // (12.10.1.6, 11.2.3.2.3) r-w
bool enable-vid-translation-table; // (12.10.1.8, 6.9) r-w
bool enable-egress-vid-translation-table; // (12.10.1.9, 6.9) r-w
struct protocol-group-vid-set; // (12.10.1.7, 6.12) r-w
enum admin-point-to-point; // (12.4.2, 6.8.2) r-w
bool protocol-based-vlan-classification; // (6.12, 5.4.1.2) r
uint16 max-vid-set-entries; // (12.10.1.3) r
port-number-type port-number; // (13.25, 12.4.2, 12.3.i) r
enum port-type; // (12.4.2.1) r
mac-address address; // (12.4.2) r
bits capabilities; // (12.4.2, 12.10.1.1.3) r
bits type-capabilities; // (12.4.2) r
bool external; // (12.4.2) r
bool oper-point-to-point; // (12.4.2, 6.8.3) r
octets media-dependent-overhead; // (12.4.2, 8.6.8.4) r
*
vid-translations (local-vid)
vlanid local-vid; // (12.10.1.8, 6.9) r-w
vlanid relay-vid; // (12.10.1.8, 6.9) r-w
*
egress-vid-translations (relay-vid)
vlanid relay-vid; // (12.10.1.9, 6.9) r-w
vlanid local-vid; // (12.10.1.9, 6.9) r-w
*
cvid-registration (cvid)
vlanid cvid; // (12.13.2.1) r-w
vlanid svid; // (12.13.2.1) r-w
bool untagged-pep; // (12.13.2.1) r-w
bool untagged-cep; // (12.13.2.1) r-w
*
service-priority-regeneration (svid) // (12.13.2)
int svid; // (12.13.2.6) r-w
struct priority-regeneration-table; // (12.13.2.6) r-w
statistics
date-time discontinuity-time; // r
counter64 in-octets, in-unicast-pkts, in-broadcast-pkts, in-multicast-pkts; // r
counter64 in-discards, in-errors, in-unknown-protos, ; // r
counter64 out-octets, out-unicast-pkts, out-broadcast-pkts, out-multicast-pkts; // r
counter64 out-discards, out-errors; // r
bridge-port statistics
counter64 delay-exceeded-discards, mtu-exceeded-discards; // (12.6.1.1.3) r
counter64 frame-rx, octets-rx, frame-tx, octets-tx; // (12.6.1.1.3) r
counter64 discard-inbound, forward-outbound, discard-lack-of-buffers; // (12.6.1.1.3) r
counter64 discard-transit-delay-exceeded, discard-on-error; // (12.6.1.1.3) r
counter64 discard-on-ingress-filtering; // (12.6.1.1.3) r
Bridge Port model objects
Objects added by this model

Figure 48-9—Provider Edge Bridge C-VLAN Interface model

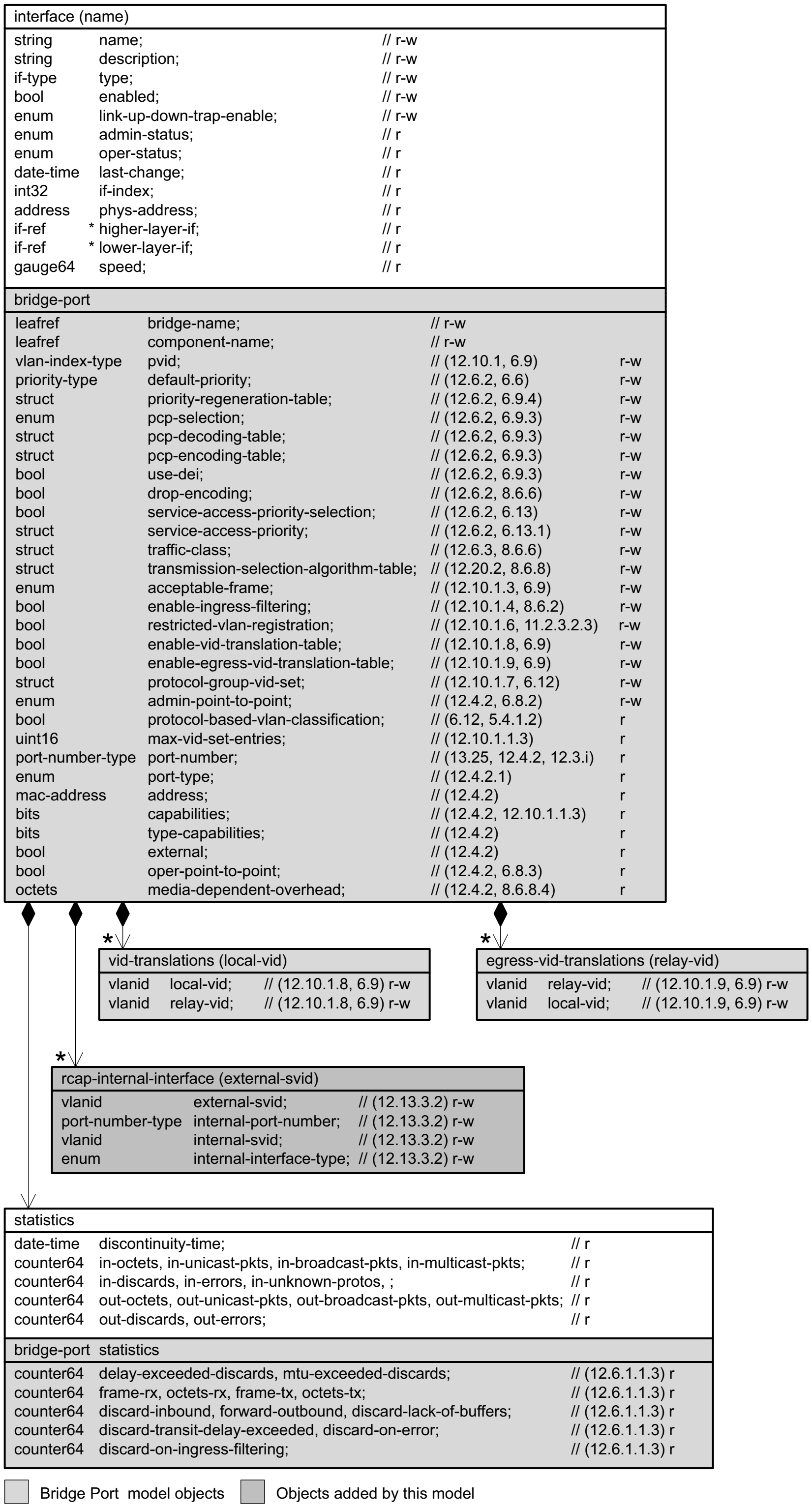

interface (name)
string name; // r-w
string description; // r-w
if-type type; // r-w
bool enabled; // r-w
enum link-up-down-trap-enable; // r-w
enum admin-status; // r
enum oper-status; // r
date-time last-change; // r
int32 if-index; // r
address phys-address; // r
if-ref * higher-layer-if; // r
if-ref * lower-layer-if; // r
gauge64 speed; // r
bridge-port
leafref bridge-name; // r-w
leafref component-name; // r-w
vlan-index-type pvid; // (12.10.1, 6.9) r-w
priority-type default-priority; // (12.6.2, 6.6) r-w
struct priority-regeneration-table; // (12.6.2, 6.9.4) r-w
enum pcp-selection; // (12.6.2, 6.9.3) r-w
struct pcp-decoding-table; // (12.6.2, 6.9.3) r-w
struct pcp-encoding-table; // (12.6.2, 6.9.3) r-w
bool use-dei; // (12.6.2, 6.9.3) r-w
bool drop-encoding; // (12.6.2, 8.6.6) r-w
bool service-access-priority-selection; // (12.6.2, 6.13) r-w
struct service-access-priority; // (12.6.2, 6.13.1) r-w
struct traffic-class; // (12.6.3, 8.6.6) r-w
struct transmission-selection-algorithm-table; // (12.20.2, 8.6.8) r-w
enum acceptable-frame; // (12.10.1.3, 6.9) r-w
bool enable-ingress-filtering; // (12.10.1.4, 8.6.2) r-w
bool restricted-vlan-registration; // (12.10.1.6, 11.2.3.2.3) r-w
bool enable-vid-translation-table; // (12.10.1.8, 6.9) r-w
bool enable-egress-vid-translation-table; // (12.10.1.9, 6.9) r-w
struct protocol-group-vid-set; // (12.10.1.7, 6.12) r-w
enum admin-point-to-point; // (12.4.2, 6.8.2) r-w
bool protocol-based-vlan-classification; // (6.12, 5.4.1.2) r
uint16 max-vid-set-entries; // (12.10.1.1.3) r
port-number-type port-number; // (13.25, 12.4.2, 12.3.i) r
enum port-type; // (12.4.2.1) r
mac-address address; // (12.4.2) r
bits capabilities; // (12.4.2, 12.10.1.1.3) r
bits type-capabilities; // (12.4.2) r
bool external; // (12.4.2) r
bool oper-point-to-point; // (12.4.2, 6.8.3) r
octets media-dependent-overhead; // (12.4.2, 8.6.8.4) r
*
vid-translations (local-vid)
vlanid local-vid; // (12.10.1.8, 6.9) r-w
vlanid relay-vid; // (12.10.1.8, 6.9) r-w
*
egress-vid-translations (relay-vid)
vlanid relay-vid; // (12.10.1.9, 6.9) r-w
vlanid local-vid; // (12.10.1.9, 6.9) r-w
*
rcap-internal-interface (external-svid)
vlanid external-svid; // (12.13.3.2) r-w
port-number-type internal-port-number; // (12.13.3.2) r-w
vlanid internal-svid; // (12.13.3.2) r-w
enum internal-interface-type; // (12.13.3.2) r-w
statistics
date-time discontinuity-time; // r
counter64 in-octets, in-unicast-pkts, in-broadcast-pkts, in-multicast-pkts; // r
counter64 in-discards, in-errors, in-unknown-protos, ; // r
counter64 out-octets, out-unicast-pkts, out-broadcast-pkts, out-multicast-pkts; // r
counter64 out-discards, out-errors; // r
bridge-port statistics
counter64 delay-exceeded-discards, mtu-exceeded-discards; // (12.6.1.1.3) r
counter64 frame-rx, octets-rx, frame-tx, octets-tx; // (12.6.1.1.3) r
counter64 discard-inbound, forward-outbound, discard-lack-of-buffers; // (12.6.1.1.3) r
counter64 discard-transit-delay-exceeded, discard-on-error; // (12.6.1.1.3) r
counter64 discard-on-ingress-filtering; // (12.6.1.1.3) r
Bridge Port model objects
Objects added by this model

Figure 48-10—Provider Edge Bridge S-VLAN Interface model

48.2.5 CFM Model

Replace Figure 48-12 with the figure on the following page:

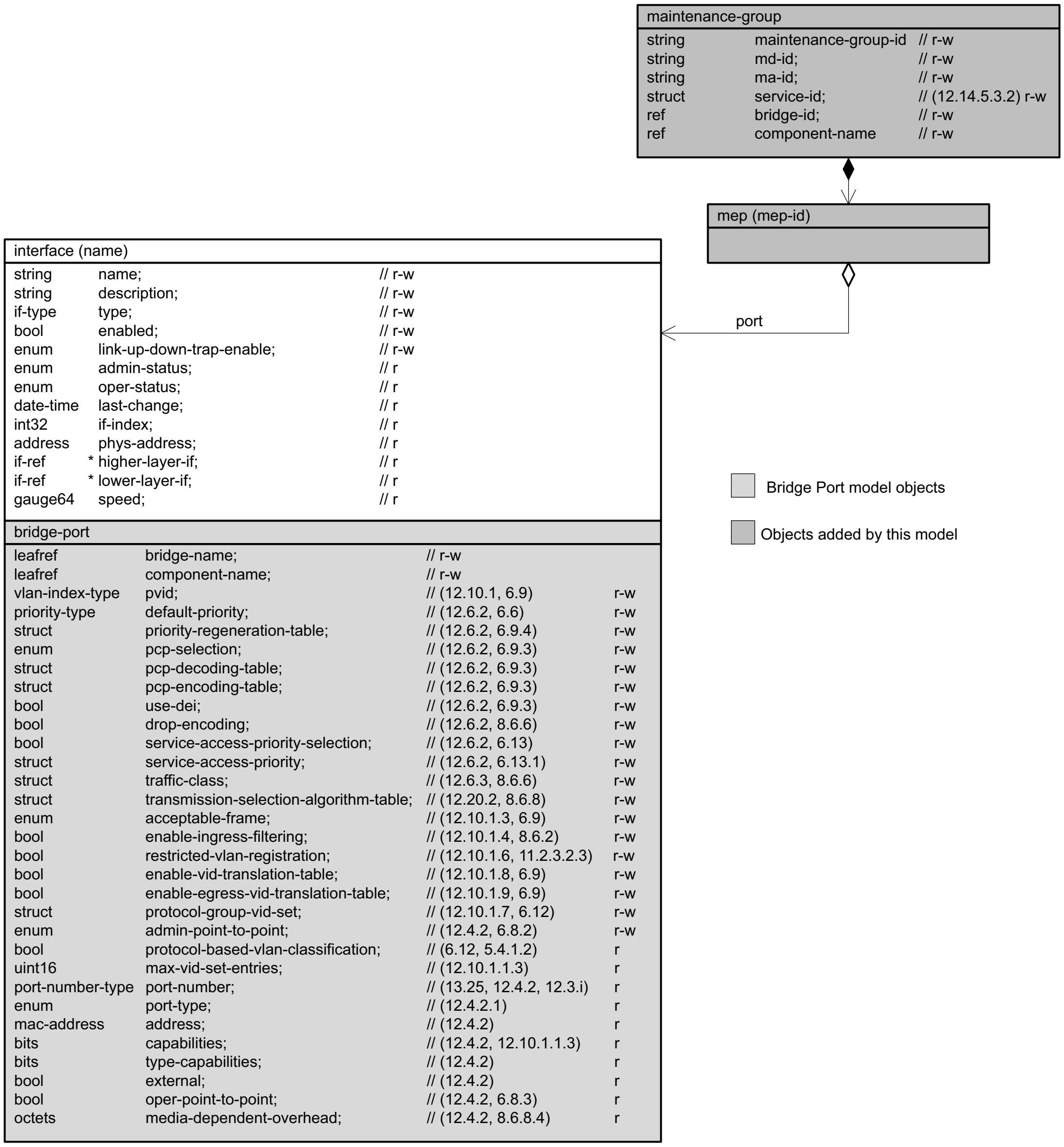

maintenance-group
string maintenance-group-id // r-w
string md-id; // r-w
string ma-id; // r-w
struct service-id; // (12.14.5.3.2) r-w
ref bridge-id; // r-w
ref component-name // r-w
mep (mep-id)
port
interface (name)
string name; // r-w
string description; // r-w
if-type type; // r-w
bool enabled; // r-w
enum link-up-down-trap-enable; // r-w
enum admin-status; // r
enum oper-status; // r
date-time last-change; // r
int32 if-index; // r
address phys-address; // r
if-ref * higher-layer-if; // r
if-ref * lower-layer-if; // r
gauge64 speed; // r
bridge-port
leafref bridge-name; // r-w
leafref component-name; // r-w
vlan-index-type pvid; // (12.10.1, 6.9) r-w
priority-type default-priority; // (12.6.2, 6.6) r-w
struct priority-regeneration-table; // (12.6.2, 6.9.4) r-w
enum pcp-selection; // (12.6.2, 6.9.3) r-w
struct pcp-decoding-table; // (12.6.2, 6.9.3) r-w
struct pcp-encoding-table; // (12.6.2, 6.9.3) r-w
bool use-dei; // (12.6.2, 6.9.3) r-w
bool drop-encoding; // (12.6.2, 8.6.6) r-w
bool service-access-priority-selection; // (12.6.2, 6.13) r-w
struct service-access-priority; // (12.6.2, 6.13.1) r-w
struct traffic-class; // (12.6.3, 8.6.6) r-w
struct transmission-selection-algorithm-table; // (12.20.2, 8.6.8) r-w
enum acceptable-frame; // (12.10.1.3, 6.9) r-w
bool enable-ingress-filtering; // (12.10.1.4, 8.6.2) r-w
bool restricted-vlan-registration; // (12.10.1.6, 11.2.3.2.3) r-w
bool enable-vid-translation-table; // (12.10.1.8, 6.9) r-w
bool enable-egress-vid-translation-table; // (12.10.1.9, 6.9) r-w
struct protocol-group-vid-set; // (12.10.1.7, 6.12) r-w
enum admin-point-to-point; // (12.4.2, 6.8.2) r-w
bool protocol-based-vlan-classification; // (6.12, 5.4.1.2) r
uint16 max-vid-set-entries; // (12.10.1.1.3) r
port-number-type port-number; // (13.25, 12.4.2, 12.3.i) r
enum port-type; // (12.4.2.1) r
mac-address address; // (12.4.2) r
bits capabilities; // (12.4.2, 12.10.1.1.3) r
bits type-capabilities; // (12.4.2) r
bool external; // (12.4.2) r
bool oper-point-to-point; // (12.4.2, 6.8.3) r
octets media-dependent-overhead; // (12.4.2, 8.6.8.4) r
Bridge Port model objects
Objects added by this model

Figure 48-12—CFM MEP model relationships

48.2.7 Asynchronous Traffic Shaping (ATS) model

Replace Figure 48-16 with the following figure:

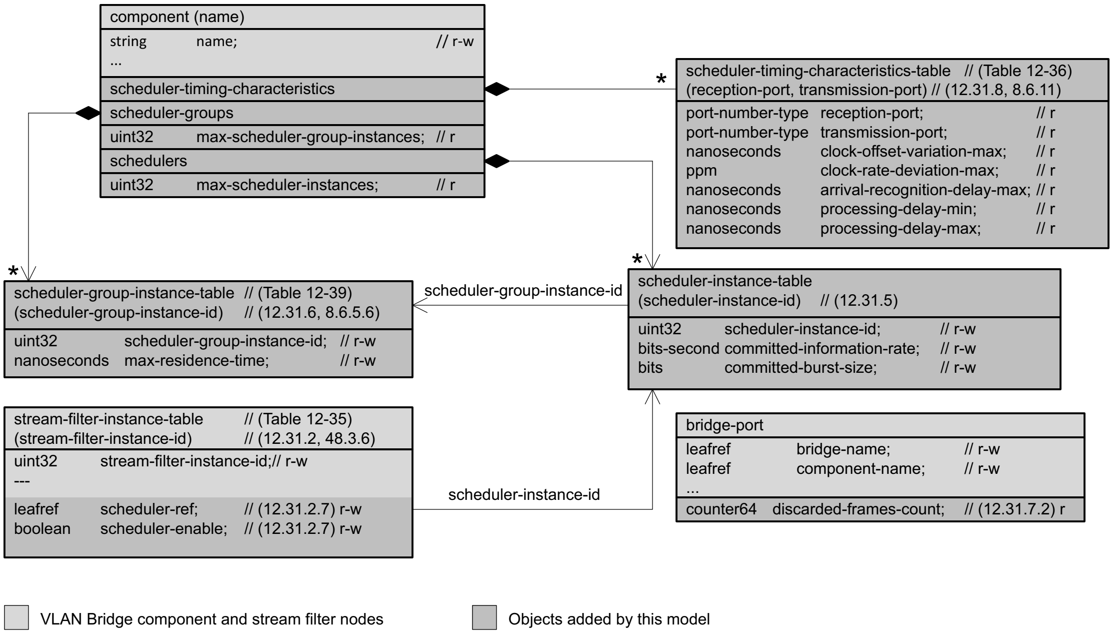

component (name)
string name; // r-w
...
scheduler-timing-characteristics
scheduler-groups
uint32 max-scheduler-group-instances; // r
schedulers
uint32 max-scheduler-instances; // r
*
scheduler-timing-characteristics-table // (Table 12-36)
(reception-port, transmission-port) // (12.31.8, 8.6.11)
port-number-type reception-port; // r
port-number-type transmission-port; // r
nanoseconds clock-offset-variation-max; // r
ppm clock-rate-deviation-max; // r
nanoseconds arrival-recognition-delay-max; // r
nanoseconds processing-delay-min; // r
nanoseconds processing-delay-max; // r
*
scheduler-group-instance-table // (Table 12-39)
(scheduler-group-instance-id) // (12.31.6, 8.6.5.6)
uint32 scheduler-group-instance-id; // r-w
nanoseconds max-residence-time; // r-w
scheduler-group-instance-id
*
scheduler-instance-table
(scheduler-instance-id) // (12.31.5)
uint32 scheduler-instance-id; // r-w
bits-second committed-information-rate; // r-w
bits committed-burst-size; // r-w
stream-filter-instance-table // (Table 12-35)
(stream-filter-instance-id) // (12.31.2, 48.3.6)
uint32 stream-filter-instance-id;// r-w
---
leafref scheduler-ref; // (12.31.2.7) r-w
boolean scheduler-enable; // (12.31.2.7) r-w
scheduler-instance-id
bridge-port
leafref bridge-name; // r-w
leafref component-name; // r-w
...
counter64 discarded-frames-count; // (12.31.7.2) r
VLAN Bridge component and stream filter nodes
Objects added by this model

Figure 48-16—Asynchronous Traffic Shaping model

48.2.8 Congestion Isolation (CI) model

Replace Figure 48-17 (as inserted by IEEE Std 802.1Qcz-2023) with the following figure:

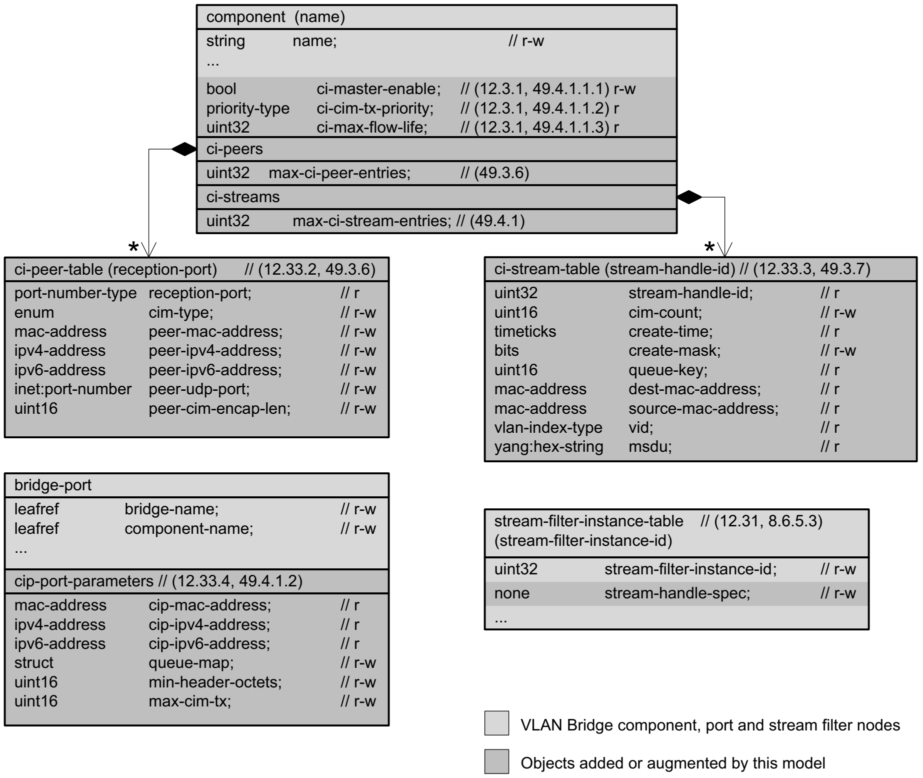

component (name)
string name; // r-w
...
bool ci-master-enable; // (12.3.1, 49.4.1.1.1) r-w
priority-type ci-cim-tx-priority; // (12.3.1, 49.4.1.1.2) r
uint32 ci-max-flow-life; // (12.3.1, 49.4.1.1.3) r
ci-peers
uint32 max-ci-peer-entries; // (49.3.6)
ci-streams
uint32 max-ci-stream-entries; // (49.4.1)
*
*
ci-peer-table (reception-port) // (12.33.2, 49.3.6)
port-number-type reception-port; // r
enum cim-type; // r-w
mac-address peer-mac-address; // r-w
ipv4-address peer-ipv4-address; // r-w
ipv6-address peer-ipv6-address; // r-w
inet:port-number peer-udp-port; // r-w
uint16 peer-cim-encap-len; // r-w
ci-stream-table (stream-handle-id) // (12.33.3, 49.3.7)
uint32 stream-handle-id; // r
uint16 cim-count; // r-w
timeticks create-time; // r
bits create-mask; // r-w
uint16 queue-key; // r
mac-address dest-mac-address; // r
mac-address source-mac-address; // r
vlan-index-type vid; // r
yang:hex-string msdu; // r
bridge-port
leafref bridge-name; // r-w
leafref component-name; // r-w
...
cip-port-parameters // (12.33.4, 49.4.1.2)
mac-address cip-mac-address; // r
ipv4-address cip-ipv4-address; // r
ipv6-address cip-ipv6-address; // r
struct queue-map; // r-w
uint16 min-header-octets; // r-w
uint16 max-cim-tx; // r-w
stream-filter-instance-table // (12.31, 8.6.5.3)
(stream-filter-instance-id)
uint32 stream-filter-instance-id; // r-w
none stream-handle-spec; // r-w
...
VLAN Bridge component, port and stream filter nodes
Objects added or augmented by this model

Figure 48-17—Congestion Isolation model

Insert 48.2.9, 48.2.10, and 48.2.11 after 48.2.8 as follows:

48.2.9 Scheduled Traffic model

The Scheduled Traffic model augments the Bridge Port model (48.2.1) with nodes that represent the managed objects contained in the following table:

a) Gate Parameter Table (12.29.1)

The Scheduled Traffic model is illustrated in Figure 48-18.

There is one gate-parameter-table per Port of a Bridge component. Each object of the table represents parameters that support the enhancements for scheduled traffic (8.6.8.4) as detailed in Table 12-32. The admin-control-list and gate-control-list are sequences of gate-control-entry as specified in 12.29.1.2. Each gate-control-entry consists of an operation name followed by a set of parameters associated with that operation as defined in Table 8-7. The basic operation for Scheduled Traffic is SetGateStates. Additionally, if frame preemption is supported, two additional operations can be performed Set-And-Hold-MAC and Set-And-Release-MAC.

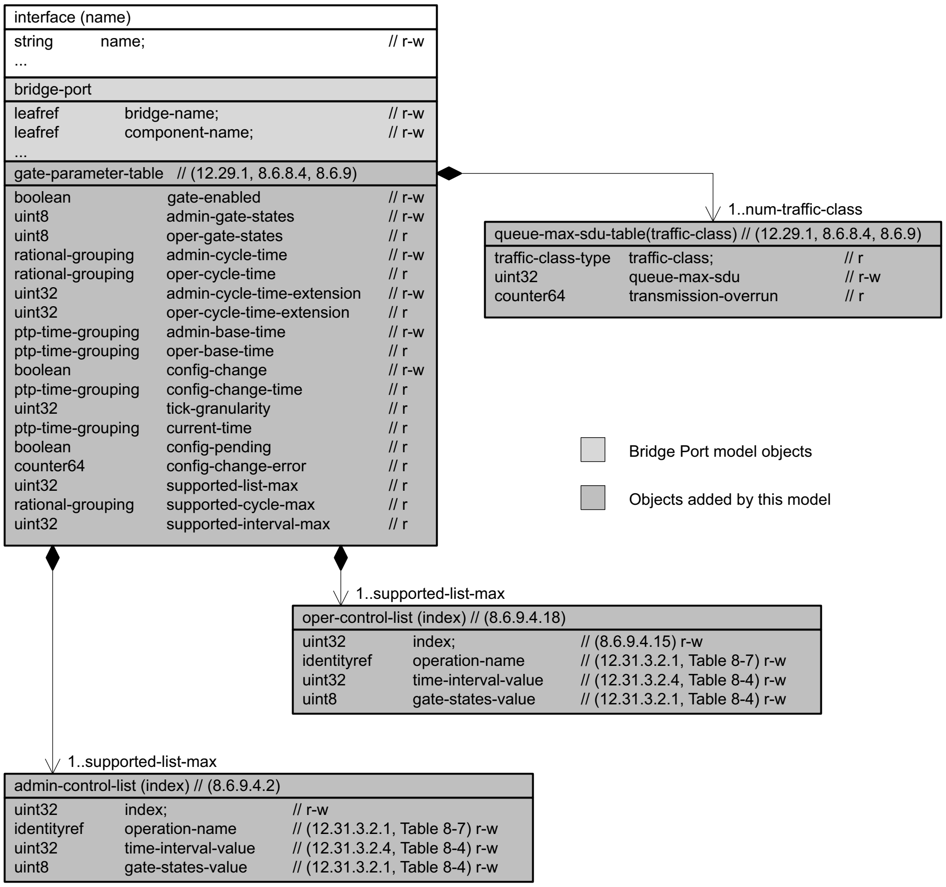

interface (name)
string name; // r-w
...
bridge-port
leafref bridge-name; // r-w
leafref component-name; // r-w
...
gate-parameter-table // (12.29.1, 8.6.8.4, 8.6.9)
boolean gate-enabled // r-w
uint8 admin-gate-states // r-w
uint8 oper-gate-states // r
rational-grouping admin-cycle-time // r-w
rational-grouping oper-cycle-time // r
uint32 admin-cycle-time-extension // r-w
uint32 oper-cycle-time-extension // r
ptp-time-grouping admin-base-time // r-w
ptp-time-grouping oper-base-time // r
boolean config-change // r-w
ptp-time-grouping config-change-time // r
uint32 tick-granularity // r
ptp-time-grouping current-time // r
boolean config-pending // r
counter64 config-change-error // r
uint32 supported-list-max // r
rational-grouping supported-cycle-max // r
uint32 supported-interval-max // r
1..num-traffic-class
queue-max-sdu-table(traffic-class) // (12.29.1, 8.6.8.4, 8.6.9)
traffic-class-type traffic-class; // r
uint32 queue-max-sdu // r-w
counter64 transmission-overrun // r
Bridge Port model objects
Objects added by this model
1..supported-list-max
oper-control-list (index) // (8.6.9.4.18)
uint32 index; // (8.6.9.4.15) r-w
identityref operation-name // (12.31.3.2.1, Table 8-7) r-w
uint32 time-interval-value // (12.31.3.2.4, Table 8-4) r-w
uint8 gate-states-value // (12.31.3.2.1, Table 8-4) r-w
1..supported-list-max
admin-control-list (index) // (8.6.9.4.2)
uint32 index; // r-w
identityref operation-name // (12.31.3.2.1, Table 8-7) r-w
uint32 time-interval-value // (12.31.3.2.4, Table 8-4) r-w
uint8 gate-states-value // (12.31.3.2.1, Table 8-4) r-w

Figure 48-18—Scheduled Traffic model

48.2.10 Frame Preemption model

The Frame Preemption model augments the Bridge Port model (48.2.1) with nodes that represent the managed objects contained in the following table:

a) Frame Preemption Parameter Table (12.30.1)

The Frame Preemption model is illustrated in Figure 48-19.

There is one Frame Preemption Parameter Table per Port of a Bridge component or end station. Each object of the table represents parameters that support frame preemption (6.7.2) as detailed in Table 12-33.

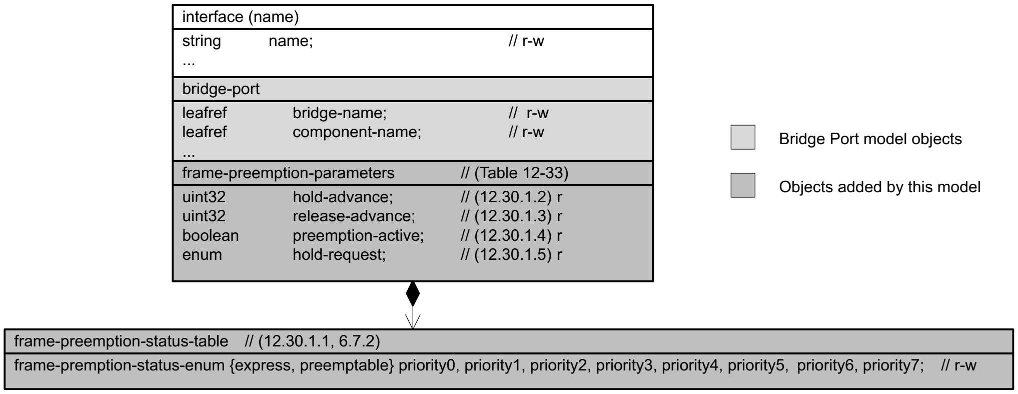

interface (name)
string name; // r-w
...
bridge-port
leafref bridge-name; // r-w
leafref component-name; // r-w
...
frame-preemption-parameters // (Table 12-33)
uint32 hold-advance; // (12.30.1.2) r
uint32 release-advance; // (12.30.1.3) r
boolean preemption-active; // (12.30.1.4) r
enum hold-request; // (12.30.1.5) r
frame-preemption-status-table // (12.30.1.1, 6.7.2)
frame-premption-status-enum {express, preemptable} priority0, priority1, priority2, priority3, priority4, priority5, priority6, priority7; // r-w
Bridge Port model objects
Objects added by this model

Figure 48-19—Frame Preemption model

48.2.11 Per-Stream Filtering and Policing model

The Per-Stream Filtering and Policing (PSFP) model augments the Bridge components model (48.2.1) and the Stream filters and stream gates model (48.2.6) with nodes that represent the managed objects contained in the following tables:

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)

The PSFP model is illustrated in Figure 48-20.

There is one stream-filter-instance-table per Bridge component. Each object of the table contains a set of parameters that defines a single Stream Filter (8.6.5.3), as detailed in Table 12-35. The table rows form an ordered list of filter instances, the order being determined by the StreamFilterInstance parameter.

There is one stream-gate-instance-table per Bridge component. Each object of the table contains a set of parameters that defines a single Stream Gate Instance (8.6.5.4), as detailed in Table 12-36.

There is one flow-meter-instance-table per Bridge component. Each object of the table contains a set of parameters that defines a single Flow Meter Instance (8.6.5.5), as detailed in Table 12-37.

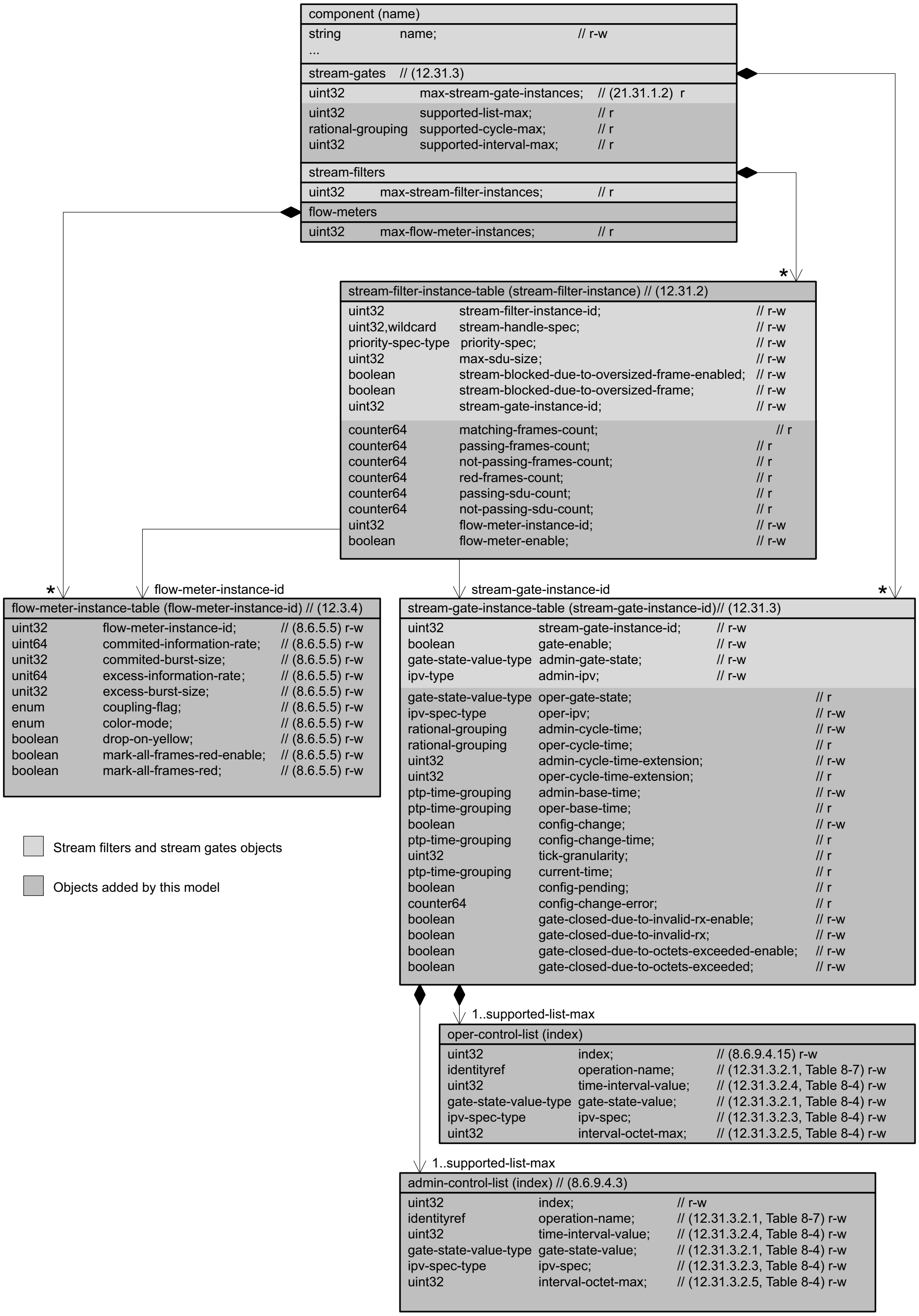

component (name)
string name; // r-w
...
stream-gates // (12.31.3)
uint32 max-stream-gate-instances; // (21.31.1.2) r
uint32 supported-list-max; // r
rational-grouping supported-cycle-max; // r
uint32 supported-interval-max; // r
stream-filters
uint32 max-stream-filter-instances; // r
flow-meters
uint32 max-flow-meter-instances; // r
*
stream-filter-instance-table (stream-filter-instance) // (12.31.2)
uint32 stream-filter-instance-id; // r-w
uint32,wildcard stream-handle-spec; // r-w
priority-spec-type priority-spec; // r-w
uint32 max-sdu-size; // r-w
boolean stream-blocked-due-to-oversized-frame-enabled; // r-w
boolean stream-blocked-due-to-oversized-frame; // r-w
uint32 stream-gate-instance-id; // r-w
counter64 matching-frames-count; // r
counter64 passing-frames-count; // r
counter64 not-passing-frames-count; // r
counter64 red-frames-count; // r
counter64 passing-sdu-count; // r
counter64 not-passing-sdu-count; // r
uint32 flow-meter-instance-id; // r-w
boolean flow-meter-enable; // r-w
*
flow-meter-instance-id
flow-meter-instance-table (flow-meter-instance-id) // (12.3.4)
uint32 flow-meter-instance-id; // (8.6.5.5) r-w
uint64 commited-information-rate; // (8.6.5.5) r-w
unit32 commited-burst-size; // (8.6.5.5) r-w
unit64 excess-information-rate; // (8.6.5.5) r-w
unit32 excess-burst-size; // (8.6.5.5) r-w
enum coupling-flag; // (8.6.5.5) r-w
enum color-mode; // (8.6.5.5) r-w
boolean drop-on-yellow; // (8.6.5.5) r-w
boolean mark-all-frames-red-enable; // (8.6.5.5) r-w
boolean mark-all-frames-red; // (8.6.5.5) r-w
stream-gate-instance-id
*
stream-gate-instance-table (stream-gate-instance-id)// (12.31.3)
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
gate-state-value-type oper-gate-state; // r
ipv-spec-type oper-ipv; // r-w
rational-grouping admin-cycle-time; // r-w
rational-grouping oper-cycle-time; // r
uint32 admin-cycle-time-extension; // r-w
uint32 oper-cycle-time-extension; // r
ptp-time-grouping admin-base-time; // r-w
ptp-time-grouping oper-base-time; // r
boolean config-change; // r-w
ptp-time-grouping config-change-time; // r
uint32 tick-granularity; // r
ptp-time-grouping current-time; // r
boolean config-pending; // r
counter64 config-change-error; // r
boolean gate-closed-due-to-invalid-rx-enable; // r-w
boolean gate-closed-due-to-invalid-rx; // r-w
boolean gate-closed-due-to-octets-exceeded-enable; // r-w
boolean gate-closed-due-to-octets-exceeded; // r-w
1..supported-list-max
oper-control-list (index)
uint32 index; // (8.6.9.4.15) r-w
identityref operation-name; // (12.31.3.2.1, Table 8-7) r-w
uint32 time-interval-value; // (12.31.3.2.4, Table 8-4) r-w
gate-state-value-type gate-state-value; // (12.31.3.2.1, Table 8-4) r-w
ipv-spec-type ipv-spec; // (12.31.3.2.3, Table 8-4) r-w
uint32 interval-octet-max; // (12.31.3.2.5, Table 8-4) r-w
1..supported-list-max
admin-control-list (index) // (8.6.9.4.3)
uint32 index; // r-w
identityref operation-name; // (12.31.3.2.1, Table 8-7) r-w
uint32 time-interval-value; // (12.31.3.2.4, Table 8-4) r-w
gate-state-value-type gate-state-value; // (12.31.3.2.1, Table 8-4) r-w
ipv-spec-type ipv-spec; // (12.31.3.2.3, Table 8-4) r-w
uint32 interval-octet-max; // (12.31.3.2.5, Table 8-4) r-w
Stream filters and stream gates objects
Objects added by this model

Figure 48-20—PSFP model

48.3 Structure of the YANG models

Insert six new rows at the end of Table 48-1 as follows (unchanged rows not shown):

Table 48-1—Summary of the YANG modules

Module	References	Managed functionality	Initial YANG specification Notes
ieee802-dot1q-sched		8.6.8.4	IEEE Std 802.1Qcw Scheduled traffic module.
ieee802-dot1q-sched-bridge		8.6.8.4	IEEE Std 802.1Qcw Augments Bridge Port with Scheduled Traffic module.
ieee802-dot1q-preemption		6.7.2	IEEE Std 802.1Qcw Frame preemption module.
ieee802-dot1q-preemption bridge		6.7.2	IEEE Std 802.1Qcw Augments Bridge Port with frame preemption.
ieee802-dot1q-psfp		8.6.5.3, 8.6.5.4, 8.6.5.5	IEEE Std 802.1Qcw PSFP module.
ieee802-dot1q-psfp-bridge		8.6.5.3, 8.6.5.4, 8.6.5.5	IEEE Std 802.1Qcw Augments Bridge Port with PSFP module.

Insert 48.3.9, 48.3.10, and 48.3.11 at the end of 48.3 as follows:

48.3.9 Scheduled Traffic model

A Bridge implementing the Scheduled Traffic model (48.2.9) implements the YANG modules in Table 48-10.

Table 48-10—Scheduled Traffic model YANG modules

YANG module
ieee802-types
ieee802-dot1q-types
ieee802-dot1q-bridge
ieee802-dot1q-sched
ieee802-dot1q-sched-bridge

48.3.10 Frame Preemption model

A Bridge implementing the Frame Preemption model (48.2.10) implements the YANG modules in Table 48-11.

Table 48-11—Frame Preemption model YANG modules

YANG module
ieee802-dot1q-types
ieee802-dot1q-bridge
ieee802-dot1q-preemption
ieee802-dot1q-preemption-bridge

48.3.11 Per-Stream Filtering and Policing model

A Bridge implementing the Per-Stream Filtering and Policing model (48.2.11) implements the YANG modules in Table 48-12.

Table 48-12—Per-Stream Filtering and Policing model YANG modules

YANG module
ieee802-types
ieee802-dot1q-types
ieee802-dot1q-bridge
ieee802-dot1q-stream-filters-gates
ieee802-dot1q-stream-filters-gates-bridge
ieee802-dot1q-psfp
ieee802-dot1q-psfp-bridge

48.4 Security considerations

Insert a new paragraph as the third paragraph of 48.4 as follows:

There are a number of management objects defined in the YANG modules specified in this standard that are configurable (i.e., read-write) and/or operational (i.e., read-only). Such objects may be considered sensitive or vulnerable in some network environments. A network configuration protocol, such as NETCONF, can support protocol operations that can edit or delete YANG module configuration data (e.g., edit-config, delete-config, copy-config). If this is done in a non-secure environment without proper protection, then negative effects on the network operation are possible.

Delete the first paragraph of 48.4.1, 48.4.2, 48.4.4, 48.4.5, 48.4.6, 48.4.7, and 48.4.8 (each beginning "There are a number of management objects …").

Insert 48.4.9, 48.4.10, and 48.4.11 after 48.4.8 (inserted by IEEE Std 802.1Qcz-2023) as follows:

48.4.9 Security considerations of the Scheduled Traffic model

The following objects in the ieee802-dot1q-sched YANG module could be manipulated to interfere with the operation of egress gating. This could, for example, be used to force a reinitialization of Scheduled Traffic state machines, thus causing network instability.

interfaces/interface/bridge-port/gate-parameter-table

See 48.4.1 for related ieee802-dot1q-bridge YANG model security considerations.

48.4.10 Security considerations of the Frame Preemption model

The following objects in the ieee802-dot1q-preemption YANG module could be manipulated to interfere with the operation of preemption. This could, for example, be used to force a reinitialization of the Frame Preemption status table, thus causing network instability.

interfaces/interface/bridge-port/frame-preemption-parameters

See 48.4.1 for related ieee802-dot1q-bridge YANG model security considerations.

48.4.11 Security considerations of the Per-Stream Filtering and Policing model

The following objects in the ieee802-dot1q-psfp YANG module could be manipulated to interfere with the operation of stream filtering and gating. This could, for example, be used to force a reinitialization of PSFP state machines, thus causing network instability.

bridges/bridge/component/stream-filters

bridges/bridge/component/stream-gates

bridges/bridge/component/flow-meters

See 48.4.1 for related ieee802-dot1q-bridge YANG model security considerations.

48.5 YANG schema tree definitions

48.5.4 Schema for the ieee802-dot1q-bridge YANG module

Delete the existing text in 48.5.4.

Insert new text in 48.5.4 as follows:

```
module: ieee802-dot1q-bridge
  +--rw bridges
     +--rw bridge* [name]
        +--rw name           dot1qtypes:name-type
        +--rw address        ieee:mac-address
        +--rw bridge-type    identityref
        +--ro ports?         uint16
        +--ro up-time?       yang:zero-based-counter32
        +--ro components?    uint32
        +--rw component* [name]
           +--rw name                     string
           +--rw id?                      uint32
           +--rw type                     identityref
           +--rw address?                 ieee:mac-address
           +--rw traffic-class-enabled?   boolean
           +--ro ports?                   uint16
           +--ro bridge-port*             if:interface-ref
           +--ro capabilities
           |  +--ro extended-filtering?             boolean
           |  +--ro traffic-classes?                boolean
           |  +--ro static-entry-individual-port?   boolean
           |  +--ro ivl-capable?                    boolean
           |  +--ro svl-capable?                    boolean
           |  +--ro hybrid-capable?                 boolean
           |  +--ro configurable-pvid-tagging?      boolean
           |  +--ro local-vlan-capable?             boolean
           +--rw filtering-database
           |  +--rw aging-time?                          uint32
           |  +--ro size?                                yang:gauge32
           |  +--ro static-entries?                      yang:gauge32
           |  +--ro dynamic-entries?                     yang:gauge32
           |  +--ro static-vlan-registration-entries?    yang:gauge32
           |  +--ro dynamic-vlan-registration-entries?   yang:gauge32
                        |    +--ro  mac-address-registration-entries?         yang:gauge32
{extended-filtering-services}?
           |  +--rw filtering-entry* [database-id vids address]
           |  |  +--rw database-id    uint32
           |  |  +--rw address        ieee:mac-address
           |  |  +--rw vids           dot1qtypes:vid-range-type
           |  |  +--rw entry-type?    enumeration
           |  |  +--rw port-map* [port-ref]
           |  |  |  +--rw port-ref                                   port-number-type
           |  |  |  +--rw (map-type)?
           |  |  |     +--:(static-filtering-entries)
           |  |  |     |  +--rw static-filtering-entries
           |  |  |     |     +--rw control-element?         enumeration
           |  |  |     |     +--rw connection-identifier?   port-number-type
           |  |  |     +--:(static-vlan-registration-entries)
           |  |  |     |  +--rw static-vlan-registration-entries
           |  |  |     |     +--rw registrar-admin-control?   enumeration
           |  |  |     |     +--rw vlan-transmitted?          enumeration
           |  |  |     +--:(mac-address-registration-entries)
           |  |  |     |  +--rw mac-address-registration-entries
           |  |  |     |     +--rw control-element?   enumeration
           |  |  |     +--:(dynamic-vlan-registration-entries)
           |  |  |     |  +--rw dynamic-vlan-registration-entries
           |  |  |     |     +--rw control-element?   enumeration
           |  |  |     +--:(dynamic-reservation-entries)
           |  |  |     |  +--rw dynamic-reservation-entries
           |  |  |     |     +--rw control-element?   enumeration
           |  |  |     +--:(dynamic-filtering-entries)
           |  |  |        +--rw dynamic-filtering-entries
           |  |  |           +--rw control-element?   enumeration
           |  |  +--ro status?        enumeration
           |  +--rw vlan-registration-entry* [database-id vids]
           |     +--rw database-id    uint32
           |     +--rw vids           dot1qtypes:vid-range-type
           |     +--rw entry-type?    enumeration
           |     +--rw port-map* [port-ref]
           |        +--rw port-ref                                   port-number-type
           |        +--rw (map-type)?
           |           +--:(static-filtering-entries)
           |           |  +--rw static-filtering-entries
           |           |     +--rw control-element?         enumeration
           |           |     +--rw connection-identifier?   port-number-type
           |           +--:(static-vlan-registration-entries)
           |           |  +--rw static-vlan-registration-entries
           |           |     +--rw registrar-admin-control?   enumeration
           |           |     +--rw vlan-transmitted?          enumeration
           |           +--:(mac-address-registration-entries)
           |           |  +--rw mac-address-registration-entries
           |           |     +--rw control-element?   enumeration
           |           +--:(dynamic-vlan-registration-entries)
           |           |  +--rw dynamic-vlan-registration-entries
           |           |     +--rw control-element?   enumeration
           |           +--:(dynamic-reservation-entries)
           |           |  +--rw dynamic-reservation-entries
           |           |     +--rw control-element?   enumeration
           |           +--:(dynamic-filtering-entries)
           |              +--rw dynamic-filtering-entries
           |                 +--rw control-element?   enumeration
           +--rw permanent-database
           |  +--ro size?                               yang:gauge32
           |  +--ro static-entries?                     yang:gauge32
           |  +--ro static-vlan-registration-entries?   yang:gauge32
           |  +--rw filtering-entry* [database-id vids address]
           |     +--rw database-id    uint32
           |     +--rw address        ieee:mac-address
           |     +--rw vids           dot1qtypes:vid-range-type
           |     +--ro status?        enumeration
           |     +--rw port-map* [port-ref]
           |        +--rw port-ref                                   port-number-type
           |        +--rw (map-type)?
           |           +--:(static-filtering-entries)
           |           |  +--rw static-filtering-entries
           |           |     +--rw control-element?         enumeration
           |           |     +--rw connection-identifier?   port-number-type
           |           +--:(static-vlan-registration-entries)
           |           |  +--rw static-vlan-registration-entries
           |           |     +--rw registrar-admin-control?   enumeration
           |           |     +--rw vlan-transmitted?          enumeration
           |           +--:(mac-address-registration-entries)
           |           |  +--rw mac-address-registration-entries
           |           |     +--rw control-element?   enumeration
           |           +--:(dynamic-vlan-registration-entries)
           |           |  +--rw dynamic-vlan-registration-entries
           |           |     +--rw control-element?   enumeration
           |           +--:(dynamic-reservation-entries)
           |           |  +--rw dynamic-reservation-entries
           |           |     +--rw control-element?   enumeration
           |           +--:(dynamic-filtering-entries)
           |              +--rw dynamic-filtering-entries
           |                 +--rw control-element?   enumeration
           +--rw bridge-vlan
           |  +--ro version?                  uint16
           |  +--ro max-vids?                 uint16
           |  +--ro override-default-pvid?    boolean
              |  +--ro protocol-template?            dot1qtypes:protocol-frame-format-type
{port-and-protocol-based-vlan}?
           |  +--ro max-msti?                 uint16
           |  +--rw vlan* [vid]
           |  |  +--rw vid              dot1qtypes:vlan-index-type
           |  |  +--rw name?            dot1qtypes:name-type
           |  |  +--ro untagged-ports*   if:interface-ref
           |  |  +--ro egress-ports*     if:interface-ref
           |  +--rw protocol-group-database* [db-index] {port-and-protocol-based-vlan}?
           |  |  +--rw db-index                 uint16
           |  |  +--rw frame-format-type?       dot1qtypes:protocol-frame-format-type
           |  |  +--rw (frame-format)?
           |  |  |  +--:(ethernet-rfc1042-snap8021H)
           |  |  |  |  +--rw ethertype?         dot1qtypes:ethertype-type
           |  |  |  +--:(snap-other)
           |  |  |  |  +--rw protocol-id?       string
           |  |  |  +--:(llc-other)
           |  |  |     +--rw dsap-ssap-pairs
           |  |  |        +--rw llc-address?   string
           |  |  +--rw group-id?                uint32
           |  +--rw vid-to-fid-allocation* [vids]
           |  |  +--rw vids               dot1qtypes:vid-range-type
           |  |  +--ro fid?               uint32
           |  |  +--ro allocation-type?   enumeration
           |  +--rw fid-to-vid-allocation* [fid]
           |  |  +--rw fid                uint32
           |  |  +--ro allocation-type?   enumeration
           |  |  +--ro vid*               dot1qtypes:vlan-index-type
           |  +--rw vid-to-fid* [vid]
           |     +--rw vid    dot1qtypes:vlan-index-type
           |     +--rw fid?   uint32
           +--rw bridge-mst
              +--rw mstid*                     dot1qtypes:mstid-type
              +--rw fid-to-mstid* [fid]
              |  +--rw fid      uint32
              |  +--rw mstid?   dot1qtypes:mstid-type
              +--rw fid-to-mstid-allocation* [fids]
                 +--rw fids     dot1qtypes:vid-range-type
                 +--rw mstid?   dot1qtypes:mstid-type

  augment /if:interfaces/if:interface:
    +--rw bridge-port
       +--rw bridge-name?                              -> /bridges/bridge/name
             +--rw  component-name?                                                    ->
/bridges/bridge[dot1q:name=current()/../bridge-name]/component/name
       +--rw port-type?                                identityref
       +--rw pvid?                                     dot1qtypes:vlan-index-type
       +--rw default-priority?                         dot1qtypes:priority-type
       +--rw priority-regeneration
       |  +--rw priority0?   priority-type
       |  +--rw priority1?   priority-type
       |  +--rw priority2?   priority-type
       |  +--rw priority3?   priority-type
       |  +--rw priority4?   priority-type
       |  +--rw priority5?   priority-type
       |  +--rw priority6?   priority-type
       |  +--rw priority7?   priority-type
       +--rw pcp-selection?                            dot1qtypes:pcp-selection-type
       +--rw pcp-decoding-table
       |  +--rw pcp-decoding-map* [pcp]
       |     +--rw pcp             pcp-selection-type
       |     +--rw priority-map* [priority-code-point]
       |        +--rw priority-code-point    priority-type
       |        +--rw priority?              priority-type
       |        +--rw drop-eligible?         boolean
       +--rw pcp-encoding-table
       |  +--rw pcp-encoding-map* [pcp]
       |     +--rw pcp             pcp-selection-type
       |     +--rw priority-map* [priority dei]
       |        +--rw priority               priority-type
       |        +--rw dei                    boolean
       |        +--rw priority-code-point?   priority-type
       +--rw use-dei?                                  boolean
       +--rw drop-encoding?                            boolean
       +--rw service-access-priority-selection?        boolean
       +--rw service-access-priority
       |  +--rw priority0?   priority-type
       |  +--rw priority1?   priority-type
       |  +--rw priority2?   priority-type
       |  +--rw priority3?   priority-type
       |  +--rw priority4?   priority-type
       |  +--rw priority5?   priority-type
       |  +--rw priority6?   priority-type
       |  +--rw priority7?   priority-type
       +--rw traffic-class
       |  x--rw traffic-class-map* [priority]
       |  |  +--rw priority                  priority-type
       |  |  +--rw available-traffic-class* [num-traffic-class]
       |  |     +--rw num-traffic-class    uint8
       |  |     +--rw traffic-class?       traffic-class-type
       |  +--rw traffic-class-table
       |     +--rw number-of-traffic-classes?   uint8
       |     +--rw priority0?                   traffic-class-type
       |     +--rw priority1?                   traffic-class-type
       |     +--rw priority2?                   traffic-class-type
       |     +--rw priority3?                   traffic-class-type
       |     +--rw priority4?                   traffic-class-type
       |     +--rw priority5?                   traffic-class-type
       |     +--rw priority6?                   traffic-class-type
       |     +--rw priority7?                   traffic-class-type
       +--rw transmission-selection-algorithm-table
       |  +--rw transmission-selection-algorithm-map* [traffic-class]
       |     +--rw traffic-class                        traffic-class-type
       |     +--rw transmission-selection-algorithm?   identityref
       +--rw acceptable-frame?                          enumeration
       +--rw enable-ingress-filtering?                  boolean
       +--rw enable-restricted-vlan-registration?      boolean
       +--rw enable-vid-translation-table?              boolean
       +--rw enable-egress-vid-translation-table?      boolean
       +--rw protocol-group-vid-set* [group-id] {port-and-protocol-based-vlan}?
       |  +--rw group-id    uint32
       |  +--rw vid*        dot1qtypes:vlanid
       +--rw admin-point-to-point?                      enumeration
                    +--ro   protocol-based-vlan-classification?                    boolean
{port-and-protocol-based-vlan}?
      +--ro max-vid-set-entries?                    uint16 {port-and-protocol-based-vlan}?
       +--ro port-number?                               dot1qtypes:port-number-type
       +--ro address?                                   ieee:mac-address
       +--ro capabilities?                              bits
       +--ro type-capabilties?                          bits
       +--ro external?                                  boolean
       +--ro oper-point-to-point?                       boolean
       +--ro media-dependent-overhead?                  uint8
       +--ro statistics
       |  +--ro delay-exceeded-discards?          yang:counter64
       |  +--ro mtu-exceeded-discards?            yang:counter64
       |  +--ro frame-rx?                         yang:counter64
       |  +--ro octets-rx?                        yang:counter64
       |  +--ro frame-tx?                         yang:counter64
       |  +--ro octets-tx?                        yang:counter64
       |  +--ro discard-inbound?                  yang:counter64
       |  +--ro forward-outbound?                 yang:counter64
       |  +--ro discard-lack-of-buffers?          yang:counter64
       |  +--ro discard-transit-delay-exceeded?   yang:counter64
       |  +--ro discard-on-error?                 yang:counter64
       |  +--ro discard-on-ingress-filtering?     yang:counter64 {ingress-filtering}?
       +--rw vid-translations* [local-vid]
       |  +--rw local-vid    dot1qtypes:vlanid
       |  +--rw relay-vid?   dot1qtypes:vlanid
       +--rw egress-vid-translations* [relay-vid]
          +--rw relay-vid    dot1qtypes:vlanid
          +--rw local-vid?   dot1qtypes:vlanid
```

Insert new 48.5.17, 48.5.18, 48.5.19, 48.5.20, 48.5.21, and 48.5.22 at the end of 48.5, as follows:

48.5.17 Schema for the ieee802-dot1q-sched YANG module

This YANG module does not have a YANG schema tree.

48.5.18 Schema for the ieee802-dot1q-sched-bridge YANG module

```
module: ieee802-dot1q-sched-bridge

  augment /if:interfaces/if:interface/dot1q:bridge-port:
    +--rw gate-parameter-table
       +--rw queue-max-sdu-table* [traffic-class]
       |  +--rw traffic-class           dot1q-types:traffic-class-type
       |  +--rw queue-max-sdu?          uint32
       |  +--ro transmission-overrun?   yang:counter64
       +--rw gate-enabled?                 boolean
       +--rw admin-gate-states?            uint8
       +--ro oper-gate-states?             uint8
       +--rw admin-control-list
       |  +--rw gate-control-entry* [index]
       |     +--rw index                  uint32
       |     +--rw operation-name         identityref
       |     +--rw time-interval-value?   uint32
       |     +--rw gate-states-value      uint8
       +--ro oper-control-list
       |  +--ro gate-control-entry* [index]
       |     +--ro index                  uint32
       |     +--ro operation-name         identityref
       |     +--ro time-interval-value?   uint32
       |     +--ro gate-states-value      uint8
       +--rw admin-cycle-time
       |  +--rw numerator?     uint32
       |  +--rw denominator?   uint32
       +--ro oper-cycle-time
       |  +--ro numerator?     uint32
       |  +--ro denominator?   uint32
       +--rw admin-cycle-time-extension?   uint32
       +--ro oper-cycle-time-extension?    uint32
       +--rw admin-base-time
       |  +--rw seconds?       uint64
       |  +--rw nanoseconds?   uint32
       +--ro oper-base-time
       |  +--ro seconds?       uint64
       |  +--ro nanoseconds?   uint32
       +--rw config-change?                boolean
       +--ro config-change-time
       |  +--ro seconds?       uint64
       |  +--ro nanoseconds?   uint32
       +--ro tick-granularity?             uint32
       +--ro current-time
       |  +--ro seconds?       uint64
       |  +--ro nanoseconds?   uint32
       +--ro config-pending?               boolean
       +--ro config-change-error?          yang:counter64
       +--rw supported-list-max?           uint32
       +--rw supported-cycle-max
       |  +--rw numerator?     uint32
       |  +--rw denominator?   uint32
       +--rw supported-interval-max?       uint32
```

48.5.19 Schema for the ieee802-dot1q-preemption YANG module

This YANG module does not have a YANG schema tree.

48.5.20 Schema for the ieee802-dot1q-preemption-bridge YANG module

```
module: ieee802-dot1q-preemption-bridge

  augment /if:interfaces/if:interface/dot1q:bridge-port:
    +--rw frame-preemption-parameters {frame-preemption}?
       +--rw frame-preemption-status-table
       |  +--rw priority0?   frame-preemption-status-enum
       |  +--rw priority1?   frame-preemption-status-enum
       |  +--rw priority2?   frame-preemption-status-enum
       |  +--rw priority3?   frame-preemption-status-enum
       |  +--rw priority4?   frame-preemption-status-enum
       |  +--rw priority5?   frame-preemption-status-enum
       |  +--rw priority6?   frame-preemption-status-enum
       |  +--rw priority7?   frame-preemption-status-enum
       +--ro hold-advance?                    uint32
       +--ro release-advance?                 uint32
       +--ro preemption-active?               boolean
       +--ro hold-request?                    enumeration
```

48.5.21 Schema for the ieee802-dot1q-psfp YANG module

This YANG module does not have a YANG schema tree.

48.5.22 Schema for the ieee802-dot1q-psfp-bridge YANG module

```
module: ieee802-dot1q-psfp-bridge

  augment /dot1q:bridges/dot1q:bridge/dot1q:component:
    +--rw flow-meters
    |  +--rw flow-meter-instance-table* [flow-meter-instance-id]
    |  |  +--rw flow-meter-instance-id        uint32
    |  |  +--rw committed-information-rate    uint64
    |  |  +--rw committed-burst-size          uint32
    |  |  +--rw excess-information-rate       uint64
    |  |  +--rw excess-burst-size             uint32
    |  |  +--rw coupling-flag                 enumeration
    |  |  +--rw color-mode                    enumeration
    |  |  +--rw drop-on-yellow                boolean
    |  |  +--rw mark-all-frames-red-enable?   boolean
    |  |  +--rw mark-all-frames-red?          boolean
    |  +--rw max-flow-meter-instances?    uint32
    +--rw stream-gates
    |  +--rw stream-gate-instance-table* [stream-gate-instance-id]
    |  |  +--rw stream-gate-instance-id                   uint32
    |  |  +--rw gate-enable?                              boolean
    |  |  +--rw admin-gate-states?                        gate-state-value-type
    |  |  +--rw admin-ipv?                                ipv-spec-type
    |  |  +--ro oper-gate-state?                          sfsg:gate-state-value-type
    |  |  +--rw oper-ipv?                                 sfsg:ipv-spec-type
    |  |  +--rw admin-control-list
    |  |  |  +--rw gate-control-entry* [index]
    |  |  |     +--rw index                  uint32
    |  |  |     +--rw operation-name         identityref
    |  |  |     +--rw time-interval-value?   uint32
    |  |  |     +--rw gate-state-value       sfsg:gate-state-value-type
    |  |  |     +--rw ipv-spec               sfsg:ipv-spec-type
    |  |  |     +--rw interval-octet-max?    uint32
    |  |  +--ro oper-control-list
    |  |  |  +--ro gate-control-entry* [index]
    |  |  |     +--ro index                  uint32
    |  |  |     +--ro operation-name         identityref
    |  |  |     +--ro time-interval-value?   uint32
    |  |  |     +--ro gate-state-value       sfsg:gate-state-value-type
    |  |  |     +--ro ipv-spec               sfsg:ipv-spec-type
    |  |  |     +--ro interval-octet-max?    uint32
    |  |  +--rw admin-cycle-time
    |  |  |  +--rw numerator?     uint32
    |  |  |  +--rw denominator?   uint32
    |  |  +--ro oper-cycle-time
    |  |  |  +--ro numerator?     uint32
    |  |  |  +--ro denominator?   uint32
    |  |  +--rw admin-cycle-time-extension?               uint32
    |  |  +--ro oper-cycle-time-extension?                uint32
    |  |  +--rw admin-base-time
    |  |  |  +--rw seconds?       uint64
    |  |  |  +--rw nanoseconds?   uint32
    |  |  +--ro oper-base-time
    |  |  |  +--ro seconds?       uint64
    |  |  |  +--ro nanoseconds?   uint32
    |  |  +--rw config-change?                            boolean
    |  |  +--ro config-change-time
    |  |  |  +--ro seconds?       uint64
    |  |  |  +--ro nanoseconds?   uint32
    |  |  +--ro tick-granularity?                         uint32
    |  |  +--ro current-time
    |  |  |  +--ro seconds?       uint64
    |  |  |  +--ro nanoseconds?   uint32
    |  |  +--ro config-pending?                           boolean
    |  |  +--ro config-change-error?                      yang:counter64
    |  |  +--rw gate-closed-due-to-invalid-rx-enable?     boolean
    |  |  +--rw gate-closed-due-to-invalid-rx?            boolean
    |  |  +--rw gate-closed-due-octets-exceeded-enable?   boolean
    |  |  +--rw gate-closed-due-octets-exceeded?          boolean
    |  +--ro max-stream-gate-instances?    uint32
    |  +--rw supported-list-max?           uint32
    |  +--rw supported-cycle-max
    |  |  +--rw numerator?     uint32
    |  |  +--rw denominator?   uint32
    |  +--rw supported-interval-max?       uint32
    +--rw stream-filters
       +--rw stream-filter-instance-table* [stream-filter-instance-id]
       |  +--rw stream-filter-instance-id                       uint32
       |  +--rw (stream-handle-spec)?
       |  |  +--:(wildcard)
       |  |  |  +--rw wildcard?                                 empty
       |  |  +--:(stream-handle)
       |  |     +--rw stream-handle                             uint32
       |  +--rw priority-spec                                   priority-spec-type
       |  +--rw max-sdu-size                                    uint32
       |  +--rw stream-blocked-due-to-oversize-frame-enabled?   boolean
       |  +--rw stream-blocked-due-to-oversize-frame?           boolean
           |   +--rw  stream-gate-ref                                   ->
../../../stream-gates/stream-gate-instance-table/stream-gate-instance-id
       |  +--ro matching-frames-count?                          yang:counter64
       |  +--ro passing-frames-count?                           yang:counter64
       |  +--ro not-passing-frames-count?                       yang:counter64
       |  +--ro red-frames-count?                               yang:counter64
       |  +--ro passing-sdu-count?                              yang:counter64
       |  +--ro not-passing-sdu-count?                          yang:counter64
           |   +--rw  flow-meter-ref?                                   ->
../../../flow-meters/flow-meter-instance-table/flow-meter-instance-id
       |  +--rw flow-meter-enable?                              boolean
       +--ro max-stream-filter-instances?    uint32
```

48.6 YANG modules[9] [10] [11]

48.6.1 The ieee802-types YANG module

Delete the YANG module in 48.6.1.

Insert the following YANG module in 48.6.1:

```
module ieee802-types {
  yang-version "1.1";
  namespace urn:ieee:std:802.1Q:yang:ieee802-types;
  prefix ieee;
  organization
    "IEEE 802.1 Working Group";
  contact
    "WG-URL: http://ieee802.org/1/
    WG-EMail: stds-802-1-l@ieee.org

    Contact: IEEE 802.1 Working Group Chair
    Postal: C/O IEEE 802.1 Working Group
          IEEE Standards Association
          445 Hoes Lane
          Piscataway, NJ 08854
          USA

    E-mail: stds-802-1-chairs@ieee.org";
  description
    "This module contains a collection of generally useful derived data
    types for IEEE YANG models.

    Copyright (C) IEEE (2023). All rights reserved.

    This version of this YANG module is part of IEEE Std 802.1Q; see the
    standard itself for full legal notices.";
  revision 2023-10-22 {
    description
      "Published as part of IEEE Std 802.1Qcw-2023.

      The following reference statement identifies each referenced IEEE
      Standard as updated by applicable amendments.";
    reference
      "IEEE Std 802.1Q Bridges and Bridged Networks:
      IEEE Std 802.1Q-2022, IEEE Std 802.1Qcz-2023, IEEE Std 802.1Qcw-2023.
      IEEE Std 802 Overview and Architecture:
      IEEE Std 802-2014.
      IEEE 802.1AS Timing and Synchronization for Time-Sensitive Applications:
      IEEE Std 802.1AS-2020.";
  }
  revision 2022-10-29 {
    description
      "Published as part of IEEE Std 802.1Q-2022.";
    reference
      "IEEE Std 802.1Q-2022, Bridges and Bridged Networks.";
  }
  revision 2022-03-16 {
    description
      "Published as part of IEEE Std 802.1ABcu.";
    reference
      "IEEE Std 802.1AB-2016";
  }
  revision 2020-06-04 {
    description
      "Published as part of IEEE Std 802.1Qcx-2020. Second version.";
```

[9] Copyright release for YANG: Users of this standard may freely reproduce the YANG modules contained in this standard so that they can be used for their intended purpose.

[10] An ASCII version of each YANG module is attached to the PDF of this standard and can also be obtained from the IEEE 802.1 Website at https://1.ieee802.org/yang-modules/.

[11] References in this standard's YANG module definitions are not clickable, as each module has been incorporated unchanged after development and verification using YANG tools.

```
  reference
    "IEEE Std 802.1Qcx-2020, Bridges and Bridged Networks - YANG Data
    Model for Connectivity Fault Management.";
}
revision 2018-03-07 {
  description
    "Published as part of IEEE Std 802.1Q-2018. Initial version.";
  reference
    "IEEE Std 802.1Q-2018, Bridges and Bridged Networks.";
}
typedef mac-address {
  type string {
    pattern "[0-9a-fA-F]{2}(-[0-9a-fA-F]{2}){5}";
  }
  description
    "The mac-address type represents a MAC address in the canonical format
    and hexadecimal format specified by IEEE Std 802. The hexadecimal
    representation uses uppercase characters.";
  reference
    "3.1, 8.1 of IEEE Std 802";
}
typedef chassis-id-subtype-type {
  type enumeration {
    enum chassis-component {
      value 1;
      description
        "Represents a chassis identifier based on the value of the
        entPhysicalAlias object (defined in IETF RFC 2737) for a chassis
        component (i.e., an entPhysicalClass value of chassis(3)).";
    }
    enum interface-alias {
      value 2;
      description
        "Represents a chassis identifier based on the value of the ifAlias
        object (defined in IETF RFC 2863) for an interface on the
        containing chassis.";
    }
    enum port-component {
      value 3;
      description
        "Represents a chassis identifier based on the value of the
        entPhysicalAlias object (defined in IETF RFC 2737) for a port or
        backplane component (i.e., entPhysicalClass value of port(10) or
        backplane(4)), within the containing chassis.";
    }
    enum mac-address {
      value 4;
      description
        "Represents a chassis identifier based on the value of a unicast
        source address (encoded in network byte order and IEEE 802.3
        bit significance), of a port on the containing chassis as
        defined in IEEE Std 802.";
    }
    enum network-address {
      value 5;
      description
        "Represents a chassis identifier based on a network address,
        associated with a particular chassis. The encoded address is
        actually composed of two fields. The first field is a single
        octet, representing the IANA AddressFamilyNumbers value for the
        specific address type, and the second field is the network address
        value.";
    }
    enum interface-name {
      value 6;
      description
        "Represents a chassis identifier based on the value of the ifName
        object (defined in IETF RFC 2863) for an interface on the
        containing chassis.";
    }
    enum local {
      value 7;
      description
        "Represents a chassis identifier based on a locally defined value.";
    }
  }
  description
    "The source of a chassis identifier.";
  reference
    "IEEE Std 802
    IETF RFC 2737
    IETF RFC 2863";
}
typedef chassis-id-type {
  type string {
    length "1..255";
  }
  description
    "The format of a chassis identifier string. Objects of this type are
    always used with an associated chassis-id-subtype object, which
    identifies the format of the particular chassis-id object
    instance.

    If the associated chassis-id-subtype object has a value of
    chassis-component, then the octet string identifies a particular
    instance of the entPhysicalAlias object (defined in IETF RFC 2737) for
    a chassis component (i.e., an entPhysicalClass value of chassis(3)).

    If the associated chassis-id-subtype object has a value of
    interface-alias, then the octet string identifies a particular
    instance of the ifAlias object (defined in IETF RFC 2863) for an
    interface on the containing chassis. If the particular ifAlias object
    does not contain any values, another chassis identifier type should be
    used.

    If the associated chassis-id-subtype object has a value of
    port-component, then the octet string identifies a particular instance
    of the entPhysicalAlias object (defined in IETF RFC 2737) for a port
    or backplane component within the containing chassis.

    If the associated chassis-id-subtype object has a value of
    mac-address, then this string identifies a particular unicast source
    address (encoded in network byte order and IEEE 802.3 bit
    significance), of a port on the containing chassis as defined in
    IEEE Std 802.

    If the associated chassis-id-subtype object has a value of
    network-address, then this string identifies a particular network
    address, encoded in network byte order, associated with one or more
    ports on the containing chassis. The first octet contains the IANA
    Address Family Numbers enumeration value for the specific address
    type, and octets 2 through N contain the network address value in
    network byte order.

    If the associated chassis-id-subtype object has a value of
    interface-name, then the octet string identifies a particular instance
    of the ifName object (defined in IETF RFC 2863) for an interface on
    the containing chassis. If the particular ifName object does not
    contain any values, another chassis identifier type should be used.

    If the associated chassis-id-subtype object has a value of local,
    then this string identifies a locally assigned Chassis ID.";
  reference
    "IEEE Std 802
    IETF RFC 2737
    IETF RFC 2863";
}
typedef port-id-subtype-type {
  type enumeration {
    enum interface-alias {
      value 1;
      description
        "Represents a port identifier based on the ifAlias MIB object,
        defined in IETF RFC 2863.";
    }
    enum port-component {
      value 2;
      description
        "Represents a port identifier based on the value of
        entPhysicalAlias (defined in IETF RFC 2737) for a port component
        (i.e., entPhysicalClass value of port(10)), within the containing
        chassis.";
    }
    enum mac-address {
      value 3;
      description
        "Represents a port identifier based on a unicast source address
        (encoded in network byte order and IEEE 802.3 bit significance),
        which has been detected by the agent and associated with a
        particular port (IEEE Std 802).";
    }
    enum network-address {
      value 4;
      description
        "Represents a port identifier based on a network address, detected
        by the agent and associated with a particular port.";
    }
    enum interface-name {
      value 5;
      description
        "Represents a port identifier based on the ifName MIB object,
        defined in IETF RFC 2863.";
    }
    enum agent-circuit-id {
      value 6;
      description
        "Represents a port identifier based on the agent-local identifier
        of the circuit (defined in RFC 3046), detected by the agent and
        associated with a particular port.";
    }
    enum local {
      value 7;
      description
        "Represents a port identifier based on a value locally assigned.";
    }
  }
  description
    "The source of a particular type of port identifier.";
  reference
    "IEEE Std 802
    IETF RFC 2737
    IETF RFC 2863
    IETF RFC 3046";
}
typedef port-id-type {
  type string {
    length "1..255";
  }
  description
    "The format of a port identifier string. Objects of this type are
    always used with an associated port-id-subtype object, which
    identifies the format of the particular port-id object instance.

    If the associated port-id-subtype object has a value of
    interface-alias, then the octet string identifies a particular
    instance of the ifAlias object (defined in IETF RFC 2863). If the
    particular ifAlias object does not contain any values, another port
    identifier type should be used.

    If the associated port-id-subtype object has a value of
    port-component, then the octet string identifies a particular instance
    of the entPhysicalAlias object (defined in IETF RFC 2737) for a port
    or backplane component.

    If the associated port-id-subtype object has a value of
    mac-address, then this string identifies a particular unicast source
```

```
      address (encoded in network byte order and IEEE 802.3 bit
      significance) associated with the port (IEEE Std 802).

      If the associated port-id-subtype object has a value of
      network-address, then this string identifies a network address
      associated with the port. The first octet contains the IANA
      AddressFamilyNumbers enumeration value for the specific address type,
      and octets 2 through N contain the networkAddress address value in
      network byte order.

      If the associated port-id-subtype object has a value of
      interface-name, then the octet string identifies a particular instance
      of the ifName object (defined in IETF RFC 2863). If the particular
      ifName object does not contain any values, another port identifier
      type should be used.

      If the associated port-id-subtype object has a value of
      agent-circuit-id, then this string identifies a agent-local identifier
      of the circuit (defined in RFC 3046).

      If the associated port-id-subtype object has a value of local,
      then this string identifies a locally assigned port ID.";
    reference
      "IEEE Std 802
      IETF RFC 2737
      IETF RFC 2863
      IETF RFC 3046";
  }
  grouping rational-grouping {
    description
      "Definition of a non-negative rational number.";
    leaf numerator {
      type uint32;
      description
        "Numerator of the rational number.";
    }
    leaf denominator {
      type uint32 {
        range "1..4294967295";
      }
      description
        "Denominator of the rational number.";
    }
  }
  grouping ptp-time-grouping {
    description
      "This grouping specifies a PTP timestamp, represented as a 48-bit
      unsigned integer number of seconds and a 32-bit unsigned integer
      number of nanoseconds.";
    reference
      "6.4.3.4 of IEEE Std 802.1AS";
    leaf seconds {
      type uint64;
      description
        "This is the integer portion of the timestamp in units of seconds.
        The upper 16 bits are always zero.";
    }
    leaf nanoseconds {
      type uint32;
      description
        "This is the fractional portion of the timestamp in units of
        nanoseconds. This value is always less than 10^9.";
    }
  }
}
```

48.6.2 The ieee802-dot1q-types YANG module

Delete the YANG module in 48.6.2.

Insert the following YANG module in 48.6.2:

```
module ieee802-dot1q-types {
  yang-version "1.1";
  namespace urn:ieee:std:802.1Q:yang:ieee802-dot1q-types;
  prefix dot1q-types;
  import ietf-yang-types {
    prefix yang;
  }
  organization
    "IEEE 802.1 Working Group";
  contact
    "WG-URL: http://ieee802.org/1/
    WG-EMail: stds-802-1-l@ieee.org

    Contact: IEEE 802.1 Working Group Chair
    Postal: C/O IEEE 802.1 Working Group
    IEEE Standards Association
    445 Hoes Lane
    Piscataway, NJ 08854
    USA

    E-mail: stds-802-1-chairs@ieee.org";
  description
    "Common types used within dot1Q-bridge modules.

    Copyright (C) IEEE (2023).

    This version of this YANG module is part of IEEE Std 802.1Q; see the
    standard itself for full legal notices.";
  revision 2023-10-22 {
    description
      "Published as part of IEEE Std 802.1Qcw-2023.

      The following reference statement identifies each referenced IEEE
      Standard as updated by applicable amendments.";
    reference
      "IEEE Std 802.1Q Bridges and Bridged Networks:
      IEEE Std 802.1Q-2022, IEEE Std 802.1Qcz-2023, IEEE Std 802.1Qcw-2023.
      IEEE Std 802 Overview and Architecture:
      IEEE Std 802-2014.";
  }
  revision 2023-07-03 {
    description
      "Published as part of IEEE Std 802.1Qcz-2023.";
    reference
      "IEEE Std 802.1Qcz-2023, Bridges and Bridged Networks - Congestion
      Isolation.";
  }
  revision 2022-10-29 {
    description
      "Published as part of IEEE Std 802.1Q-2022.";
    reference
      "IEEE Std 802.1Q-2022, Bridges and Bridged Networks.";
  }
  revision 2020-06-04 {
    description
      "Published as part of IEEE Std 802.1Qcx-2020.";
    reference
      "IEEE Std 802.1Qcx-2020, Bridges and Bridged Networks - YANG Data
      Model for Connectivity Fault Management.";
  }
  revision 2018-03-07 {
    description
      "Published as part of IEEE Std 802.1Q-2018.";
    reference
      "IEEE Std 802.1Q-2018, Bridges and Bridged Networks.";
  }
  identity dot1q-vlan-type {
    description
      "Base identity from which all 802.1Q VLAN tag types are derived.";
  }
  identity c-vlan {
    base dot1q-vlan-type;
    description
      "An 802.1Q Customer VLAN, using the 81-00 EtherType.";
    reference
      "5.5 of IEEE Std 802.1Q";
  }
  identity s-vlan {
    base dot1q-vlan-type;
    description
      "An 802.1Q Service VLAN, using the 88-A8 EtherType originally
      introduced in 802.1ad, and incorporated into 802.1Q (2011)";
    reference
      "5.6 of IEEE Std 802.1Q";
  }
  identity transmission-selection-algorithm {
    description
      "Specify the transmission selection algorithms of IEEE Std 802.1Q
      Table 8-6";
  }
  identity strict-priority {
    base transmission-selection-algorithm;
    description
      "Indicates the strict priority transmission selection algorithm.";
    reference
      "Table 8-6 of IEEE Std 802.1Q";
  }
  identity credit-based-shaper {
    base transmission-selection-algorithm;
    description
      "Indicates the credit-based shaper transmission selection algorithm.";
    reference
      "Table 8-6 of IEEE Std 802.1Q";
  }
  identity enhanced-transmission-selection {
    base transmission-selection-algorithm;
    description
      "Indicates the enhanced transmission selection algorithm.";
    reference
      "Table 8-6 of IEEE Std 802.1Q";
  }
  identity asynchronous-traffic-shaping {
    base transmission-selection-algorithm;
    description
      "Indicates the asynchronous transmission selection algorithm.";
    reference
      "Table 8-6 of IEEE Std 802.1Q";
  }
  identity vendor-specific {
    base transmission-selection-algorithm;
    description
      "Indicates a vendor specific transmission selection algorithm.";
    reference
      "Table 8-6 of IEEE Std 802.1Q";
  }
  identity type-of-operation {
    description
      "Represents the operation type (name).";
  }
  typedef name-type {
    type string {
      length "0..32";
    }
    description
      "A text string of up to 32 characters, of locally determined
      significance.";
```

```
}
typedef port-number-type {
  type uint32 {
    range "1..4095";
  }
  description
    "The port number of the Bridge port for which this entry contains
    Bridge management information.";
}
typedef priority-type {
  type uint8 {
    range "0..7";
  }
  description
    "A range of priorities from 0 to 7 (inclusive). The Priority Code
    Point (PCP) is a 3-bit field that refers to the class of service
    associated with an 802.1Q VLAN tagged frame. The field specifies a
    priority value between 0 and 7, these values can be used by quality of
    service (QoS) to prioritize different classes of traffic.";
}
typedef num-traffic-class-type {
  type uint8 {
    range "1..8";
  }
  description
    "The number of traffic classes supported or participating in a
    particular feature. There are between 1 and 8 supported traffic
    classes defined by IEEE Std 802.1Q.";
}
typedef vid-range-type {
  type string {
    pattern
      "([1-9]"+
      "[0-9]{0,3}"+
      "(-[1-9][0-9]{0,3})?"+
      "(,[1-9][0-9]{0,3}(-[1-9][0-9]{0,3})?)*)";
  }
  description
    "A list of VLAN IDs, or non overlapping VLAN ranges, in ascending
    order, between 1 and 4094.

    This type is used to match an ordered list of VLAN IDs, or contiguous
    ranges of VLAN IDs. Valid VLAN IDs must be in the range 1 to 4094, and
    included in the list in non overlapping ascending order.

    For example: 1,10-100,250,500-1000";
}
typedef vlanid {
  type uint16 {
    range "1..4094";
  }
  description
    "The vlanid type uniquely identifies a VLAN. This is the 12-bit
    VLAN-ID used in the VLAN Tag header. The range is defined by the
    referenced specification. This type is in the value set and its
    semantics equivalent to the VlanId textual convention of the SMIv2.";
}
typedef vlan-index-type {
  type uint32 {
    range "1..4094 | 4096..4294967295";
  }
  description
    "A value used to index per-VLAN tables. Values of 0 and 4095 are not
    permitted. The range of valid VLAN indices. If the value is greater
    than 4095, then it represents a VLAN with scope local to the
    particular agent, i.e., one without a global VLAN-ID assigned to it.
    Such VLANs are outside the scope of IEEE 802.1Q, but it is convenient
    to be able to manage them in the same way using this YANG module.";
  reference
    "9.6 of IEEE Std 802.1Q";
}
typedef mstid-type {
  type uint32 {
    range "1..4094";
  }
  description
    "In an MSTP Bridge, an MSTID, i.e., a value used to identify a
    spanning tree (or MST) instance";
  reference
    "13.8 of IEEE Std 802.1Q";
}
typedef pcp-selection-type {
  type enumeration {
    enum 8P0D {
      description
        "8 priorities, 0 drop eligible";
    }
    enum 7P1D {
      description
        "7 priorities, 1 drop eligible";
    }
    enum 6P2D {
      description
        "6 priorities, 2 drop eligible";
    }
    enum 5P3D {
      description
        "5 priorities, 3 drop eligible";
    }
  }
  description
    "Priority Code Point selection types.";
  reference
    "12.6.2.5.3, 6.9.3 of IEEE Std 802.1Q";
}
typedef protocol-frame-format-type {
  type enumeration {
    enum Ethernet {
      description
        "Ethernet frame format";
    }
    enum rfc1042 {
      description
        "RFC 1042 frame format";
    }
    enum snap8021H {
      description
        "SNAP 802.1H frame format";
    }
    enum snapOther {
      description
        "Other SNAP frame format";
    }
    enum llcOther {
      description
        "Other LLC frame format";
    }
  }
  description
    "A value representing the frame format to be matched.";
  reference
    "12.10.1.7.1 of IEEE Std 802.1Q";
}
typedef ethertype-type {
  type string {
    pattern "[0-9a-fA-F]{2}-[0-9a-fA-F]{2}";
  }
  description
    "The EtherType value represented in the canonical order defined by
    IEEE 802. The canonical representation uses uppercase characters.";
  reference
    "9.2 of IEEE Std 802";
}
typedef dot1q-tag-type {
  type identityref {
    base dot1q-vlan-type;
  }
  description
    "Identifies a specific 802.1Q tag type";
  reference
    "9.5 IEEE Std 802.1Q";
}
typedef traffic-class-type {
  type uint8 {
    range "0..7";
  }
  description
    "This is the numerical value associated with a traffic class in a
    Bridge. Larger values are associated with higher priority traffic
    classes.";
  reference
    "3.273 of IEEE Std 802.1Q";
}
grouping dot1q-tag-classifier-grouping {
  description
    "A grouping which represents an 802.1Q VLAN, matching both the
    EtherType and a single VLAN ID.";
  leaf tag-type {
    type dot1q-tag-type;
    mandatory true;
    description
      "VLAN type";
  }
  leaf vlan-id {
    type vlanid;
    mandatory true;
    description
      "VLAN ID";
  }
}
grouping dot1q-tag-or-any-classifier-grouping {
  description
    "A grouping which represents an 802.1Q VLAN, matching both the
    EtherType and a single VLAN ID or 'any' to match on any VLAN ID.";
  leaf tag-type {
    type dot1q-tag-type;
    mandatory true;
    description
      "VLAN type";
  }
  leaf vlan-id {
    type union {
      type vlanid;
      type enumeration {
        enum any {
          value 4095;
          description
            "Matches 'any' VLAN in the range 1 to 4094 that is not matched
            by a more specific VLAN ID match";
        }
      }
    }
    mandatory true;
    description
      "VLAN ID or any";
  }
}
grouping dot1q-tag-ranges-classifier-grouping {
  description
    "A grouping which represents an 802.1Q VLAN that matches a range of
    VLAN IDs.";
  leaf tag-type {
    type dot1q-tag-type;
    mandatory true;
    description
      "VLAN type";
  }
  leaf vlan-ids {
    type vid-range-type;
    mandatory true;
    description
      "VLAN IDs";
  }
}
grouping dot1q-tag-ranges-or-any-classifier-grouping {
  description
    "A grouping which represents an 802.1Q VLAN, matching both the
    EtherType and a single VLAN ID, ordered list of ranges, or 'any' to
    match on any VLAN ID.";
  leaf tag-type {
    type dot1q-tag-type;
    mandatory true;
    description
      "VLAN type";
  }
  leaf vlan-id {
    type union {
      type vid-range-type;
      type enumeration {
        enum any {
          value 4095;
          description
            "Matches 'any' VLAN in the range 1 to 4094.";
        }
      }
    }
    mandatory true;
    description
      "VLAN IDs or any";
  }
}
grouping priority-regeneration-table-grouping {
  description
    "The priority regeneration table provides the ability to map incoming
    priority values on a per-Port basis, under management control.";
  reference
    "6.9.4 of IEEE Std 802.1Q";
  leaf priority0 {
    type priority-type;
    default "0";
    description
      "Priority 0";
    reference
      "12.6.2.3, 6.9.4 of IEEE Std 802.1Q";
  }
  leaf priority1 {
    type priority-type;
    default "1";
    description
      "Priority 1";
    reference
      "12.6.2.3, 6.9.4 of IEEE Std 802.1Q";
  }
  leaf priority2 {
    type priority-type;
    default "2";
    description
      "Priority 2";
    reference
      "12.6.2.3, 6.9.4 of IEEE Std 802.1Q";
  }
  leaf priority3 {
    type priority-type;
    default "3";
    description
      "Priority 3";
    reference
      "12.6.2.3, 6.9.4 of IEEE Std 802.1Q";
  }
  leaf priority4 {
    type priority-type;
    default "4";
    description
      "Priority 4";
    reference
      "12.6.2.3, 6.9.4 of IEEE Std 802.1Q";
  }
  leaf priority5 {
    type priority-type;
    default "5";
    description
      "Priority 5";
    reference
      "12.6.2.3, 6.9.4 of IEEE Std 802.1Q";
  }
  leaf priority6 {
    type priority-type;
    default "6";
    description
      "Priority 6";
    reference
      "12.6.2.3, 6.9.4 of IEEE Std 802.1Q";
  }
  leaf priority7 {
    type priority-type;
    default "7";
    description
      "Priority 7";
    reference
      "12.6.2.3, 6.9.4 of IEEE Std 802.1Q";
  }
}
grouping pcp-decoding-table-grouping {
  description
    "The Priority Code Point decoding table enables the decoding of the
    priority and drop-eligible parameters from the PCP.";
  reference
    "6.9.3 of IEEE Std 802.1Q";
  list pcp-decoding-map {
    key "pcp";
    description
      "This map associates the priority code point field found in the VLAN
      with a priority and drop eligible value based upon the priority code
      point selection type.";
    leaf pcp {
      type pcp-selection-type;
      description
        "The priority code point selection type.";
      reference
        "12.6.2.7, 6.9.3 of IEEE Std 802.1Q";
    }
    list priority-map {
      key "priority-code-point";
      description
        "This map associates a priority code point value with priority
        and drop eligible parameters.";
      leaf priority-code-point {
        type priority-type;
        description
          "Priority associated with the pcp.";
        reference
          "12.6.2.7, 6.9.3 of IEEE Std 802.1Q";
      }
      leaf priority {
        type priority-type;
        description
          "Priority associated with the pcp.";
        reference
          "12.6.2.7, 6.9.3 of IEEE Std 802.1Q";
      }
      leaf drop-eligible {
        type boolean;
        description
          "Drop eligible value for pcp";
        reference
          "12.6.2.7, 6.9.3 of IEEE Std 802.1Q";
      }
    }
  }
}
grouping pcp-encoding-table-grouping {
  description
    "The Priority Code Point encoding table encodes the priority and
    drop-eligible parameters in the PCP field of the VLAN tag.";
  reference
    "12.6.2.9, 6.9.3 of IEEE Std 802.1Q";
  list pcp-encoding-map {
    key "pcp";
    description
      "This map associates the priority and drop-eligible parameters
      with the priority used to encode the PCP of the VLAN based upon
      the priority code point selection type.";
    leaf pcp {
      type pcp-selection-type;
      description
        "The priority code point selection type.";
      reference
        "12.6.2.7, 6.9.3 of IEEE Std 802.1Q";
    }
    list priority-map {
      key "priority dei";
      description
        "This map associates the priority and drop-eligible parameters
        with the priority code point field of the VLAN tag.";
      leaf priority {
        type priority-type;
        description
          "Priority associated with the pcp.";
        reference
          "12.6.2.7, 6.9.3 of IEEE Std 802.1Q";
      }
      leaf dei {
        type boolean;
        description
          "The drop eligible value.";
        reference
          "12.6.2, 8.6.6 of IEEE Std 802.1Q";
      }
      leaf priority-code-point {
        type priority-type;
        description
          "PCP value for priority when DEI value";
        reference
          "12.6.2.9, 6.9.3 of IEEE Std 802.1Q";
      }
    }
  }
}
grouping service-access-priority-table-grouping {
  description
    "The Service Access Priority Table associates a received priority with
    a service access priority.";
  reference
    "12.6.2.17, 6.13.1 of IEEE Std 802.1Q";
  leaf priority0 {
    type priority-type;
    default "0";
    description
      "Service access priority value for priority 0";
    reference
      "12.6.2.17, 6.13.1 of IEEE Std 802.1Q";
  }
  leaf priority1 {
    type priority-type;
    default "1";
    description
      "Service access priority value for priority 1";
    reference
      "12.6.2.17, 6.13.1 of IEEE Std 802.1Q";
  }
  leaf priority2 {
    type priority-type;
    default "2";
    description
      "Service access priority value for priority 2";
    reference
      "12.6.2.17, 6.13.1 of IEEE Std 802.1Q";
  }
  leaf priority3 {
    type priority-type;
    default "3";
    description
      "Service access priority value for priority 3";
    reference
      "12.6.2.17, 6.13.1 of IEEE Std 802.1Q";
  }
  leaf priority4 {
    type priority-type;
    default "4";
    description
      "Service access priority value for priority 4";
    reference
      "12.6.2.17, 6.13.1 of IEEE Std 802.1Q";
  }
  leaf priority5 {
    type priority-type;
    default "5";
    description
      "Service access priority value for priority 5";
    reference
      "12.6.2.17, 6.13.1 of IEEE Std 802.1Q";
  }
  leaf priority6 {
    type priority-type;
    default "6";
    description
      "Service access priority value for priority 6";
    reference
      "12.6.2.17, 6.13.1 of IEEE Std 802.1Q";
  }
  leaf priority7 {
    type priority-type;
    default "7";
    description
      "Service access priority value for priority 7";
    reference
      "12.6.2.17, 6.13.1 of IEEE Std 802.1Q";
  }
}
grouping traffic-class-table-grouping {
  description
    "The Traffic Class Table models the operations that can be
    performed on, or can inquire about, the current contents of the
    Traffic Class Table (8.6.6) for a given Port.";
  reference
    "12.6.3, 8.6.6 of IEEE Std 802.1Q";
  list traffic-class-map {
    key "priority";
    status "deprecated";
    description
      "The priority index into the traffic class table. This list modeled
      the Traffic Class Table incorrectly. available-traffic-class should
      be a single value per port and not a list of all possible
      available-traffic-class. For more information see maintenance issue
```

```
        0230. The status of this object is deprecated. It is replaced by
        sibling container traffic-class-table.";
      leaf priority {
        type priority-type;
        description
          "The priority of the traffic class entry.";
        reference
          "8.6.6 of IEEE Std 802.1Q";
      }
      list available-traffic-class {
        key "num-traffic-class";
        description
          "The traffic class index associated with a given priority within
          the traffic class table.";
        reference
          "8.6.6 of IEEE Std 802.1Q";
        leaf num-traffic-class {
          type uint8 {
            range "1..8";
          }
          description
            "The available number of traffic classes.";
          reference
            "8.6.6 of IEEE Std 802.1Q";
        }
        leaf traffic-class {
          type traffic-class-type;
          description
            "The traffic class index associated with a given traffic class
            entry.";
          reference
            "8.6.6 of IEEE Std 802.1Q";
        }
      }
    }
    container traffic-class-table {
      description
        "The priority to traffic class mapping.";
      reference
        "8.6.6 of IEEE Std 802.1Q";
      leaf number-of-traffic-classes {
        type uint8 {
          range "1..8";
        }
        description
          "The number of egress traffic classes supported on this port. This
          object may be optionally read-only.";
        reference
          "12.6.3.1 of IEEE Std 802.1Q";
      }
      leaf priority0 {
        type traffic-class-type;
        must
          "current() < ../number-of-traffic-classes";
        description
          "The traffic class index associated with priority 0";
        reference
          "8.6.6 of IEEE Std 802.1Q";
      }
      leaf priority1 {
        type traffic-class-type;
        must
          "current() < ../number-of-traffic-classes";
        description
          "The traffic class index associated with priority 1";
        reference
          "8.6.6 of IEEE Std 802.1Q";
      }
      leaf priority2 {
        type traffic-class-type;
        must
          "current() < ../number-of-traffic-classes";
        description
          "The traffic class index associated with priority 2";
        reference
          "8.6.6 of IEEE Std 802.1Q";
      }
      leaf priority3 {
        type traffic-class-type;
        must
          "current() < ../number-of-traffic-classes";
        description
          "The traffic class index associated with priority 3";
        reference
          "8.6.6 of IEEE Std 802.1Q";
      }
      leaf priority4 {
        type traffic-class-type;
        must
          "current() < ../number-of-traffic-classes";
        description
          "The traffic class index associated with priority 4";
        reference
          "8.6.6 of IEEE Std 802.1Q";
      }
      leaf priority5 {
        type traffic-class-type;
        must
          "current() < ../number-of-traffic-classes";
        description
          "The traffic class index associated with priority 5";
        reference
          "8.6.6 of IEEE Std 802.1Q";
      }
      leaf priority6 {
        type traffic-class-type;
        must
          "current() < ../number-of-traffic-classes";
        description
          "The traffic class index associated with priority 6";
        reference
          "8.6.6 of IEEE Std 802.1Q";
      }
      leaf priority7 {
        type traffic-class-type;
        must
          "current() < ../number-of-traffic-classes";
        description
          "The traffic class index associated with priority 7";
        reference
          "8.6.6 of IEEE Std 802.1Q";
      }
    }
  }
  grouping transmission-selection-table-grouping {
    description
      "The Transmission Selection Algorithm Table models the operations that
      can be performed on, or can inquire about, the current contents of the
      Transmission Selection Algorithm Table (12.20.2) for a given Port.";
    reference
      "12.20.2, 8.6.8 of IEEE Std 802.1Q";
    list transmission-selection-algorithm-map {
      key "traffic-class";
      description
        "The traffic class to index into the transmission selection table.";
      leaf traffic-class {
        type traffic-class-type;
        description
          "The traffic class of the entry.";
        reference
          "8.6.6 of IEEE Std 802.1Q";
      }
      leaf transmission-selection-algorithm {
        type identityref {
          base dot1q-types:transmission-selection-algorithm;
        }
        description
          "Transmission selection algorithm";
        reference
          "8.6.8, Table 8-6 of IEEE Std 802.1Q";
      }
    }
  }
  grouping port-map-grouping {
    description
      "A set of control indicators, one for each Port. A Port Map,
      containing a control element for each outbound Port";
    reference
      "8.8.1, 8.8.2 of IEEE Std 802.1Q";
    list port-map {
      key "port-ref";
      description
        "The list of entries composing the port map.";
      leaf port-ref {
        type port-number-type;
        description
          "The interface port reference associated with this map.";
        reference
          "8.8.1 of IEEE Std 802.1Q";
      }
      choice map-type {
        description
          "Type of port map";
        container static-filtering-entries {
          description
            "Static filtering entries attributes.";
          leaf control-element {
            type enumeration {
              enum forward {
                description
                  "Forwarded, independently of any dynamic filtering
                  information held by the FDB.";
              }
              enum filter {
                description
                  "Filtered, independently of any dynamic filtering
                  information.";
              }
              enum forward-filter {
                description
                  "Forwarded or filtered on the basis of dynamic filtering
                  information, or on the basis of the default Group
                  filtering behavior for the outbound Port (8.8.6) if no
                  dynamic filtering information is present specifically for
                  the MAC address.";
              }
            }
            description
              "A control element for each outbound Port, specifying that
              a frame with a destination MAC address, and in the case of
              VLAN Bridge components, VID that meets this specification.";
            reference
              "8.8.1 of IEEE Std 802.1Q";
          }
          leaf connection-identifier {
            type port-number-type;
            description
              "A Port MAP may contain a connection identifier (8.8.12) for
              each outbound port. The connection identifier may be
              associated with the Bridge Port value maintained in a Dynamic
              Filtering Entry of the FDB for Bridge Ports.";
            reference
              "8.8.1, 8.8.12 of IEEE Std 802.1Q";
          }
        }
        container static-vlan-registration-entries {
```

```
  description
    "Static VLAN registration entries.";
  leaf registrar-admin-control {
    type enumeration {
      enum fixed-new-ignored {
        description
          "Registration Fixed (New ignored).";
      }
      enum fixed-new-propagated {
        description
          "Registration Fixed (New propagated.";
      }
      enum forbidden {
        description
          "Registration Forbidden.";
      }
      enum normal {
        description
          "Normal Registration.";
      }
    }
    description
      "The Registrar Administrative Control values for MVRP and MIRP
      for the VID.";
    reference
      "8.8.2 of IEEE Std 802.1Q";
  }
  leaf vlan-transmitted {
    type enumeration {
      enum tagged {
        description
          "VLAN-tagged";
      }
      enum untagged {
        description
          "VLAN-untagged";
      }
    }
    description
      "Whether frames are to be VLAN-tagged or untagged when
      transmitted.";
    reference
      "8.8.2 of IEEE Std 802.1Q";
  }
}
container mac-address-registration-entries {
  description
    "MAC address registration entries attributes.";
  leaf control-element {
    type enumeration {
      enum registered {
        description
          "Forwarded, independently of any dynamic filtering
          information held by the FDB.";
      }
      enum not-registered {
        description
          "Filtered, independently of any dynamic filtering
          information.";
      }
    }
    description
      "A control element for each outbound Port, specifying that
      a frame with a destination MAC address, and in the case of
      VLAN Bridge components, VID that meets this specification.";
    reference
      "8.8.4 of IEEE Std 802.1Q";
  }
}
container dynamic-vlan-registration-entries {
  description
    "Dynamic VLAN registration entries attributes.";
```

```
        leaf control-element {
          type enumeration {
            enum registered {
              description
                "Forwarded, independently of any dynamic filtering
                information held by the FDB.";
            }
          }
          description
            "A control element for each outbound Port, specifying that
            a frame with a destination MAC address, and in the case of
            VLAN Bridge components, VID that meets this specification.";
          reference
            "8.8.5 of IEEE Std 802.1Q";
        }
      }
      container dynamic-reservation-entries {
        description
          "Dynamic reservation entries attributes.";
        leaf control-element {
          type enumeration {
            enum forward {
              description
                "Forwarded, independently of any dynamic filtering
                information held by the FDB.";
            }
            enum filter {
              description
                "Filtered, independently of any dynamic filtering
                information.";
            }
          }
          description
            "A control element for each outbound Port, specifying that
            a frame with a destination MAC address, and in the case of
            VLAN Bridge components, VID that meets this specification.";
          reference
            "8.8.7 of IEEE Std 802.1Q";
        }
      }
      container dynamic-filtering-entries {
        description
          "Dynamic filtering entries attributes.";
        leaf control-element {
          type enumeration {
            enum forward {
              description
                "Forwarded, independently of any dynamic filtering
                information held by the FDB.";
            }
          }
          description
            "A control element for each outbound Port, specifying that
            a frame with a destination MAC address, and in the case of
            VLAN Bridge components, VID that meets this specification.";
          reference
            "8.8.3 of IEEE Std 802.1Q";
        }
      }
    }
  }
}
grouping bridge-port-statistics-grouping {
  description
    "Grouping of bridge port statistics.";
  reference
    "12.6.1.1.3 of IEEE Std 802.1Q";
  leaf delay-exceeded-discards {
    type yang:counter64;
    description
      "The number of frames discarded by this port due to excessive
      transit delay through the Bridge. It is incremented by both
```

```
        transparent and source route Bridges.";
      reference
        "12.6.1.1.3, 8.6.6 of IEEE Std 802.1Q";
    }
    leaf mtu-exceeded-discards {
      type yang:counter64;
      description
        "The number of frames discarded by this port due to an excessive
        size. It is incremented by both transparent and source route
        Bridges.";
      reference
        "Item g) in 12.6.1.1.3 of IEEE Std 802.1Q";
    }
    leaf frame-rx {
      type yang:counter64;
      description
        "The number of frames that have been received by this port from its
        segment. Note that a frame received on the interface corresponding
        to this port is only counted by this object if and only if it is for
        a protocol being processed by the local bridging function, including
        Bridge management frames.";
      reference
        "12.6.1.1.3 of IEEE Std 802.1Q";
    }
    leaf octets-rx {
      type yang:counter64;
      description
        "The total number of octets in all valid frames received (including
        BPDUs, frames addressed to the Bridge as an end station, and frames
        that were submitted to the Forwarding Process).";
      reference
        "12.6.1.1.3 of IEEE Std 802.1Q";
    }
    leaf frame-tx {
      type yang:counter64;
      description
        "The number of frames that have been transmitted by this port to its
        segment. Note that a frame transmitted on the interface
        corresponding to this port is only counted by this object if and
        only if it is for a protocol being processed by the local bridging
        function, including Bridge management frames.";
    }
    leaf octets-tx {
      type yang:counter64;
      description
        "The total number of octets that have been transmitted by this port
        to its segment.";
    }
    leaf discard-inbound {
      type yang:counter64;
      description
        "Count of received valid frames that were discarded (i.e., filtered)
        by the Forwarding Process.";
      reference
        "12.6.1.1.3 of IEEE Std 802.1Q";
    }
    leaf forward-outbound {
      type yang:counter64;
      description
        "The number of frames forwarded to the associated MAC Entity (8.5).";
      reference
        "12.6.1.1.3 of IEEE Std 802.1Q";
    }
    leaf discard-lack-of-buffers {
      type yang:counter64;
      description
        "The count of frames that were to be transmitted through the
        associated Port but were discarded due to lack of buffers.";
      reference
        "12.6.1.1.3 of IEEE Std 802.1Q";
    }
    leaf discard-transit-delay-exceeded {
      type yang:counter64;
      description
        "The number of frames discarded by this port due to excessive
        transit delay through the Bridge. It is incremented by both
        transparent and source route Bridges.";
      reference
        "12.6.1.1.3 of IEEE Std 802.1Q";
    }
    leaf discard-on-error {
      type yang:counter64;
      description
        "The number of frames that were to be forwarded on the associated
        MAC but could not be transmitted (e.g., frame would be too large,
        6.5.8).";
      reference
        "12.6.1.1.3 of IEEE Std 802.1Q";
    }
  }
  grouping base-gate-control-entries {
    description
      "Grouping of gate control entries.";
    list gate-control-entry {
      key "index";
      description
        "List of gate control entries.";
      leaf index {
        type uint32;
        description
          "The index for this entry.";
      }
      leaf operation-name {
        type identityref {
          base type-of-operation;
        }
        mandatory true;
        description
          "The name (type) of the operation for this entry.";
      }
      leaf time-interval-value {
        type uint32;
        description
          "timeIntervalValue is a 32-bit unsigned integer, representing a
          number of nanoseconds. After timeIntervalValue nanoseconds have
          elapsed since the completion of the previous entry in the gate
          control list, control passes to the next entry.";
        reference
          "12.29.1.2.3, 8.6.8.4 of IEEE Std 802.1Q";
      }
    }
  }
}
```

48.6.4 The ieee802-dot1q-bridge YANG module

Delete the YANG module in 48.6.4.

Insert the following YANG module in 48.6.4:

```
module ieee802-dot1q-bridge {
  yang-version "1.1";
  namespace urn:ieee:std:802.1Q:yang:ieee802-dot1q-bridge;
  prefix dot1q;
  import ieee802-types {
    prefix ieee;
  }
  import ietf-yang-types {
    prefix yang;
  }
  import ietf-interfaces {
    prefix if;
  }
  import iana-if-type {
    prefix ianaif;
  }
  import ieee802-dot1q-types {
    prefix dot1qtypes;
  }
  organization
    "IEEE 802.1 Working Group";
  contact
    "WG-URL: http://ieee802.org/1/
    WG-EMail: stds-802-1-l@ieee.org

    Contact: IEEE 802.1 Working Group Chair
    Postal: C/O IEEE 802.1 Working Group
           IEEE Standards Association
           445 Hoes Lane
           Piscataway, NJ 08854
           USA

    E-mail: stds-802-1-chairs@ieee.org";
  description
    "This YANG module describes the Bridge configuration model for the
    following IEEE 802.1Q Bridges:
       1) Two Port MAC Relays
       2) Customer VLAN Bridges
       3) Provider Bridges.

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    This version of this YANG module is part of IEEE Std 802.1Q; see the
    standard itself for full legal notices.";
  revision 2023-10-26 {
    description
      "Published as part of IEEE Std 802.1Qcw-2023.

      The following reference statement identifies each referenced IEEE
      Standard as updated by applicable amendments.";
    reference
      "IEEE Std 802.1Q Bridges and Bridged Networks:
      IEEE Std 802.1Q-2022, IEEE Std 802.1Qcz-2023, IEEE Std 802.1Qcw-2023.
      IEEE Std 802 Overview and Architecture:
      IEEE Std 802-2014.
      IEEE Std 802.1AC Media Access Control (MAC) Service Definition:
      IEEE Std 802.1AC-2016, IEEE Std 802.1AC-2016-Cor1-2018.";
  }
  revision 2022-10-29 {
    description
      "Published as part of IEEE Std 802.1Q-2022.";
    reference
      "IEEE Std 802.1Q-2022, Bridges and Bridged Networks.";
  }
```

```
revision 2020-11-06 {
  description
    "Published as part of IEEE Std 802.1Qcr-2020. Third version.";
  reference
    "IEEE Std 802.1Qcr-2020, Bridges and Bridged Networks - Asynchronous
    Traffic Shaping.";
}
revision 2020-06-04 {
  description
    "Published as part of IEEE Std 802.1Qcx-2020. Second version.";
  reference
    "IEEE Std 802.1Qcx-2020, Bridges and Bridged Networks - YANG Data
    Model for Connectivity Fault Management.";
}
revision 2018-03-07 {
  description
    "Published as part of IEEE Std 802.1Q-2018. Initial version.";
  reference
    "IEEE Std 802.1Q-2018, Bridges and Bridged Networks.";
}
feature ingress-filtering {
  description
    "Each Port may support an Enable Ingress Filtering parameter. A frame
    received on a Port that is not in the member set (8.8.10) associated
    with the frames VID shall be discarded if this parameter is set. The
    default value for this parameter is reset, i.e., Disable Ingress
    Filtering, for all Ports. Any Port that supports setting this
    parameter shall also support resetting it. The parameter may be
    configured by the management operations defined in Clause 12.";
  reference
    "8.6.2 of IEEE Std 802.1Q";
}
feature extended-filtering-services {
  description
    "Extended Filtering Services support the filtering behavior required
    for regions of a network in which potential recipients of multicast
    frames exist, and where both the potential recipients of frames and
    the Bridges are able to support dynamic configuration of filtering
    information for group MAC addresses. In order to integrate this
    extended filtering behavior with the needs of regions of the network
    that support only Basic Filtering Services, Bridges that support
    Extended Filtering Services can be statically and dynamically
    configured to modify their filtering behavior on a per-group MAC
    address basis, and also on the basis of the overall filtering service
    provided by each outbound Port with regard to multicast frames. The
    latter capability permits configuration of the Port's default
    forwarding or filtering behavior with regard to group MAC addresses
    for which no specific static or dynamic filtering information has been
    configured.";
  reference
    "8.8.4, Clause 10 of IEEE Std 802.1Q";
}
feature port-and-protocol-based-vlan {
  description
    "A VLAN-aware Bridge component implementation in conformance to the
    provisions of this standard for Port-and-Protocol-based VLAN
    classification (5.4.1) shall 1) Support one or more of the following
    Protocol Classifications and Protocol Template formats: Ethernet,
    RFC_1042, SNAP_8021H, SNAP_Other, or LLC_Other (6.12); and may 2)
    Support configuration of the contents of the Protocol Group Database.";
  reference
    "5.4.1.2 of IEEE Std 802.1Q";
}
feature flow-filtering {
  description
    "Flow filtering support enables Bridges to distinguish frames
    belonging to different client flows and to use this information in the
    forwarding process. Information related to client flows may be used at
    the boundary of an SPT Domain to generate a flow hash value. The flow
    hash, carried in an F-TAG, serves to distinguish frames belonging to
    different flows and can be used in the forwarding process to
    distribute frames over equal cost paths. This provides for finer
    granularity load spreading while maintaining frame order for each
    client flow.";
  reference
    "44.2 of IEEE Std 802.1Q";
}
feature simple-bridge-port {
  description
    "A simple bridge port allows underlying (MAC) layers to share the same
    Interface as the Bridge Port.";
}
feature flexible-bridge-port {
  description
    "A flexible Bridge Port provides an interface that is distinct from
    the interface provided by the underlying (MAC) layer.";
}
identity type-of-bridge {
  description
    "Represents the configured Bridge type.";
}
identity customer-vlan-bridge {
  base type-of-bridge;
  description
    "Base identity for a Customer VLAN Bridge.";
}
identity provider-bridge {
  base type-of-bridge;
  description
    "Base identity for a Provider Bridge (PB).";
}
identity provider-edge-bridge {
  base type-of-bridge;
  description
    "Base identity for a Provider Edge Bridge (PEB).";
}
identity two-port-mac-relay-bridge {
  base type-of-bridge;
  description
    "Base identity for a Two Port MAC Relay (TPMR).";
}
identity type-of-component {
  description
    "Represents the type of Component.";
}
identity c-vlan-component {
  base type-of-component;
  description
    "Base identity for a C-VLAN component.";
}
identity s-vlan-component {
  base type-of-component;
  description
    "Base identity for a S-VLAN component.";
}
identity d-bridge-component {
  base type-of-component;
  description
    "Base identity for a VLAN unaware component.";
}
identity edge-relay-component {
  base type-of-component;
  description
    "Base identity for an EVB station ER component.";
}
identity type-of-port {
  description
    "Represents the type of Bridge port.";
}
identity c-vlan-bridge-port {
  base type-of-port;
  description
    "Indicates the port can be a C-TAG aware port of an enterprise VLAN
    aware Bridge.";
```

```
}
identity provider-network-port {
  base type-of-port;
  description
    "Indicates the port can be an S-TAG aware port of a Provider Bridge or
    Backbone Edge Bridge used for connections within a PBN (Provider
    Bridged Network) or PBBN (Provider Backbone Bridged Network).";
}
identity customer-network-port {
  base type-of-port;
  description
    "Indicates the port can be an S-TAG aware port of a Provider Bridge or
    Backbone Edge Bridge used for connections to the exterior of a PBN
    (Provider Bridged Network) or PBBN (Provider Backbone Bridged
    Network).";
}
identity customer-edge-port {
  base type-of-port;
  description
    "Indicates the port can be a C-TAG aware port of a Provider Bridge
    used for connections to the exterior of a PBN (Provider Bridged
    Network) or PBBN (Provider Backbone Bridged Network).";
}
identity d-bridge-port {
  base type-of-port;
  description
    "Indicates the port can be a VLAN-unaware member of an 802.1Q Bridge.";
}
identity remote-customer-access-port {
  base type-of-port;
  description
    "Indicates the port can be an S-TAG aware port of a Provider Bridge
    capable of providing Remote Customer Service Interfaces.";
}
identity bridge-interface {
  description
    "Generic interface property that represents any interface that can be
    associated with an IEEE 802.1Q compliant Bridge component. Any new
    Interface types would derive from this identity to automatically pick
    up Bridge related configuration or operational data.";
}
container bridges {
  description
    "Contains the Bridge(s) configuration information.";
  list bridge {
    key "name";
    unique "address";
    description
      "Provides configuration data in support of the Bridge Configuration
      resources. There is a single bridge data node per Bridge.";
    leaf name {
      type dot1qtypes:name-type;
      description
        "A text string associated with the Bridge, of locally determined
        significance.";
      reference
        "12.4 of IEEE Std 802.1Q";
    }
    leaf address {
      type ieee:mac-address;
      mandatory true;
      description
        "The MAC address for the Bridge from which the Bridge Identifiers
        used by the STP, RSTP, and MSTP are derived.";
      reference
        "12.4 of IEEE Std 802.1Q";
    }
    leaf bridge-type {
      type identityref {
        base type-of-bridge;
      }
      mandatory true;
      description
        "The type of Bridge.";
    }
    leaf ports {
      type uint16 {
        range "1..4095";
      }
      config false;
      description
        "The number of Bridge Ports (MAC Entities)";
      reference
        "12.4 of IEEE Std 802.1Q";
    }
    leaf up-time {
      type yang:zero-based-counter32;
      units "seconds";
      config false;
      description
        "The count in seconds of the time elapsed since the Bridge was
        last reset or initialized.";
      reference
        "12.4 of IEEE Std 802.1Q";
    }
    leaf components {
      type uint32;
      config false;
      description
        "The number of components associated with the Bridge.";
    }
    list component {
      key "name";
      description
        "The set of components associated with a given Bridge. For
        example, - A TPMR is associated with a single VLAN unaware
        component. - A Customer VLAN Bridge is associated with a single
        VLAN aware component. - A Provider Bridge is associated with a
        single S-VLAN component and zero or more C-VLAN components.";
      reference
        "12.4.1.5 of IEEE Std 802.1Q";
      leaf name {
        type string;
        description
          "The name of the Component.";
      }
      leaf id {
        type uint32;
        description
          "Unique identifier for a particular Bridge component within the
          system.";
        reference
          "Item l) in 12.3 of IEEE Std 802.1Q";
      }
      leaf type {
        type identityref {
          base type-of-component;
        }
        mandatory true;
        description
          "The type of component used to classify a particular Bridge
          component within a Bridge system comprising multiple components.";
        reference
          "Item m) in 12.3 of IEEE Std 802.1Q";
      }
      leaf address {
        type ieee:mac-address;
        description
          "Unique EUI-48 Universally Administered MAC address assigned to
          a Bridge component.";
        reference
          "8.13.8 of IEEE Std 802.1Q";
      }
      leaf traffic-class-enabled {
```

```
  type boolean;
  default "true";
  description
    "Indication of Traffic Classes enablement associated with the
    Bridge Component. A value of True indicates that Traffic Classes
    are enabled on this Bridge Component. A value of False indicates
    that the Bridge Component operates with a single priority level
    for all traffic.";
  reference
    "Item b) in 12.4.1.5.2 of IEEE Std 802.1Q";
}
leaf ports {
  type uint16 {
    range "1..4095";
  }
  config false;
  description
    "The number of Bridge Ports associated with the Bridge
    Component.";
  reference
    "Item c) in 12.4.1.1.3 of IEEE Std 802.1Q";
}
leaf-list bridge-port {
  type if:interface-ref;
  config false;
  description
    "List of bridge-port references.";
}
container capabilities {
  config false;
  description
    "Array of Boolean values of the feature capabilities associated
    with a given Bridge Component.";
  reference
    "Item b) in 12.10.1.1.3, 12.4.1.5.2 of IEEE Std 802.1Q";
  leaf extended-filtering {
    type boolean;
    default "false";
    description
      "Can perform filtering on individual multicast addresses
      controlled by MMRP.";
    reference
      "12.4.1.5.2 of IEEE Std 802.1Q";
  }
  leaf traffic-classes {
    type boolean;
    default "false";
    description
      "Can map priority to multiple traffic classes.";
    reference
      "12.4.1.5.2 of IEEE Std 802.1Q";
  }
  leaf static-entry-individual-port {
    type boolean;
    default "false";
    description
      "Static entries per port.";
    reference
      "12.4.1.5.2 of IEEE Std 802.1Q";
  }
  leaf ivl-capable {
    type boolean;
    default "true";
    description
      "Independent VLAN Learning (IVL).";
    reference
      "12.4.1.5.2 of IEEE Std 802.1Q";
  }
  leaf svl-capable {
    type boolean;
    default "false";
    description
```

```
      "Shared VLAN Learning (SVL).";
    reference
      "12.4.1.5.2 of IEEE Std 802.1Q";
  }
  leaf hybrid-capable {
    type boolean;
    default "false";
    description
      "Both IVL and SVL simultaneously.";
    reference
      "12.4.1.5.2 of IEEE Std 802.1Q";
  }
  leaf configurable-pvid-tagging {
    type boolean;
    default "false";
    description
      "Whether the implementation supports the ability to override
      the default PVID setting and its egress status (VLAN-tagged or
      Untagged) on each port.";
    reference
      "12.4.1.5.2 of IEEE Std 802.1Q";
  }
  leaf local-vlan-capable {
    type boolean;
    default "false";
    description
      "Can support multiple local Bridges, outside the scope of
      802.1Q defined VLANs.";
    reference
      "12.4.1.5.2 of IEEE Std 802.1Q";
  }
}
container filtering-database {
  when
    "not(derived-from-or-self(../../bridge-type, "+
    "'two-port-mac-relay-bridge'))" {
    description
      "Applies to non TPMRs.";
  }
  description
    "Contains filtering information used by the Forwarding Process
    in deciding through which Ports of the Bridge frames should be
    forwarded.";
  reference
    "12.7 of IEEE Std 802.1Q";
  leaf aging-time {
    type uint32 {
      range "10..1000000";
    }
    units "seconds";
    default "300";
    description
      "The timeout period in seconds for aging out
      dynamically-learned forwarding information.";
    reference
      "12.7, 8.8.3 of IEEE Std 802.1Q";
  }
  leaf size {
    type yang:gauge32;
    config false;
    description
      "The maximum number of entries that can be held in the FDB.";
    reference
      "12.7 of IEEE Std 802.1Q";
  }
  leaf static-entries {
    type yang:gauge32;
    config false;
    description
      "The number of Static Filtering entries currently in the FDB.";
    reference
      "12.7, 8.8.1 of IEEE Std 802.1Q";
```

```
}
leaf dynamic-entries {
  type yang:gauge32;
  config false;
  description
    "The number of Dynamic Filtering entries currently in the FDB.";
  reference
    "12.7, 8.8.3 of IEEE Std 802.1Q";
}
leaf static-vlan-registration-entries {
  type yang:gauge32;
  config false;
  description
    "The number of Static VLAN Registration entries currently in
    the FDB.";
  reference
    "12.7, 8.8.2 of IEEE Std 802.1Q";
}
leaf dynamic-vlan-registration-entries {
  type yang:gauge32;
  config false;
  description
    "The number of Dynamic VLAN Registration entries currently in
    the FDB.";
  reference
    "12.7, 8.8.5 of IEEE Std 802.1Q";
}
leaf mac-address-registration-entries {
  if-feature "extended-filtering-services";
  type yang:gauge32;
  config false;
  description
    "The number of MAC Address Registration entries currently in
    the FDB.";
  reference
    "12.7, 8.8.4 of IEEE Std 802.1Q";
}
list filtering-entry {
  key "database-id vids address";
  description
    "Information for the entries associated with the Permanent
    Database.";
  leaf database-id {
    type uint32;
    description
      "The identity of this Filtering Database.";
    reference
      "12.7.7 of IEEE Std 802.1Q";
  }
  leaf address {
    type ieee:mac-address;
    description
      "A MAC address (unicast, multicast, broadcast) for which the
      device has forwarding and/or filtering information.";
    reference
      "12.7.7 of IEEE Std 802.1Q";
  }
  leaf vids {
    type dot1qtypes:vid-range-type;
    description
      "The set of VLAN identifiers to which this entry applies.";
    reference
      "12.7.7 of IEEE Std 802.1Q";
  }
  leaf entry-type {
    type enumeration {
      enum static {
        description
          "Static entry type";
      }
      enum dynamic {
        description
```

```
                "Dynamic/learnt entry type";
            }
          }
          description
            "The type of filtering entry. Whether static or dynamic.
            Static entries can be created, deleted, and retrieved.
            However, dynamic entries can only be deleted or retrieved by
            the management entity. Consequently, a Bridge is not
            required to accept a command that can alter the dynamic
            entries except delete a dynamic entry.";
          reference
            "12.7.7 of IEEE Std 802.1Q";
        }
        uses dot1qtypes:port-map-grouping;
        leaf status {
          type enumeration {
            enum other {
              description
                "None of the following. This may include the case where
                some other object is being used to determine if and how
                frames addressed to the value of the corresponding
                instance of 'address' are being forwarded.";
            }
            enum invalid {
              description
                "This entry is no longer valid (e.g., it was learned but
                has since aged out), but has not yet been flushed from
                the table.";
            }
            enum learned {
              description
                "The value of the corresponding instance of the port
                node was learned and is being used.";
            }
            enum self {
              description
                "The value of the corresponding instance of the address
                node representing one of the devices address.";
            }
            enum mgmt {
              description
                "The value of the corresponding instance of address node
                that is also the value of an existing instance.";
            }
          }
          config false;
          description
            "The status of this entry.";
        }
      }
      list vlan-registration-entry {
        key "database-id vids";
        description
          "The VLAN Registration Entries models the operations that can
          be performed on a single VLAN Registration Entry in the FDB.
          The set of VLAN Registration Entries within the FDB changes
          under management control and also as a result of MVRP
          exchanges";
        reference
          "12.7.5 of IEEE Std 802.1Q";
        leaf database-id {
          type uint32;
          description
            "The identity of this Filtering Database.";
          reference
            "12.7.7 of IEEE Std 802.1Q";
        }
        leaf vids {
          type dot1qtypes:vid-range-type;
          description
            "The set of VLAN identifiers to which this entry applies.";
          reference
```

```
              "12.7.7 of IEEE Std 802.1Q";
          }
          leaf entry-type {
            type enumeration {
              enum static {
                description
                  "Static entry type";
              }
              enum dynamic {
                description
                  "Dynamic/learnt entry type";
              }
            }
            description
              "The type of filtering entry. Whether static or dynamic.
              Static entries can be created, deleted, and retrieved.
              However, dynamic entries can only be deleted or retrieved by
              the management entity. Consequently, a Bridge is not
              required to accept a command that can alter the dynamic
              entries except delete a dynamic entry.";
            reference
              "12.7.7 of IEEE Std 802.1Q";
          }
          uses dot1qtypes:port-map-grouping;
        }
      }
      container permanent-database {
        description
          "The Permanent Database container models the operations that can
          be performed on, or affect, the Permanent Database. There is a
          single Permanent Database per FDB.";
        leaf size {
          type yang:gauge32;
          config false;
          description
            "The maximum number of entries that can be held in the FDB.";
          reference
            "12.7.6 of IEEE Std 802.1Q";
        }
        leaf static-entries {
          type yang:gauge32;
          config false;
          description
            "The number of Static Filtering entries currently in the FDB.";
          reference
            "12.7.6 of IEEE Std 802.1Q";
        }
        leaf static-vlan-registration-entries {
          type yang:gauge32;
          config false;
          description
            "The number of Static VLAN Registration entries currently in
            the FDB.";
          reference
            "12.7.6 of IEEE Std 802.1Q";
        }
        list filtering-entry {
          key "database-id vids address";
          description
            "Information for the entries associated with the Permanent
            Database.";
          leaf database-id {
            type uint32;
            description
              "The identity of this Filtering Database.";
            reference
              "12.7.7 of IEEE Std 802.1Q";
          }
          leaf address {
            type ieee:mac-address;
            description
              "A MAC address (unicast, multicast, broadcast) for which the
              device has forwarding and/or filtering information.";
            reference
              "12.7.7 of IEEE Std 802.1Q";
          }
          leaf vids {
            type dot1qtypes:vid-range-type;
            description
              "The set of VLAN identifiers to which this entry applies.";
            reference
              "12.7.7 of IEEE Std 802.1Q";
          }
          leaf status {
            type enumeration {
              enum other {
                description
                  "None of the following. This may include the case where
                  some other object is being used to determine if and how
                  frames addressed to the value of the corresponding
                  instance of 'address' are being forwarded.";
              }
              enum invalid {
                description
                  "This entry is no longer valid (e.g., it was learned but
                  has since aged out), but has not yet been flushed from
                  the table.";
              }
              enum learned {
                description
                  "The value of the corresponding instance of the port
                  node was learned and is being used.";
              }
              enum self {
                description
                  "The value of the corresponding instance of the address
                  node representing one of the devices address.";
              }
              enum mgmt {
                description
                  "The value of the corresponding instance of address node
                  that is also the value of an existing instance.";
              }
            }
            config false;
            description
              "The status of this entry.";
          }
          uses dot1qtypes:port-map-grouping;
        }
      }
      container bridge-vlan {
        when
          "not(derived-from-or-self(../../bridge-type, "+
          "'two-port-mac-relay-bridge'))" {
          description
            "Applies to non TPMRs.";
        }
        description
          "The Bridge VLAN container models configuration information that
          modifies, or inquires about, the overall configuration of the
          Bridge's VLAN resources. There is a single Bridge VLAN
          Configuration managed object per Bridge.";
        reference
          "12.10 of IEEE Std 802.1Q";
        leaf version {
          type uint16;
          config false;
          description
            "The version number supported.";
          reference
            "Item a) of 12.10.1.1.3 of IEEE Std 802.1Q";
        }
        leaf max-vids {
```

```
  type uint16;
  config false;
  description
    "The maximum number of VIDs supported.";
  reference
    "Item b)1) of 12.10.1.1.3 of IEEE Std 802.1Q";
}
leaf override-default-pvid {
  type boolean;
  default "false";
  config false;
  description
    "Indicates if the default PVID can be overridden, and its
    egress status (VLAN-tagged or untagged) on each port.";
  reference
    "Item b)2) of 12.10.1.1.3 of IEEE Std 802.1Q";
}
leaf protocol-template {
  if-feature "port-and-protocol-based-vlan";
  type dot1qtypes:protocol-frame-format-type;
  config false;
  description
    "The data-link encapsulation format or the detagged_frame_type
    in a Protocol Template";
  reference
    "12.10.1.7 of IEEE Std 802.1Q";
}
leaf max-msti {
  type uint16;
  config false;
  description
    "The maximum number of MSTIs supported within an MST region
    (i.e., the number of spanning tree instances that can be
    supported in addition to the CIST), for MST Bridges. For SST
    Bridges, this parameter may be either omitted or reported as
    0.";
  reference
    "Item b)4) of 12.10.1.1.3 of IEEE Std 802.1Q";
}
list vlan {
  key "vid";
  description
    "List of VLAN related configuration nodes associated with the
    Bridge.";
  reference
    "12.10.2 of IEEE Std 802.1Q";
  leaf vid {
    type dot1qtypes:vlan-index-type;
    description
      "The VLAN identifier to which this entry applies.";
    reference
      "12.10.2 of IEEE Std 802.1Q";
  }
  leaf name {
    type dot1qtypes:name-type;
    description
      "A text string of up to 32 characters of locally determined
      significance.";
    reference
      "12.10.2 of IEEE Std 802.1Q";
  }
  leaf-list untagged-ports {
    type if:interface-ref;
    config false;
    description
      "The set of ports in the untagged set for this VID.";
    reference
      "12.10.2.1.3, 8.8.2 of IEEE Std 802.1Q";
  }
  leaf-list egress-ports {
    type if:interface-ref;
    config false;
    description
      "The set of egress ports in the member set for this VID.";
    reference
      "12.10.2.1.3, 8.8.10 of IEEE Std 802.1Q";
  }
}
list protocol-group-database {
  if-feature "port-and-protocol-based-vlan";
  key "db-index";
  description
    "List of the protocol group database entries.";
  reference
    "12.10.1.7, 6.12.3 of IEEE Std 802.1Q";
  leaf db-index {
    type uint16;
    description
      "The protocol group database index.";
  }
  leaf frame-format-type {
    type dot1qtypes:protocol-frame-format-type;
    description
      "The data-link encapsulation format or the
      detagged_frame_type in a Protocol Template";
    reference
      "12.10.1.7 of IEEE Std 802.1Q";
  }
  choice frame-format {
    description
      "The identification of the protocol above the data-link
      layer in a Protocol Template. Depending on the frame type,
      the octet string will have one of the following values:
      - For Ethernet, rfc1042, and snap8021H, this is the 16-bit
      (2-octet) EtherType field.
      - For snapOther, this is the 40-bit (5-octet) PID.
      - For llcOther, this is the 2-octet IEEE 802.2 Link Service
      Access Point (LSAP) pair: first octet for Destination Service
      Access Point (DSAP) and second octet for Source Service Access
      Point (SSAP).";
    reference
      "12.10.1.7 of IEEE Std 802.1Q";
    case ethernet-rfc1042-snap8021H {
      when
        "frame-format-type = 'Ethernet' or frame-format-type = "+
        "'rfc1042' or frame-format-type = 'snap8021H'" {
        description
          "Applies to Ethernet, RFC 1042, SNAP 8021H frame
          formats.";
      }
      description
        "Identifier used if Ethenet, RFC1042, or SNAP 8021H.";
      leaf ethertype {
        type dot1qtypes:ethertype-type;
        description
          "Format containing the 16-bit IEEE 802 EtherType field.";
        reference
          "9.2 of IEEE Std 802";
      }
    }
    case snap-other {
      when
        "frame-format-type = 'snapOther'" {
        description
          "Applies to Snap Other frame formats.";
      }
      description
        "Identifier used if SNAP other.";
      leaf protocol-id {
        type string {
          pattern "[0-9a-fA-F]{2}(-[0-9a-fA-F]{2}){4}";
        }
        description
          "Format containing the 40-bit protocol identifier (PID).
```

```
                The canonical representation uses uppercase characters.";
              reference
                "12.10.1.7.1 of IEEE Std 802.1Q";
            }
          }
          case llc-other {
            when
              "frame-format-type = 'llcOther'" {
              description
                "Applies to LLC Other frame formats";
            }
            description
              "Identifier used if LLC other.";
            container dsap-ssap-pairs {
              description
                "A pair of ISO/IEC 8802-2 DSAP and SSAP address field
                values, for matching frame formats of LLC_Other.";
              leaf llc-address {
                type string {
                  pattern "[0-9a-fA-F]{2}-[0-9a-fA-F]{2}";
                }
                description
                  "A pair of ISO/IEC 8802-2 DSAP and SSAP address field
                  values, for matching frame formats of LLC_Other. The
                  canonical representation uses uppercase characters.";
                reference
                  "12.10.1.7.1 of IEEE Std 802.1Q";
              }
            }
          }
        }
        leaf group-id {
          type uint32;
          description
            "Designates a group of protocols in the Protocol Group
            Database.";
          reference
            "6.12.2 of IEEE Std 802.1Q";
        }
      }
      list vid-to-fid-allocation {
        key "vids";
        description
          "This list allows inquiries about VID to FID allocations.";
        leaf vids {
          type dot1qtypes:vid-range-type;
          description
            "Range of VLAN identifiers.";
          reference
            "12.10.3 of IEEE Std 802.1Q";
        }
        leaf fid {
          type uint32;
          config false;
          description
            "The Filtering Database used by a set of VIDs.";
          reference
            "12.10.3 of IEEE Std 802.1Q";
        }
        leaf allocation-type {
          type enumeration {
            enum undefined {
              description
                "No allocation defined.";
            }
            enum fixed {
              description
                "A fixed allocation to FID is defined.";
            }
            enum dynamic {
              description
                "A dynamic allocation to FID is defined.";
            }
          }
          config false;
          description
            "The type of allocation used";
          reference
            "12.10.3 of IEEE Std 802.1Q";
        }
      }
      list fid-to-vid-allocation {
        key "fid";
        description
          "The FID to VID allocations managed object models operations
          that inquire about FID to VID allocations.";
        leaf fid {
          type uint32;
          description
            "The Filtering Database used by a set of VIDs.";
          reference
            "12.10.3 of IEEE Std 802.1Q";
        }
        leaf allocation-type {
          type enumeration {
            enum undefined {
              description
                "No allocation defined.";
            }
            enum fixed {
              description
                "A fixed allocation to FID is defined.";
            }
            enum dynamic {
              description
                "A dynamic allocation to FID is defined.";
            }
          }
          config false;
          description
            "The type of allocation used";
          reference
            "12.10.3 of IEEE Std 802.1Q";
        }
        leaf-list vid {
          type dot1qtypes:vlan-index-type;
          config false;
          description
            "The VLAN identifier to which this entry applies.";
          reference
            "12.7.7 of IEEE Std 802.1Q";
        }
      }
      list vid-to-fid {
        key "vid";
        description
          "Fixed allocation of a VID to an FID. The underlying system
          will ensure that subsequent commands that make changes to the
          VID to FID mapping can override previous associations.";
        reference
          "12.10.3.4, 12.10.3.5 of IEEE Std 802.1Q";
        leaf vid {
          type dot1qtypes:vlan-index-type;
          description
            "A list of VIDs associated with a given database identifier
            (i.e., FID).";
          reference
            "12.7.7 of IEEE Std 802.1Q";
        }
        leaf fid {
          type uint32;
          description
            "The Filtering Database used by this VLAN";
          reference
```

```
              "12.10.3 of IEEE Std 802.1Q";
          }
        }
      }
      container bridge-mst {
        when
          "not(derived-from-or-self(../../bridge-type, "+
          "'two-port-mac-relay-bridge'))" {
          description
            "Applies to non TPMRs.";
        }
        description
          "The Bridge MST container models configuration information that
          modifies, or inquires about, the overall configuration of the
          Bridges MST resources.";
        reference
          "12.12 of IEEE Std 802.1Q";
        leaf-list mstid {
          type dot1qtypes:mstid-type;
          description
            "The list of MSTID values that are currently supported by the
            Bridge";
        }
        list fid-to-mstid {
          key "fid";
          description
            "The FID to MSTID allocation table.";
          reference
            "12.12.2 of IEEE Std 802.1Q";
          leaf fid {
            type uint32;
            description
              "The Filtering Database identifier.";
            reference
              "12.12.2 of IEEE Std 802.1Q";
          }
          leaf mstid {
            type dot1qtypes:mstid-type;
            description
              "The MSTID to which the FID is to be allocated.";
            reference
              "12.12.2 of IEEE Std 802.1Q";
          }
        }
        list fid-to-mstid-allocation {
          key "fids";
          description
            "The FID to MSTID allocation table";
          leaf fids {
            type dot1qtypes:vid-range-type;
            description
              "Range of FIDs.";
            reference
              "12.12.2 of IEEE Std 802.1Q";
          }
          leaf mstid {
            type dot1qtypes:mstid-type;
            description
              "The MSTID to which the FID is allocated.";
            reference
              "12.12.2 of IEEE Std 802.1Q";
          }
        }
      }
    }
  }
}
augment "/if:interfaces/if:interface" {
  when
    "derived-from-or-self(if:type,'ianaif:bridge') or "+
    "derived-from-or-self(if:type,'ianaif:ethernetCsmacd') or "+
    "derived-from-or-self(if:type,'ianaif:ieee8023adLag') or "+
    "derived-from-or-self(if:type,'ianaif:ilan')" {
    description
      "Applies when a Bridge interface.";
  }
  description
    "Augment the interface model with the Bridge Port";
  container bridge-port {
    description
      "Bridge Port is an extension of the IETF Interfaces model (RFC7223).";
    leaf bridge-name {
      type leafref {
        path '/dot1q:bridges/dot1q:bridge/dot1q:name';
      }

      description
        "Used to reference configured Bridge node.";
    }
    leaf component-name {
      type leafref {
        path
          '/dot1q:bridges'+
          '/dot1q:bridge[dot1q:name=current()'+
          '/..'+
          '/bridge-name]'+
          '/dot1q:component'+
          '/dot1q:name';
      }

      description
        "Used to reference configured Component node.";
    }
    leaf port-type {
      type identityref {
        base type-of-port;
      }
      description
        "The port type. Indicates the capabilities of this port.";
      reference
        "12.4.2.1 of IEEE Std 802.1Q";
    }
    leaf pvid {
      when
        "/dot1q:bridges/dot1q:bridge[dot1q:name=current()"+
        "/../dot1q:bridge-name]/dot1q:component[name=current()"+
        "/../dot1q:component-name]/dot1q:type !="+
        "'dot1q:d-bridge-component'" {
        description
          "Applies to non TPMRs";
      }
      type dot1qtypes:vlan-index-type;
      default "1";
      description
        "The primary (default) VID assigned to a specific Bridge Port.";
      reference
        "12.10.1, 5.4, item m) of IEEE Std 802.1Q";
    }
    leaf default-priority {
      type dot1qtypes:priority-type;
      default "0";
      description
        "The default priority assigned to a specific Bridge Port.";
      reference
        "12.6.2 of IEEE Std 802.1Q";
    }
    container priority-regeneration {
      description
        "The Priority Regeneration Table parameters associated with a
        specific Bridge Port. A list of Regenerated User Priorities for
        each received priority on each port of a Bridge. The regenerated
        priority value may be used to index the Traffic Class Table for
        each input port. This only has effect on media that support native
        priority. The default values for Regenerated User Priorities are
```

```
          the same as the User Priorities";
        reference
          "12.6.2, 6.9.4 of IEEE Std 802.1Q";
        uses dot1qtypes:priority-regeneration-table-grouping;
      }
      leaf pcp-selection {
        type dot1qtypes:pcp-selection-type;
        default "8P0D";
        description
          "The Priority Code Point selection assigned to a specific Bridge
          Port. This object identifies the rows in the PCP encoding and
          decoding tables that are used to remark frames on this port if
          this remarking is enabled";
        reference
          "12.6.2, 6.9.3 of IEEE Std 802.1Q";
      }
      container pcp-decoding-table {
        description
          "The Priority Code Point Decoding Table parameters associated with
          a specific Bridge Port.";
        uses dot1qtypes:pcp-decoding-table-grouping;
      }
      container pcp-encoding-table {
        description
          "The Priority Code Point Encoding Table parameters associated with
          a specific Bridge Port.";
        uses dot1qtypes:pcp-encoding-table-grouping;
      }
      leaf use-dei {
        type boolean;
        default "false";
        description
          "The Drop Eligible Indicator. If it is set to True, then the
          drop_eligible parameter is encoded in the DEI of transmitted
          frames, and the drop_eligible parameter shall be true(1) for a
          received frame if the DEI is set in the VLAN tag or the Priority
          Code Point Decoding Table indicates drop_eligible True for the
          received PCP value. If this parameter is False, the DEI shall be
          transmitted as zero and ignored on receipt.";
        reference
          "12.6.2, 6.9.3 of IEEE Std 802.1Q";
      }
      leaf drop-encoding {
        type boolean;
        default "false";
        description
          "The Drop Encoding parameter. If a Bridge supports encoding or
          decoding of drop_eligible from the PCP field of a VLAN tag (6.9.3)
          on any of its Ports, then it shall implement a Boolean parameter
          Require Drop Encoding on each of its Ports with default value
          False. If Require Drop Encoding is True and the Bridge Port cannot
          encode particular priorities with drop_eligible, then frames
          queued with those priorities and drop_eligible True shall be
          discarded and not transmitted.";
        reference
          "12.6.2, 6.9.3 of IEEE Std 802.1Q";
      }
      leaf service-access-priority-selection {
        type boolean;
        default "false";
        description
          "The Service Access Priority selection. Indication of whether the
          Service Access Priority Selection function is supported on the
          Customer Bridge Port to request priority handling of the frame
          from a Port-based service interface.";
        reference
          "12.6.2, 6.13 of IEEE Std 802.1Q";
      }
      container service-access-priority {
        description
          "The Service Access Priority table parameters. A table that
          contains information about the Service Access Priority Selection
          function for a Provider Bridge. The use of this table enables a
          mechanism for a Customer Bridge attached to a Provider Bridged
          Network to request priority handling of frames.";
        reference
          "12.6.2, 6.13.1 of IEEE Std 802.1Q";
        uses dot1qtypes:service-access-priority-table-grouping;
      }
      container traffic-class {
        description
          "The Traffic Class table parameters. A table mapping evaluated
          priority to Traffic Class, for forwarding by the Bridge";
        reference
          "12.6.3, 8.6.6 of IEEE Std 802.1Q";
        uses dot1qtypes:traffic-class-table-grouping;
      }
      container transmission-selection-algorithm-table {
        description
          "The Transmission Selection Algorithm Table for a given Port
          assigns, for each traffic class that the Port supports, the
          transmission selection algorithm that is to be used to select
          frames for transmission from the corresponding queue. Transmission
          Selection Algorithm Tables may be managed, and allow the
          identification of vendor-specific transmission selection
          algorithms. The transmission selection algorithms are identified
          in the Transmission Selection Algorithm Table by means of integer
          identifiers.";
        reference
          "12.20.2, 8.6.8 of IEEE Std 802.1Q";
        uses dot1qtypes:transmission-selection-table-grouping;
      }
      leaf acceptable-frame {
        when
          "/dot1q:bridges/dot1q:bridge[dot1q:name=current()"+
          "/../dot1q:bridge-name]/dot1q:component[name=current()"+
          "/../dot1q:component-name]/dot1q:type !="+
          "'dot1q:d-bridge-component'" {
          description
            "Applies to non TPMRs";
        }
        type enumeration {
          enum admit-only-VLAN-tagged-frames {
            description
              "Admit only VLAN-tagged frames.";
          }
          enum admit-only-untagged-and-priority-tagged {
            description
              "Admit only untagged and priority-tagged frames.";
          }
          enum admit-all-frames {
            description
              "Admit all frames.";
          }
        }
        default "admit-all-frames";
        description
          "To configure the Acceptable Frame Types parameter associated with
          one or more Ports";
        reference
          "12.10.1.3, 6.9 of IEEE Std 802.1Q";
      }
      leaf enable-ingress-filtering {
        when
          "/dot1q:bridges/dot1q:bridge[dot1q:name=current()"+
          "/../dot1q:bridge-name]/dot1q:component[name=current()"+
          "/../dot1q:component-name]/dot1q:type !="+
          "'dot1q:d-bridge-component'" {
          description
            "Applies to non TPMRs";
        }
        type boolean;
        default "false";
        description
          "To enable the Ingress Filtering feature associated with one or
          more Ports.";
        reference
          "12.10.1.4, 8.6.2 of IEEE Std 802.1Q";
      }
      leaf enable-restricted-vlan-registration {
        when
          "/dot1q:bridges/dot1q:bridge[dot1q:name=current()"+
          "/../dot1q:bridge-name]/dot1q:component[name=current()"+
          "/../dot1q:component-name]/dot1q:type !="+
          "'dot1q:d-bridge-component'" {
          description
            "Applies to non TPMRs";
        }
        type boolean;
        default "false";
        description
          "To enable the Restricted VLAN Registration associated with one or
          more Ports.";
        reference
          "11.2.3.2.3, 12.10.1.6 of IEEE Std 802.1Q";
      }
      leaf enable-vid-translation-table {
        when
          "/dot1q:bridges/dot1q:bridge[dot1q:name=current()"+
          "/../dot1q:bridge-name]/dot1q:component[name=current()"+
          "/../dot1q:component-name]/dot1q:type !="+
          "'dot1q:d-bridge-component'" {
          description
            "Applies to non TPMRs";
        }
        type boolean;
        default "false";
        description
          "To enable VID Translation table associated with a Bridge Port.
          This is not applicable to Bridge Ports that do no support a VID
          Translation Table.";
        reference
          "12.10.1.8, 6.9 of IEEE Std 802.1Q";
      }
      leaf enable-egress-vid-translation-table {
        when
          "/dot1q:bridges/dot1q:bridge[dot1q:name=current()"+
          "/../dot1q:bridge-name]/dot1q:component[name=current()"+
          "/../dot1q:component-name]/dot1q:type !="+
          "'dot1q:d-bridge-component'" {
          description
            "Applies to non TPMRs";
        }
        type boolean;
        default "false";
        description
          "To enable Egress VID Translation table associated with a Bridge
          Port. This is not applicable to Ports that do not support an
          Egress VID Translation table.";
        reference
          "12.10.1.8, 6.9 of IEEE Std 802.1Q";
      }
      list protocol-group-vid-set {
        when
          "/dot1q:bridges/dot1q:bridge[dot1q:name=current()"+
          "/../dot1q:bridge-name]/dot1q:component[name=current()"+
          "/../dot1q:component-name]/dot1q:type !="+
          "'dot1q:d-bridge-component'" {
          description
            "Applies to non TPMRs";
        }
        if-feature "port-and-protocol-based-vlan";
        key "group-id";
        description
          "The list of VID values associated with the Protocol Group
          Identifier for this port.";
        reference
          "12.10.1.1.3 of IEEE Std 802.1Q";
        leaf group-id {
          type uint32;
          description
            "The protocol group identifier";
          reference
            "12.10.1.7 of IEEE Std 802.1Q";
        }
        leaf-list vid {
          type dot1qtypes:vlanid;
          description
            "The VLAN identifier to which this entry applies.";
          reference
            "12.10.2 of IEEE Std 802.1Q";
        }
      }
      leaf admin-point-to-point {
        type enumeration {
          enum force-true {
            value 1;
            description
              "Indicates that this port should always be treated as if it is
              connected to a point-to-point link.";
          }
          enum force-false {
            value 2;
            description
              "Indicates that this port should be treated as having a shared
              media connection.";
          }
          enum auto {
            value 3;
            description
              "Indicates that this port is considered to have a
              point-to-point link if it is an Aggregator and all of its
              members are aggregatable, or if the MAC entity is configured
              for full duplex operation, either through auto-negotiation or
              by management means.";
          }
        }
        description
          "For a port running spanning tree, this object represents the
          administrative point-to-point status of the LAN segment attached
          to this port, using the enumeration values of IEEE Std 802.1AC. A
          value of forceTrue(1) indicates that this port should always be
          treated as if it is connected to a point-to-point link. A value of
          forceFalse(2) indicates that this port should be treated as having
          a shared media connection. A value of auto(3) indicates that this
          port is considered to have a point-to-point link if it is an
          Aggregator and all of its members are aggregatable, or if the MAC
          entity is configured for full duplex operation, either through
          auto-negotiation or by management means. Manipulating this object
          changes the underlying adminPointToPointMAC.";
        reference
          "12.4.2, 6.8.3 of IEEE Std 802.1Q; 11.3 of IEEE Std 802.1AC";
      }
      leaf protocol-based-vlan-classification {
        when
          "/dot1q:bridges/dot1q:bridge[dot1q:name=current()"+
          "/../dot1q:bridge-name]/dot1q:component[name=current()"+
          "/../dot1q:component-name]/dot1q:type !="+
          "'dot1q:d-bridge-component'" {
          description
            "Applies to non TPMRs";
        }
        if-feature "port-and-protocol-based-vlan";
        type boolean;
        config false;
        description
          "A boolean indication indicating if Port-and-Protocol-based VLAN
          classification is supported on a given Port.";
        reference
          "5.4.1.2 of IEEE Std 802.1Q";
      }
      leaf max-vid-set-entries {
        when
          "/dot1q:bridges/dot1q:bridge[dot1q:name=current()"+
          "/../dot1q:bridge-name]/dot1q:component[name=current()"+
          "/../dot1q:component-name]/dot1q:type !="+
          "'dot1q:d-bridge-component'" {
          description
            "Applies to non TPMRs";
        }
        if-feature "port-and-protocol-based-vlan";
        type uint16;
        config false;
        description
          "The maximum number of entries supported in the VID set on a given
          Port.";
        reference
          "12.10.1.1.3 of IEEE Std 802.1Q";
      }
      leaf port-number {
        type dot1qtypes:port-number-type;
        config false;
        description
          "An integer that uniquely identifies a Bridge Port.";
        reference
          "Item i) in 12.3, 17.3.2.2 of IEEE Std 802.1Q";
      }
      leaf address {
        type ieee:mac-address;
        config false;
        description
          "The specific MAC address of the individual MAC Entity associated
          with the Port.";
        reference
          "12.4.2, Item a) in 12.4.1.1.3 of IEEE Std 802.1Q";
      }
      leaf capabilities {
        type bits {
          bit tagging {
            position 0;
            description
              "Supports 802.1Q VLAN tagging of frames and MVRP.";
          }
          bit configurable-acceptable-frame-type {
            position 1;
            description
              "Allows modified values of acceptable frame types";
          }
          bit ingress-filtering {
            position 2;
            description
              "Supports the discarding of any frame received on a Port whose
              VLAN classification does not include that Port in its member
              set.";
          }
        }
        config false;
        description
          "The feature capabilities associated with port. Indicates the
          parts of IEEE 802.1Q that are optional on a per-port basis, that
          are implemented by this device, and that are manageable.";
        reference
          "Item c) in 12.10.1.1.3, 12.4.2 of IEEE Std 802.1Q";
      }
      leaf type-capabilties {
        type bits {
          bit customer-vlan-port {
            position 0;
            description
              "Indicates the port can be a C-TAG aware port of an enterprise
              VLAN aware Bridge";
          }
          bit provider-network-port {
            position 1;
            description
              "Indicates the port can be an S-TAG aware port of a Provider
              Bridge or Backbone Edge Bridge used for connections within a
              PBN or PBBN.";
          }
          bit customer-network-port {
            position 2;
            description
              "Indicates the port can be an S-TAG aware port of a Provider
              Bridge or Backbone Edge Bridge used for connections to the
              exterior of a PBN or PBBN.";
          }
          bit customer-edge-port {
            position 3;
            description
              "Indicates the port can be a C-TAG aware port of a Provider
              Bridge used for connections to the exterior of a PBN or PBBN.";
          }
          bit customer-backbone-port {
            position 4;
            description
              "Indicates the port can be a I-TAG aware port of a Backbone
              Edge Bridge's B-component.";
          }
          bit virtual-instance-port {
            position 5;
            description
              "Indicates the port can be a virtual S-TAG aware port within a
              Backbone Edge Bridge's I-component which is responsible for
              handling S-tagged traffic for a specific backbone service
              instance.";
          }
          bit d-bridge-port {
            position 6;
            description
              "Indicates the port can be a VLAN-unaware member of an 802.1Q
              Bridge.";
          }
          bit remote-customer-access-port {
            position 7;
            description
              "Indicates the port can be an S-TAG aware port of a Provider
              Bridge capable of providing Remote Customer Service
              Interfaces.";
          }
          bit station-facing-bridge-port {
            position 8;
            description
              "Indicates the station-facing Bridge Port in a EVB Bridge.";
          }
          bit uplink-access-port {
            position 9;
            description
              "Indicates the uplink access port in an EVB Bridge or EVB
              station.";
          }
          bit uplink-relay-port {
            position 10;
            description
              "Indicates the uplink relay port in an EVB station.";
          }
        }
        config false;
        description
          "The type of feature capabilities supported with port. Indicates
          the capabilities of this port.";
        reference
          "12.4.2 of IEEE Std 802.1Q";
```

```
}
leaf external {
  type boolean;
  config false;
  description
    "A boolean indicating whether the port is external. A value of
    True means the port is external. A value of False means the port
    is internal.";
  reference
    "12.4.2 of IEEE Std 802.1Q";
}
leaf oper-point-to-point {
  type boolean;
  config false;
  description
    "For a port running spanning tree, this object represents the
    operational point-to-point status of the LAN segment attached to
    this port. It indicates whether a port is considered to have a
    point-to-point connection.

    If admin-point-to-point is set to auto(2), then the value of
    oper-point-to-point is determined in accordance with the specific
    procedures defined for the MAC entity concerned, as defined in
    IEEE Std 802.1AC.

    The value is determined dynamically; that is, it is re-evaluated
    whenever the value of admin-point-to-point changes, and whenever
    the specific procedures defined for the MAC entity evaluate a
    change in its point-to-point status.";
  reference
    "IEEE Std 802.1AC; 12.4.2 of IEEE Std 802.1Q";
}
leaf media-dependent-overhead {
  type uint8;
  units "octets";
  config false;
  description
    "The portMediaDependentOverhead parameter provides the number of
    additional octets for media-dependent framing. The overhead
    includes all octets prior the first octet of the Destination
    Address field and all octets after the last octet of the frame
    check sequence.";
  reference
    "12.4.2 of IEEE Std 802.1Q";
}
container statistics {
  config false;
  description
    "Container of operational state node information associated with
    the bridge port.";
  uses dot1qtypes:bridge-port-statistics-grouping;
  leaf discard-on-ingress-filtering {
    when
    "/dot1q:bridges/dot1q:bridge[dot1q:name=current()"+
    "/../../dot1q:bridge-name]/dot1q:component[name=current()"+
    "/../../dot1q:component-name]/dot1q:type !="+
    "'dot1q:d-bridge-component'" {
      description
        "Applies to non TPMRs";
    }
    if-feature "ingress-filtering";
    type yang:counter64;
    description
      "The number of frames that were discarded as a result of Ingress
      Filtering being enabled.

      Discontinuities in the value of this counter can occur at
      re-initialization of the management system, and at other times
      as indicated by the value of 'discontinuity-time'.";
    reference
      "12.6.1.1.3 of IEEE Std 802.1Q";
  }
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```
    }
    list vid-translations {
      when
        "/dot1q:bridges/dot1q:bridge[dot1q:name=current()"+
        "/../dot1q:bridge-name]/dot1q:component[name=current()"+
        "/../dot1q:component-name]/dot1q:type !="+
        "'dot1q:d-bridge-component'" {
        description
          "Applies to non TPMRs";
      }
      key "local-vid";
      description
        "To configure the VID Translation Table (6.9) associated with a
        Port. This object is not applicable to Ports that do not support a
        VID Translation Table. The default configuration of the table has
        the value of the Relay VID equal to the value of the Local VID. If
        no local VID is configured, then it is assumed that the relay VID
        is the same value as the local VID.

        If the port supports an Egress VID translation table, the VID
        Translation Configuration object configures the Local VID to Relay
        VID mapping on ingress only. If an Egress VID translation is not
        supported, the VID Translation Configuration object defines a
        single bidirectional mapping. In this case, the Bridge should not
        allow multiple keys ('local-vid') mapped to the same 'relay-vid'
        value.";
      leaf local-vid {
        type dot1qtypes:vlanid;
        description
          "The Local VID after translation received at the ISS or EISS.";
        reference
          "12.10.1.8, 6.9 of IEEE Std 802.1Q";
      }
      leaf relay-vid {
        type dot1qtypes:vlanid;
        description
          "The Relay VID received before translation received at ISS or
          EISS.";
        reference
          "12.10.1.8, 6.9 of IEEE Std 802.1Q";
      }
    }
    list egress-vid-translations {
      when
        "/dot1q:bridges/dot1q:bridge[dot1q:name=current()"+
        "/../dot1q:bridge-name]/dot1q:component[name=current()"+
        "/../dot1q:component-name]/dot1q:type !="+
        "'dot1q:d-bridge-component'" {
        description
          "Applies to non TPMRs";
      }
      key "relay-vid";
      description
        "To configure the Egress VID Translation Table (6.9) associated
        with a Port. This object is not applicable to Ports that do not
        support an Egress VID Translation Table. The default configuration
        of the table has the value of the Local VID equal to the value of
        the Relay VID. If no Relay VID is configured, then it is assumed
        that the local VID is the same value as the relay VID.";
      leaf relay-vid {
        type dot1qtypes:vlanid;
        description
          "The Relay VID received before translation received at ISS or
          EISS.";
        reference
          "12.10.1.9, 6.9 of IEEE Std 802.1Q";
      }
      leaf local-vid {
        type dot1qtypes:vlanid;
        description
          "The Local VID after translation received at the ISS or EISS.";
        reference
```

```
          "12.10.1.9, 6.9 of IEEE Std 802.1Q";
      }
    }
  }
 }
}
```

48.6.6 The ieee802-dot1q-pb YANG module

Delete the YANG module in 48.6.6.

Insert the following YANG module in 48.6.6:

```
module ieee802-dot1q-pb {
  yang-version "1.1";
  namespace urn:ieee:std:802.1Q:yang:ieee802-dot1q-pb;
  prefix dot1q-pb;
  import ieee802-dot1q-bridge {
    prefix dot1q;
  }
  import ieee802-dot1q-types {
    prefix dot1qtypes;
  }
  import ietf-interfaces {
    prefix if;
  }
  organization
    "IEEE 802.1 Working Group";
  contact
    "WG-URL: http://ieee802.org/1/
    WG-EMail: stds-802-1-l@ieee.org

    Contact: IEEE 802.1 Working Group Chair
    Postal: C/O IEEE 802.1 Working Group
          IEEE Standards Association
          445 Hoes Lane
          Piscataway, NJ 08854
          USA

    E-mail: stds-802-1-chairs@ieee.org";
  description
    "This YANG module describes the Bridge configuration model for Provider
    Bridges.

    Copyright (C) IEEE (2023).

    This version of this YANG module is part of IEEE Std 802.1Q; see the
    standard itself for full legal notices.";
  revision 2023-10-22 {
    description
      "Published as part of IEEE Std 802.1Qcw-2023.

      The following reference statement identifies each referenced IEEE
      Standard as updated by applicable amendments.";
    reference
      "IEEE Std 802.1Q Bridges and Bridged Networks:
      IEEE Std 802.1Q-2022, IEEE Std 802.1Qcz-2023, IEEE Std 802.1Qcw-2023.";
  }
  revision 2022-01-19 {
    description
      "Published as part of IEEE Std 802.1Q-2022.";
    reference
      "IEEE Std 802.1Q-2022, Bridges and Bridged Networks.";
  }
  revision 2020-06-04 {
    description
      "Published as part of IEEE Std 802.1Qcx-2020. Second version.";
    reference
      "IEEE Std 802.1Qcx-2020, Bridges and Bridged Networks - YANG Data
      Model for Connectivity Fault Management.";
  }
  revision 2018-03-07 {
    description
      "Published as part of IEEE Std 802.1Q-2018. Initial version.";
    reference
      "IEEE Std 802.1Q-2018, Bridges and Bridged Networks.";
  }
```

```
augment "/if:interfaces/if:interface/dot1q:bridge-port" {
  description
    "Augment the interface model with 802.1Q Bridge Port configuration
    specific nodes.";
  leaf svid {
    type dot1qtypes:vlanid;
    description
      "Service VLAN identifier.";
    reference
      "12.13.2.1 of IEEE Std 802.1Q";
  }
  list cvid-registration {
    when
      "/dot1q:bridges/dot1q:bridge[dot1q:name=current()"+
      "/../dot1q:bridge-name]/dot1q:component[dot1q:name=current()"+
      "/../dot1q:component-name]/dot1q:type = 'dot1q:c-vlan-component'"+
      " and ../dot1q:port-type = 'dot1q:customer-edge-port'" {
      description
        "Applies when the component associated with this interface is a
        C-VLAN component and the port-type is a customer edge port.";
    }
    key "cvid";
    description
      "The C-VID Registration Table, provides a mapping between a C-VID
      and the service instance represented by an S-VID selected for that
      C-VLAN. This table provides the equivalent functionality of
         1) Configuring the PVID of the internal CNP on the S-VLAN
            component
         2) Adding the corresponding PEP on the C-VLAN component to the
            member set of the C-VLAN
         3) Adding the PEP and/or CEP to the untagged set of the C-VLAN
            (if it is desired that frames forwarded to that port are
            transmitted untagged for this C-VLAN).";
    leaf cvid {
      type dot1qtypes:vlanid;
      description
        "Customer VLAN identifiers associated with this bridge port.";
      reference
        "12.13.2.1 of IEEE Std 802.1Q";
    }
    leaf svid {
      type dot1qtypes:vlanid;
      description
        "Service VLAN identifier.";
      reference
        "12.13.2.1 of IEEE Std 802.1Q";
    }
    leaf untagged-pep {
      type boolean;
      default "true";
      description
        "A boolean indicating frames for this C-VLAN should be forwarded
        untagged through the Provider Edge Port.";
      reference
        "12.13.2.1 of IEEE Std 802.1Q";
    }
    leaf untagged-cep {
      type boolean;
      default "true";
      description
        "A boolean indicating frames for this C-VLAN should be forwarded
        untagged through the Customer Edge Port.";
      reference
        "12.13.2.1 of IEEE Std 802.1Q";
    }
  }
  list service-priority-regeneration {
    when
      "/dot1q:bridges/dot1q:bridge[dot1q:name=current() "+
      "/../dot1q:bridge-name]/dot1q:component[dot1q:name=current() "+
      "/../dot1q:component-name]/dot1q:type = 'dot1q:c-vlan-component' "+
      "and ../dot1q:port-type = 'dot1q:customer-edge-port'" {
      description
        "Applies when the component associated with this interface is a
        C-VLAN component and the port-type is a customer edge port.";
    }
    key "svid";
    description
      "The Service Priority Regeneration Table, which provides the
      Priority Regeneration Table (12.6.2) for each internal CNP connected
      to the C-VLAN component associated with the CEP.";
    leaf svid {
      type dot1qtypes:vlanid;
      description
        "Service VLAN identifier.";
      reference
        "12.13.2.6 of IEEE Std 802.1Q";
    }
    container priority-regeneration {
      description
        "Contains Service Priority Regeneration table nodal information.";
      reference
        "12.13.2.6 of IEEE Std 802.1Q";
      uses dot1qtypes:priority-regeneration-table-grouping;
    }
  }
  list rcap-internal-interface {
    when
      "/dot1q:bridges/dot1q:bridge[dot1q:name=current() "+
      "/../dot1q:bridge-name]/dot1q:component[dot1q:name=current() "+
      "/../dot1q:component-name]/dot1q:type = 'dot1q:s-vlan-component' "+
      "and ../dot1q:port-type = 'dot1q:remote-customer-access-port'" {
      description
        "Applies when the component associated with this interface is a
        C-VLAN component and the port-type is a customer edge port.";
    }
    key "external-svid";
    description
      "Designating an external port as an RCAP automatically creates a
      Port-mapping S-VLAN component associated with that port. This
      Port-mapping S-VLAN component includes one internal PNP.";
    leaf external-svid {
      type dot1qtypes:vlanid;
      description
        "External Service VLAN identifier.";
      reference
        "12.13.3.2 of IEEE Std 802.1Q";
    }
    leaf internal-port-number {
      type dot1qtypes:port-number-type;
      description
        "The number of the RCAP.";
      reference
        "12.13.3.2 of IEEE Std 802.1Q";
    }
    leaf internal-svid {
      type dot1qtypes:vlanid;
      description
        "Internal Service VLAN Identifier (not applicable for a C-tagged
        RCSI).";
      reference
        "12.13.3.2 of IEEE Std 802.1Q";
    }
    leaf internal-interface-type {
      type enumeration {
        enum port-based-rcsi {
          description
            "Port-based RCSI";
        }
        enum c-tagged-rcsi {
          description
            "C-tagged RCSI";
        }
        enum pnp {
          description
            "Provider Network Port";
        }
        enum discard {
          description
            "Discard (external S-VID is not associated with an internal
            port).";
        }
      }
      description
        "A value indicating the type of internal interface associated with
        the external S-VID.";
      reference
        "12.13.3.2 of IEEE Std 802.1Q";
    }
  }
}
}
```

Insert 48.6.17 after 48.6.16 (inserted by IEEE Std 801.Qcz-2023) as follows:

48.6.17 The ieee802-dot1q-sched YANG module

```
module ieee802-dot1q-sched {
  yang-version "1.1";
  namespace urn:ieee:std:802.1Q:yang:ieee802-dot1q-sched;
  prefix sched;
  import ietf-yang-types {
    prefix yang;
  }
  import ieee802-types {
    prefix ieee802;
  }
  import ieee802-dot1q-types {
    prefix dot1q-types;
  }
  organization
    "IEEE 802.1 Working Group";
  contact
    "WG-URL: http://www.ieee802.org/1/
    WG-EMail: stds-802-1-l@ieee.org

    Contact: IEEE 802.1 Working Group Chair
    Postal: C/O IEEE 802.1 Working Group
    IEEE Standards Association
    445 Hoes Lane
    Piscataway, NJ 08854
    USA

    E-mail: STDS-802-1-CHAIRS@IEEE.ORG";
  description
    "This module provides for management of IEEE Std 802.1Q Bridges that
    support Scheduled Traffic Enhancements.

    Copyright (C) IEEE (2023).

    This version of this YANG module is part of IEEE Std 802.1Q; see the
    standard itself for full legal notices.";
  revision 2023-10-22 {
    description
      "Published as part of IEEE Std 802.1Qcw-2023.

      The following reference statement identifies each referenced IEEE
      Standard as updated by applicable amendments.";
    reference
      "IEEE Std 802.1Q Bridges and Bridged Networks:
      IEEE Std 802.1Q-2022, IEEE Std 802.1Qcz-2023, IEEE Std 802.1Qcw-2023.";
  }
  feature scheduled-traffic {
    description
      "Enhancements for Scheduled Traffic supported.";
    reference
      "IEEE Std 802.1Q";
  }
  identity set-gate-states {
    base dot1q-types:type-of-operation;
    description
      "Operation to set the gate states.";
  }
  identity set-and-hold-mac {
    base dot1q-types:type-of-operation;
    description
      "Operation to set and hold MAC.";
  }
  identity set-and-release-mac {
    base dot1q-types:type-of-operation;
    description
      "Operation to set and release MAC.";
  }
  grouping sched-gate-control-entries {
```

```
  description
    "A GateControlEntry consists of an operation name, followed by up to 2
    parameters associated with the operation. The first parameter is a
    gateStatesValue; the second parameter is a timeIntervalValue";
  uses dot1q-types:base-gate-control-entries {
    refine "gate-control-entry/operation-name" {
      must
        "(. = 'sched:set-gate-states') or (. = "+
        "'sched:set-and-hold-mac') or (. = 'sched:set-and-release-mac')";
    }
    refine "gate-control-entry/time-interval-value" {
      must
        "(. <= ../../../supported-interval-max )";
    }
    augment "gate-control-entry" {
      description
        "Augment gate-control-entry from base-gate-control-entries with
        parameter gate-states-value.";
      leaf gate-states-value {
        type uint8;
        mandatory true;
        description
          "gateStatesValue is the gate states for this entry for the Port.
          The gates are immediately set to the states in gateStatesValue
          when this entry executes. The bits of the octet represent the
          gate states for the corresponding traffic classes; the
          most-significant bit corresponds to traffic class 7, the
          least-significant bit to traffic class 0. A bit value of 0
          indicates closed; a bit value of 1 indicates open.";
        reference
          "12.29.1.2.2 and 8.6.8.4 of IEEE Std 802.1Q.";
      }
    }
  }
}
grouping sched-parameters {
  description
    "sched-parameters comprises all of the parameters associated with
    Scheduled Traffic configuration.";
  container gate-parameter-table {
    description
      "A table that contains the per-port manageable parameters for
      traffic scheduling. For a given Port, an entry in the table exists.
      All writable objects in this table must be persistent over power up
      restart/reboot.";
    reference
      "12.29.1, 8.6.8.4 and 8.6.9 of IEEE Std 802.1Q";
    list queue-max-sdu-table {
      key "traffic-class";
      description
        "A list containing a set of max SDU parameters, one for each
        traffic class. All writable objects in this table must be
        persistent over power up restart/reboot.";
      reference
        "12.29.1.1, 8.6.8.4 and 8.6.9 of IEEE Std 802.1Q";
      leaf traffic-class {
        type dot1q-types:traffic-class-type;
        description
          "Traffic class";
      }
      leaf queue-max-sdu {
        type uint32;
        default "0";
        description
          "The value of the queueMaxSDU parameter for the traffic class. A
          value of 0 is interpreted as the max SDU size supported by the
          underlying MAC. The value must be retained across
          reinitializations of the management system.";
        reference
          "12.29.1.1.1, 8.6.8.4 and 8.6.9 of IEEE Std 802.1Q.";
      }
      leaf transmission-overrun {
        type yang:counter64;
        default "0";
        config false;
        description
          "A counter of transmission overrun events, where a PDU is still
          being transmitted by a MAC at the time when the transmission
          gate for the queue closed.";
        reference
          "12.29.1.1.2, 8.6.8.4 and 8.6.9 of IEEE Std 802.1Q.";
      }
    }
    leaf gate-enabled {
      type boolean;
      default "false";
      description
        "The GateEnabled parameter determines whether traffic scheduling
        is active (true) or inactive (false). The value must be retained
        across reinitializations of the management system.";
      reference
        "12.29.1, 8.6.8.2 and 8.6.9.4.14 of IEEE Std 802.1Q.";
    }
    leaf admin-gate-states {
      type uint8;
      default "255";
      description
        "AdminGateStates is the administrative value of the initial gate
        states for the Port. The bits of the octet represent the gate
        states for the corresponding traffic classes; the most-significant
        bit corresponds to traffic class 7, the least-significant bit to
        traffic class 0. A bit value of 0 indicates closed; a bit value of
        1 indicates open. The value must be retained across
        reinitializations of the management system.";
      reference
        "12.29.1 and 8.6.9.4.5 of IEEE Std 802.1Q.";
    }
    leaf oper-gate-states {
      type uint8;
      config false;
      description
        "OperGateStates is the operational value of the current gate
        states for the Port. The bits of the octet represent the gate
        states for the corresponding traffic classes; the most-significant
        bit corresponds to traffic class 7, the least-significant bit to
        traffic class 0. A bit value of 0 indicates closed; a bit value of
        1 indicates open.";
      reference
        "12.29.1 and 8.6.9.4.21 of IEEE Std 802.1Q.";
    }
    container admin-control-list {
      must
        "(count(./gate-control-entry) <= ../supported-list-max)" {
        error-message
          "Number of elements in admin-control-list must not be greater"+
          "than supported-list-max";
      }
      description
        "AdminControlList is the administrative value of the gate control
        list for the Port. The value must be retained across
        reinitializations of the management system.";
      reference
        "12.29.1.2, 8.6.8.4 and 8.6.9.4.2 of IEEE Std 802.1Q.";
      uses sched-gate-control-entries;
    }
    container oper-control-list {
      must
        "(count(./gate-control-entry) <= ../supported-list-max)" {
        error-message
          "Number of elements in oper-control-list must not be greater"+
          "than supported-list-max";
      }
      config false;
      description
```

```
          "OperControlList is the operational value of the gate control list
          for the Port.";
        reference
          "12.29.1.2, 8.6.8.4 and 8.6.9.4.18 of IEEE Std 802.1Q.";
        uses sched-gate-control-entries;
      }
      container admin-cycle-time {
        must
          "(./numerator div ./denominator <= "+
          "../supported-cycle-max/numerator div "+
          "../supported-cycle-max/denominator )" {
          error-message
            "admin-cycle-time must not be greater than supported-cycle-max";
        }
        description
          "AdminCycleTime specifies the administrative value of the gating
          cycle time for the Port. AdminCycleTime is a rational number of
          seconds, defined by an integer numerator and an integer
          denominator. The value must be retained across reinitializations
          of the management system.";
        reference
          "12.29.1, 8.6.8.4 and 8.6.9.4.3 of IEEE Std 802.1Q.";
        uses ieee802:rational-grouping;
      }
      container oper-cycle-time {
        must
          "(./numerator div ./denominator <= "+
          "../supported-cycle-max/numerator div "+
          "../supported-cycle-max/denominator )" {
          error-message
            "oper-cycle-time must not be greater than supported-cycle-max";
        }
        config false;
        description
          "OperCycleTime specifies the operational value of the gating cycle
          time for the Port. OperCycleTime is a rational number of seconds,
          defined by an integer numerator and an integer denominator.";
        reference
          "12.29.1, 8.6.8.4 and 8.6.9.4.19 of IEEE Std 802.1Q.";
        uses ieee802:rational-grouping;
      }
      leaf admin-cycle-time-extension {
        type uint32;
        units "nanoseconds";
        description
          "An unsigned integer number of nanoseconds, defining the maximum
          amount of time by which the gating cycle for the Port is permitted
          to be extended when a new cycle configuration is being installed.
          This is the administrative value. The value must be retained
          across reinitializations of the management system.";
        reference
          "12.29.1 and 8.6.9.4.4 of IEEE Std 802.1Q.";
      }
      leaf oper-cycle-time-extension {
        type uint32;
        units "nanoseconds";
        config false;
        description
          "An unsigned integer number of nanoseconds, defining the maximum
          amount of time by which the gating cycle for the Port is permitted
          to be extended when a new cycle configuration is being installed.
          This is the operational value.";
        reference
          "12.29.1 and 8.6.9.4.20 of IEEE Std 802.1Q.";
      }
      container admin-base-time {
        description
          "The administrative value of the base time at which gating cycles
          begin, expressed as an IEEE 1588 precision time protocol (PTP)
          timescale. The value must be retained across reinitializations of
          the management system.";
        reference
          "12.29.1 and 8.6.9.4.1 of IEEE Std 802.1Q.";
        uses ieee802:ptp-time-grouping;
      }
      container oper-base-time {
        config false;
        description
          "The operational value of the base time at which gating cycles
          begin, expressed as an IEEE 1588 precision time protocol (PTP)
          timescale.";
        reference
          "12.29.1 and 8.6.9.4.17 of IEEE Std 802.1Q.";
        uses ieee802:ptp-time-grouping;
      }
      leaf config-change {
        type boolean;
        description
          "The ConfigChange parameter signals the start of a configuration
          change when it is set to TRUE, indicating that the administrative
          parameters for the Port are ready to be copied into their
          corresponding operational parameters. This should only be done
          when the various administrative parameters are all set to
          appropriate values.";
        reference
          "12.29.1 and 8.6.9.4.7 of IEEE Std 802.1Q.";
      }
      container config-change-time {
        config false;
        description
          "The time at which the next config change is scheduled to occur.";
        reference
          "12.29.1 and 8.6.9.4.9 of IEEE Std 802.1Q.";
        uses ieee802:ptp-time-grouping;
      }
      leaf tick-granularity {
        type uint32;
        config false;
        description
          "The granularity of the cycle time clock, represented as an
          unsigned number of tenths of nanoseconds. The value must be
          retained across reinitializations of the management system.";
        reference
          "12.29.1 of IEEE Std 802.1Q";
      }
      container current-time {
        config false;
        description
          "The current time as maintained by the local system.";
        reference
          "12.29.1 and 8.6.9.4.10 of IEEE Std 802.1Q.";
        uses ieee802:ptp-time-grouping;
      }
      leaf config-pending {
        type boolean;
        config false;
        description
          "The value of the ConfigPending state machine variable. The value
          is TRUE if a configuration change is in progress but has not yet
          completed.";
        reference
          "12.29.1 and 8.6.9.4.8 of IEEE Std 802.1Q.";
      }
      leaf config-change-error {
        type yang:counter64;
        config false;
        description
          "A counter of the number of times that a re-configuration of the
          traffic schedule has been requested with the old schedule still
          running and the requested base time was in the past.";
        reference
          "12.29.1 and 8.6.9.3.1 of IEEE Std 802.1Q.";
      }
      leaf supported-list-max {
        type uint32;
        description
          "The maximum value supported by this Port for the
          AdminControlListLength and OperControlListLength parameters. It is
          available for use by schedule computation software to determine
          the port’s control list capacity prior to computation. The object
          may optionally be read-only.";
        reference
          "12.29.1.5 of IEEE Std 802.1Q";
      }
      container supported-cycle-max {
        description
          "The maximum value supported by this Port of the AdminCycleTime
          and OperCycleTime parameters. The object may optionally be
          read-only.";
        reference
          "12.29.1.6 of IEEE Std 802.1Qcw";
        uses ieee802:rational-grouping;
      }
      leaf supported-interval-max {
        type uint32;
        description
          "The maximum value supported by this Port of the TimeIntervalValue
          parameter. The object may optionally be read-only.";
        reference
          "12.29.1.7 of IEEE Std 802.1Qcw";
      }
    }
  }
}
```

Insert 48.6.18 after 48.6.17 as follows:

48.6.18 The ieee802-dot1q-sched-bridge YANG module

```
module ieee802-dot1q-sched-bridge {
  yang-version "1.1";
  namespace urn:ieee:std:802.1Q:yang:ieee802-dot1q-sched-bridge;
  prefix sched-bridge;
  import ietf-interfaces {
    prefix if;
  }
  import ieee802-dot1q-bridge {
    prefix dot1q;
  }
  import ieee802-dot1q-sched {
    prefix sched;
  }
  organization
    "IEEE 802.1 Working Group";
  contact
    "WG-URL: http://www.ieee802.org/1/
    WG-EMail: stds-802-1-l@ieee.org

    Contact: IEEE 802.1 Working Group Chair
    Postal: C/O IEEE 802.1 Working Group
    IEEE Standards Association
    445 Hoes Lane
    Piscataway, NJ 08854
    USA

    E-mail: STDS-802-1-CHAIRS@IEEE.ORG";
  description
    "This module provides for management of IEEE Std 802.1Q Bridges that
    support Scheduled Traffic Enhancements.

    Copyright (C) IEEE (2023).

    This version of this YANG module is part of IEEE Std 802.1Q; see the
    standard itself for full legal notices.";
  revision 2023-10-26 {
    description
      "Published as part of IEEE Std 802.1Qcw-2023.

      The following reference statement identifies each referenced IEEE
      Standard as updated by applicable amendments.";
    reference
      "IEEE Std 802.1Q Bridges and Bridged Networks:
      IEEE Std 802.1Q-2022, IEEE Std 802.1Qcz-2023, IEEE Std 802.1Qcw-2023.";
  }
  augment "/if:interfaces/if:interface/dot1q:bridge-port" {
    description
      "Augment bridge-port with Scheduled Traffic configuration.";
    uses sched:sched-parameters;
  }
}
```

Insert 48.6.19 after 48.6.18 as follows:

48.6.19 The ieee802-dot1q-preemption YANG module

```
module ieee802-dot1q-preemption {
  yang-version "1.1";
  namespace urn:ieee:std:802.1Q:yang:ieee802-dot1q-preemption;
  prefix preempt;
  organization
    "IEEE 802.1 Working Group";
  contact
    "WG-URL: http://www.ieee802.org/1/
    WG-EMail: stds-802-1-l@ieee.org

    Contact: IEEE 802.1 Working Group Chair
    Postal: C/O IEEE 802.1 Working Group
    IEEE Standards Association
    445 Hoes Lane
    Piscataway, NJ 08854
    USA

    E-mail: STDS-802-1-CHAIRS@IEEE.ORG";
  description
    "This module provides for management of IEEE Std 802.1Q Bridges that
    support frame preemption.

    Copyright (C) IEEE (2023).

    This version of this YANG module is part of IEEE Std 802.1Q; see the
    standard itself for full legal notices.";
  revision 2023-10-26 {
    description
      "Published as part of IEEE Std 802.1Qcw-2023.

      The following reference statement identifies each referenced IEEE
      Standard as updated by applicable amendments.";
    reference
      "IEEE Std 802.1Q Bridges and Bridged Networks:
      IEEE Std 802.1Q-2022, IEEE Std 802.1Qcz-2023, IEEE Std 802.1Qcw-2023.";
  }
  feature frame-preemption {
    description
      "Frame preemption supported.";
    reference
      "IEEE Std 802.1Q";
  }
  typedef frame-preemption-status-enum {
    type enumeration {
      enum express {
        description
          "Frames queued for the priority are to be transmitted using the
          express service for the Port.";
      }
      enum preemptable {
        description
          "Frames queued for the priority are to be transmitted using the
          preemptable service for the Port.";
      }
    }
    description
      "Frame preemption status of each priority.";
  }
  grouping preemption-parameters {
    description
      "preemption-parameters comprises all of the parameters associated with
      frame preemption configuration.";
    container frame-preemption-parameters {
      description
        "A table containing a set of frame preemption parameters, one for
        each Port. All writeable objects in this table must be persistent
        over power up restart/reboot.";
      reference
        "12.30.1 of IEEE Std 802.1Q";
      container frame-preemption-status-table {
        description
          "The framePreemptionStatusTable consists of 8 frame-preemption
          status parameter leafs, one per priority";
        reference
          "12.30.1.1 of IEEE Std 802.1Q";
        leaf priority0 {
          type frame-preemption-status-enum;
          default "express";
          description
            "The value of the frame-preemption status parameter for the
            priority 0. The default value of the parameter is express (1).
            The value of this object MUST be retained across
            reinitializations of the management system.";
          reference
            "12.30.1.1.1 of IEEE Std 802.1Q";
        }
        leaf priority1 {
          type frame-preemption-status-enum;
          default "express";
          description
            "The value of the frame-preemption status parameter for the
            priority 1. The default value of the parameter is express (1).
            The value of this object MUST be retained across
            reinitializations of the management system.";
          reference
            "12.30.1.1.1 of IEEE Std 802.1Q";
        }
        leaf priority2 {
          type frame-preemption-status-enum;
          default "express";
          description
            "The value of the frame-preemption status parameter for the
            priority 2. The default value of the parameter is express (1).
            The value of this object MUST be retained across
            reinitializations of the management system.";
          reference
            "12.30.1.1.1 of IEEE Std 802.1Q";
        }
        leaf priority3 {
          type frame-preemption-status-enum;
          default "express";
          description
            "The value of the frame-preemption status parameter for the
            priority 3. The default value of the parameter is express (1).
            The value of this object MUST be retained across
            reinitializations of the management system.";
          reference
            "12.30.1.1.1 of IEEE Std 802.1Q";
        }
        leaf priority4 {
          type frame-preemption-status-enum;
          default "express";
          description
            "The value of the frame-preemption-status parameter for the
            priority 4. The default value of the parameter is express (1).
            The value of this object MUST be retained across
            reinitializations of the management system.";
          reference
            "12.30.1.1.1 of IEEE Std 802.1Q";
        }
        leaf priority5 {
          type frame-preemption-status-enum;
          default "express";
          description
            "The value of the frame-preemption status parameter for the
            priority 5. The default value of the parameter is express (1).
            The value of this object MUST be retained across
            reinitializations of the management system.";
          reference
            "12.30.1.1.1 of IEEE Std 802.1Q";
        }
        leaf priority6 {
          type frame-preemption-status-enum;
          default "express";
          description
            "The value of the frame-preemption status parameter for the
            priority 6. The default value of the parameter is express (1).
            The value of this object MUST be retained across
            reinitializations of the management system.";
          reference
            "12.30.1.1.1 of IEEE Std 802.1Q";
        }
        leaf priority7 {
          type frame-preemption-status-enum;
          default "express";
          description
            "The value of the frame-preemption status parameter for the
            priority 7. The default value of the parameter is express (1).
            The value of this object MUST be retained across
            reinitializations of the management system.";
          reference
            "12.30.1.1.1 of IEEE Std 802.1Q";
        }
      }
      leaf hold-advance {
        type uint32;
        units "nanoseconds";
        config false;
        description
          "The value of the holdAdvance parameter for the Port in
          nanoseconds. There is no default value; the holdAdvance is a
          property of the underlying MAC.";
        reference
          "12.30.1.2 of IEEE Std 802.1Q";
      }
      leaf release-advance {
        type uint32;
        units "nanoseconds";
        config false;
        description
          "The value of the releaseAdvance parameter for the Port in
          nanoseconds. There is no default value; the releaseAdvance is a
          property of the underlying MAC.";
        reference
          "12.30.1.3 of IEEE Std 802.1Q";
      }
      leaf preemption-active {
        type boolean;
        config false;
        description
          "TRUE if preemption is both supported by the MAC and currently
          active.";
        reference
          "12.30.1.4 of IEEE Std 802.1Q";
      }
      leaf hold-request {
        type enumeration {
          enum hold {
            value 1;
            description
              "A hold request has been issued to the MAC.";
          }
          enum release {
            value 2;
            description
              "A release request has been issued to the MAC.";
          }
        }
        config false;
        description
          "The value of the holdRequest parameter for the Port, either hold
```

```
          (1) or release (2). The value of this object is release (2) on
          system initialization.";
        reference
          "12.30.1.5 of IEEE Std 802.1Q";
      }
    }
  }
}
```

Insert 48.6.20 after 48.6.19 as follows:

48.6.20 The ieee802-dot1q-preemption-bridge YANG module

```
module ieee802-dot1q-preemption-bridge {
  yang-version "1.1";
  namespace urn:ieee:std:802.1Q:yang:ieee802-dot1q-preemption-bridge;
  prefix preempt-bridge;
  import ietf-interfaces {
    prefix if;
  }
  import ieee802-dot1q-bridge {
    prefix dot1q;
  }
  import ieee802-dot1q-preemption {
    prefix preempt;
  }
  organization
    "IEEE 802.1 Working Group";
  contact
    "WG-URL: http://www.ieee802.org/1/
    WG-EMail: stds-802-1-l@ieee.org

    Contact: IEEE 802.1 Working Group Chair
    Postal: C/O IEEE 802.1 Working Group
    IEEE Standards Association
    445 Hoes Lane
    Piscataway, NJ 08854
    USA

    E-mail: STDS-802-1-CHAIRS@IEEE.ORG";
  description
    "This module provides for management of IEEE Std 802.1Q Bridges that
    support frame preemption.

    Copyright (C) IEEE (2023).

    This version of this YANG module is part of IEEE Std 802.1Q; see the
    standard itself for full legal notices.";
  revision 2023-10-26 {
    description
      "Published as part of IEEE Std 802.1Qcw-2023.

      The following reference statement identifies each referenced IEEE
      Standard as updated by applicable amendments.";
    reference
      "IEEE Std 802.1Q Bridges and Bridged Networks:
      IEEE Std 802.1Q-2022, IEEE Std 802.1Qcz-2023, IEEE Std 802.1Qcw-2023.";
  }
  feature frame-preemption {
    description
      "Frame preemption supported.";
    reference
      "IEEE Std 802.1Q";
  }
  augment "/if:interfaces/if:interface/dot1q:bridge-port" {
    if-feature "frame-preemption";
    description
      "Augment bridge-port with frame preemption configuration.";
    uses preempt:preemption-parameters;
  }
}
```

Insert 48.6.21 after 48.6.20 as follows:

48.6.21 The ieee802-dot1q-psfp YANG module

```
module ieee802-dot1q-psfp {
  yang-version "1.1";
  namespace urn:ieee:std:802.1Q:yang:ieee802-dot1q-psfp;
  prefix psfp;
  import ietf-yang-types {
    prefix yang;
  }
  import ieee802-types {
    prefix ieee802;
  }
  import ieee802-dot1q-types {
    prefix dot1q-types;
  }
  import ieee802-dot1q-stream-filters-gates {
    prefix sfsg;
  }
  organization
    "IEEE 802.1 Working Group";
  contact
    "WG-URL: http://www.ieee802.org/1/
    WG-EMail: stds-802-1-l@ieee.org

    Contact: IEEE 802.1 Working Group Chair
    Postal: C/O IEEE 802.1 Working Group
    IEEE Standards Association
    445 Hoes Lane
    Piscataway, NJ 08854
    USA

    E-mail: STDS-802-1-CHAIRS@IEEE.ORG";
  description
    "This module provides management of IEEE Std 802.1Q Bridge
    components that support Per-Stream Filtering and Policing (PSFP).

    Copyright (C) IEEE (2023).

    This version of this YANG module is part of IEEE Std 802.1Q; see the
    standard itself for full legal notices.";
  revision 2023-10-26 {
    description
      "Published as part of IEEE Std 802.1Qcw-2023.

      The following reference statement identifies each referenced IEEE
      Standard as updated by applicable amendments.";
    reference
      "IEEE Std 802.1Q Bridges and Bridged Networks:
      IEEE Std 802.1Q-2022, IEEE Std 802.1Qcz-2023, IEEE Std 802.1Qcw-2023.";
  }
  feature psfp {
    description
      "Per-Stream Filtering and Policing supported.";
    reference
      "IEEE Std 802.1Q";
  }
  identity set-gate-and-ipv {
    base dot1q-types:type-of-operation;
    description
      "The StreamGateState parameter specifies a desired state, open or
      closed, for the stream gate, and the IPV parameter specifies a desired
      value of the IPV associated with the stream. On execution, the
      StreamGateState and IPV parameter values are used to set the
      operational values of the stream gate state and internal priority
      specification parameters for the stream. After TimeInterval ticks have
      elapsed since the completion of the previous stream gate control
      operation in the stream gate control list, control passes to the next
      stream gate control operation. The optional IntervalOctetMax parameter
      specifies the maximum number of MSDU octets that are permitted to pass
      the gate during the specified TimeInterval. If the IntervalOctetMax
      parameter is omitted, there is no limit on the number of octets that
      can pass the gate.";
    reference
      "8.6.5.4 of IEEE Std 802.1Q";
  }
  grouping stream-gate-control-entries {
    description
      "A GateControlEntry consists of an operation name, followed by three
      mandatory parameters and one optional parameter associated with the
      operation. The first parameter is a gateStatesValue; the second
      parameter is an IPV value; the third parameter is a timeIntervalValue;
      and the fourth parameter is an IntervalOctetMaxValue.
      IntervalOctetMaxValue is optional.";
    uses dot1q-types:base-gate-control-entries {
      refine "gate-control-entry/operation-name" {
        must
          ". = 'psfp:set-gate-and-ipv'";
      }
      refine "gate-control-entry/time-interval-value" {
        must
          "(. <= ../../../../supported-interval-max )";
      }
      augment "gate-control-entry" {
        description
          "Augment gate-control-entry from base-gate-control-entries with
          parameters gate-state-value, ipv-spec and interval-octet-max.";
        leaf gate-state-value {
          type sfsg:gate-state-value-type;
          mandatory true;
          description
            "The PSFPgateStatesValue indicates the desired gate state, open
            or closed, for the stream gate.";
          reference
            "12.31.3.2.1 of IEEE Std 802.1Q";
        }
        leaf ipv-spec {
          type sfsg:ipv-spec-type;
          mandatory true;
          description
            "The IPV value indicates the IPV to be associated with frames
            that pass the gate.";
          reference
            "12.31.3.2.3 of IEEE Std 802.1Q";
        }
        leaf interval-octet-max {
          type uint32;
          description
            "An unsigned integer, denoting a IntervalOctetMax in MSDU
            octets. If this parameter is omitted, there is no maximum.";
          reference
            "12.31.3.2.5 of IEEE Std 802.1Q";
        }
      }
    }
  }
  grouping psfp-parameters {
    description
      "psfp-parameters comprises all of the parameters associated with
      Per-Stream Filtering and Policing configuration.";
    container flow-meters {
      description
        "This container comprises all flow meter related nodes.";
      list flow-meter-instance-table {
        must
          "(count(.) <= ../max-flow-meter-instances)" {
          error-message
            "Number of elements in flow-meter-instance-table must not be"+
            "greater than max-flow-meter-instances.";
        }
        key "flow-meter-instance-id";
        description
```

```
          "There is one Flow Meter Instance Table per Bridge component. Each
          table row contains a set of parameters that defines a single Flow
          Meter Instance. Tables can be created or removed dynamically in
          implementations that support dynamic configuration of Bridge
          components. Rows in the table can be created or removed
          dynamically in implementations that support dynamic configuration
          of flow meters.";
        reference
          "12.31.4 of IEEE Std 802.1Q";
        leaf flow-meter-instance-id {
          type uint32;
          mandatory true;
          description
            "An integer table index that allows the Flow Meter to be
            referenced from Stream Filter Instance Table entries.";
          reference
            "8.6.5.5 of IEEE Std 802.1Q";
        }
        leaf committed-information-rate {
          type uint64;
          units "bits/second";
          mandatory true;
          description
            "Committed information rate (CIR), in bits per second.";
          reference
            "8.6.5.5 of IEEE Std 802.1Q";
        }
        leaf committed-burst-size {
          type uint32;
          units "octets";
          mandatory true;
          description
            "Committed burst size (CBS), in octets.";
          reference
            "8.6.5.5 of IEEE Std 802.1Q";
        }
        leaf excess-information-rate {
          type uint64;
          units "bits/second";
          mandatory true;
          description
            "Excess Information Rate (EIR), in bits per second.";
          reference
            "8.6.5.5 of IEEE Std 802.1Q";
        }
        leaf excess-burst-size {
          type uint32;
          units "octets";
          mandatory true;
          description
            "Excess burst size (EBS) per bandwidth profile flow, in octets.";
          reference
            "8.6.5.5 of IEEE Std 802.1Q";
        }
        leaf coupling-flag {
          type enumeration {
            enum zero {
              value 0;
              description
                "Uncoupled";
            }
            enum one {
              value 1;
              description
                "Coupled";
            }
          }
          mandatory true;
          description
            "Coupling flag (CF), which takes the value 0 or 1.";
          reference
            "8.6.5.5 of IEEE Std 802.1Q";
```

```
      }
      leaf color-mode {
        type enumeration {
          enum color-blind {
            description
              "Color-blind (i.e., the color of a frame is ignored by the
              bandwidth profile algorithm).";
          }
          enum color-aware {
            description
              "Color-aware (i.e., the color of a frame is considered by
              the bandwidth profile algorithm).";
          }
        }
        mandatory true;
        description
          "Color mode (CM), which takes the value color-blind or
          color-aware, as specified in Bandwidth Profile Parameters and
          Algorithm in MEF 10.3.";
        reference
          "8.6.5.5 of IEEE Std 802.1Q";
      }
      leaf drop-on-yellow {
        type boolean;
        mandatory true;
        description
          "DropOnYellow, which takes the value TRUE or FALSE. A value of
          TRUE indicates that yellow frames are dropped (i.e., discarded);
          a value of FALSE indicates that yellow frames will have the
          drop_eligible parameter set to TRUE.";
        reference
          "8.6.5.5 of IEEE Std 802.1Q";
      }
      leaf mark-all-frames-red-enable {
        type boolean;
        default "false";
        description
          "MarkAllFramesRedEnable, which takes the value TRUE or FALSE. A
          value of TRUE indicates that the MarkAllFramesRed function is
          enabled; a value of FALSE indicates that the MarkAllFramesRed
          function is disabled. The default value of MarkAllFramesRedEnable
          is FALSE.";
        reference
          "8.6.5.5 of IEEE Std 802.1Q";
      }
      leaf mark-all-frames-red {
        type boolean;
        default "false";
        description
          "MarkAllFramesRed, which takes the value TRUE or FALSE. If
          MarkAllFramesRedEnable is TRUE, a value of TRUE in
          MarkAllFramesRed indicates that all frames are dropped (i.e.,
          discarded). If MarkAllFramesRed is FALSE, it has no effect. The
          default value of MarkAllFramesRed is FALSE; if the operation of
          the flow meter causes any frame to be discarded, then
          MarkAllFramesRed is set TRUE.";
        reference
          "8.6.5.5 of IEEE Std 802.1Q";
      }
    }
    leaf max-flow-meter-instances {
      type uint32;
      description
        "The maximum number of Flow Meter instances supported by this
        Bridge component. The object may optionally be read-only.";
      reference
        "12.31.1.3 of IEEE Std 802.1Q";
    }
  }
  uses sfsg:sfsg-parameters {
    augment "stream-filters/stream-filter-instance-table" {
      description
        "Augment the Bridge component Stream filter by frame counters.";
      leaf matching-frames-count {
        type yang:counter64;
        config false;
        description
          "A count of frames matching both the stream_handle and priority
          specifications.";
        reference
          "8.6.5.3 of IEEE Std 802.1Q";
      }
      leaf passing-frames-count {
        type yang:counter64;
        config false;
        description
          "A count of frames that passed the stream gate.";
        reference
          "8.6.5.3 of IEEE Std 802.1Q";
      }
      leaf not-passing-frames-count {
        type yang:counter64;
        config false;
        description
          "A count of frames that did not pass the stream gate.";
        reference
          "8.6.5.3 of IEEE Std 802.1Q";
      }
      leaf red-frames-count {
        type yang:counter64;
        config false;
        description
          "A count of frames that were discarded as a result of the
          operation of the flow meter.";
        reference
          "8.6.5.3 of IEEE Std 802.1Q";
      }
      leaf passing-sdu-count {
        type yang:counter64;
        config false;
        description
          "A count of frames that passed the Maximum SDU size filter.";
        reference
          "8.6.5.3 of IEEE Std 802.1Q";
      }
      leaf not-passing-sdu-count {
        type yang:counter64;
        config false;
        description
          "A count of frames that did not pass the Maximum SDU size
          filter.";
        reference
          "8.6.5.3 of IEEE Std 802.1Q";
      }
      leaf flow-meter-ref {
        type leafref {
          path
            '..'+
            '/..'+
            '/..'+
            '/flow-meters'+
            '/flow-meter-instance-table'+
            '/flow-meter-instance-id';
        }
        description
          "Flow meter instance that is associated with the stream filter.";
        reference
          "8.6.5.5 and 12.31.2.6 of IEEE Std 802.1Q.";
      }
      leaf flow-meter-enable {
        type boolean;
        description
          "If it is set to TRUE, flow-meter-instance-id identifies the
          flow meter instance associated with the stream filter. If it is
```

```
          set to FALSE, no flow meter instance is associated with the
          stream filter.";
        reference
          "8.6.5.5 and 12.31.2.6 of IEEE Std 802.1Q.";
      }
    }
    augment "stream-gates" {
      description
        "Augment the Bridge component Stream Gates by maximum control list
        limits, as used for PTP-controlled open and close transitions";
      leaf supported-list-max {
        type uint32;
        description
          "The maximum value supported by this Bridge component of the
          AdminControlListLength and OperControlListLength parameters. It
          is available for use by schedule computation software to
          determine the Bridge component’s control list capacity prior to
          computation. The object may optionally be read-only.";
        reference
          "12.31.1.4 of IEEE Std 802.1Q";
      }
      container supported-cycle-max {
        description
          "The maximum value supported by this Bridge component of the
          AdminCycleTime and OperCycleTime parameters. The object may
          optionally be read-only.";
        reference
          "12.31.1.7 of IEEE Std 802.1Q";
        uses ieee802:rational-grouping;
      }
      leaf supported-interval-max {
        type uint32;
        description
          "The maximum value supported by this Bridge component of the
          TimeIntervalValue parameter. The object may optionally be
          read-only.";
        reference
          "12.31.1.8 of IEEE Std 802.1Q";
      }
    }
    augment "stream-gates/stream-gate-instance-table" {
      description
        "Augment the Bridge component Stream Gate instances by
         a) Operational gate states
         b) Operational IPV values
         c) PTP controlled open and close transitions
         d) Management for PTP controlled open and close transitions";
      leaf oper-gate-state {
        type sfsg:gate-state-value-type;
        config false;
        description
          "The current operational state of the gate. The operational
          state of the gate is set by the List Execute state machine, and
          its initial value is determined by the value of the
          administrative state of the gate.";
        reference
          "12.31.3.2.1 and 8.6.10.5 of IEEE Std 802.1Q";
      }
      leaf oper-ipv {
        type sfsg:ipv-spec-type;
        description
          "The operational internal priority value specification.";
        reference
          "12.31.3.3, 8.6.10.7, and 8.6.5.4 of IEEE Std 802.1Q";
      }
      container admin-control-list {
        must
          "(count(./gate-control-entry) <= ../../supported-list-max)" {
          error-message
            "Number of elements in admin-control-list must not be"+
            "greater than supported-list-max";
        }
```

```
          description
            "The AdminControlList and OperControlList are ordered lists
            containing AdminControlListLength or OperControlListLength
            entries, respectively. Each entry represents a gate operation.
            Each entry in the list is structured as a GateControlEntry.";
          reference
            "12.31.3.2, 12.31.3.2.2, and 8.6.9.4.2 of IEEE Std 802.1Q";
          uses stream-gate-control-entries;
        }
        container oper-control-list {
          must
            "(count(./gate-control-entry) <= ../../supported-list-max)" {
            error-message
              "Number of elements in oper-control-list must not be greater"+
              "than supported-list-max";
          }
          config false;
          description
            "The AdminControlList and OperControlList are ordered lists
            containing AdminControlListLength or OperControlListLength
            entries, respectively. Each entry represents a gate operation.
            Each entry in the list is structured as a GateControlEntry.";
          reference
            "12.31.3.2, 12.31.3.2.2 and 8.6.9.4.18 of IEEE Std 802.1Q";
          uses stream-gate-control-entries;
        }
        container admin-cycle-time {
          must
            "(./numerator div ./denominator <= "+
            "../../supported-cycle-max/numerator div "+
            "../../supported-cycle-max/denominator)" {
            error-message
              "admin-cycle-time must not be greater than"+
              "supported-cycle-max";
          }
          description
            "The administrative value of the gating cycle for the Port. This
            value can be changed by management, and is used by the List
            Config state machine to set the value of OperCycleTime. The
            AdminCycleTime variable is a rational number of seconds, defined
            by an integer numerator and an integer denominator.";
          reference
            "12.29.1.3 and 8.6.9.4.3 of IEEE Std 802.1Q";
          uses ieee802:rational-grouping;
        }
        container oper-cycle-time {
          must
            "(./numerator div ./denominator <= "+
            "../../supported-cycle-max/numerator div "+
            "../../supported-cycle-max/denominator)" {
            error-message
              "oper-cycle-time must not be greater than"+
              "supported-cycle-max";
          }
          config false;
          description
            "The operational value of the gating cycle for the Port. This
            variable is set dynamically from the AdminCycleTime variable
            under the control of the List Config state machine OperCycleTime
            is used by the Cycle Timer state machine to enforce the cycle
            time for the Port. The OperCycleTime variable is a rational
            number of seconds, defined by an integer numerator and an
            integer denominator.";
          reference
            "12.29.1.3 and 8.6.9.4.19 of IEEE Std 802.1Q";
          uses ieee802:rational-grouping;
        }
        leaf admin-cycle-time-extension {
          type uint32;
          units "nanoseconds";
          description
            "An integer number of nanoseconds, defining the maximum amount
            of time by which the gating cycle for the Port is permitted to
            be extended when a new cycle configuration is being installed.
            This administrative value can be changed by management, and is
            used by the List Config state machine to set the value of
            OperCycleTimeExtension.";
          reference
            "8.6.9.4.4 of IEEE Std 802.1Q";
        }
        leaf oper-cycle-time-extension {
          type uint32;
          units "nanoseconds";
          config false;
          description
            "An integer number of nanoseconds, defining the maximum amount
            of time by which the gating cycle for the Port is permitted to
            be extended when a new cycle configuration is installed. This
            operational value is set by the List Config state machine to the
            value of AdminCycleTimeExtension. The value of
            OperCycleTimeExtension is used by the SetCycleStartTime()
            procedure.";
          reference
            "8.6.9.4.20 of IEEE Std 802.1Q";
        }
        container admin-base-time {
          description
            "The administrative value of base time, expressed as an IEEE
            1588 precision time protocol (PTP) timescale (see IEEE Std
            802.1AS-2011). This value can be changed by management, and is
            used by the List Config state machine to set the value of
            OperBaseTime.";
          reference
            "12.29.1.4 and 8.6.9.4.1 of IEEE Std 802.1Q";
          uses ieee802:ptp-time-grouping;
        }
        container oper-base-time {
          config false;
          description
            "The operational value of base time, expressed as a PTP
            timescale (see IEEE Std 802.1AS-2011). This variable is used by
            the List Config state machine.";
          reference
            "12.29.1.4 and 8.6.9.4.17 of IEEE Std 802.1Q";
          uses ieee802:ptp-time-grouping;
        }
        leaf config-change {
          type boolean;
          description
            "A Boolean variable that acts as a start signal to the List
            Config state machine that the administrative variable values for
            the Port are ready to be copied into their corresponding
            operational variables. This variable is set TRUE by management
            and is set FALSE by the List Config state machine.";
          reference
            "8.6.9.4.7 of IEEE Std 802.1Q";
        }
        container config-change-time {
          config false;
          description
            "The time at which the administrative variables that determine
            the cycle are to be copied across to the corresponding
            operational variables, expressed as a PTP timescale. The value
            of this variable is set by the SetConfigChangeTime() procedure
            in the List Config state machine.";
          reference
            "12.29.1.4 and 8.6.9.4.9 of IEEE Std 802.1Q";
          uses ieee802:ptp-time-grouping;
        }
        leaf tick-granularity {
          type uint32;
          config false;
          description
            "Characteristics of an implementation’s cycle timer clock
```

```
    (TickGranularity).";
  reference
    "8.6.9.4.16 of IEEE Std 802.1Q";
}
container current-time {
  config false;
  description
    "The current time maintained by the local system, expressed as a
    PTP timescale (see IEEE Std 802.1AS-2011).";
  reference
    "12.29.1.4 and 8.6.9.4.10 of IEEE Std 802.1Q";
  uses ieee802:ptp-time-grouping;
}
leaf config-pending {
  type boolean;
  config false;
  description
    "A Boolean variable, set TRUE by the List Config state machine
    to signal that there is a new cycle configuration awaiting
    installation. The variable is set FALSE when the List Config
    state machine has installed the new configuration. The variable
    is used by the SetCycleStartTime() procedure to control the
    length of the cycle that immediately precedes the first cycle
    that uses the new configuration values. This value can be read
    by management.";
  reference
    "8.6.9.3 and 8.6.9.4.8 of IEEE Std 802.1Q";
}
leaf config-change-error {
  type yang:counter64;
  config false;
  description
    "An error counter that is incremented if AdminBaseTime specifies
    a time in the past, and the current schedule is running.";
  reference
    "8.6.9.3.1 of IEEE Std 802.1Q";
}
leaf gate-closed-due-to-invalid-rx-enable {
  type boolean;
  default "false";
  description
    "A value of TRUE indicates that the GateClosedDueToInvalidRx
    function is enabled; a value of FALSE indicates that the
    GateClosedDueToInvalidRx function is disabled. The default value
    of GateClosedDueToInvalidRxEnable is FALSE.";
  reference
    "8.6.5.4 of IEEE Std 802.1Q";
}
leaf gate-closed-due-to-invalid-rx {
  type boolean;
  default "false";
  description
    "If GateClosedDueToInvalidRxEnable is TRUE, a value of TRUE in
    GateClosedDueToInvalidRx indicates that all frames are dropped
    (i.e., the gate behaves as if the operational stream gate state
    is Closed). If GateClosedDueToInvalidRx is FALSE, it has no
    effect. The default value of GateClosedDueToInvalidRx is FALSE;
    if any frame is discarded because the gate is in the Closed
    state, then GateClosedDueToInvalidRx is set TRUE.";
  reference
    "8.6.5.4 of IEEE Std 802.1Q";
}
leaf gate-closed-due-octets-exceeded-enable {
  type boolean;
  default "false";
  description
    "A value of TRUE indicates that the
    GateClosedDueToOctetsExceeded function is enabled; a value of
    FALSE indicates that the GateClosedDueToOctetsExceeded function
    is disabled. The default value of GateClosedDueToOctetsExceed is
    FALSE.";
  reference
```

```
            "8.6.5.4 of IEEE Std 802.1Q";
        }
        leaf gate-closed-due-octets-exceeded {
          type boolean;
          default "false";
          description
            "If GateClosedDueToOctetsExceededEnable is TRUE, a value of TRUE
            in GateClosedDueToOctetsExceeded indicates that all frames are
            dropped (i.e., the gate behaves as if the operational stream
            gate state is Closed). If GateClosedDueToOctetsExceeded is
            FALSE, it has no effect. The default value of
            GateClosedDueToOctetsExceeded is FALSE; if any frame is
            discarded because there are insufficient IntervalOctetsLeft,
            then GateClosedDueToOctetsExceeded is set TRUE.";
          reference
            "8.6.5.4 of IEEE Std 802.1Q";
        }
      }
    }
  }
}
```

Insert 48.6.22 after 48.6.21 as follows:

48.6.22 The ieee802-dot1q-psfp-bridge YANG module

```
module ieee802-dot1q-psfp-bridge {
  yang-version "1.1";
  namespace urn:ieee:std:802.1Q:yang:ieee802-dot1q-psfp-bridge;
  prefix psfp-bridge;
  import ieee802-dot1q-bridge {
    prefix dot1q;
  }
  import ieee802-dot1q-psfp {
    prefix psfp;
  }
  organization
    "IEEE 802.1 Working Group";
  contact
    "WG-URL: http://www.ieee802.org/1/
    WG-EMail: stds-802-1-l@ieee.org

    Contact: IEEE 802.1 Working Group Chair
    Postal: C/O IEEE 802.1 Working Group
    IEEE Standards Association
    445 Hoes Lane
    Piscataway, NJ 08854
    USA

    E-mail: STDS-802-1-CHAIRS@IEEE.ORG";
  description
    "This module provides management of IEEE Std 802.1Q Bridge
    components that support Per-Stream Filtering and Policing (PSFP).

    Copyright (C) IEEE (2023).

    This version of this YANG module is part of IEEE Std 802.1Q; see the
    standard itself for full legal notices.";
  revision 2023-10-26 {
    description
      "Published as part of IEEE Std 802.1Qcw-2023.

      The following reference statement identifies each referenced IEEE
      Standard as updated by applicable amendments.";
    reference
      "IEEE Std 802.1Q Bridges and Bridged Networks:
      IEEE Std 802.1Q-2022, IEEE Std 802.1Qcz-2023, IEEE Std 802.1Qcw-2023.";
  }
  feature psfp {
    description
      "Per-Stream Filtering and Policing supported.";
    reference
      "IEEE Std 802.1Q";
  }
  augment "/dot1q:bridges/dot1q:bridge/dot1q:component" {
    description
      "Augment bridge with Per-Stream Filtering and Policing configuration";
    uses psfp:psfp-parameters;
  }
}
```

Annex A

(normative)

PICS proforma—Bridge implementations[12]

A.47 YANG

Insert the following rows at the end of the table in A.47 (unchanged rows not shown):

Item	Feature	Status	References	Support
YANG-SCHED	Is the *ieee802-dot1q-sched* module supported?	SCHED or CQF:O	48.6.17	Yes [ ] No [ ] N/A [ ]
YANG-SCHED-BRIDGE	Is the *ieee802-dot1q-sched-bridge* module supported?	SCHED or CQF:O	48.6.18	Yes [ ] No [ ] N/A [ ]
YANG-PREEMP	Is the *ieee802-dot1q-preemption* module supported?	PRE:O	48.6.19	Yes [ ] No [ ] N/A [ ]
YANG-PREEMP-BRIDGE	Is the *ieee802-dot1q-preemption-bridge* module supported?	PRE:O	48.6.20	Yes [ ] No [ ] N/A [ ]
YANG-PSFP	Is the *ieee802-dot1q-psfp* module supported?	PSFP or CQF:O	48.6.21	Yes [ ] No [ ] N/A [ ]
YANG-PSFP-BRIDGE	Is the *ieee802-dot1q-psfp-bridge* module supported?	PSFP or CQF:O	48.6.22	Yes [ ] No [ ] N/A [ ]

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Annex B

(normative)

PICS proforma—End station implementations[13]

B.15 Scheduled traffic

Insert the following row at the end of the table in B.15 (unchanged rows not shown):

Item	Feature	Status	References	Support	
SCHED4	Is the *ieee802-dot1q-sched* YANG module supported?	YANG AND (SCHED OR CQF):O	5.28 item c), 12.29, 48.6.17	Yes [ ] No [ ]	N/A [ ]

B.16 Frame Preemption

Insert the following row at the end of the table in B.16 (unchanged rows not shown):

Item	Feature	Status	References	Support	
PRE4	Is the *ieee802-dot1q-preemption* YANG module fully supported?	PRE: O	5.4.1 item ae), 12.30, 48.6.19	Yes [ ] No [ ]	N/A [ ]

B.17 Per-Stream Filtering and Policing

Insert the following row at the end of the table in B.17 (unchanged rows not shown):

Item	Feature	Status	References	Support	
PSFP4	Is the *ieee802-dot1q-psfp* module supported?	YANG AND (PSFP OR CQF):O	12.31, 48.6.21	Yes [ ] No [ ]	N/A [ ]

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